

# Appendix A

## Implementation Schedule of Environmental Mitigation Measures

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CONSTRUCTION PHASE MITIGATION MEASURES FOR ALL SITES							
EIA* Ref. S2.5.1 and EM&A Ref. S2 Construction Dust Mitigation Measures	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Air Pollution Control (Construction Dust) Regulation
Relevant dust control requirements set out in the <i>Air Pollution Control (Construction Dust) Regulation</i> should be met to minimise dust emission. The site agent should adopt dust reduction measures while carrying out construction works. In particular, the mitigation measures listed below should be adopted where applicable.  Site clearance and demolition of existing structures <ul style="list-style-type: none"><li>The working area for the uprooting of trees, shrubs, or vegetation or for the removal of boulders, poles, pillars or temporary or permanent structures should be sprayed with water or a dust suppression chemical immediately before, during and immediately after the operation so as to maintain the entire surface wet; and</li><li>All demolished items (including trees, shrubs, vegetation, boulders, poles, pillars, structures, debris, rubbish and other items arising from site clearance) that may dislodge dust particles should be covered entirely by impervious sheeting or placed in an area sheltered on the top and the 3 sides within a day of demolition.</li></ul> Site boundary and entrance <ul style="list-style-type: none"><li>Vehicle washing facilities including a high pressure water jet should be provided at every discernible or designated 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; and</li><li>Where a site boundary adjoins a road, street, service and or other area accessible to the public, hoarding of not less than 2.4m from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit.</li></ul> Access road <ul style="list-style-type: none"><li>Every main haul road (i.e. any course inside a construction site having a vehicle passing rate of higher than 4 in any 30 minutes) should be paved with concrete,</li></ul>							

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<p>bituminous materials, hardcores or metal plates, and kept clear of dusty materials; or sprayed with water or a dust suppression chemical so as to maintain the entire road surface wet; and</p> <ul style="list-style-type: none"><li>• The portion of any road leading only to a construction site that is within 30m of a discernible or designated vehicle entrance or exit should be kept clear of dusty materials, say by means of suction sweepers.</li></ul> <p>Use of vehicle</p> <ul style="list-style-type: none"><li>• Immediately before leaving a construction site, every vehicle should be washed to remove any dusty materials from its body and wheels; and</li><li>• Where a vehicle leaving a construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle.</li></ul> <p>Concrete production</p> <ul style="list-style-type: none"><li>• Cement delivered in bulk should be stored in a closed silo fitted with an audible high level alarm which is interlocked with the material filling line such that, in the event of the silo approaching an overfilling condition, an audible alarm is triggered and the material filling stops within one minute;</li><li>• Silo used for the storage of cement should not be overfilled;</li><li>• The loading, unloading, transfer, handling or storage of any cement should be carried out in a totally enclosed system or facility, and any vent or exhaust should be fitted with an effective fabric filter or equivalent air pollution control system or equipment; and</li><li>• Cement collected by fabric filters or other pollution control system or equipment should be disposed of in a totally enclosed containers.</li></ul> <p>Excavation and earth moving</p> <ul style="list-style-type: none"><li>• The working area of any excavation or earth moving operation should be sprayed with water or a dusty suppression chemical immediately before, during and immediately after the operation so as the maintain the entire surface wet; and</li><li>• Exposed earth should be properly treated by compaction, turfing, hydroseeding, vegetation planting or sealing with latex, vinyl, bitumen, shotcrete or other suitable surface stabilizer within 6 months after the last construction activity on the construction site or part of the construction site where the exposed earth lies.</li></ul> <p>Stockpiling of dusty materials</p> <p>Any stockpile of dusty material should be either covered entirely by impervious</p>							

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sheeting; placed in an area sheltered on the top and the 3 sides; or sprayed with water or a dust suppression chemical so as to maintain the entire surface wet.  <u>Building construction</u> <ul style="list-style-type: none"><li>Where a scaffolding is erected around the perimeter of a building under construction, effective dust screens, sheeting or netting should be provided to enclose the scaffolding from the ground floor level of the building, or if a canopy is provided at the first floor level, from the first floor level, up to the highest level of the scaffolding; and</li><li>Any skip hoist for material transport should be totally enclosed by impervious sheeting.</li></ul>							
<u>EIA* Ref. S3.6.3 and EM&amp;A Ref. S3</u> <b>Construction Noise Mitigation Measures</b>	All construction sites / During whole construction period	Contractors	✓	✓		✓	Noise Control Ordinance
The following good site practice should be adopted during the construction phase: <ul style="list-style-type: none"><li>The contractor should site noisy equipment and activities as far from sensitive receivers as practicable. Also, temporary site offices (and other similar structures) should be located, as far as is possible, such that sensitive receivers could be screened by these structures from the line of sight of the construction areas;</li><li>Intermittent noisy activities should be scheduled to minimize exposure of nearby NSRs to high levels of construction noise. For example, noisy activities could be scheduled at times coinciding with periods when the schools are likely to be unoccupied. Prolonged operation of noisy equipment close to the schools should be avoided;</li><li>Idle equipment should be turned off or throttled down. Noisy equipment should be properly maintained and used no more often than is necessary;</li><li>Construction activities should be planned so that parallel operation of several sets of equipment close to a given receiver is avoided;</li><li>Where possible, the numbers of concurrently operating items of plant should be reduced through sensitive programming; and</li><li>Construction plant should be properly maintained and operated. Construction equipment often has silencing measures built in or added on, e.g. compressor panels, and mufflers. Silencing measures should be properly maintained and utilized.</li></ul>							

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<p>Others direct measures should include:</p> <p><u>Use of Quiet Plant and Working Methods</u></p> <p>The Contractor should use quiet plant and adopt quieter working methods. Quiet plant is defined as powered mechanical equipment whose actual sound power level is less than the value specified in the <i>TM on Noise from Construction Work other than Percussive Piling</i> for the same item of plant. Reference can be made to the British Standard BS5228: Part 1:1997 Control on Construction and Open Sites.</p> <p><u>Using Temporary and Movable Noise Barriers</u></p> <p>Erecting movable barriers of 3 to 5 m height with a small cantilevered upper portion and skid footing within a few metres of stationary plant and within about 5 m or more of a mobile equipment such as an excavator and mobile crane etc. could block the line of sight of these plant items to the NSR. It would be possible for the Contractor to provide purpose-built noise barriers or screens constructed of appropriate material (minimum superficial density of 15 kg/m²) located close to operating PME, in order to reduce the noise impact to the surrounding sensitive uses. Certain types of PME, such as generators and compressors, could be completely screened by portable barriers giving a total noise reduction of 10 dB(A) or more.</p> <p><u>Reducing the Numbers of Plant Operating in Critical Areas Close to NSRs</u></p> <p>It would be appropriate to restrict the number of operating PME within certain parts of the site that are very close to the NSRs in order to reduce the level of noise impacts. This method could be more effective for activities associated with foundation work, pile construction and excavation activities in which a large number of PME are anticipated, but not all of them would be utilised at the same time. A noise reduction of up to 6 dB(A) could be achieved if the number of PME used on site is reduced to one, as estimated from the predicted values.</p> <p><u>Using Noise Screening Structures or Purpose-built Noise Barriers along the Site Boundary</u></p> <p>Considering the medium-rise nature of surrounding NSRs, it would be effective to have noise screening structures along the site boundary to protect NSRs close to the construction site boundary. The following measures could be applied to reduce the construction noise:</p> <ul style="list-style-type: none"><li>• Site buildings such as office and stores could be grouped together to form a substantial barrier separating site operations and nearby noise sensitive premises;</li><li>• Stacks of certain materials such as bricks, aggregate, timber or topsoil could be strategically placed to form a barrier;</li></ul>							



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<ul style="list-style-type: none"><li>Earth bunds could be built to provide screening for major earthmoving operations and</li><li>For adverse cases, purpose-built noise barriers or screens could be placed along the site boundary.</li></ul>							
<b>EIA* Ref. S4.5.1 and EM&amp;A Ref. S4</b> <b>Construction Phase Water Quality Mitigation Measures</b>	All construction sites / During whole construction period	Contractors	✓	✓		✓	Water Pollution Control Ordinance
<u>Nullah and Box Culvert Diversion</u> <ul style="list-style-type: none"><li>Nullah and box culvert diversion should be away from typhoon shelter, marina and temporary embayment created during the construction phase to minimize the water quality impacts to these sensitive receivers.</li><li>Site run-off should be prevented from entering the diverted section of the nullah and box culvert and release of construction wastes into the diverted section should be avoided;</li><li>Good housekeeping should be adopted to reduce generation of construction wastes and the potential water pollution;</li><li>Stockpiles of construction and dusty materials should not be placed near the diverted section of the nullah and box culverts when carrying out of diversion works, so as to avoid the release of dusty materials into the water;</li><li>Construction activities that generate wastewater should be carried out in a distance away from the diverted section, wherever practicable; and</li><li>Surface channels should be provided along the edge of the diverted section of the nullah to intercept site runoff.</li></ul> <u>Dredging and Filling</u> <ul style="list-style-type: none"><li>Prior to commencement of marine works, the project department should consult the mariculturists of the Ma Wan and Tung Lung Chau Mariculture Zones. The project department should also inform and update mariculturists of the tentative programme of the marine works in advance.</li><li>Use of public fill as the major source of fill material for the reclamation works; and use of sand fill for provision of sand blanket in the reclamation areas and at foundations for major marine structures.</li><li>Filling activities should be carried out behind a temporary protective structure such as seawall or rock-filled barrier. The barrier could be built using rock fill at the boundary of the reclamation zone. Silt curtains should be placed at the opening left</li></ul>							

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<p>for marine accesses to prevent the spreading of the sediment plumes;</p> <ul style="list-style-type: none"><li>• Seawall should be constructed in the early stage of the reclamation, and its presence would effectively confine the release of sediment during dredging and filling;</li><li>• Placing the foundation for seawall/breakwater, and the Earth Bund for Culvert P2 through the suction arm of a trailer suction dredger close to the seabed to minimise sediment losses;</li><li>• The maximum sediment dredging rate of 2500m³/day and sandfilling/ filling of public fill rate of 20000m³/day, which have been demonstrated as environmentally acceptable in this EIA, should be adopted as one of the mitigation measures;</li><li>• The rate of dredging should be reduced when high levels of contaminants are detected during the water quality monitoring;</li><li>• Tightly closed grabs should be used to reduce sediment loss during dredging and raising of the grabs from the seabed to the dredgers.</li><li>• The descent speed of grabs should be controlled to minimise the disturbance to the seabed and reduce sediment loss during dredging and raising of grabs;</li><li>• Sealed grab dredgers should be used for dredging;</li><li>• The decks of all barges should be clean and tidy to avoid any substances that might be washed to the water during loading;</li><li>• Sediment loading should be carried out carefully to minimise splashing of sediments;</li><li>• Overloading of barges should not be allowed and sufficient freeboard should be maintained to ensure that there would be no spill over of the dredged material during loading and transport;</li><li>• The bottom opening of barges should be tightly sealed to prevent leakage of the dredged material during transport of the sediments to disposal site;</li><li>• The speed of vessels in the dredging area should be reduced to prevent generation of turbulence from moving vessels; and</li><li>• Silt curtains should be provided around dredging sites, except at the less contaminated areas including the eastern and western breakwaters of the new Kwun Tong Typhoon Shelter, to restrict the spreading of sediment plumes particularly at WSD's seawater intake points.</li></ul>							
<p>Construction Site Runoff</p> <ul style="list-style-type: none"><li>• Discharge licence should be applied from EPD;</li><li>• Suitable wastewater treatment systems or facilities should be provided on site to meet the discharge requirements specified in the discharge licence;</li></ul>							

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<ul style="list-style-type: none"><li>Perimeter channels should be provided in advance of site formation and earthworks to intercept runoff at site boundary;</li><li>Drainage channels should be provided on site to convey storm water to sand/silt traps for removal of soil particles;</li><li>Regular cleaning and maintenance of the sediment removal facilities should be implemented to ensure that the facilities are in normal function at all times;</li><li>Provision of earth bunds or sand bags in areas where a large amount of exposed soils exists would be required;</li><li>The construction works should be properly programmed to minimise soil excavation in rainy seasons, so as to prevent soil erosion from exposed soil surfaces;</li><li>Excavated trench should be backfilled in short sections;</li><li>Exposed stockpiles should be covered with tarpaulin or impervious sheets before a rainstorm occurs;</li><li>Suitable locations should be selected on site to place the stockpiles so as to avoid release of materials into the drainage channels;</li><li>Final surface of earthworks should be compacted and protected by permanent work</li><li>Hydroseeding could be used to protect exposed sloe surfaces;</li><li>Intercepting channels should be provided to prevent storm runoff from washing across exposed soils surfaces;</li><li>Haul roads should be paved with concrete and temporary access roads should be protected by using crushed stone or gravel; and</li><li>Good construction practice should be adopted to minimise runoff and soil erosion.</li></ul>							
<u>Wastewater and Sewage Generated from Construction Activities</u> <ul style="list-style-type: none"><li>Wastewater generated from foundation construction, washing of concrete lorry and related activities should be collected and discharged into storm drains after removal of silt and sand in a sedimentation facility;</li><li>The quality of the discharged effluent in terms of suspended solids, pH, COD and other contaminated as specified in the discharge licence should be monitored to check for compliance with the licence's requirements;</li><li>Reuse of the treated effluent for vehicle washing, dust suppression and cleaning is recommended;</li><li>Use of bentonite slurry in diaphragm wall and bore-pile construction should be reconditioned and reused, wherever practicable, to minimise the volume of used</li></ul>							

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<p>slurry to be disposed of;</p> <ul style="list-style-type: none"><li>• Sediment settling facilities should be provided to remove the fine concrete particles contained in wastewater generated from washing of concrete lorry prior to discharging this kind of wastewater into the final sedimentation facilities;</li><li>• Suitable pH adjustment facilities would be required to lower than pH value of wastewater to an acceptable range;</li><li>• Wheel washing facilities should be provide at all site exists to ensure that earth, mud and debris would not be carried out of the construction site by vehicles;</li><li>• The wheel washing wastewater should be diverted to the sedimentation facilities for removal of silt and sand before discharging into storm drains;</li><li>• The road section between the construction site exit and the public road should be properly paved to reduce vehicle tracking of soil and to prevent site runoff from entering storm drains;</li><li>• Building construction involves a large variety of construction activities. Wastewater would be generated from concreting, plastering, cleaning and polishing, internal decoration and similar activities. Direct discharge of wastewater into storm drains would pollute the water quality of the receiving water body. A suitably designed wastewater collection system should be provided on site to divert all the wastewater to the sedimentation facility. If necessary, pH adjustment should be undertaken to neutralise the wastewater;</li><li>• The newly constructed manholes should be covered and temporarily sealed to prevent debris and wastewater from entering the drainage systems. Similar approach should be taken to prevent pollutants to get into the water supply and drainage pipes during building construction;</li><li>• The drainage which serves open filling points should be connected to a petrol interceptor before discharging into storm drains. If vehicle wash bays and lubrication bays are present on site, these facilities should be located in roofed areas. The drainage serving these areas should be connected to a petrol interceptor prior to discharging into a foul sewer;</li><li>• Emergency plans should be developed to deal with accidental spillage of chemicals. Leakage and spillage should be contained and cleaned up immediately to minimise the pollution to water quality. If chemical wastes are generated from the construction activities, the chemical waste disposal should comply with the Waste Disposal Ordinance;</li><li>• Sewage generated from workforce should be discharged into a foul sewer (or other suitable collection and storage system).</li></ul>							

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<ul style="list-style-type: none"><li>Grease traps, which are capable of providing at least 20 minutes retention time during peak flow, should be provided to reduce the oil and grease contents in wastewater prior to discharging into a foul sewer. In case where a foul sewer is not available, suitable sewage collection and storage systems should be provided on site to hold the sewage. The stored sewage should be collected and disposed of by a licensed waste collector on a regular basis. Installation of a sewage treatment facility is an alternative to treat the sewage to acceptable discharge standards;</li><li>Chemical toilets should be provided in buildings under construction and in areas where the construction activity involves a large number of workers for collection of toilet wastes. Cleaning of toilet wastes should be carried out regularly by a licensed waste collector. All the cleaning and waste disposal records should be properly filed;</li><li>Good site arrangement and management should be adopted to minimise potential pollution</li></ul>							
<u>Ground Improvement</u> <ul style="list-style-type: none"><li>A sand blanket should be placed on top of the undredged sediments during dredging to minimise the disturbance to the sediments.</li><li>Vertical sand drains or band drains could be used to release the excess pore water from the compressible soils/sediments during consolidation. Suitable surface drains should be provided at the outlet of sand drains or band drains to collect the pore water. Temporary retention structures with a large surface area could be used to store the collected pore water. Evaporation of pore water from the retention structures reduces the volume of pore water and disposal of pore water could be minimised. In case where discharge of the collected pore water is required, silt traps or wastewater treatment systems should be provided to remove the suspended solids and contaminants prior to final discharge. The quality of treated effluent should comply with the criteria specified in the Technical Memorandum or Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters.</li><li>The ground improvement work should be properly planned and competent persons should be deployed for carrying out the work.</li><li>A sand blanket should be placed on top of the sediments to minimise the disturbance to the sediments when carrying out the soil mixing operation for the field trials of DCM. Release of leachate should be controlled to avoid the potential impacts to the surrounding environment.</li><li>The injection rate of the cement slurry into the sediments should be controlled to avoid leaching out of cement slurry. The slurry waste generated during the DCM</li></ul>							

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<p>process should be properly disposed of.</p> <ul style="list-style-type: none"><li>The treatment work should be properly planned and competent persons should be deployed for carrying out the work. It is recommended to carry out monitoring during the trials to assess the residual environmental impacts arising from the application of the DCM method.</li></ul> <p><u>Groundwater Discharge during Dewatering</u></p> <ul style="list-style-type: none"><li>Sedimentation tanks should be provided to remove the suspended solids in groundwater extracted during excavation and construction of foundation to levels that are in compliance with the EM requirements prior to final discharge;</li><li>Excavation should be carried out during dry season wherever possible to minimise contaminated runoff leading to water pollution;</li><li>Excavated material should be covered to reduce exposure of contaminated soil to rainwater;</li><li>The groundwater extracted from the excavation site should be recharged into the groundwater table through groundwater recharge wells, which could be built near the excavation site, so as to reduce the discharge of groundwater into the nearshore water;</li><li>Should groundwater discharge be required during dewatering, the concentrations of benzene, toluene and tetrachloroethylene should be monitored; and</li><li>The groundwater should be collected and treated to the standards as recommended by the USEPA prior to final discharge.</li></ul>							
<p><u>Kwun Tong Typhoon Shelter and Marina</u></p> <ul style="list-style-type: none"><li>Stormdrains should be diverted away from the typhoon shelter and the marina;</li><li>For the storm overflows into the Kwun Tong Typhoon Shelter, the overflow weirs should be set at a level of 2.5m m.P.D or above. The overflow structure should be so designed to avoid, during dry weather condition, the overflow of the dry weather flows, which tends to form a thin surface layer on top of the seawater due to the lower density, into the typhoon shelter.</li></ul>	During design stage	Implementation: TDD	✓		✓		
<p><u>Emergency Overflows from KTPTW and TKWPTW</u></p> <ul style="list-style-type: none"><li>For the emergency overflow from KTPTW, a by-pass pipe should be provided to convey the emergency overflow along the new breakwater (eastern arm of KTTS) and to discharge at the end of the breakwater to allow quick dispersion of the sewage plume;</li></ul>	During design stage	Implementation: TDD	✓		✓		

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<ul style="list-style-type: none"><li>For the emergency overflow from TKWPTW, an emergency bypass along the proposed box culvert (Outfall P1) plus a 150m submarine outfall should be provided to allow discharging into more open water.</li><li>To avoid the impacts due to the emergency overflows from TKWPTW and KTPTW to the WSD's seawater intakes at Tai Wan and Cha Kwo Ling, the seawater extracted from the intake points should be monitored for <i>E. coli</i> and SS levels.</li><li>The management of the two sewage treatment works should inform WSD to take protective measures when emergency overflow occurs.</li></ul>							
<u>EIA* Ref. S7.4.1 and EM&amp;A Ref. S6</u> Construction Phase Waste Management	All construction sites / During whole construction period	Contractors	✓	✓		✓	Waste Disposal Ordinance (Cap. 354) & relevant regulations; Dumping At Sea Ordinance (Cap. 466); Environmental Impact Assessment Ordinance (Cap. 499); and Public Health and Municipal Services Ordinance (Cap. 132); and relevant WBTC.
<u>General</u> The Contractor is responsible for waste control within the construction site, removal of the waste material produced from the site and to implement any mitigation measures to minimise waste or redress problems arising from the waste from the site. The waste material may include any sewage, waste water or effluent containing sand, cement, silt or any other suspended or dissolved material to flow from the site onto any adjoining land, storm sewer, sanitary sewer, or any waste matter or refuse to be deposited anywhere within the site or onto any adjoining land.  A proper waste management plan should be implemented to promote waste minimisation at source. Where waste generation is unavoidable then the potential for recycling or reuse should be explored and opportunities taken. If wastes cannot be recycled then the recommended disposal routes should be followed. On the management of construction and demolition (C&D) materials, reference should be made to Work Bureau Technical Circulars WBTC 29/2000 on Waste Management Plan. The EM&A report should also regularly publish information on management of C&D materials to ensure that information included in the environment section of the PWSC paper are monitored and audited during the construction period.							

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<p>Different types of construction waste generated from the site should be segregated, stored, transported and disposed of separately in accordance with EPD's required procedures. It is important that the sorting of wastes should be done on-site. All waste materials shall be segregated into categories covering:</p> <ul style="list-style-type: none"><li>• Excavated material or inert construction and demolition material suitable for reuse on-site;</li><li>• Excavated material or inert construction and demolition material suitable for SEKD reclamation;</li><li>• Remaining waste for landfill;</li><li>• Chemical waste; and</li><li>• General refuse.</li></ul> <p>On site measures promoting proper segregation and disposal of construction waste should be implemented, e.g. provide separate containers for inert (rubber, sand, stone etc) and non-inert (wood, organics etc) wastes. The inert waste can be taken to SEKD reclamation and the non-inert waste can be transported to strategic landfills.</p> <p>The Contractors should make use of excavated spoil as much as possible to minimise off-site fill material requirements and disposal of spoil. During road transportation of excavated spoil, vehicles should be covered to avoid dust impacts.</p> <p>The Contractor shall also pay attention to the Waste Disposal Ordinance, the Dumping at Sea Ordinance, the Public Health and Municipal Services Ordinance, the Water Pollution Control Ordinance, and relevant Work Bureau Technical Circulars, and carry out the appropriate waste management work. The relevant licence/permit, such as the effluent discharge licence, the chemical waste producer registration, etc. should be obtained. The Contractor shall refer to the relevant booklets issued by EPD when applying for the licence/permit.</p> <p><u>Construction and Demolition (C&amp;D) Material</u></p> <p>Components of C&amp;D wastes such as steel and other metals should be segregated and recycled as far as possible before disposal to landfill. Wastes such as concrete and rubble should be disposed of at SEKD reclamation.</p> <p>An on-site C&amp;D material handling facilities including temporary barging point and areas for sorting and stockpiling of all C&amp;D material should be set up for handling the large quantities of C&amp;D material generated prior to disposal, which is in reference to the</p>							



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<p>Works Bureau Technical Circular No. 5/98 – On Site Sorting of Construction Waste or Demolition Sites.</p> <p>If there is surplus waste required to be disposed of at SEKD reclamation, it should be noted that the public filling materials should only consist of earth, building debris and broken rock and concrete. They should be free from marine mud, household refuse, plastic, metals, industrial and chemical waste, animal and vegetable matter, and other material considered unsuitable by the public filling Supervisor. Small quantity of timber mixed with otherwise suitable material will be permitted.</p> <p><u>Chemical Waste</u></p> <ul style="list-style-type: none"><li>• Chemical waste (e.g. oily sludge, halogenated solvent) produced from decommissioning of underground pipes and tanks and other activity should be handled according to the Code of Practice on the Packaging, Labeling and Storage of Chemical Waste and disposed of by a licensed contractor at Tsing Yi Chemical Waste Treatment Facility;</li><li>• Uncontrolled disposal of chemical and hazardous waste into the air, soil and waters should be prevented;</li><li>• Where tanks or pipes are to be emptied or removed, precautionary measures should be taken to avoid the spillage of any petroleum products that may cause contamination to the ground;</li><li>• Any contaminated material such as absorbent or cleaning stuffs should be properly disposed of;</li><li>• If temporary on-site storage of ACM is required, the storage facilities should be designed in accordance with the Code of Practice on the Packaging, Labeling and Storage of Chemical Waste issued by EPD;</li><li>• ACM must be removed by registered contractors and disposed of at landfill. The handling procedures must comply with the requirements specified in EPD's Code of Practice on the Handling, Transportation and Disposal of Asbestos Waste;</li><li>• A sewerage system or septic tanks must be provided to collect human waste;</li><li>• Sludge should be removed regularly by a hygiene service company to a suitable landfill site, subject to the sludge generated meeting the acceptance criteria (e.g. dry solid content) for the landfill; and</li><li>• On-site refuse collection point must be provided. This waste would normally be collected by private waste collectors, then transferred to a transfer station for compaction and containerization, and finally disposed of at a landfill.</li></ul>							

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<u>Refuse</u> <ul style="list-style-type: none"><li>Implement appropriate measures to minimize windblown litter and dust during transportation by covering trucks or transporting wastes in enclosed containers; and</li><li>Set up temporary refuse collection facility to store domestic waste and the waste should be collected frequently.</li></ul>							
<u>Waste Minimisation</u> <ul style="list-style-type: none"><li>C&amp;D waste should be recycled or reused wherever possible. The waste management strategy to be employed should promote waste minimisation a source. Where waste generation is unavoidable then the potential for recycling or reuse should be explored and opportunities taken;</li><li>Waste reduction measures should be introduced at the design stage and carried through the construction activities, wherever possible, by careful control on purchasing, reuse of formwork, and good site management;</li><li>Training of construction staff should be given to increase awareness and draw attention to waste management issues and the need to minimise waste generation. The training requirements should be included in the site management plan.</li></ul>							
<u>Waste Handling and Disposal</u> <ul style="list-style-type: none"><li>Reputable waste collectors authorised to collect the specific category of waste should be used to collect and transport the wastes to the appropriate disposal points;</li><li>Waste should be handled and stored properly to ensure that they are held securely without loss or leakage thereby minimising the potential for pollution. Release of pollutants into nearby water bodies during storage and handling should not be permitted;</li><li>Appropriate measures should be employed to minimise windblown litter and dust during transportation of wastes by either covering the trucks or transporting wastes in enclosed containers;</li><li>The necessary waste disposal permits should be obtained from the appropriate authorities for specific category of waste in accordance with the relevant regulations;</li><li>Collection of municipal wastes should be carried out frequently, say on a daily basis; and</li></ul>							

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<ul style="list-style-type: none"><li>Records of the quantities of wastes generated, recycled and disposed should be maintained, determined by weighing each load or by other appropriate methods.</li><li>A trip-ticket system should be implemented for the proper disposal of the C&amp;D materials at the public filling areas and landfills.</li></ul>							
<u>EIA* Ref. S13.9.3</u> Construction Phase Landscape and Visual Mitigation Measures	All construction sites / During whole construction period	Contractors	✓	✓		✓	Hong Kong Planning Standards and Guidelines; Tree Preservation (Works Branch), WBTC 24/94; Management & Maintenance of both Natural Vegetation & Landscape Works (Works Branch), WBTC 18/94; Management & Maintenance of Landscape Works along Public Roads. Aug 1996 (HyD. Guidance Notes), (U/GN/001; Control of Visual Impact of Slopes (Works Branch), WBTC 25/93; Allocation of Space for Urban Street Trees (Works Branch), WBTC; and Appearance of Structures. Lands and Works Branch Technical Circular No. 11/89.
<u>Tree preservation</u> Vegetation clearance should be restricted to those areas requiring engineering construction in order to maximise retention of existing vegetation, particularly trees and tree groups. In particular, the detail engineering design should provide design measures to preserve as many trees as possible. This can be achieved through a minimization of the work areas and preserving trees which are not disturbed directly by the permanent engineering or building roads. For example any trees potentially disturbed by embankments or cuttings adjacent to a road should be retained by the use of structures. A plan clearly identifying no-go zones for the contractor should also be compiled prior to any works on site. All trees to be preserved shall be protected by sturdy 1.8m fencing around at least the full crown of the tree. All areas within this zone will be inaccessible to the contractor for any purpose. Where tree felling is unavoidable, it should only be undertaken in accordance with the Government approved tree felling application as outlined in WBTC 24/94 Tree Preservation.							

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<p>Tree felling should be compensated by new tree planting within the site, specifically this should include all the public open space areas (regional, district and local open spaces), and within amenity areas and strips including roadsides. Trees should be planted at an appropriate level of maturity to ensure their establishment. At a minimum the same number of trees should be replanted as those felled. Compensatory planting proposals should be submitted to the relevant Government Departments under whose jurisdiction and maintenance the planting will apply, as part of the Tree Felling Application.</p> <p><u>Protection of existing vegetation and trees to be retained</u></p> <p>Adequate measures for the protection of existing vegetation should be fully specified. Existing vegetation identified to be retained should be protected from disturbance by robust fencing and hoarding. As a minimum this should be sturdy 1.8m protective fencing to be located at the edge of the tree canopy and not around the trunk. There should be prohibition of the storage of materials, the movement of construction vehicles and the washing of equipment including concrete mixers beneath the tree canopy. Penalties for tree damage should be included in the contract documents to enforce the requirements.</p> <p><u>Tree transplanting</u></p> <p>As part of the tree survey, all trees affected by the works should be assessed for their suitability for transplanting. Where physically feasible and cost effective, trees should be transplanted. New locations for transplanted trees should be agreed with the relevant government department. Trees to be transplanted should be indicated on the Tree Felling Application to Government. Adequate provisions and safeguards should be made within the specification for transplanting trees. The tree transplanting and planting works would be implemented by approved landscape contractors and inspected and approved on site by a qualified landscape architect. A tree protection/transplanting specification should be included within the contract documents.</p> <p><u>Hoarding</u></p> <p>A minimum 2.5m hoarding should be used around the boundary of the works. Although high-rise VSRs may not benefit due to their height, views from the lower levels and street will benefit. In particular this should be used during the reclamation.</p> <p><u>Temporary Open Space</u></p> <p>The development of temporary open should be considered to provide outdoor</p>							

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recreational areas for the first population intake as there is certain period prior to development of other parts of the site.  <u>Reclamation</u> All reclaimed areas which are programmed to remain undeveloped for more than 12 months should be hydroseeded with grass in order to provide a temporary vegetative cover.							
<b>EIA* Ref. S12.1.13 &amp; 12.3</b> <b>Construction Phase Cultural Heritage Investigation</b>							
<u>Land Archaeological Site Investigation</u> Archaeological site investigation should be carried out prior to any construction work carried out on the site of the old Lung Tsun Pier and along the 1943 coastline to determine the existence of the Kowloon City Public Pier and the rock from the Kowloon Walled City underneath the NAKTA area. Should any site of cultural heritage importance be identified in the archaeological site investigation, rescue excavation might be required prior to the construction of the proposed development at NAKTA area.  The site of the Kowloon City Public Pier lies within the former Airport Terminal Building area. The only possible site for the archaeological site investigation would be at the road between the former Airport Terminal Building and the Car-park Building. Possible site for the rock from the Kowloon Walled City is an old reclamation area near the western end of the Kai Tak Tunnel within the NAKTA area. Archaeological site investigation would be carried out by excavations in the form of trial pit / trench to reveal if anything remains underneath the existing pavement.	NAKTA Area / Prior to any construction works	TDD	✓				EIAO
<u>Marine Archaeological Investigation</u> Geophysical surveys should be conducted for all reclamation areas before the commencement of dredging and reclamation activities. Should the geophysical surveys reveal the presence of anomalies, such anomalies should be verified using either remotely operated vehicles (ROV) or divers to determine whether they are of any marine archaeological potential.	All reclamation areas / Prior to any reclamation work	TDD	✓				EIAO

EIA* Ref. S4.5.2 and EM&A Ref. S4.8.5											
All Sites – Operational Phase Water Quality Mitigation Measures										Water Pollution Control Ordinance	
<u>Water Quality in Extended Sections of Diverted Nullahs</u> <ul style="list-style-type: none"> <li>Water quality monitoring for extended sections of nullahs and box culvert formulated in the EM&amp;A Manual should be implemented so that the deterioration of water quality within the nullahs and box culvert can be detected.</li> </ul>		Extended sections of diverted nullahs / EPD During operational life						✓			
<u>Cooling Water Discharges</u> <ul style="list-style-type: none"> <li>To avoid short-circuiting of the cooling water discharges, a suitable distance to separate the intake point and discharge point should be selected;</li> <li>At the detailed design stage, the intake point at a level below the thermal plume layer to avoid short-circuiting should be considered as one of the options.</li> <li>The concentrations of chlorine and biocide should be suitably controlled to avoid releasing of excess chemicals into the receiving water body, and it is recommended to explore ways to minimise the use of chlorine and biocide during the detailed design stage of the project; and</li> <li>Maintenance of DCS should be implemented on a regular basis to ensure the normal operation of the system.</li> </ul> <p>It is recommended to use a near-field model such as CORMIX (USEPA model) or JETLAG (by Lee and Cheung, 1990) to provide details of the flow dynamics of the thermal plume at the detailed design stage of the development. The near-field model results can be used to determine:</p> <ul style="list-style-type: none"> <li>The size of the mixing zone;</li> <li>The high velocity region that may cause impact to ship navigation and cause local scouring; and</li> <li>The most suitable distance to separate the cooling water intake point and discharge point.</li> </ul>		Cooling water intake and discharge points / Service Provider During design stage appointed by EMSD		✓							
<u>Sewage generated from the SEKD</u>											

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<ul style="list-style-type: none"><li>The impacts on the treatment capacity should be assessed during the sewerage design to ensure that KTPTW and TKWPTW have sufficient spare capacities to handle the sewage generated from the SEKD.</li></ul>	During design stage						
<u>Storm and Emergency Overflows</u> <ul style="list-style-type: none"><li>Details of the operational issues of the submarine outfall would be dealt with during the detailed design stage.</li></ul>	During design stage						
<u>EIA* Ref. S13.9.4</u> <b>All Sites – Landscape and Visual Mitigation Measures</b>	All planning area / During design stage	Project proponents of various planning items	✓				Hong Kong Planning Standards and Guidelines; Tree Preservation (Works Branch), WBTC 24/94; Management & Maintenance of both Natural Vegetation & Landscape Works (Works Branch), WBTC 18/94; Management & Maintenance of Landscape Works along Public Roads. Aug 1996 (HyD. Guidance Notes), (U/GN/001; Control of Visual Impact of Slopes (Works Branch), WBTC 25/93; Allocation of Space for Urban Street Trees (Works Branch), WBTC; and Appearance of Structures. Lands and Works Branch Technical Circular No. 11/89.
<u>Topsoil</u> The potential for any future re-use of the topsoils on-site must be taken in consideration of the contamination of the soils, which is currently being treated. Notwithstanding, any topsoil proposed to be disturbed should be tested to investigate its quality. Should the soil be of good quality it should be removed and stockpiled for future use on the project. If this is not practicable, it should be removed and used on projects elsewhere. If soils are contaminated they should be identified and treated / removed accordingly. Poor, but uncontaminated, soils may be treated to improve their quality where practicable or removed from site for other uses.		TDD	✓	✓			
<u>Earthworks</u>							

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<p>The following general principles should be considered in the design of the earthworks:</p> <ul style="list-style-type: none"><li>• Slopes should be designed to be capable of supporting trees and vegetation. In general, a minimum of 1000mm of graded topsoil should be placed on the surface of fill embankments;</li><li>• The slope gradient should allow the slope to be safely planted and maintained. Generally, it is not possible to plant slopes steeper than 1:1.5, with slopes normally being no more than 1:3. Slopes steeper than this should be planted using an alternative method such as by hydroseeding;</li><li>• Earthworks should aim, as far as possible, to blend with the surrounding and adjacent landforms. In this highly urban environment of Kowloon, it may be more appropriate to consider more sculptural landforms as part of the overall landscape design;</li><li>• In critical locations where there are space limitations, retaining walls may be used to achieve greater slope gradients. These systems may then be planted at the base, on the wall and on any terraces so formed; and</li><li>• Access to planted areas for both planting works and slope maintenance operations must be considered from the outset. It is generally anticipated that service vehicles and operatives will use the roads system to access roadside planting, although this may not be possible for link roads and elevated roads. Where roadside access is impossible, additional methods of access should be provided.</li></ul>		TDD/HyD/LCSD (Refer to Section 7.4 of EM&A Manual)	✓	✓	✓		
<p><u>Planting Proposals</u></p> <p>The design of any mitigation planting should take into account the following:</p> <ul style="list-style-type: none"><li>• Landscape Treatment Of Roadside Slopes should be used to screen structures from adjacent sensitive viewpoints; compensate for trees felled as part of the construction works; and enhancement of the ecological and landscape value of the area;</li><li>• Hydroseeding - Once the shape and extent of soft slopes is determined, the initial action is to hydroseed directly onto the newly formed slope. The specification should fully describe ground preparation measures that are required prior to commencement of hydroseeding;</li><li>• Planting. Slopes should be hydroseeded on completion with a grass seed mix. Where appropriate, hydroseeding should be followed by pit or notch planting of whips, small trees and shrubs. Planting works should follow during the first planting season. Planting mixes should be based on a variety of species that will rapidly establish a vegetative cover. These should include a proportion of quick growing ‘nurse’ species as well as slow growing but long lived native trees. Shrubs should be included to create an understorey to the developing woodland. Woodland mixes</li></ul>		TDD/HyD/LCSD (Refer to Section 7.4 of EM&A Manual)	✓	✓	✓		



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<p>should, where appropriate, reflect the species lost due to the works. However, the potential for enhancement and the use of more appropriate species should be used, particularly for ecological considerations;</p> <ul style="list-style-type: none"><li>• Landscape Below Elevated Structures. Shade tolerant species should be included below the elevated road structures wherever possible. Provision of waterpoints must be provided to facilitate maintenance. Appropriate landscape treatments should be found for land beneath elevated structures where it is assessed that planting will not thrive. In highly visible areas, creative hard landscape solutions should be included which add visual interest to the townscape but which require little maintenance. Design solutions should be sculptural in nature;</li><li>• Where roadside planting is proposed, the planting area should be separate from that set aside for utilities;</li><li>• Tree and shrub screen planting, including roadside amenity planting should be considered as appropriate; and</li><li>• Tree planting areas should generally be provided with 1000mm depth topsoil.</li></ul>							
<p><u>Design of Buildings</u></p> <ul style="list-style-type: none"><li>• Building should be designed to be contemporary, providing aesthetic and visual interest as well as a quality urban environment. Notwithstanding, the use of reflective materials should be restricted, particularly on the south-facing elevation, to avoid reflection across the harbour.</li><li>• Buildings in G/IC areas, should be designed to be feature buildings within the development. The use of standard building form should be avoided. This may be achieved by the use of clad materials over the structure, such as tiles, coloured panels, etc. Boundary tree and shrub planting should be used to provide a landscape buffer and visual screen.</li></ul>		Lot Developer	✓	✓	✓		
<p><u>Design of Engineering Structures</u></p> <p>The design of all structures is to be consistent through the SEKD, i.e. structures to have consistent features and elements for the whole development to create a distinctive identity. This can be achieved through the use of materials and the design of form. Additionally thematic features, e.g. panels within the structures, could be used to reflect the former airport site. It should be ensured that there is adequate provision of underground space and soil depth over box culverts for landscaping and recreational facilities.</p>		TDD/HyD	✓	✓	✓		
<p><u>(a) Advanced design of Open Space over Engineering Structures (subject to further discussion)</u></p> <p>The design and construction of any open space over any engineering structures will be</p>		TDD	✓	✓	✓		

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<p>advanced. Thus the project proponent, design engineer and design landscape architect will liase closely in order to ensure that there is an integrated design between the engineering structure and the requirements of creating a quality landscaped open space above. In particular, consideration should be given to: allowing sufficient loading requirements topsoils and tree planting; location of any utilities (particularly drainage water and electrical supplies) to be within the structure and away from any planting areas; dual use of hard surfacing for pedestrians and maintenance access (within safety constraints); avoidance of ventilation, etc. buildings within the open space (unless absolutely necessary, whereby they should be designed to be a feature building); adequate provision of water for irrigation, design of external appearance of the structure to have an aesthetically appealing design, minimisation of in situ concrete as a finish. A system for monitoring and feedback of the ongoing design of any structures should be established between all design parties in order to ensure that the final design fully achieves its goal of being having a quality open space above.</p>							
<p><u>(b) Viaducts</u></p> <p>Viaduct structures should be designed to have a narrow profile and slender columns in order to reduce their visual intrusion. Spans between columns should be maximised in order to reduce the number required. All additional engineering elements, e.g. drainage provision, associated with the viaduct should be concealed within structures. Noise barriers, etc. should be designed as an integral part of the viaduct in order to minimise visual clutter.</p>		TDD/HyD	✓	✓	✓		
<p><u>(c) At-grade Structures</u></p> <ul style="list-style-type: none"><li>• The visual appearance of at-grade structures should be aesthetically compatible with the environment; avoid deterioration of the existing environment for pedestrians; and incorporate effective landscape treatments.</li><li>• Particular attention should be given to the appearance of the at-grade supports.</li><li>• For maintenance reasons, it will be difficult to soften the structure by growing climbing plant material over it. In the limited locations where space permits, trees and shrubs should be planted. Where space is limited, external climbing frames could be attached to both retaining walls. However, textured or clad finishes should be considered, in particular to overcome staining problems from car emissions and rain.</li></ul>		TDD/HyD	✓	✓	✓		
<p><u>(d) Tunnel Portals and Ventilation Buildings</u></p> <ul style="list-style-type: none"><li>• Tunnel portals should be constructed using contemporary design and materials, should be considered as local features within the urban environment, and should be integrated with the local urban environment and townscape.</li></ul>		TDD/HyD					

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<ul style="list-style-type: none"><li>• Ventilation buildings should also be designed as features within the local landscape.</li><li>• The designs for all such structures should avoid overly utilitarian design and form.</li><li>• Landscape should be integrated with the design of these elements in order to provide a softening buffer to the buildings.</li></ul> <p>(e) Retaining Walls</p> <ul style="list-style-type: none"><li>• These retaining walls should be designed as features along the roadside with a thematic design appropriate for the former airport. This may be achieved by the use of concrete panels or cladding.</li><li>• Retaining walls should be designed to relate to their context. In residential areas or in close proximity to schools, the design intention should be to reduce their massive nature and create visual interest. All walls should be softened and screened by incorporating plant material both at grade and at the top of the wall.</li></ul> <p>(f) Planting</p> <p>Tree and shrub planting should be used associated with structures to help reduce the apparent scale of the engineering structures in the landscape.</p> <p>(g) Materials</p> <p>All structure should be finished to minimise glare and staining, such as the use of textured concrete finish or by clad materials, e.g. coloured panels.</p> <p>(h) ACABAS</p> <p>The design of all engineering structures should be reviewed and approved by ACABAS</p> <p><u>Noise Barriers</u></p> <p>All noise barriers and semi-enclosures, where possible, should be based on one design theme to create a single family of structures, and also to minimise visual impact. Principles for their detail design are as follows:</p> <ul style="list-style-type: none"><li>• Emphasis should be put on the use of clear panels, particularly on those barriers located on viaducts. However, as this is a also an urban development, consideration should be given to creating features of those barriers at ground level by the use of coloured or feature panels. Such panels could have a thematic design reflecting the former airport use of the site and should be considered for barriers adjacent to residential areas and open space, where they can also be used to partially screen the wide roads and traffic. However, it should be ensured that key views would be retained and not screened by the use of opaque barriers.</li><li>• All barriers should be designed to be integrated with the local streetscape in order to avoid visual clutter. When proposed on viaducts, the entire system should be</li></ul>		TDD	✓	✓	✓		
		TDD/HyD/LCSD	✓	✓	✓		
		TDD/HyD	✓	✓	✓		
		Implementation: TDD / Maintenance: HyD	✓	✓	✓		
			✓	✓	✓		

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designed as single entity to create a simple and uncluttered form. <ul style="list-style-type: none"><li>Where practicable, planting should be associated with the barriers in order to soften their appearance.</li><li>Visual junctions between noise barriers of different height requirements should not be handled by abrupt changes of level but by inclined panel profiles at a slope of between 10 to 15 degrees and never greater than 210 degrees; commencement of such changes of level must be coordinated with major structural elements. Similar design attention should be given to changes of differing cantilever barrier profiles so that such changes are perceived visually as gradual changes.</li></ul>							
All Sites – Operation Phase Air Quality Mitigation Measures							
EIA* Ref. S2.1 Open Spaces The buffer distance recommended in Chapter 9 of the HKPSG between different types of roads and active recreation open spaces, passive recreation open spaces, and amenity areas (see Table 2.3 of the EIA Report) should be followed in planning the uses within the open spaces of SEKD.	All open spaces / During design stage	LCSD	✓		✓		HKPSG Chapter 9
EIA* Ref. S2.3.3.15 Ventilation System of Tunnels and Submerged Roads The ventilation system of the tunnels and submerged roads within SEKD should be designed to avoid any traffic emissions from the tunnel portal(s).	All tunnels and submerged roads / During design stage	TDD (except HyD for eastern portal of CKR tunnel)	✓		✓		Air Pollution Control Ordinance
EIA* Ref. S2.4.2.15 Traffic Air Quality Within Vehicle Tunnel and Full Noise Enclosure During detailed design stage of the vehicle tunnel and full noise enclosure, the ventilation system should be designed to comply with the tunnel air quality limits stipulated in EPD's Practice Note on Control of Air Pollution in Vehicle Tunnels by means of mechanical or natural ventilation or other control measures.	All vehicle tunnels and full noise enclosures / During design stage	TDD (except HyD for CKR tunnel)	✓		✓		Practice Note on Control of Air Pollution in Vehicle Tunnels
EIA* Ref. S7.6.3.44 Automatic Refuse Collection System To ensure the achievement of the air quality requirement, the exhaust from the system will pass through the following means: <ul style="list-style-type: none"><li>A System Collector removes larger particles in the air stream to prevent clogging the downstream equipment;</li><li>A Wet Scrubber removes most of the remaining particles when air passes through the fan. The odour from the fan discharge will be removed by means of an agent</li></ul>	ARCS / During design stage	Future service provider	✓		✓		Air Pollution Control Ordinance

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such as caustic soda; • A chemical or ozone treatment will reduce odour and the accumulation of bacteria. This can be further improved by injecting ammonia solution into a catalytic deNOx reactor to remove the NOx contained in exhaust air. The NOx in the exhaust air will almost be totally eliminated; and • An acoustic louvre and silencer will be provided for noise reduction through air in/out openings. • As a precaution, air discharge outlets will be located away from sensitive areas such as domestic block facades and fresh air intakes.							
EIA* Ref. S3.7							
All Sites – Traffic Noise Mitigation Measures							
• All noise barriers should be made up of solid material with a mass per unit surface area in excess of 5kg/sq.m. • There should be no gaps at joints in the barrier materials. • Barrier should have a sound reduction index of not less than 10 dB(A).  In the design of noise barriers / enclosures, the following conditions regarding fire fighting should be noted: a) Emergency Vehicular access to any areas/buildings on both sides of a road shall not be obstructed; and b) Operation of the hydrant shall not be impeded - In a fire-fighting operation, the fire appliance will first proceed to a position close to the fire hydrant and obtain water from the fire hydrant through hoses connecting the fire hydrant and the fire appliance and then provide water for fire-fighting through hoses connecting the fire appliance and the hand branches at the scene of fire. The segregation between the carriageway and the pavement will definitely obstruct the use of fire hydrant during fire fighting operation. - In addition a minimum all round clearance of 1.5m should be maintained for the hydrant outlets and its ground valve at all times.	All noise barriers / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
OPERATIONAL PHASE MITIGATION MEASURES FOR SPECIFIC SITES							
EIA* Ref. S3.7							
Site 1A – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Semi-enclosure with opening on right side (Barrier T1-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-2)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-3)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER1)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER2)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER3)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER4A)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER4B)</li><li>Semi-enclosure with opening on west side (D1-E1)</li><li>Semi-enclosure with opening on north side (Barrier L1-E1)</li><li>One section of vertical barrier (5m high) (Barrier L1-1)</li><li>One section of vertical barrier (5m high) (Barrier L1/A-1)</li><li>Modify the southern semi-enclosure in front of Richland Garden to become full enclosure</li><li>Low noise surfacing on T1 and Prince Edward Road East (PRRE)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
School Sites <ul style="list-style-type: none"><li>Semi-enclosure on T1 NB with opening on right side (Barrier T1-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-2)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-3)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER1)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER2)</li><li>One section of vertical barrier (5m high) (Barrier L1-1)</li><li>One section of vertical barrier (5m high) (Barrier L1/A-1)</li><li>Low noise surfacing on T1 and PERE</li></ul>							
<b>1A6-SS</b> <ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing site 1A, and the large auxiliary block facing KTBP/PER and the small auxiliary block facing school 1A7</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F- 6/F auxiliary block</li></ul> <b>1A7-North PS</b> <ul style="list-style-type: none"><li>The school building is set in an orientation with classroom block facing the residential blocks of site 1A, and the auxiliary block facing school 1A8</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 6/F classroom block only</li></ul> <b>1A8-South PS</b> <ul style="list-style-type: none"><li>The school building is set in an orientation with classroom block facing the residential blocks of site 1A, and the auxiliary block facing school 1A7</li><li>Boundary wall of 3m high</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F- 6/F classroom block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.17</b>							
<b>Site 1A – Fixed Noise Mitigation Measures</b>							
<b>1A2 Centralised Cooling System (CSCP)</b> <ul style="list-style-type: none"><li>Fully/partial enclosure of noise equipment/parts to reduce the noise impact;</li><li>The exhaust of the CSCP and any opening of the building should be located facing away from any NSRs; and</li><li>Louver or other acoustic reduction system should be applied to the exhaust exit of the building.</li></ul>	During design stage	Service Provider appointed by EMSD	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>EIA* Ref. S3.7</b> <b>Site 1B – Traffic Noise Mitigation Measures</b> <ul style="list-style-type: none"><li>Semi-enclosure on T1 NB with opening on right side (Barrier T1-1)</li><li>Semi-enclosure on T1 NB with opening on right side (Barrier T1-2)</li><li>Full enclosure in front of Richland Garden (T1-F1)</li><li>One section of vertical barrier along NB in front of 1B site (5m high) (Barrier L1-2)</li><li>One section of vertical barrier (5m high) (Barrier L1-5)</li><li>Modify the southern semi-enclosure in front of Richland Garden to become full enclosure</li><li>Low noise surfacing on T1 and PERE</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>EIA* Ref. S3.7</b> <b>Site 1C – Traffic Noise Mitigation Measures</b> <ul style="list-style-type: none"><li>Semi-enclosure on T1 NB with opening on right side (Barrier T1-2)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier L2-1)</li><li>Modify the southern semi-enclosure in front of Richland Garden to become full enclosure</li><li>Low noise surfacing on T1</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
<b>School Sites</b> <ul style="list-style-type: none"><li>Semi-enclosure on T1 NB with opening on right side (Barrier T1-2)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D2-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D2-2)</li><li>Low noise surfacing on T1</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>1C3-PS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along pedestrian path of D2 next to the carpark at site 1B</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing site 1C and the auxiliary block facing school 1C4</li><li>Acoustic insulation and air conditioning for affected classrooms of 3/F-6/F classroom block corridor side and 3/F auxiliary block in exceedance of standard</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<b>1C4-SS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along pedestrian path of D2 next to the carpark at site 1B</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
<ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				



Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
residential blocks of site 1C, the large auxiliary block facing the car park and the small auxiliary block facing school 1C3 • Acoustic insulation and air conditioning for classrooms of all floors of auxiliary block in exceedance of standard	stage						
EIA* Ref. S3.7							
Site 1D – Traffic Noise Mitigation Measures							
• One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1) • One section of vertical barrier (5m high) (D1-1B) • One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1C) • One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D5-2)	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
• Setback from the D2: Not less than 30m from the west site boundary • Setback from the D1: Not less than 10m from the north site boundary • 13.5m high podium along D1	Within identified planning areas / During the design stage	HD	✓				Noise Control Ordinance
EIA* Ref. S3.10.1							
Site 1D – Fixed Noise Mitigation Measures							
1D1 Public Transport Interchange (PTI) • Complete podium decking over noisy facilities provides screening effect and reduces noise emission • Locate the facilities so that there is no line-of-sight of noise sources at the NSRs • Installation of sound absorbent material on the roof of PTI to avoid reverberation noise within the PTI • The ingress/egress (I/E) of PTI should be arranged with frontage to open space to mitigate the impact on NSRs • During the detailed design stage, ancillary structure within the PTI namely escalator, lift and stairways should be carefully located to act as natural barrier	PTIs / During design stage	Future PTI developer	✓				Noise Control Ordinance
EIA* Ref. S3.7							
Site 1E – Traffic Noise Mitigation Measures							
• One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1) • One section of vertical barrier (5m high) (D1-1B) • One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1C)	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-2)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-3)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-4)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-5)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-6)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-7)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-8)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER3)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER4A)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER4B)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER5)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER6)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D5-2)</li></ul>							
<ul style="list-style-type: none"><li>Avoid openable windows at facades indicated by assessment points: 8413, 8418</li><li>Setback from the D1: Not less than 20m from the south site boundary</li><li>Setback from the D3: Not less than 50m from the east site boundary</li><li>15m high podium along D1 and D2</li><li>Single-aspect building for 2 blocks along PER.</li></ul>	Within identified planning areas / During the design stage	Developer of the site	✓				
<u>School Sites</u> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-2)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-3)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-4)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-5)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-6)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-7)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-8)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER4A)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER4B)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER5)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER6)</li></ul>							
<b>1E9-PS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along D3</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the residential blocks of site 1E, the large auxiliary block facing site 1K and the small auxiliary block facing school 1E10</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 6/F classroom block corridor side and all floors of auxiliary block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<b>1E10-SS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along D3</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
<ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the residential blocks of site 1E, the auxiliary block facing school 1E1</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F classroom block corridor side and 3/F auxiliary block 3/F</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<b>1E11-SS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along D3</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
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Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing school 1E10, the large auxiliary block facing PER and the small auxiliary block facing road L15</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F auxiliary block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<u>EIA* Ref. S3.10.4</u> Site 1G – Fixed Noise Mitigation Measures							
<u>1G1 Electric Substation</u> <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise; and</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms.</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 1K – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-6)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-7)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D3-8)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER5)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER6)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<ul style="list-style-type: none"><li>25m high podium with depot for shuttle system underneath</li><li>Setback from D1: Not less than 15m from the site boundary</li><li>Avoid openable windows at facades indicated by assessment points: 8535</li><li>Single-aspect building for 2 blocks along D3/PER</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 1L – Traffic Noise Mitigation Measures							
<u>School Sites</u> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1A)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D5-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D5-1A)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>1L-PS</b> <ul style="list-style-type: none"><li>5m vertical barrier on central reserve along D5</li><li>5.5m+2.2m cantilever barrier along D1 &amp; D5</li><li>The school building is set at an orientation with the classroom block facing D1, the auxiliary block facing D5.</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F classroom block and 1/F-3/F auxiliary block</li></ul>	During the design stage  Within identified school sites / During design stage	Implementation: TDD / Maintenance: HyD ED & ASD	✓ ✓		✓		
<b>1L-SS</b> <ul style="list-style-type: none"><li>5m vertical barrier on central reserve along D5</li><li>5.5m+2.2m cantilever barrier along D5</li><li>The school building is set at an orientation with the classroom block facing D5 tunnel, the large auxiliary block facing site 2B and the small auxiliary block facing road D5</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F auxiliary block</li></ul>	During the design stage  Within identified school sites / During design stage	Implementation: TDD / Maintenance: HyD ED & ASD	✓ ✓		✓		
<b>1L-PS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along D1</li><li>The school building is set at an orientation with the classroom block facing the stadium, the auxiliary block facing site 2B.</li></ul> <b>1L-SS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along D1</li><li>The school building is set at an orientation with the classroom block facing the stadium, the large auxiliary block facing the primary school and the small auxiliary block facing site 2B</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 6/F auxiliary block</li></ul>	During the design stage  Within identified school sites / During design stage  During the design stage  Within identified school sites / During design stage	Implementation: TDD / Maintenance: HyD ED & ASD  Implementation: TDD / Maintenance: HyD ED & ASD	✓ ✓ ✓ ✓		✓		
<b>EIA* Ref. S3.10.13</b> <b>Site 1L – Fixed Noise Mitigation Measures</b>							
<b>1L1 Stadium</b> <ul style="list-style-type: none"><li>Retractable Roof and Fixed Roof design to screen noise;</li><li>A good distributed sound system should be installed based on good design; and</li><li>Good structural and building design, such as the stadium bowl could be depressed into the ground and noise-screening effect could be provided by higher building structure.</li></ul>	Site 1L / During design stage	Project proponent of the stadium	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>EIA* Ref. S3.10.4</b> <b>1L1</b> Warm-up Track <ul style="list-style-type: none"><li>Proper sound distributed system and proper loud speaker directivity</li></ul>	Site 1L / During design stage	LCSD/ Project proponent of the stadium	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.9</b> <b>1L5</b> Ventilation Shafts <ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated</li></ul>	During design stage	Implementation: TDD / Maintenance: HyD	✓				Noise Control Ordinance
<b>Site 1M – Fixed Noise Mitigation Measures</b>							
<b>EIA* Ref. S3.10.4</b> <b>1M4</b> Electric Substation <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.16</b> <b>1M7</b> Quarantine and Dog Kennel <ul style="list-style-type: none"><li>Entrance should be avoided facing nearby NSRs</li><li>Area keeping animals should be a sheltered place screened by the building structure itself and avoid any openings directly facing NSRs</li><li>A solid boundary wall should be provided</li></ul>	During design stage	Project proponent of quarantine and dog kennel	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.4</b> <b>Site 1N – Fixed Noise Mitigation Measures</b>							
<b>1N6</b> Electric Substation <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<b>EIA* Ref. S3.7</b> <b>Site 1P – Traffic Noise Mitigation Measures</b>							
<b>School Sites</b> <b>1P-PS</b> <ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the Kai Tak Tunnel Administration building and the auxiliary block facing the CKR</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of all floors of classroom block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
EIA* Ref. S3.7							
Site 2A – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier PER6)</li><li>25m high podium with rail depot underneath;</li><li>Setback from D1: Not less than 25m setback from podium edge along D1</li><li>Setback from PER: Not less than 95m setback from podium edge west for buildings not screened by single-aspect building</li><li>Single-aspect building for 6 blocks along D3/PER</li><li>Avoid openable windows at facades indicated by assessment points: 8656, 8661, 8681, 8686, 8692, 8697, 8733, 8739</li></ul>	During the design stage  Within identified planning areas / During the design stage	Implementation: TDD / Maintenance: HyD  Future developer	✓  ✓		✓		Noise Control Ordinance
School Sites							
2A9-SS <ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the school 2A10 and the auxiliary block facing the depot with landscape deck over</li><li>3m school boundary wall along boundary facing PER</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 6/F classroom block corridor side and 3/F auxiliary block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				Noise Control Ordinance
2A10-PS <ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the school 2A10 and the large auxiliary block facing the school 2A11 and the small auxiliary block facing school 2A9</li><li>3m school boundary wall along boundary facing PER</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms for all floors of auxiliary block</li></ul>							
2A11- PS <ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the school 2A10 and the auxiliary block facing the building in site 2A (2A1)</li><li>3m school boundary wall along boundary facing PER</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F classroom block corridor side and 3/F auxiliary block</li></ul>							
Site 2A – Fixed Noise Mitigation Measures							
EIA* Ref. S3.10.14							
2A2 Fire Station and Ambulance Depot <ul style="list-style-type: none"><li>Special system such as greenwave system or hurry call system should be adopted so as to reduce the annoyance level of the sirens.</li></ul>	During design stage	FSD	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<u>EIA* Ref. S3.7</u> Site 2B – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from D1: Not less than 25m setback from podium edge along D1</li><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>School Sites</u> 2B3-SS <ul style="list-style-type: none"><li>1m vertical barrier along central reserve of L4</li><li>The school building is set at an orientation with the classroom block facing the school 2B4 and the non-sensitive auxiliary block facing road L4</li><li>3m school boundary wall facing L4</li></ul> 2B4-PS <ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing the school 2B3 the auxiliary block facing road site 2B.</li></ul>	During the design stage  Within identified school sites / During design stage	Implementation: TDD / Maintenance: HyD ED & ASD	✓ ✓		✓		Noise Control Ordinance
<u>EIA* Ref. S3.10.4</u> Site 2B – Traffic Noise Mitigation Measures							
Noise Mitigation Measure for Fixed Noise Source 2B5 <u>Electric Substation</u> <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 2C – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from L4: Not less than 20m &amp; 23m from the site boundary</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 2E – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from D1: Not less than 14m from the site boundary</li><li>Setback from L4: Not less than 9m from the site boundary</li><li>Setback from L3: Not less than 16 and 25m from the site boundary</li><li>10-15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 2F – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from D1: Not less than 25m setback from north site boundary</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance



Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>Setback from L3: Not less than 10m setback from east site boundary</li><li>Setback from L4: Not less than 10m setback from south site boundary</li><li>10-15m high podium</li><li>Avoid openable windows at facades indicated by assessment points: 8973, 8978, 8983.</li></ul>	design stage						
EIA* Ref. S12.7.1 Site 2H – Cultural Heritage Mitigation Measures	During design stage	LCSD	✓				EIAO
<u>Re-instatement of the Sung Wong Toi Inscription Rock</u> The current layout plan reserves a district open area in Area 2H for re-instatement of the Sung Wong Toi Inscription Rock: <ul style="list-style-type: none"><li>A small artificial hill is recommended to be erected on the site of the original Sacred Hill, and that the remains of the Sung Wong Toi rock be removed from their present unworthy setting, and placed on the summit of the hill, on its original site, the hill to be designed to reflect the importance and solemnity of the site and its historical associations.</li><li>To provide for a suitable setting for the re-provided Sung Wong Toi rock and hill, it is recommended that a suitable public park be provided around the artificial hill erected for the Sung Wong Toi rock. To reflect the importance and solemnity of the site and its historical associations, it is also recommended that this park be designed and built to the highest standards.</li><li>Since the position of the Sung Wong Toi is of historical significance to a large degree because of its unobstructed view through to the sea, the re-sited Sung Wong Toi Rock should be so placed that it would enjoy an uninterrupted sight-line to the sea. The current layout plan maintained an uninterrupted sight-line through the Lei Yue Mun Channel from the re-erected Sung Wong Toi site to the open sea.</li></ul>							
<u>Preservation of the Former Far East Flying Training School</u> The existing buildings of the former Far East Flying Training School at the Hong Kong Aviation Club were only built in 1958, but they are the only reminder of the training school which had played an important role in both civil and military aviation development history in the region for nearly fifty years. The former school site of 1958 also remarks the post war development of Kai Tak Airport. As such, the buildings of the former Far East Flying School at Sung Wong Toi Road are of historical importance. It is therefore proposed to preserve and relocate those buildings to the tourist node of SEKD.							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<u>EIA* Ref. S3.7</u> Site 3B – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-1)</li><li>15m high podium</li></ul>	During the design stage	Implementation: TDD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	/ Maintenance: HyD Future developer	✓				
<u>EIA* Ref. S3.7</u> Site 3C – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-2)</li><li>10m-15m high podium</li></ul>	During the design stage	Implementation: TDD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	/ Maintenance: HyD Future developer	✓				
<u>EIA* Ref. S3.10.5</u> Site 3K – Fixed Noise Mitigation Measures							
3K1 Rectifier Substation	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms</li></ul>							
<u>EIA* Ref. S3.7</u> Site 3M – Traffic Noise Mitigation Measures							
<u>School Sites</u> 3M2-SS	Within identified school sites / During design stage	ED & ASD	✓				Noise Control Ordinance
<ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing site 3M, and the auxiliary block facing L8</li></ul>							
<u>EIA* Ref. S3.7</u> Site 3P – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-2)</li><li>Setback from the D4: Not less than 30m setback from north site boundary</li><li>10-15m high podium</li></ul>	During the design stage	Implementation: TDD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	/ Maintenance: HyD Future developer	✓				
<u>EIA* Ref. S3.7</u> Site 3Q – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-1)</li></ul>	During the design stage	Implementation: TDD	✓		✓		Noise Control Ordinance
		/ Maintenance: HyD					

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>Setback from the D4: Not less than 30m setback from south site boundary</li><li>Setback from the L15: Not less than 10m setback from north site boundary</li><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				
<b>School Sites</b> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-3)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-4)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>3Q4-PS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along pedestrian path of D1</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
<ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing the local road, and the auxiliary block facing school 3Q5</li><li>3m school boundary wall along the eastern boundary</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<b>3Q5-SS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier replacing school boundary wall / along D1</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
<ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing site 3B R2, the large auxiliary block facing L15, and the small auxiliary block facing school 3Q4</li><li>3m school boundary wall along the northern boundary</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<b>EIA* Ref. S3.7</b> <b>Site 3R – Traffic Noise Mitigation Measures</b>							
<ul style="list-style-type: none"><li>Avoid openable windows at facades indicated by assessment points: 8709</li><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<b>EIA* Ref. S3.7</b> <b>Site 3S – Traffic Noise Mitigation Measures</b>							
<ul style="list-style-type: none"><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<b>EIA* Ref. S3.7</b> <b>Site 3T – Traffic Noise Mitigation Measures</b>							
<ul style="list-style-type: none"><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.1</b> <b>Site 3T – Fixed Noise Mitigation Measures</b>							
<b>3T1</b> <u>Public Transport Interchange (PTI)</u>	PTIs / During design stage	Future PTI developer	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>Complete podium decking over noisy facilities provides screening effect and reduces noise emission</li><li>Locate the facilities so that there is no line-of-sight of noise sources at the NSRs</li><li>Installation of sound absorbent material on the roof of PTI to avoid reverberation noise within the PTI</li><li>The ingress/egress (I/E) of PTI should be arranged with frontage to open space to mitigate the impact on NSRs</li><li>During the detailed design stage, ancillary structure within the PTI namely escalator, lift and stairways should be carefully located to act as natural barrier</li></ul>							
<u>EIA* Ref. S2.5.2</u> Site 3V – Air Quality Mitigation Measures							
In order to avoid adverse air quality impacts due to industrial emissions from Ma Tau Kok Gas Works, there should be 60m buffer zone on the western side of Site 3V for high-rise residential development. (Refers to Drawing No. 22936/TP/110 for the extent of the buffer area)	Site 3V / Design stage of Site 3V	Future developer	✓				Air Pollution Control Ordinance
<u>EIA* Ref. S3.7</u> Site 3V – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>15m high podium</li><li>Avoid openable windows at facades indicated by assessment points: 8876</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 3X – Traffic Noise Mitigation Measures							
<u>School Sites</u> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-2)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier L15-1)</li><li>One section of cantilever barrier to screen PER (5.5m vertical + 2.2m horizontal extension) (Barrier L15-2)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<u>3X1-PS</u> <ul style="list-style-type: none"><li>5.5m + 2.2m cantilever barrier along pedestrian path of L15</li><li>5m vertical barrier along central reserve of L15</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>The school building is set at an orientation with the classroom block facing road L15 and the auxiliary block facing the ESS at 3X4.</li><li>3m school boundary wall on school boundary wall of the school and on the boundary facing To Kwa Wan Road</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of all floors of classroom block</li></ul> <b>3X3-SS</b> <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier along pedestrian path of D1</li><li>5.5m+2.2m cantilever barrier: adjacent to School 3X3 at Long Yuet Street, two sections of cantilever barriers roadside and pedestrian path</li><li>The school building is set at an orientation with the classroom block facing To Kwa Wan Road, the large auxiliary block facing road D4, and the small auxiliary block facing school 3X1</li><li>3m school boundary wall around the school except on the boundary where there would be a cantilever barrier</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of all floors of classroom block and 6/F auxiliary block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				Relevant Legislation & Guidelines
	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
	Within identified school sites / During design stage	ED & ASD	✓				
<b>Site 3X – Fixed Noise Mitigation Measure</b>							
<b>EIA* Ref. S3.10.4</b> <b>3X4</b> <u>Electric Substation</u> <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.9</b> <b>3X5</b> <u>Ventilation Shafts</u> <ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated.</li></ul>	During design stage	HyD	✓				Noise Control Ordinance
<b>Site 3Y – Fixed Noise Mitigation Measures</b>							
<b>EIA* Ref. S3.10.6</b>							
<b>3Y1</b> <u>Gas Pigging/Uptake Station</u> <ul style="list-style-type: none"><li>Barrier in the form of boundary wall to be built at the northern site boundary to protect NSRs in site 3N1.</li></ul>	During design stage	HKCG	✓				Noise Control Ordinance
<b>EIA* Ref. S3.10.4</b> <b>3Y4</b> <u>Electric Substation</u> <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise; and</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms.</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>EIA* Ref. S12.7.2</b> <b>Site 3Y – Cultural Heritage Mitigation Measures</b> <u>Provision of Sensitive Linkage to Fishtail Rock</u> The rock is now located at the southeastern edge of existing Hoi Sham Park in Site 3Y of the current SEKD layout plan. In order to retain the historical significance of the Fishtail Rock currently located in Hoi Sham Park in Site 3Y, a view corridor is incorporated into the current layout plan to provide an unobstructed view from the Fishtail Rock to the Victoria Harbour. Pedestrian linkage between the park and the New Development Area of SEKD should be planned to make this heritage site more effective than it is now.	Site 3Y / During design stage	Implementation: LCSD & TDD / Maintenance: LCSD	✓		✓		EIAO
<b>Site 3Z – Fixed Noise Mitigation Measures</b>							
<b>EIA* Ref. S3.10.6</b> <b>3Z2    <u>Ventilation Shafts</u></b> <ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated</li><b>3Z3    <u>Ventilation Shafts</u></b><ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated</li></ul></ul>	During design stage	Implementation: TDD / Maintenance: HyD	✓				Noise Control Ordinance
<b>EIA* Ref. S2.5.2</b> <b>Site 4A – Air Quality Mitigation Measures</b> In order to avoid adverse air quality impacts due to ventilation shafts, an environmental setback of 230m from the centre of the East Vent Building of CKR tunnel within Site 4A should be allowed. Assuming a vent shaft exhaust height of 33m, the environmental setback is for high-rise development more than 50m above ground and not for low-rise development. (Refers to Drawing No. 22936/TP/111 for the extent of the environmental setback)	Site 4A / During design stage of Site 4A	Future developer	✓				Air Pollution Control Ordinance
<b>EIA* Ref. S3.7</b> <b>Site 4A – Traffic Noise Mitigation Measures</b> <ul style="list-style-type: none"><li>One section of vertical barrier (5.5m high) (Barrier CKR-1)</li><li>One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier CKR-2)</li><li>Semi-enclosure with opening on north side (CKR)</li><li>Avoid openable windows at facades indicated by assessment points: 8004, 8025</li></ul>	During the design stage  Within identified planning areas / During the design stage	Implementation: / Maintenance: HyD  Future developer	✓  ✓		✓		Noise Control Ordinance

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Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>School Sites</b> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-1)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-2)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-3)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-4)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S1)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S2)</li><li>Semi-enclosure with opening one north east side (T2-semi enclosure)</li><li>One section of cantilever barrier on the top of T2 semi-enclosure to shield noise from KTB (5.5m vertical plus 2.2m extension)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-3)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-8)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-9)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>4E2-PS</b> <ul style="list-style-type: none"><li>Barriers on D5 and T2</li></ul> <ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 4E3, and the auxiliary block facing site 4E R1</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 6/F classroom block corridor side</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>4E3-SS</b> <ul style="list-style-type: none"><li>Barriers on D5 and T2</li></ul> <ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 4E2, the large auxiliary block facing D5, and the small auxiliary block facing site 4E R1</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>EIA* Ref. S3.10.6</b> <b>Site 4H – Fixed Noise Mitigation Measures</b>							
<b>4H3 Ventilation Shafts</b> <ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated.</li></ul>	During design stage	Implementation: TDD / Maintenance: HyD	✓				Noise Control Ordinance
<b>4H4 Ventilation Shafts</b> <ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated.</li></ul>							
<b>EIA* Ref. S3.7</b> <b>Site 4L – Traffic Noise Mitigation Measures</b>							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-1)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-2)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-3)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance



Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-4)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S1)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S2)</li><li>Semi-enclosure with opening one north east side (T2-semi enclosure)</li><li>One section of cantilever barrier on the top of T2 semi-enclosure to shield noise from KTB (5.5m vertical plus 2.2m extension)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-3)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-4)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-5)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-6)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-7)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-8)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-9)</li></ul>							
<ul style="list-style-type: none"><li>Avoid openable windows at facades indicated by assessment points: 8281, 8288</li></ul>	Within identified planning areas / During the design stage	HD	✓				
<b>School Sites</b> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-1)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-2)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-3)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-4)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S1)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S2)</li><li>Semi-enclosure with opening one north east side (T2-semi enclosure)</li><li>One section of cantilever barrier on the top of T2 semi-enclosure to shield noise from KTB (5.5m vertical plus 2.2m extension)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-3)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-4)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-5)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-6)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-7)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-8)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-9)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>4L3-PS</b> <ul style="list-style-type: none"><li>Barriers on D5 and T2</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 4L4, and the auxiliary block facing site 4L R1.</li><li>3m school boundary wall on boundary facing D5 and the corner facing site 4B8</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3F-6/F classroom block corridor side and 1/F-3/F auxiliary block</li></ul> <b>4L4-SS</b> <ul style="list-style-type: none"><li>Barriers on D5 and T2</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				Relevant Legislation & Guidelines
	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
<ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 4L3, the large auxiliary block facing D5, and the small auxiliary block facing site 4L R1.</li><li>3m school boundary wall around school except on wall facing school 4L3</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F auxiliary block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<b>EIA* Ref. S3.7</b> <b>Site 4M – Traffic Noise Mitigation Measures</b>							
<ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-1)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-2)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-3)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (T2-4)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S1)</li><li>One section of vertical barrier on slip road joining T2 (3m high) (T2-S2)</li><li>Semi-enclosure with opening one north east side (T2-semi enclosure)</li><li>One section of cantilever barrier on the top of T2 semi-enclosure to shield noise from KTB (5.5m vertical plus 2.2m extension)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-4)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-5)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-6)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-7)</li><li>Avoid openable windows at facades indicated by assessment points: 8307, 8314, 8321</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	HD	✓				
<b>EIA* Ref. S3.7</b> <b>Site 4N – Traffic Noise Mitigation Measures</b>							
<b>School Sites</b> <ul style="list-style-type: none"><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-5)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-7)</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
4N2-SS <ul style="list-style-type: none"><li>Barriers on D5 and T2</li></ul> <ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 4N3, the large auxiliary block facing D5, and the small auxiliary block facing site 4M R1.</li><li>3m school boundary wall part of the boundaries facing D5 and L9, and along the whole boundary facing school 4L4</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F auxiliary block</li></ul>	During the design stage  Within identified school sites / During design stage	Implementation: TDD / Maintenance: HyD ED & ASD	✓ ✓		✓		
4N3-PS <ul style="list-style-type: none"><li>Barriers on D5 and T2</li></ul> <ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 4N2, and the auxiliary block facing L9.</li><li>3m school boundary wall part of the boundaries facing D5, and along the whole boundary facing site 4P</li><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 3/F-6/F classroom block and 3/F auxiliary block</li></ul>	During the design stage  Within identified school sites / During design stage	Implementation: TDD / Maintenance: HyD ED & ASD	✓ ✓		✓		
EIA* Ref. S3.10.15 Site 4P – Fixed Noise Mitigation Measure							
4P1 <u>Swimming Pool Complex</u> <ul style="list-style-type: none"><li>Proper sound distributed system and proper loud speaker directivity.</li></ul>	Site 4P / During design stage	LCSD / TDD as Implementation LCSD as Maintenance	✓				Noise Control Ordinance
EIA* Ref. S2.5.2 Site 4Q – Air Quality Mitigation Measures							
<ul style="list-style-type: none"><li>In order to prevent adverse air quality impact due to exhaust emissions from the northern vent shaft of T2 tunnel, the exhaust point of the vent shaft should be designed at not less than 24m above ground level.</li></ul>	Before population intake in Area 4N	Implementation: TDD / Maintenance: HyD	✓		✓		Air Pollution Control Ordinance
Site 4Q – Fixed Noise Mitigation Measure							
EIA* Ref. S3.10.12 Noise Mitigation Measure for Fixed Noise Source 4Q4 <u>Fire Station and Ambulance Depot</u> <ul style="list-style-type: none"><li>Special system such as greenwave system or hurry call system should be adopted so as to reduce the annoyance level of the sirens.</li></ul>	During design stage	FSD	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<u>EIA* Ref. S3.7</u> Site 4R – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Semi-enclosure with opening one north east side (T2-semi enclosure)</li><li>One section of cantilever barrier on the top of T2 semi-enclosure to shield noise from KTB (5.5m vertical plus 2.2m extension)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-4)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-5)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-6)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-7)</li><li>Setback from the L9: Not less than 10m setback from the boundary along L9</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	HD	✓				
<u>EIA* Ref. S3.7</u> Site 4S – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from the L9: Not less than 15m setback from the boundary along L9</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.10.17</u> Site 5A – Fixed Noise Mitigation Measures							
<u>5A1 Centralised Cooling System (CSCP)</u> <ul style="list-style-type: none"><li>Fully/partial enclosure of noise equipment/parts to reduce the noise impact;</li><li>The exhaust of the CSCP and any opening of the building should be located facing away from any NSRs; and</li><li>Louver or other acoustic reduction system should be applied to the exhaust exit of the building.</li></ul>	During design stage	Service Provider of EMSD	✓				Noise Control Ordinance
<u>5A2 Centralised Cooling Pumping Stations (CSPS)</u> <ul style="list-style-type: none"><li>Fully/partial enclosure of noise equipment/parts to reduce the noise impact;</li><li>The exhaust of the CSPS and any opening of the building should be located facing away from any NSRs; and</li><li>Louver or other acoustic reduction system should be applied to the exhaust exit of the building.</li></ul>	During design stage	Service Provider of EMSD	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 5C – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from the D4: Not less than 15m setback from the north site boundary</li><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<u>EIA* Ref. S3.7</u> Site 5G – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from the D4: Not less than 15m setback from the south site boundary and 20m setback from the east site boundary</li><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 5H – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Setback from the D5: Not less than 25m setback from the north site boundary</li><li>15m high podium</li></ul>	Within identified planning areas / During the design stage	Future developer	✓				Noise Control Ordinance
<u>EIA* Ref. S3.7</u> Site 5K – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>Semi-enclosure with opening one north east side (T2-semi enclosure)</li><li>One section of cantilever barrier on the top of T2 semi-enclosure to shield noise from KTB (5.5m vertical plus 2.2m extension)</li><li>Single-aspect building: 4 blocks along Kwun Tong Bypass</li><li>Setback from the D5: Not less than 25m setback from the southeastern site boundary</li><li>15m high podium</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	Future developer	✓				
<u>EIA* Ref. S3.7</u> Site 5J – Traffic Noise Mitigation Measures							
<ul style="list-style-type: none"><li>One section of vertical barrier (5m high) (D5-10)</li><li>Setback from the D4: Not less than 20m setback from the east site boundary</li><li>Setback from the D5: Not less than 25m setback from the east site boundary</li><li>15m high podium</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
	Within identified planning areas / During the design stage	HD	✓				
<u>School Sites</u> <ul style="list-style-type: none"><li>One section of vertical barrier (5m high) (D5-10)</li><li>One section of cantilever barrier (5.5m vertical plus 2.2m extension) (D5-11)</li></ul> 5J3-PS <ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing road L16, and the auxiliary block facing site 5J R1</li><li>3m school boundary wall on the boundary facing L10 and L16</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
	Within identified school sites / During design stage	ED & ASD	✓				
5J4-SS <ul style="list-style-type: none"><li>5.5m+2.2m cantilever barrier on pedestrian path of D5</li><li>5m vertical barrier on central reserve of D5</li></ul>	During the design stage	Implementation: TDD / Maintenance: HyD	✓		✓		
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Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>The school is set at an orientation with the classroom block facing school 5J3, the large auxiliary block facing L10, and the small auxiliary block facing site 5J R1</li><li>3m school boundary wall from boundary facing L10 to part of boundary facing D5</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				
<u>EIA* Ref. S2.4.2.11</u> Site 5L – Air Quality Mitigation Measures							
<u>Proposed Hospital</u> <ul style="list-style-type: none"><li>Air quality assessment should be carried out for any potential chimney emissions within the hospital site such that there would not be unacceptable air quality impacts on the surrounding sensitive receivers.</li></ul>	Hospital / During design stage	Future hospital proponent	✓				Air Pollution Control Ordinance
<u>EIA* Ref. S3.7</u> Site 5L – Traffic Noise Mitigation Measures							
<u>School Sites</u> 5L2-SS <ul style="list-style-type: none"><li>Indirect measures in the form of acoustic insulation and air conditioning for affected classrooms of 6/F classroom block and 1/F- 3/F auxiliary block</li></ul>	Within identified school sites / During design stage	ED & ASD	✓				Noise Control Ordinance
<u>EIA* Ref. S2.4.2.30</u> Site 6A – Air Quality Mitigation Measures							
<u>Cruise Terminal</u> <ul style="list-style-type: none"><li>A detailed air quality impact assessment should be carried out at the detailed design stage of the cruise terminal to prevent adverse air quality impact due to emissions from vessels berthing at the cruise terminal. Requirements of buffer distance from the berthing vessels or suitable locations of fresh air intakes of centralized air conditioning systems for adjacent commercial uses should be determined.</li></ul>	Cruise terminal / During design stage	Future cruise terminal developer	✓				Air Pollution Control Ordinance
Site 6A – Fixed Noise Mitigation Measures							
<u>EIA* Ref. S3.10.5</u> 6A4 Rectifier Substation <ul style="list-style-type: none"><li>All the mechanical parts should be enclosed within the building premise</li><li>Noisy equipment should be noise-insulated in enclosed plant rooms</li></ul>	During design stage	Future electricity supplier	✓				Noise Control Ordinance
<u>EIA* Ref. S3.10.1</u> 6A9 Public Transport Interchange (PTI) <ul style="list-style-type: none"><li>Complete podium decking over noisy facilities provides screening effect and reduces noise emission</li><li>Locate the facilities so that there is no line-of-sight of noise sources at the NSRs</li></ul>	PTIs / During design stage	Future PTI developer	✓				Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>Installation of sound absorbent material on the roof of PTI to avoid reverberation noise within the PTI</li><li>The ingress/egress (I/E) of PTI should be arranged with frontage to open space to mitigate the impact on NSRs</li><li>During the detailed design stage, ancillary structure within the PTI namely escalator, lift and stairways should be carefully located to act as natural barrier</li></ul>							
Site 6C – Air Quality Mitigation Measures							
EIA* Ref. S2.5.2.12							
6C Public Filling Barging Point (PFBP) <ul style="list-style-type: none"><li>The tipping activities of filling material from the trucks to the barges should be carried out in an enclosed structure.</li><li>All dust-laden air generated from the tipping operation should be properly suppressed by watering or extracted and vented to fabric filtering system before exhaust to the atmosphere.</li><li>All practicable measures should be taken to prevent or minimise the dust emission caused by vehicle movement.</li><li>All access and route roads within the facility should be paved and adequately wetted.</li><li>Vehicle cleaning facilities should be provided and used by all vehicles leaving the facility to wash off any dust and/or mud deposited on the wheels and/or vehicle body.</li><li>A high standard of housekeeping should be maintained. All spillages or deposits of materials on ground should be cleaned up promptly and dumping of materials a open area should be prohibited.</li></ul>	PFBP / During design stage	CED	✓		✓		Air Pollution Control Ordinance
EIA* Ref. S2.5.2.11							
6C Refuse Transfer Station <ul style="list-style-type: none"><li>The reception hall and the major refuse handling activities should be undertaken within an enclosed structure.</li><li>Ventilation system with effective odour removal equipment similar to those implemented in other newly built RTS in the territory should be installed to prevent odour impact on nearby sensitive receivers.</li><li>The proposed RTS is a Designated Project under Schedule 2 Part I:G.2 of the EIAO, a detailed EIA should be carried out by the future project proponent and approved under the EIAO to confirm that there will be no insurmountable environmental impacts associated with the construction and operation of the RTS.</li></ul>	During design stage	EPD	✓				Air Pollution Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Site 6C – Fixed Noise Mitigation Measures							
EIA* Ref. S3.10.19 6C Public Filling Barging Point (PFBP) <ul style="list-style-type: none"><li>Partially screening of the loading facility from NSR's line of sight</li><li>Boundary wall along the northeastern site boundary of PFBP</li></ul>	PFBP / During design stage	CED	✓				Noise Control Ordinance
EIA* Ref. S3.10.18 6C Refuse Transfer Station <ul style="list-style-type: none"><li>The RTS should be fully enclosed in order to reduce noise impacts</li></ul>	During design stage	EPD	✓				Noise Control Ordinance
EIA* Ref. S3.10.6 6C Ventilation Shafts <ul style="list-style-type: none"><li>Silencer and acoustic louver should be incorporated</li></ul>	During design stage	Implementation: TDD Maintenance: HyD	✓				Noise Control Ordinance
EIA* Ref. S7.4.2 Site 6C – Waste Management Measures							
Design, commissioning, and operation of a new Refuse Transfer Station in Site 6C to handle the municipal wastes generated from SEKD and the existing Kowloon Bay Transfer Station catchment area.	Site 6C / Before decommissioning of Kowloon Bay Transfer Station	EPD	✓		✓		EIAO
Operational Phase Mitigation Measures For Existing Areas							
EIA* Ref. S3.7 Noise Mitigation Measures For Rhythm Garden <ul style="list-style-type: none"><li>Semi-enclosure with opening on west side (Barrier D1-E1).</li></ul>	Road D1 / Prior to operation of Road D1	Implementation: TDD / Maintenance: HyD	✓	✓	✓		Noise Control Ordinance
For Richland Garden <ul style="list-style-type: none"><li>Three sections of vertical barrier (5m high) (Barrier L1-3, L1-4, L1-5)</li></ul>	Road L1 / Prior to operation of Road L1	Implementation: TDD / Maintenance: HyD	✓		✓		
EIA* Ref. S3.10.3 Mitigation Measures for Upgrade of Tai Wan Saltwater Pumping Station <ul style="list-style-type: none"><li>Quiet pumps and motors should be used as far as possible;</li><li>All plant and equipment in the pump hall/machine room should be enclosed;</li><li>All openings such as ventilation intake/exhaust and door should be located away from sensitive receivers;</li><li>Acoustic louver as standard ventilation Lourdes should be used at pump hall/machine room; and</li></ul>	During design stage	WSD	✓				Noise Control Ordinance



Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>Pump hall/machine room door should be kept closed at all time.</li></ul>							
<b>EIA* Ref. S9</b> <b>Risk Mitigation Measures</b> <u>Existing Chlorine Unloading Point</u> <ul style="list-style-type: none"><li>Permanently relocated outside SEKD</li></ul>	Existing chlorine unloading point in Kowloon Bay Pier / Before population intake in the Runway area	GSD			✓		EIAO, HKPSG, ProPECC Note PN 2/94
<b>EIA* Ref. S3.7.6.4</b> <b>Other Traffic Noise Mitigation Measures</b>  <b>Kwun Tong Bypass</b> <ul style="list-style-type: none"><li>Modify the southern semi-enclosure in front of Richland Garden to become a full enclosure.</li><li>The portion requires changing from semi-enclosure to full enclosure is outside Richland Garden and is not part of the Kwun Tong Bypass Structure. It belongs to the approach road to Tate Cairn's Tunnel.</li></ul> <b>Low Noise Surfacing</b> Low noise surface is recommended for: <ul style="list-style-type: none"><li>Selected sections of Prince Edward Road East (refer to Drawing No. 22936/EN/269);</li><li>Kwun Tong Bypass for the exposed sections (not semi-enclosed sections) from Choi Hung estate to Site 10;</li><li>Section of the existing of Kai Fuk Road from the Airport Tunnel portal to the interchange with Wai Yip Street; and</li><li>All proposed low noise surfacing should be designed to the design guidelines/practice notes issued by HyD Guidance Note No. RD/GN/010A.</li></ul>	During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>EIA* Ref. S6.4.2, 6.4.3 &amp; 6.4.4</b> <b>Sewerage System Mitigation Measures</b> Potential expansion facilities for To Kwa Wan PTW and Kwun Tong PTW due to SEKD contribution subject to HATS review.	To Kwa Wan PTW and Kwun Tong PTW / Timing of completion of expansion subject to HATS review	Implementation: TDD / DSD / Maintenance: DSD	✓		✓		DSD Sewerage Manual

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Recommended Environmental Protection Measures for SEKD Reclamation and the Associated Dredging							
EIA* Ref. S5.1, S2.5 and EM&A Ref. S5, S2							
General	All reclamation sites / During whole reclamation period	Contractors	✓	✓			Water Pollution Control Ordinance Dumping at Sea Ordinance
Protection measures to prevent biogas hazards during construction: <ul style="list-style-type: none"><li>• Special precautions and safety measures to be undertaken for works to be carried out in confined space;</li><li>• Monitoring of the methane, carbon dioxide and oxygen levels in excavated areas and areas below ground to ensure a safe working environment;</li><li>• Provision of sufficient ventilation in temporary structures including site huts and unventilated enclosures;</li><li>• Smoking and open fire should be prohibited in the region where drilling activities are carried out; and</li><li>• Provision of vent pipes to vent off the accumulated methane gas in areas with high concentrations of methane gas.</li></ul> Protection measures for individual developments or buildings to minimise biogas risks: <ul style="list-style-type: none"><li>• Use of a porous fill material to allow the generated methane gas to migrate from underground to the surface of the fill material;</li><li>• Installation of a gas collection layer for methane gas collection;</li><li>• Provision of low gas permeability sealant and low permeability physical barriers to prevent methane gas from entering the buildings in the future development;</li><li>• Installation of a membrane with low gas permeability in the floor slab of buildings including underground car parks and rooms to prevent ingress of methane gas;</li><li>• Sealing of openings in the floor;</li><li>• Installation of vent pipes to vent off the collected methane gas;</li><li>• Provision of passive barriers and passive ventilation system; and</li><li>• Providing sufficient ventilation within buildings to avoid accumulation of methane gas.</li></ul> Protection measures should be incorporated in the design, tender and construction stages of the development. As such, it is recommended that protection measures should be included in the land lease document and specification for individual							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
developments in the SEKD, if required. The installation of protection systems should be part of the construction requirements and be specified in the tender documents. The design of the protection measures should be based on the final development plan to avoid any constraints that would pose to the future developments.							
Protection measures to minimize dredging impacts are: <ul style="list-style-type: none"><li>• Provision of silt curtains;</li><li>• Carrying out water quality monitoring near the dredging areas;</li><li>• Controlling the loading of the dredged sediments to the barge to avoid splashing and overflowing of the sediment slurry to the surrounding water;</li><li>• Minimising exposure to the contaminated sediments;</li><li>• The workers should wear protective gloves when carrying out the dredging work;</li><li>• Adequate washing and cleaning facilities should be provided on site;</li><li>• The dredged sediments should be transferred from the barge to the sediment washing unit immediately after dredging when ex-situ treatment is undertaken;</li><li>• Storage of the dredged sediments should be avoided; and</li><li>• The dredged sediments should be segregated from other wastes.</li></ul>							
Mitigation measures to minimize odour impacts are:  <i>When fully dredged or minimum dredged option with ex-situ treatment is adopted:</i> <ul style="list-style-type: none"><li>• Suction dredging should be used for sediment dredging to remove the sediments under the water to as to minimise the potential odour impacts by preventing the exposure of dredged sediments in the atmosphere;</li><li>• In-pipe injection of strong oxidant, by the addition of Fenton's reagent (or similar) into the dredged sediments in the dredge pipeline to reduce much of the AVS so that odour emission is minimized;</li><li>• Covering the dredged sediments after being loaded into the dredger, so that dispersion of odour would be minimised during transportation of the sediments to the disposal sites or treatment facilities;</li><li>• The <i>ex-situ</i> treatment plants and the associated soil piles should be fully enclosed to minimise odour emission.</li></ul> <i>When no dredged option with in-situ treatment is adopted:</i> <ul style="list-style-type: none"><li>• Reclamation should be carried out first and then in-situ treatment be implemented when required.</li></ul>							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<u>EIA* Ref. S5.6 and EM&amp;A Ref. S5</u> Mitigation Measures for Different Reclamation Options	All reclamation sites / During and after reclamation period	Contractors, TDD, & Lands Department	✓	✓			Water Pollution Control Ordinance, Air Pollution Control Ordinance, Dumping at Sea Ordinance
<u>Kai Tak Approach Channel (KTAC)</u> The KTAC sediments could be treated by in-situ or ex-situ treatment. Either no dredged reclamation option with provision of in-situ treatment or dredge for ex-situ treatment reclamation option together with ex-situ treatment would be adopted for the KTAC reclamation. If temporary sea wall is to be constructed near the boundary between the KTAC and KTTS, it may involve dredging of sediments in the sea wall location. Minimum dredged reclamation would then be adopted. The undredged sediments would require in-situ treatment to reduce the methane potential and the dredged sediments would be treated. The treated material should be reused as fill material for reclamation as far as possible. The no dredged reclamation option with the use of in-situ treatment should be the top priority for consideration. If the pilot tests confirm that in-situ treatment is not suitable for use in this case, dredge for ex-situ treatment reclamation option should then be adopted. If both the in-situ and ex-situ treatment methods are not suitable, implementation of a fall back option with provision of protection measures should be adopted.  <u>No Dredged Reclamation Option – In-situ treatment</u> <ul style="list-style-type: none"><li>• Injection of the selected reagent could be carried out from a barge-based operation in KTAC, but probably can best be accomplished by first backfilling the channel and then conducting the in-situ treatment;</li><li>• The pressure injection system used for delivery the reagent should be suitably controlled to avoid high pressure leading to uncontrolled reaction;</li><li>• Loss of the reagent during the injection process should be minimised;</li><li>• Methane gas monitoring should be carried out after reclamation to ensure that the actual emission rate is lower than the maximum safe rate of gas emission; and</li><li>• A total of approximately 10 monitoring boreholes should be installed to monitor the emission of methane gas.</li></ul> Implementation of protection measures should be based on the monitoring results and the following criteria:  (1) Measured Methane Emission Rates higher than the Maximum Safe Rate of Gas							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Emission In case where the methane gas emission rates measured from any boreholes in a particular area are higher than the maximum safe rate of gas emission (10 L/m²/d) or safe flow rate of 200 L/d, protection measures should be provided to protect the buildings to be constructed in that area.							
(2) Measured Methane Emission Rates below the Maximum Safe Rate of Gas Emission When the measured flow rate of methane in a particular area is consistently lower than the safe flow rate of 200 L/d, protection measures may not be required. However, the monitoring data should cover the flow rate of methane measured during the low atmospheric conditions to confirm whether there is any exceedance of the safe flow rate under unusual conditions. In addition, the trend of the monitoring results should be analyzed. Continuous monitoring would be required if an increasing trend of the flow rate in a particular area were found. To be conservative, provision of protection measures could be considered for this situation.							
(3) Measured Methane Emission Rates occasionally exceed the Maximum Safe Rate of Gas Emission If monitoring results show significant variations in the methane flow rate emitted from the boreholes and exceedances of the safe flow rate (> 200 L/d), continuous monitoring should be undertaken to confirm whether there would be an increasing trend or a decreasing trend of the methane flow rate. When there is a clear indication of the measured methane flow rate consistently below the safe flow rate, protection measures may not be required. Otherwise, suitable protection measures should be provided to prevent methane hazards to the individual developments or buildings in the area of concern.							
<u>Dredge for Ex-situ Treatment Reclamation Option</u> <ul style="list-style-type: none"><li>During the suction dredge operation, a strong oxidant such as Fenton's reagent should be fed into the dredge pipeline to oxidize the organic contaminants and much of the AVS;</li><li>The odour problem that may generate during dredging would be minimized through the almost instantaneous in-pipe oxidation of AVS;</li><li>Vibrating screen system should be used to remove the oversized debris in the slurry and a land-based sediment washing unit should be installed to remove the inorganic and organic contaminants in the sediment slurry;</li></ul>							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>• <i>Ex-situ</i> treatment is recommended to reduce the contaminant levels of the highly contaminated sediments to a low contaminant level. The treated material should be reused as fill material as far as possible. The proposed ex-situ treatment techniques including BioGenesis Sediment Washing and Daramend Bioremediation;</li><li>• For those contaminated sediments that cannot be dredged should be treated by <i>in-situ</i> treatment; and</li><li>• A fluid injection system and a strong oxidation reagent should be applied in the concerned areas.</li></ul> <p><u>Minimum Dredged Reclamation Option – In-situ treatment and/or Ex-situ treatment</u></p> <ul style="list-style-type: none"><li>• In areas where diaphragm wall or bored pile wall is to be used as the foundation works for the future developments, the design engineer shall take special attention during the detailed design stage. Any material extracted from the captioned operation shall be carefully examined, and appropriate treatment shall be applied, if necessary, prior to disposal at designated sites.</li><li>• It would be applicable if temporary sea wall is to be constructed for the KTAC reclamation;</li><li>• In-situ and ex-situ treatment should be adopted, wherever appropriate, to minimise the biogas potential in the undredged areas and the contaminant levels of the dredged sediments; and</li><li>• The treated material should be reused as fill material for reclamation as far as possible.</li></ul> <p><u>Fall Back Option</u></p> <ul style="list-style-type: none"><li>• Should the pilot tests indicate that both the in-situ treatment and ex-situ treatment fail to reduce the methane potential of the KTAC sediments to an acceptable level, use of protection measures to collect and vent off the methane gas in the locations with high methane potential would be adopted as a fall back option.</li><li>• Monitoring of methane gas emission rate in the KTAC should be carried out to identify the hot spots with high emission rate.</li><li>• Protection measures should be provided to safeguard the individual developments in that particular area where exceedance of the maximum safe rate of gas emission is constantly detected, and also be provided in areas where maximum safe rate of gas emission is occasionally exceeded and with an increasing trend of</li></ul>							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
the methane flow rate; <ul style="list-style-type: none"><li>As methane gas may accumulate in below ground services, use of air-tight sockets for electricity supply system would be one of the measures to prevent ingress of methane gas from below ground conduits.</li></ul>							
<b>Kwun Tong Typhoon Shelter (KTTS)</b> <i>No Dredged Reclamation Option– In-situ treatment</i> <i>In-situ</i> treatment should only be required for hotspots and newly identified hotspots. The recommended treatment methods for the pilot tests are: <ul style="list-style-type: none"><li>Fenton's reagent</li><li>Oxygen Release Compound</li><li>Seditreat™ method.</li></ul> Implementation of protection measures should be based on the monitoring results and the following criteria:  (3) Measured Methane Emission Rates higher than the Maximum Safe Rate of Gas Emission In case where the methane gas emission rates measured from any boreholes in a particular area are higher than the maximum safe rate of gas emission (10 L/n³/d) or safe flow rate of 200 L/d, protection measures should be provided to protect the buildings to be constructed in that area.  (4) Measured Methane Emission Rates below the Maximum Safe Rate of Gas Emission When the measured flow rate of methane in a particular area is consistently lower than the safe flow rate of 200 L/d, protection measures may not be required. However, the monitoring data should cover the flow rate of methane measured during the low atmospheric conditions to confirm whether there is any exceedance of the safe flow rate under unusual conditions. In addition, the trend of the monitoring results should be analyzed. Continuous monitoring would be required if an increasing trend of the flow rate in a particular area were found. To be conservative, provision of protection measures could be considered for this situation.  (3) Measured Methane Emission Rates occasionally exceed the Maximum Safe Rate of Gas Emission If monitoring results show significant variations in the methane flow rate emitted from							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<p>the boreholes and exceedances of the safe flow rate (&gt; 200 L/d), continuous monitoring should be undertaken to confirm whether there would be an increasing trend or a decreasing trend of the methane flow rate. When there is a clear indication of the measured methane flow rate consistently below the safe flow rate, protection measures may not be required. Otherwise, suitable protection measures should be provided to prevent methane hazards to the individual developments or buildings in the area of concern.</p> <p><i>Minimum Dredged Reclamation Option – In-situ treatment and/or Ex-situ treatment</i></p> <p><i>In-situ</i> and <i>ex-situ</i> treatment should be adopted, wherever appropriate, to minimise the biogas potential in the undredged areas and the contaminant levels of the dredged sediments.</p> <ul style="list-style-type: none"><li>• A total of approximately 10 monitoring boreholes should be installed in the KTTS reclamation area to detect the actual methane emission rate and to locate any additional hot spots;</li><li>• <i>In-situ</i> treatment should only be required for hotspots and newly identified hotspots.</li><li>• The hotspot areas in KTTS should be divided into a number of cells for application of <i>in-situ</i> treatment. A strong reagent such as Fenton's reagent should be injected into the KTTS sediments at a number of injection points in each of the cells from a land-based operation;</li><li>• A fluid injection system should be used to deliver the reagent into the contaminated sediments to a injection depth of about 2m below the existing seabed would be required. If the hotspots are present in the area near Cha Kwo Ling, the fluid injection system would be needed to deliver the reagent to a level 4m below the existing seabed; and</li><li>• The settlement of the reclaimed land would be minimized by applying the ground improvement techniques such as vertical drain and surcharge methods.</li></ul>							
<p><b>Hoi Sham</b></p> <p><i>No Dredged Reclamation Option– In-situ treatment</i></p> <p>In-situ treatment should be applied at the hotspot areas in the Hoi Sham area. The following treatment methods have been recommended to include in the pilot tests:</p> <ul style="list-style-type: none"><li>• Fenton's reagent</li><li>• Oxygen Release Compound</li><li>• Seditreat™ method.</li></ul>							



Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<p>Implementation of protection measures should be based on the monitoring results and the following criteria:</p> <p>(1) Measured Methane Emission Rates higher than the Maximum Safe Rate of Gas Emission In case where the methane gas emission rates measured from any boreholes in a particular area are higher than the maximum safe rate of gas emission (10 L/m<sup>3</sup>/d) or safe flow rate of 200 l/d, protection measures should be provided to protect the buildings to be constructed in that area.</p> <p>(2) Measured Methane Emission Rates below the Maximum Safe Rate of Gas Emission When the measured flow rate of methane in a particular area is consistently lower than the safe flow rate of 200 l/d, protection measures may not be required. However, the monitoring data should cover the flow rate of methane measured during the low atmospheric conditions to confirm whether there is any exceedance of the safe flow rate under unusual conditions. In addition, the trend of the monitoring results should be analyzed. Continuous monitoring would be required if an increasing trend of the flow rate in a particular area were found. To be conservative, provision of protection measures could be considered for this situation.</p> <p>(3) Measured Methane Emission Rates occasionally exceed the Maximum Safe Rate of Gas Emission If monitoring results show significant variations in the methane flow rate emitted from the boreholes and exceedances of the safe flow rate (&gt; 200 l/d), continuous monitoring should be undertaken to confirm whether there would be an increasing trend or a decreasing trend of the methane flow rate. When there is a clear indication of the measured methane flow rate consistently below the safe flow rate, protection measures may not be required. Otherwise, suitable protection measures should be provided to prevent methane hazards to the individual developments or buildings in the area of concern.</p> <p><u>Minimum Dredged Reclamation Option – In-situ treatment and/or Ex-situ treatment</u></p> <ul style="list-style-type: none"><li>Both the contaminated and uncontaminated sediments in the sea wall, breakwater and tunnel locations would be dredged away unless suitable foundation improvement techniques such as DCM are to be applied to consolidate the foundation of structures,</li></ul>							

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<ul style="list-style-type: none"><li>Dredging should be carried out in the location where earth bund is to constructed;</li><li>The dredged sediments should be disposed of or treated to acceptable levels for reuse/disposal;</li><li>A total of approximately 20 evenly distributed monitoring boreholes should be required to monitor the methane gas generation;</li><li><i>In-situ</i> treatment by injection an oxidizing reagent into the sediments in Hoi Sham area should be carried out in a number of cells at the identified hot spots;</li><li><i>In-situ</i> treatment should be applied to remediate the hotspots with high methane potential; and</li><li>Suitable ground improvement techniques such as vertical drain and surcharge should be applied to minimize settlement on the reclaimed land.</li></ul>							
<p><u>Pilot Tests</u></p> <p>The feasibility of <i>in-situ</i> treatment and <i>ex-situ</i> treatment should be demonstrated through pilot tests, which would include bench scale laboratory tests and field trials. The recommended <i>in-situ</i> treatment methods or reagents for sediment remediation in the SEKD include:</p> <ul style="list-style-type: none"><li>Fenton's Reagent;</li><li>Oxygen Release Compound (ORC); and</li><li>Seditreat™.</li></ul> <p>The recommended <i>ex-situ</i> treatment methods are:</p> <ul style="list-style-type: none"><li>BioGenesis Sediment Washing; and</li><li>Daramend™ Bioremediation.</li></ul> <p>Bench scale laboratory tests will examine the treatability of sediments by the <i>in-situ</i> and <i>ex-situ</i> treatment methods. The results obtained from the bench scale tests will be used for evaluation of the suitable methods/oxidants and formulation of the subsequent site trials.</p> <p><u>DCM Site Trials</u></p> <p>Site trials would be required in order to determine the appropriate acceptance criteria for using this method. After reviewing the site trial results, the areas for application of DCM could be evaluated. During the trials, monitoring could be carried out to assess the residual environmental impacts arising from the use of DCM.</p>	At selected locations / Before reclamation						

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Recommended Environmental Protection Measures for Trunk Road T1							
EIA* Ref. S2, 3, 4, 7 & 13 and EM&A Ref. S2, 3, 4 & 6 Construction Phase Mitigation Measures All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
EIA* Ref. S3.7.6.4 Operational Phase Mitigation Measures Noise Mitigation Measures for Planned Areas (See Drawing No. 22936/TP/101 to 129 Layout Plan for detailed locations) 1A Semi-enclosure with opening on the right side (Barrier T1-1 onT1 northbound) Low noise surfacing for the exposed sections of T1 1A-School sites Semi-enclosure with opening on the right side (Barrier T1-1 onT1 northbound and Barrier T1-2 on T1 northbound); Full enclosure in front of Richland Garden (T1-F1); Low noise surfacing for the exposed sections of T1 1B Semi-enclosure with opening on the right side (Barrier T1-1 onT1 northbound) Semi-enclosure with opening on the right side (Barrier T1-2 onT1 northbound) Full enclosure in front of Richland Garden (Barrier T1- F1) Low noise surfacing for the exposed sections of T1  Noise Mitigation Measures for Existing Areas For Richland Garden Full enclosure in front of Richland Garden (Barrier T1-F1); Two sections of cantilever barrier (5.5 vertical + 2.2m horizontal extension) - (Barriers T1-C2, T1-C3); Low noise surfacing for the exposed sections of T1 For Choi Hung Estate Two sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) ; (Barriers T1-C2, T1-C3); Low noise surfacing for the exposed sections of T1 For Rhythm Garden One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers T1-C1); Low noise surfacing for the exposed sections of T1	All identified sections of T1 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>EIA* Ref. S13.9.4</b> <u>Landscape and Visual Mitigation Measures</u> All relevant measures listed under operational phase landscape and visual mitigation measures in table “Recommended Operational Phase Environmental Protection Measures for SEKD” should be followed.	All road works of T1 / During design stage	Implementation: TDD / Maintenance: HyD (Refer to Section 7.4 of EM&A Manual)	✓		✓		All relevant Legislation and Guidelines listed in table “Recommended Operational Phase Environmental Protection Measures for SEKD”
Recommended Environmental Protection Measures for Trunk Road T2							
<b>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</b> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table “Recommended Construction Phase Environmental Protection Measures for SEKD” should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table “Recommended Construction Phase Environmental Protection Measures for SEKD”
<b>EIA* Ref. S3.7.6.4</b> <b>Operational Phase Mitigation Measures</b> <u>Noise Mitigation Measures for Planned Areas</u> (See Drawing No. 22936/TP/101 to 129 Layout Plan for detailed locations) <b>4B</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier T2-2) ; Low noise surfacing for the exposed sections of T2 <b>4E</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers T2-1, T2-2, T2-3, T2-4); One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension on top of T2 semi-enclosure to shield noise from KTB) ; Two sections of vertical barrier (3m high) (Barrier T2-S1, T2-S2); Semi-enclosure with opening on northeast side (Barrier T2); Low noise surfacing for the exposed sections of T2 <b>4E-School sites</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers T2-1, T2-2, T2-3, T2); One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension on top of T2 semi-enclosure to shield noise from KTB); Two sections of vertical barrier (3m high) (Barrier T2-S1, T2-S2); Semi-enclosure with opening on northeast side (Barrier T2) ; Low noise surfacing for the exposed sections of T2 <b>4L</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers T2-1, T2-2, T2-3, T2-4); One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension on top of T2 semi-enclosure to shield noise from KTB) ; Two	All identified sections of T2 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
sections of vertical barrier (3m high) (Barrier T2-S1, T2-S2) ; Semi-enclosure with opening on northeast side (Barrier T2); Low noise surfacing for the exposed sections of T2 <b>4L-School sites</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier T2-1, T2-2, T2-3, T2-4); One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension on top of T2 semi-enclosure to shield noise from KTB; Two sections of vertical barrier (3m high) (Barrier T2-S1, T2-S2); Semi-enclosure with opening on northeast side (Barrier T2); Low noise surfacing for the exposed sections of T2 <b>4M</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers T2-1, T2-2, T2-3, T2-4); One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension on top of T2 semi-enclosure to shield noise from KTB (Barriers T2-1, T2-2, T2-3, T2-4); Two sections of vertical barrier (3m high) (Barrier T2-S1, T2-S2) ; Semi-enclosure with opening on northeast side (Barrier T2) ; Low noise surfacing for the exposed sections of T2 <b>4R</b> Semi-enclosure with opening on northeast side (BarrierT2); One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension on top of T2 semi-enclosure to shield noise from KTB) <b>5K</b> Semi-enclosure with opening on northeast side (Barrier T2); One section of cantilever barrier (5.5m vertical + 2.2m ) ; Horizontal extension on top of T2 semi-enclosure to shield noise from KTB)  <u>Noise Mitigation Measures for Existing Areas</u> <b>For Laguna City</b> Low noise surfacing for the exposed sections of T2  <b>For Cha Kwo Ling Village</b> Low noise surfacing for the exposed sections of T2							
<b>EIA* Ref. S13.9.4</b> <u>Landscape and Visual Mitigation Measures</u> All relevant measures listed under operational phase landscape and visual mitigation measures in table “Recommended Operational Phase Environmental Protection Measures for SEKD” should be followed.	All road works of T2 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		All relevant Legislation and Guidelines listed in table “Recommended Operational Phase Environmental Protection Measures for SEKD”

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Recommended Environmental Protection Measures for Distributor Road D1							
<u>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</u> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<u>EIA* Ref. S3.7.6.4</u>							
<b>Operational Phase Mitigation Measures</b> <u>Noise Mitigation Measures</u> (See Drawing No. 22936/TP/101 to 129 Layout Plan for detailed locations) <b>1D</b> Two sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D1-1, D1-1C); one section of vertical barrier (5m high) (Barrier D1-1B) <b>1E</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1C); one section of vertical barrier (5m high) (Barrier D1-1B) <b>1L-School Village</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-1A) <b>3Q-School sites</b> Two sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D1-3, D1-4) <b>3X-School sites</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D1-2)  <b>Under Ground Facilities</b> Mitigation measures within the area of railway reserve or tunnel reserve should be reviewed; Measures at Sung Wong Toi Road widening should be reviewed together with the design of site 2G.	All identified sections of D1 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Recommended Environmental Protection Measures for Distributor Road D2							
<u>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</u> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<u>EIA* Ref. S3.7.6.4</u> <b>Operational Phase Mitigation Measures</b> <u>Noise Mitigation Measures</u> (See Drawing No. 22936/TP/101 to 129 Layout Plan for detailed locations) <b>1C-School sites</b> Two sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D2-1, D2-2)	All identified sections of D2 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
Recommended Environmental Protection Measures for Distributor Road D3							
<u>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</u> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<u>EIA* Ref. S3.7.6.4</u> <b>Operational Phase Mitigation Measures</b> <u>Noise Mitigation Measures</u> (See Drawing No. 22936/TP/101 to 129 Layout Plan for detailed locations) <b>1A</b> Eight sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D3-1, D3-2, D3-3, PER1, PER2, PER3, PER4A, PER4B) <b>1A-School sites</b> Five sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D3-1, D3-2, D3-3, PER1, PER2) <b>1E</b> 12 sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) ; (Barriers D3-2, D3-3, D3-4, D3-5, D3-6, D3-7, D3-8, PER3, PER4A, PER4B, PER5	All identified sections of D3 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

<b>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</b>							
<b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<b>EIA* Ref. S3.7.6.4</b>							
<b>Operational Phase Mitigation Measures</b> <u>Noise Mitigation Measures</u> <i>(See Drawing No. 22936/TP/101 to 129 for detailed locations)</i>	All identified sections of D4 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance
<b>3B</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-1) eastbound side <b>3C</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-2) <b>3P</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barrier D4-2) <b>3Q</b> One section of cantilever barrier (5.5m vertical + 2.2m horizontal extension)							



Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
(Barrier D4-1)							
<b>EIA* Ref. S13.9.4</b> <u>Landscape and Visual Mitigation Measures</u> All relevant measures listed under operational phase landscape and visual mitigation measures in table “Recommended Operational Phase Environmental Protection Measures for SEKD” should be followed.	All road works of D4 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		All relevant Legislation and Guidelines listed in table “Recommended Operational Phase Environmental Protection Measures for SEKD”
<b>Recommended Environmental Protection Measures for Distributor Road D5</b>							
<b>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</b> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table “Recommended Construction Phase Environmental Protection Measures for SEKD” should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table “Recommended Construction Phase Environmental Protection Measures for SEKD”
<b>EIA* Ref. S3.7.6.4</b> <b>Operational Phase Mitigation Measures</b> <u>Noise Mitigation Measures</u> (See Drawing No. 22936/TP/101 to 129 Layout Plan for detailed locations) <b>1D</b> One section of vertical barrier (5m high) (Barrier D5-2) eastbound side <b>1E</b> One section of vertical barrier (5m high) (Barrier D5-2) eastbound side <b>1L</b> Two sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-1, D5-1A) on westbound side <b>4E</b> Five sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-3, D5-4, D5-6, D5-8, D5-9) <b>4E-School sites</b> Three sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-3, D5-8, D5-9) <b>4L</b> Seven sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-3, D5-4, D5-5, D5-6, D5-7, D5-8, D5- 9) <b>4L-School sites</b> Seven sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-3, D5-4, D5-5, D5-6, D5-7, D5-8, D5-9) <b>4M</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-4, D5-5, D5-6, D5-7) <b>4N-School sites</b> Two sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-5, D5-7)	All identified sections of D5 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>4R</b> Four sections of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-4, D5-5, D5-6, D5-7) <b>5J</b> One section of vertical barrier (5m high) (Barrier D5-10) eastbound side <b>5J-School site</b> One section of vertical barrier (5m high) (Barrier D5-10) eastbound side and one section of cantilever barrier (5.5m vertical + 2.2m horizontal extension) (Barriers D5-11) on westbound side							
<b>EIA* Ref. S13.9.4</b> Landscape and Visual Mitigation Measures All relevant measures listed under operational phase landscape and visual mitigation measures in table "Recommended Operational Phase Environmental Protection Measures for SEKD" should be followed.	All road works of D5 / During design stage	Implementation: TDD / Maintenance: HyD	✓		✓		All relevant Legislation and Guidelines listed in table "Recommended Operational Phase Environmental Protection Measures for SEKD"
<b>Recommended Environmental Protection Measures for Pumping Stations in SEKD</b>							
<b>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</b> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<b>Operational Phase Mitigation Measures</b>							
<b>EIA* Ref. S3.10.2</b> <b>Noise Mitigation Measures</b> <b>1E4</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building. <b>1M8</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building.	All SPSs / During design stage	Implementation: TDD / Maintenance: DSD	✓		✓		Noise Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
<b>2A4</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building <b>2G3</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building. <b>3N2</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building <b>3K4</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building <b>4E4</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building <b>5L4</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building <b>6A2</b> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; Louver or other acoustic reduction system should also be applied to the exhaust exit of the building; Pumps and mechanical ventilation are either underground or enclosed within a structure or building							
<b>EIA* Ref. S2.5.2.9</b> <u>Odour Mitigation Measures</u> Proper enclosure and ventilation system should be installed to divert the odour emissions to odour scrubbing device.	All SPSs / During design stage	Implementation: TDD / Maintenance: DSD	✓		✓		Air Pollution Control Ordinance
<b>EIA* Ref. S4.4.3.61</b> <u>Water Quality Mitigation Measures</u> To avoid water pollution during emergency overflow conditions, the overflow discharge locations for all proposed pumping stations should be kept away from the areas of: 1) the KTTS; 2) marina; 3) the embayment created at the mouth of Tsui Ping Nullah by the	All SPSs / During design stage	Implementation: TDD / Maintenance: DSD	✓		✓		Water Pollution Control Ordinance

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
eastern breakwater of the KTTS; and 4) the existing and proposed seawater intakes.							
<b>EIA* Ref. S13.9.4</b> <b>Landscape and Visual Mitigation Measures</b> All relevant measures listed under operational phase landscape and visual mitigation measures in table "Recommended Operational Phase Environmental Protection Measures for SEKD" should be followed.	All SPSs / During design stage	Implementation: TDD / Maintenance: DSD	✓		✓		All relevant Legislation and Guidelines listed in table "Recommended Operational Phase Environmental Protection Measures for SEKD"
<b>Recommended Environmental Protection Measures for Widening of Existing Hoi Bun Road</b>							
<b>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</b> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<b>Operational Phase Mitigation Measures</b> Detailed EIA should be carried out at the detailed design stage to assess the impact, in particular traffic noise impact, and recommend necessary mitigation measures for this Schedule 2 DP under EIAO.	Widening section of Hoi Bun Road / During design stage	TDD	✓				EIAO
<b>Recommended Environmental Protection Measures for Reprovisioning of Typhoon Shelter and Associated Breakwaters</b>							
<b>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</b> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<b>Operational Phase Mitigation Measures</b> Detailed EIA should be carried out at the detailed design stage to assess the impact, in particular water quality impact, and recommend necessary mitigation measures for this Schedule 2 DP under EIAO.	The reprovisioned typhoon shelter and the associated breakwaters / During design stage	TDD	✓				EIAO

Recommended Environmental Protection Measures for SEKD							
Environmental Protection Measures*	Location / Duration of measures / Timing of completion of measures	Implementation Agent / Maintenance Agent	Implementation Stage**				Relevant Legislation & Guidelines
			Des	C	O	Dec	
Recommended Environmental Protection Measures for Marina							
<u>EIA* Ref. S2, 3, 4, 7 &amp; 13 and EM&amp;A Ref. S2, 3, 4 &amp; 6</u> <b>Construction Phase Mitigation Measures</b> All relevant measures listed in the table "Recommended Construction Phase Environmental Protection Measures for SEKD" should be followed.	All Construction sites / During whole construction period	Contractors	✓	✓		✓	Legislation and Guidelines listed in table "Recommended Construction Phase Environmental Protection Measures for SEKD"
<b>Operational Phase Mitigation Measures</b> Detailed EIA should be carried out at the detailed design stage to assess the impact, in particular water quality impact, and recommend necessary mitigation measures for this Schedule 2 DP under EIAO.	Marina / During design stage	TDD	✓				EIAO

\* All recommendations and requirements resulted during the course of EIA process, including ACE and/or accepted public comment to the proposed project.  
\*\* Des=Design; C=Construction; O=Operation; Dec=Decommissioning