

18 IMPACT SUMMARY

18.1 Introduction

- 18.1.1 This Project falls within item 1 under Schedule 3 of the EIAO, i.e. engineering feasibility study of urban development project with a study area covering more than 20 hectares or involving a total population of more than 100,000.
- 18.1.2 This Project also contains various Schedule 2 Designated Projects (DPs) that, under the EIAO, require Environmental Permits (EPs) to be granted by the DEP before they may be either constructed or operated. **Table 18.1** lists all the Schedule 2 DPs that are contained within KTD.
- 18.1.3 Three Schedule 2 DPs, namely the Decommissioning of the Former Kai Tak Airport other than the North Apron (DP4), Kai Tak North Apron Decommissioning (DP5), and the Dredging Works for Proposed Cruise Terminal at Kai Tak (DP6), have already been covered under separate EIA Reports that were approved under the EIAO.
- 18.1.4 The environmental impacts of another three Schedule 2 DPs namely new distributor roads serving the planned KTD (DP1), new sewage pumping stations serving the planned KTD (DP2), and decommissioning of the remaining parts (Ex-GFS Building and Radar Station) of the former Kai Tak Airport (DP3a) have been adequately addressed in this Schedule 3 EIA Report. In accordance with Section 5.2 of the EIA Study Brief, a stand-alone EIA report or a separate stand-alone section of the EIA report shall be prepared for each of the individual Schedule 2 EIA projects that are identified to be adequately addressed in this Schedule 3 EIA. Each report or section shall aim to be self-sufficient in information documentation for the DEP to make decision on whether the contents meets requirements of the EIA Study Brief and relevant provisions in the EIAO-TM for that particular individual Schedule 2 EIA project. In order to fulfil this EIA Study Brief requirement, separate stand-alone section has been prepared for each of DP1, DP2 and DP3a and included as **Sections 3, 4 and 5** respectively in this EIA Report.
- 18.1.5 The rest of the Schedule 2 DPs listed in **Table 18.1** will be addressed in further detailed EIA studies by the respective project proponents in the future.
- 18.1.6 The detailed remarks on the Schedule 2 DPs identified within KTD are included in **Table 18.1**. The locations of all the Schedule 2 DPs listed in **Table 18.1** are shown in **Figure 1.2**. The locations of those Schedule 2 DPs that have been adequately addressed in this Schedule 3 EIA study are shown in **Figure 1.3**.

Table 18.1 List of Schedule 2 Designated Projects Contained within the Kai Tak Development

| Item | Designated Project | EIAO Reference | Remarks | Project Proponent |
|------|---|---|--|-------------------|
| DP1 | New distributor roads serving the planned KTD | Schedule 2, Part I, Items A.1, A8 & A.9. Partly referred in Section 1.3 (ii) of EIA Study Brief No. ESB-152/2006. | The environmental impacts have been adequately addressed in the Schedule 3 EIA. (Individual Schedule 2 DP is presented in Section 3 of this Report) | CEDD |

| Item | Designated Project | EIAO Reference | Remarks | Project Proponent |
|------|---|---|--|-------------------------------------|
| DP2 | New sewage pumping stations serving the hinterland and the planned KTD | Schedule 2, Part I, Item F.3. Partly referred in Section 1.3 (iii) of EIA Study Brief No. ESB-152/2006. | The environmental impacts have been adequately addressed in the Schedule 3 EIA. (Individual Schedule 2 DP is presented in Section 4 of this Report) | CEDD / Drainage Services Department |
| DP3a | Decommissioning of the remaining parts (Ex-GFS Building and Radar Station) of the former Kai Tak Airport | Schedule 2, Part II, Item 1 | The environmental impacts have been adequately addressed in the Schedule 3 EIA. (Individual Schedule 2 DP is presented in Section 5 of this Report) | CEDD |
| DP3b | Decommissioning of the remaining parts (HKAC site and existing EMSD Headquarters) of the former Kai Tak Airport | Schedule 2, Part II, Item 1 | To be adequately addressed in further detailed EIA study by the respective project proponent. For the decommissioning of the HKAC, no soil remediation works would be necessary (see Section 10) and no building demolition is anticipated. | To be determined |
| DP4 | Decommissioning of the former Kai Tak Airport other than the North Apron | Schedule 2, Part II, Item 1. Referred in Section 1.3(i) of EIA Study Brief No. ESB-152/2006. | The EIA report has been approved under EIAO (Register No.: AEIAR-114/2007). | CEDD |
| DP5 | Kai Tak Airport North Apron decommissioning | Schedule 2, Part II, Item 1 | The EIA report has been approved under EIAO (Register No.: AEIAR-002/1998). | CEDD (completed) |
| DP6 | Dredging works for proposed cruise terminal at Kai Tak | Schedule 2, Part I, Item C.12. Referred in Section 1.3 (iv) of EIA Study Brief No. ESB-152/2006. | The EIA report has been approved under EIAO (Register No.: AEIAR-115/2007). | CEDD |
| DP7 | Open air concert venue and outdoor sporting facility of the proposed Stadium Complex | Schedule 2, Part I, Item O.6 & O.7 | To be adequately addressed in further detailed EIA study by the respective project proponent. | To be determined |
| DP8 | Kwun Tong Transportation Link | Schedule 2, Part I, Item A.8 | To be adequately addressed in further detailed EIA study by the respective project proponent. | To be determined |
| DP9 | 400kV electricity substation and transmission line | Schedule 2, Part I, Item H.1 | To be adequately addressed in further detailed EIA study by the respective project proponent. | CLP Power Hong Kong Limited |

| Item | Designated Project | EIAO Reference | Remarks | Project Proponent |
|-------|---|--|--|-------------------------------------|
| DP10 | Trunk Road T2 (including the associated dredging works and reconstruction of submarine sewage outfall from Kwun Tong PTW) | Schedule 2, Part I, Items A.1, A.7, C.12 & F.6 | To be adequately addressed in further detailed EIA study by CEDD. | CEDD |
| DP11 | Central Kowloon Route | Schedule 2, Part 1, Items A.1 & A.7 | To be adequately addressed in further detailed EIA study by HyD in accordance with EIA Study Brief No. ESB-156/2006. | Highways Department |
| DP12 | Shatin to Central Link | Schedule 2, Part I, Items A.2 & A.7 | To be adequately addressed in further detailed EIA study by the respective project proponent. | MTRC |
| DP13a | Environmentally Friendly Transport System (if the selected transport system is rail type) | Schedule 2, Part I, Item A.2 | To be adequately addressed in further detailed EIA study by the respective project proponent. | To be determined |
| DP13b | Transport Depot for Environmentally Friendly Transport System (if the selected type of transport system requires a depot) | Schedule 2, Part I, Item A.4 or A.6 | To be adequately addressed in further detailed EIA study by the respective project proponent. | To be determined |
| DP14 | Submarine gas pipeline relocation | Schedule 2, Part I, Items C.12 and H.2 | To be adequately addressed in further detailed EIA study by the Hong Kong and China Gas Company Limited in accordance with EIA Study Brief No. ESB-171/2007. | HK and China Gas Co. Ltd. |
| DP15 | Pumping station of DWFI Compound for JVBC | Schedule 2, Part I, Item F.3 | To be adequately addressed in further detailed EIA study by the respective project proponent. | Drainage Services Department |
| DP16 | Upgrading of Kwun Tong Sewage Preliminary Treatment Works | Schedule 2, Part I, Item F.1 | To be adequately addressed in further detailed EIA study by the respective project proponent. | Environmental Protection Department |

- 18.1.7 This EIA Report has provided an assessment of the potential environmental impacts associated with the construction and operation of the Project, with the consideration of the potential cumulative impact from other concurrent projects. Specific mitigation measures requirements for the Project, as well as an environmental monitoring and auditing programme, have been developed during the assessment of the proposed developments. The Implementation Schedule of the recommendations is presented in **Section 19**. The key assessment assumptions, limitation of assessment methodologies and all obtained relevant prior agreements with the EPD or other authorities on individual environmental media assessment components are given in **Appendix 18.1**. A summary of the environmental impacts associated with the Project are presented below.

18.2 Air Quality Impact

Construction Phase

- 18.2.1 The major potential air quality impact during the construction phase of the Project will be dust arising from various construction activities including haul road emissions, open site erosion, excavation and filling activities. Civil works related to the demolition of existing structures and construction of infrastructure will also cause dust emissions.
- 18.2.2 The findings of the construction phase air quality assessment indicate that exceedance of the 1-hour and 24-hour average total suspended particulates (TSP) criteria and Air Quality Objectives (AQOs) would not be expected at the air sensitive receivers (ASRs) in the vicinity of the construction sites. In order to ensure compliance with the TSP criteria at the ASRs at all times, the dust suppression measures and requirements of the Air Pollution Control (Construction Dust) Regulation should be adhered to during the construction period. In addition, a comprehensive dust monitoring and audit programme is recommended to ensure the effective implementation of dust suppression measures.
- 18.2.3 Biopiling and solidification / stabilization would be conducted at the proposed decontamination works area located at the ex-GFS and Radar Station. As the volume of soil requiring treatment would be small and that carbon absorber with 99% removal efficiency would be installed at the biopile facilities to treat off-gas prior to discharge, adverse air quality impact from the decontamination works is therefore not anticipated.

Operational Phase

- 18.2.4 The pollutant concentrations associated with the vehicular emissions from distributor road, ventilation building emissions from tunnels, portal emissions from proposed Road L1 tunnel and the decked section of Road D2 have been assessed. Air quality impacts due to the vehicular emission during the operational phase are therefore not expected.
- 18.2.5 The operational phase cumulative air quality impacts associated with a number of emission sources including vehicular emissions from road traffic, cruise ship emissions from the proposed cruise terminal at Kai Tak, industrial chimney emissions from San Po Kong, To Kwa Wan and Kwun Tong industrial areas, emission from the planned hospital and the planned heliport at Kai Tak and emission from the nearby typhoon shelters were assessed in the EIA. The assessment results show that the predicted air quality at all the existing and planned residential ASRs would comply with the AQOs.
- 18.2.6 Exceedances of the AQOs are predicted at the middle to upper level of the proposed Tourism Node fronting the proposed cruise terminal at Kai Tak. In order to alleviate the potential air quality impacts on the Tourism Node due to direct impingement of the cruise emissions, it is recommended that the fresh air intakes of the central air-conditioning system of the Tourism Node should be located at lower level (below 40m above ground) with acceptable air quality. With the incorporation of this design measure, adverse air quality impact at the proposed Tourism Node would not be expected. For ASR PA64 which is an industrial building in the South Apron area under construction, exceedances of the 1-hour average AQO for SO₂ are predicted at its outdoor environment. Since the building will be centrally air-conditioned and the air quality inside the building is predicted to be within AQO, no residual impact is anticipated.

- 18.2.7 The air quality inside the decked section of Road D2 and Road L1 tunnel would comply with EPD in-tunnel air quality standards.
- 18.2.8 Apart from the above potential air quality impacts, odour nuisance associated with the Kai Tak Approach Channel (KTAC) is an existing environmental problem. In order to improve the environment, this Project will take the opportunity to mitigate the potential sources of odour nuisance within the Project area so as to alleviate this existing environmental problem, as well as to provide an acceptable environment for the future land uses within the project area.
- 18.2.9 Mitigation measures have been formulated to alleviate this existing odour problem. These include reconstruction or decking of Kai Tak Nullah (KTN) within the former apron area, full mitigation of the potential odour emissions from the headspace of KTN and Jordan Valley Box Culvert (JVBC) near the existing discharge locations, localised maintenance dredging within KTAC, 600m gap opening at the northern section of the former runway to improve the water circulation in KTAC, and the implementation of in-situ bioremediation to treat the sediment accumulated at KTAC and Kwun Tong Typhoon Shelter (KTTS). With the implementation of these odour mitigation measures, the predicted odour levels in the vicinity of KTAC would be reduced significantly. In other words, this Project will alleviate the existing odour problems in the vicinity of KTAC to a large extent by implementing the proposed mitigation measures. However, some exceedances of the odour criterion are still predicted at some of the ASRs under the worst case conditions. Nevertheless, the residual odour levels are predicted to be very low and adverse health effects on ASRs are not expected. Hence, with the implementation of the proposed odour mitigation measures, adverse odour impact is not expected at the existing and planned ASRs in the vicinity of the Kai Tak Development.
- 18.2.10 Operational odour impacts from sewage pumping stations can be effectively mitigated by fully covered of the odour sources and installation of deodorization system at the exhaust of ventilation system. Adverse odour impact arising from the SPS is not anticipated.

18.3 Noise Impact

Construction Phase

- 18.3.1 This assessment has predicted the construction noise impacts of the Project during normal daytime working hours, taking into account other expected concurrent projects. The predicted unmitigated noise levels would range from 45 to 92 dB(A) at the representative noise sensitive receivers (NSRs). With the use of quiet powered mechanical equipment (PME), movable barriers and temporary barriers, the noise levels at most of the NSRs selected for construction noise impact assessment would comply with the construction noise standard.
- 18.3.2 Exceedances of the construction noise standard are predicted at a number of NSRs including Buddhist Chi King Primary School, S.K.H Kowloon Bay Kei Lok Primary School, Cognitio College, Lee Kau Yan Memorial School, Holly Carpenter Primary School, CCC Kei To Secondary School, Po Leung Kuk Ngan Po Ling College, South Mansion, HK Society for Blind hostel, Grand Waterfront, Hang Chien Court and the planned Site 1A1. Some of these affected NSRs are schools and they all have been noise insulated with air conditioners. By keeping the windows closed during the construction activities, noise impacts at the indoor environment of these school NSRs can be avoided. Notwithstanding this, it is recommended that the particularly noisy construction activities should be scheduled to avoid the examination periods of these NSRs as far as practicable.
- 18.3.3 Whilst this impact assessment does indicate some noise exceedances for limited periods of time, as much as practically possible should be done to reduce the construction noise during the actual construction period. Besides, on-going liaison with all concerned parties and site monitoring should also be conducted during the course of the construction period.

- 18.3.4 A construction noise environmental monitoring and audit (EM&A) programme is recommended to check the compliance of the noise criteria during normal daytime working hours.

Operational Phase

- 18.3.5 The potential road traffic noise impacts have been assessed based on the worst case traffic flows in 2031. Without any noise mitigation measures in place, the predicted noise levels at the NSRs would range from 42 to 87 dB(A). Practicable traffic noise mitigation measures are therefore formulated for the planned NSRs with predicted noise levels exceeding the EIAO-TM traffic noise criteria.
- 18.3.6 For school sites 1A2, 1A3, 1A4, 1B2, 1B3 & 1B4, a low noise surfacing at Road L2, Road L3 through Road, Road L4 are proposed. The layout of these planned schools should be arranged in a way to avoid the sensitive facades of the classrooms facing Roads L2 and L4, or as the last resort all the classrooms should be noise insulated with air-conditioners to avoid unacceptable traffic noise impacts from the surrounding road network.
- 18.3.7 Mitigation measures in the form of structure fins, low noise surfacing, special building design and building setback are proposed to mitigate the traffic noise impacts at Sites 1B1, 1I1, 1L2, 1L3, 2B6 & 5A4 and ex-San Po Kong Flatted Factory. The potential traffic noise impact at these sites are contributed by both existing and 'New' roads. With the proposed noise mitigation measures, the predicted overall noise levels at these NSRs would comply with the noise criterion.
- 18.3.8 For those noise sensitive uses located within the planned commercial site, it is recommended that the noise sensitive uses should either be located away from the traffic-noise affecting facades of the site or, as the last resort, the sensitive uses should be noise insulated with air-conditioners to avoid unacceptable traffic noise impacts from the surrounding road network.
- 18.3.9 For those affected existing NSRs, the 'New' road noise contributions to the overall noise levels would be less than 1.0 dB(A) and the 'New' road noise levels would all be below the relevant noise criteria, although the overall noise levels would still exceed the relevant noise criteria. However, it should be noted that such noise exceedances at the representative NSRs are due to the existing roads. Hence, direct mitigation measures on 'New' roads are not required as they would not be effective in improving the noise environment at the sensitive receivers.
- 18.3.10 Operational noise impacts from fixed plant noise can be effectively mitigated by implementing noise control treatment at source during the design stage and residual operational noise impacts are not anticipated. The need for noise measurement during commissioning of fixed noise sources should be included in the Contract Document.
- 18.3.11 Noise impacts from Open Air Entertainment Activities, namely those at the proposed Main Stadium, can be effectively mitigated by installation of retractable roof or the stadium could consider a fixed roof design. The noise impact due to the activities to be held in the Main Stadium is not likely to be significant.
- 18.3.12 The distance between the proposed helipad and the nearest planned residential NSR at Site 4B5 is about 700 m with an estimated L_{max} level of 80dB(A) at this NSR. Therefore, it is considered that the proposed helipad locations would comply with the helicopter noise criteria at the nearest NSRs and adverse helicopter noise impact would not be anticipated.

- 18.3.13 With the implementation of practicable noise mitigation measures and a buffer distance of not less than 10m between the proposed Environmental Friendly Transportation Link (EFTS) (if decided to be a railway form in the future) and the nearby NSRs, adverse rail noise impacts at the NSRs would not be anticipated. Example of practicable noise mitigation measures including those adopted in Ma On San (MOS) Rail namely the use of multi-plenum system and vertical noise barrier at the all elevated sections of the alignment on viaduct.
- 18.3.14 The operation activities of the marine traffic noise (include noise from typhoon shelters) may vary with the composition and type of the vessels. The potential noise impact is likely coming from the engine noise and operation activities of individual vessel in operation. It is similar to noise from public place which vessels are free to move around and implementation control measures are not possible. Nevertheless, given the large separation distance between the typhoon shelters and the nearby NSRs, the noise level from the marine traffic noise (include noise from typhoon shelters) at the NSRs would be minimal.

18.4 Water Quality Impact

Construction Phase

Marine-based Impact

- 18.4.1 The cumulative water quality impact from the marine construction works proposed under KTD has been assessed under the approved EIA for Dredging Works for Proposed Cruise Terminal at Kai Tak (EIAO Register No. AEIAR-115/2007). Suspended sediment is identified as the most significant water quality parameter during the marine works. However, the water quality impacts could be effectively minimized with the implementation of the proposed mitigation measures including deployment of silt curtains at appropriate dredging areas, and installation of silt screens at selected seawater intakes. There would be no unacceptable residual water quality impact due to the proposed marine works. An environmental monitoring and audit programme is required to ensure the effectiveness of the proposed water quality mitigation measures.

Land-based Impact

- 18.4.2 Water quality impacts from land-based construction, including road works, waterfront facilities and public utilities, are associated with the surface runoff, effluent discharge from the site, and sewage from on-site construction workers. Impacts can be controlled to comply with the Water Pollution Control Ordinance (WPCO) standards by implementing the recommended mitigation measures including those stipulated in EPD's *Practice Note for Professional Persons, Construction Site Drainage* (ProPECC PN1/94). No unacceptable residual impacts on water quality are anticipated.

Sediment Treatment

- 18.4.3 No unacceptable impact would be expected from the proposed *in-situ* bioremediation for the sediment accumulated in KTAC and KTTS to mitigate odour nuisance. Water quality monitoring and audit is recommended to be carried out during and after the treatment operation to ensure that the proposed sediment treatment work would not result in unacceptable water quality impact.

Operational Phase

Use of KTAC and KTTS as an Area of General Amenity Value

- 18.4.4 No unacceptable water quality impact is predicted for the proposed general amenity use at KTAC and KTTS provided that a 600 m wide opening will be provided at the northern end of the runway (north of taxiway bridge) to improve the water circulation and flushing effect at KTAC and KTTS. Cleansing contractor will provide scavenging service (floating refuse) in the accessible water area surrounding the ex-Kai Tak Airport runway. The assessment results also indicated that the proposed 600 m opening at the runway would not adversely affect the overall water quality impact in the Victoria Harbour and its adjacent water. A water quality monitoring and audit programme will be implemented before and after opening a 600 m gap at the runway to ascertain the runway opening would not result in unacceptable impact marine water quality as well as the WSD flushing water intakes and to confirm the water quality impacts predicted under operational phase of the Project. An algal bloom / red tide monitoring programme and action plan will also be implemented to ascertain the runway opening and bioremediation for the sediment at KTAC and KTTS would not result in unacceptable impact.

Overflow Bypass of Proposed Sewage Pumping Stations at Kai Tak

- 18.4.5 Provision of standby pumping facilities and dual power supply would minimize the occurrence of emergency discharge event. With the implementation of suitable design measure, there would not be any insurmountable water quality impacts associated with the operation of the proposed sewage pumping stations at Kai Tak.

Spent Cooling Water Discharge

- 18.4.6 The thermal impact from the DCS discharge on the harbour water is predicted to be localized and minor as the general flushing capacity in Victoria Harbour is high. As the chlorine would be subject to decay, the impact from any residual chlorine discharge from the DCS is also predicted to be localized and confined in area close to the outfall. No unacceptable water quality impacts are expected from the DCS.

Road Runoff

- 18.4.7 Surface runoff from new roads proposed under this Project may be contaminated by oils leaked from passing vehicles. It is considered that impacts upon water quality will be acceptable provided that the road works are designed with adequate drainage systems and appropriate oil interceptors, as required.

18.5 Waste Management Implications

- 18.5.1 Wastes generated by the Project are likely to include dredged marine sediment from marine works and construction and demolition (C&D) material generated from 600m runway opening, site formation and various civil works for the construction of buildings and infrastructure within the Project boundary, as well as general refuse from the workforce and chemical waste from the maintenance of construction plant and equipment and from the soil remediation process. During operational phase of the Project, the major solid wastes are municipal wastes generated from different land uses within the development.
- 18.5.2 The total volume of dredged sediment generated from the dredging of the seabed to provide the manoeuvring basin for the cruise terminal is estimated to be approximately 1.38 Mm³ during construction phase. Based on the results of the chemical and biological screening, approximately 430,000 m³ was classified as contaminated dredged sediment (Category M and H) requiring Type 1 – Open Sea Disposal (Dedicated Sites) or Type 2 - Confined Marine Disposal, and approximately 950,000 m³ was classified as Category L sediment suitable for Type 1 - Open Sea Disposal in accordance with ETWB TCW No. 34/2002.

- 18.5.3 The total volume of dredged sediment generated from maintenance dredging for the cruise terminal is estimated to be approximately 350,000 m³ every 5 to 10 years. Prior to any maintenance dredging, sediment sampling and testing will be carried out in accordance with the ETWB TCW No. 34/2002 to determine the contamination level of the dredged sediment.
- 18.5.4 The total volume of dredged sediment generated from 600m runway opening, localized maintenance dredging at KTAC, and immersed tunnel sections of Road T2 and Central Kowloon Route (CKR) are estimated to be approximately 3,200m³, 120,000m³ and 2,620,000 m³ respectively which are subject to the actual construction method to be adopted. With reference to the sediment chemical testing results presented in the SEKDCFS EIA for locations around the proposed dredging areas, the dredged sediment is likely to be highly contaminated and classified as Category H materials, that would require confined marine disposal (Type 2 contaminated sediment) and special treatment (Type 3 contaminated sediment) according to the future sediment biological testing responsible by the contractor prior to disposal. The contaminated sediment must be dredged and transported with great care in accordance with ETWB TCW No. 34/2002. Subject to the final allocation of the disposal sites by Marine Fill Committee, the dredged contaminated sediment must be effectively isolated from the environment upon final disposal and shall be disposed of at the East Sha Chau Contaminated Mud Pits that are designated for the disposal of contaminated mud in Hong Kong.
- 18.5.5 The total volume of dredged sediment generated from the existing seawall to be re-constructed for the proposed public landing step cum fireboat berth is estimated to be approximately 600m³. From the results of recent site investigation around the proposed marine works area, the dredged sediment is likely to be classified as Category L material. The materials must be dredged, transported and disposed of in a manner, which minimizes the loss of contaminants either into solution or by resuspension.
- 18.5.6 The total volume of C&D material generated from the major construction activities of the Project are estimated to be approximately 5,946,250 m³ and 2,658,200 m³ is estimated to be reused during construction phase. The inert materials would be re-used on-site or in other projects as far as possible and delivered to the public fill reception facilities or other designated sites as advised by the Secretary of Public Fill Committee as last resort. Other wastes generated from the Project are likely to include chemical waste from the maintenance of construction plant and equipment and general refuse from the construction workforce.
- 18.5.7 Mitigation measures are recommended in this EIA to minimise potential environmental impacts associated with handling and disposal of different wastes arising from the Project. Provided that the recommended mitigation measures are properly followed, adverse environmental impacts would not be expected from the Project.

18.6 Land Contamination

- 18.6.1 The former Kai Tak Airport site is identified as a potential contaminated area. Based on the findings of the approved EIA Report for Kai Tak Airport North Apron Decommissioning (EIAO Register No.: AEIAR-002/1998), land contamination identified in the North Apron area had already been cleaned up. Besides, in accordance with the approved EIA Report for Decommissioning of the former Kai Tak Airport other than the North Apron (EIAO Register No.: AEIAR-114/2007), no land contamination was identified in the Runway area and the land contamination identified near the Kai Tak Tunnel, South Apron and the ex-Government Flying Service (GFS) apron area were found relatively confined and localized. Soils with elevated concentration of semi-volatile organic compounds (SVOCs), volatile organic compounds (VOCs), total petroleum hydrocarbons (TPH), metals and free product (observed at ex-GFS apron area only) would be remediated according to the approved EIA Report.

- 18.6.2 For areas surrounding the KTD, various existing industrial activities in the Ma Tau Kok, Kowloon Bay and Kwun Tong areas are identified with potential land contamination issues. It is recommended that the future developers of those identified land contamination hotspots should carry out detailed land contamination investigations prior to any redevelopment. If land contamination is confirmed, proper remedial measures should be formulated and implemented prior to the redevelopment of the respective site.
- 18.6.3 For the remaining sites within the former Kai Tak Airport yet to be decommissioned including the ex-GFS building and the Radar Station in the South Apron area, and the Hong Kong Aviation Club (HKAC) and the Electrical and Mechanical Services Department (EMSD) Headquarters in the North Apron area, the potential land contamination concern may be mainly arisen from (1) hangar area, (2) fuel storage and injection facilities, (3) dangerous goods and waste chemical storage, (4) generator, transformer and battery rooms and (5) plant and equipment storage. Meanwhile, the site of EMSD Headquarters is currently occupied by EMSD for the operation as headquarter. This use will continue for the near future and no decommissioning programme is anticipated at the moment.
- 18.6.4 Land contamination assessments have been conducted for the ex-GFS building, Radar Station and HKAC area. The assessment results indicated no contamination at the Radar Station and HKAC area while some areas of the ex-GFS building were identified to be contaminated with heavy metals, TPH or SVOCs including Phenanthrene, Benzo(a)pyrene, Fluoranthene and Pyrene. The volumes of soil contaminated by different types of contaminants at the ex-GFS building are estimated to be (i) 316.8 m³ of heavy metal contaminated soils and (ii) 72 m³ of TPH/SVOCs contamination soils.
- 18.6.5 The proposed implementation options for heavy metal and organic contaminated soil are solidification / stabilization and biopiling respectively. During remediation, the contaminated soils should be excavated from the excavation zones and then transported to preferably a centralized decontamination works area on site for treatment by biopiling or solidification / stabilization.
- 18.6.6 Various environmental mitigation measures and health and safety measures have been proposed for the decontamination activities. With the incorporation of these measures during excavation and operation of the remediation system, as well as the provision of safety measures to site workers, no residual impact arising from land contamination would be expected.

18.7 Hazard to Life

- 18.7.1 Based on the results of the Quantitative Risk Assessments (QRAs) for the operations of the Mau Tau Kok Gas Works North Plant (MTKGWWNP) and its associated facilities, the Kwun Tong DG Vehicular Ferry Pier (DGVFP), and the Kerry DG Godown, the risk levels at the assessment year of 2012, 2016 and 2021 to the future occupants of the Project are considered to be in compliance with the risk guidelines and no adverse impact is expected.
- 18.7.2 With regards to the existing petrol cum LPG filling stations / dedicated LPG filling stations in the proximity of the KTD, the results of the QRAs indicated that the risk levels at the assessment year of 2012, 2016 and 2021 to the future occupants of the Project are also considered to be in compliance with the risk guidelines.

18.8 Impact on Cultural Heritage

- 18.8.1 A desk-based study and a built heritage field survey have been conducted and revealed several heritage resources associated with the former Kai Tak Airport, which include two wind poles, the airport pier, Fire Station A, Fire Station B (and associated pier), Fire Station C, seawall and the runway, the Old Far East Flying Training School, Sung Wong Toi Inscription Rock, Fish Tail Rock, and Kowloon Rock. The heritage significance of the Old Far East Flying Training School and Fish Tail Rock are moderate. The heritage significance of the Sung Wong Toi Inscription Rock is high. The heritage significance of the other examined heritage resources are low. No mitigation is required for the examined heritage resources except appropriate protective measures for the structures within the site of Old Far East Flying Training School during any laying of services in its vicinity and protective measures for the Sung Wong Toi Inscription Rock in case of relocation.
- 18.8.2 The KTD will directly impact on the archaeological sites and areas of archaeological potential in the North Apron area of the former Kai Tak Airport. Archaeological investigation has been undertaken in this EIA. The remains of the Longjin Pier and sherds from Sung Dynasty were recovered at two locations in the North Apron area. Further archaeological investigation and rescue excavation will be undertaken at the location with sherds from Sung Dynasty. Whereas for Longjin Pier, it is recommended to preserve the Longjin Pier *in-situ* as part of the KTD after the completion of further archaeological investigation.
- 18.8.3 Marine archaeological resources may be impacted during the proposed dredging works for KTD and it has been recommended that monitoring of the dredged material be undertaken as outlined in the EIA report. With the implementation of the above stated measures, no significant impacts to cultural heritage resources are anticipated.

18.9 Landscape & Visual Impact

- 18.9.1 The scale of Kai Tak Development, particularly in a waterfront location, will inevitably result in some landscape and visual impacts. These have been minimized through careful consideration of the layout plans for the development incorporate design mitigation measures such as creation of sub-districts, creation of new open space framework, creation of visual connections and breezeways, retention of views to ridgelines at strategic locations, preservation of Victoria Harbour, preservation of cultural and heritage assets, aesthetic design of roads and streetscapes and provision of compensatory planting proposals in the development.
- 18.9.2 Based on a very broad brush estimate, approximate 2,250 existing trees will be affected by Kai Tak Development. Approximate 5,000 nos. of trees will be planted within new open spaces and approximate 1,000 nos. of trees will be planted for new distributor roads to compensate for the loss of existing trees. The overall residual impact on trees is considered acceptable with mitigation measures.
- 18.9.3 A series of interconnected open space system that accommodate a number of leisure, recreation and civic activities are proposed in the development layout. A total of approximately 89.5 ha of open space will be provided within the development. Key major open space provided include Metro Park, Station Square, Sung Wong Toi Park, Runway Park, North Apron District Park, Hoi Sham Park, Kowloon Bay Square, Cha Kwo Ling Park and Kwun Tong Plaza. These open spaces are well connected within the development and to the adjacent surrounding districts. The overall residual impact on open space system is considered acceptable with mitigation measures.
- 18.9.4 A new urban waterfront will be created under the Kai Tak Development. The overall landscape character of the area will be dramatically changed from a flat open area with various temporary uses to a high-rise contemporary development with sports and entertainment nodes. The overall residual impact on LCAs is considered acceptable with mitigation measures.

18.9.5 The scale and the extent of high-rise development is likely to significantly alter the visual context of area, particularly due to partially or fully loss of open sea view, enclosure and blocking or reduction of depth of current view. There will unavoidably be moderate residual impact on the residential VSRs at high rise buildings in To Kwa Wan, Kowloon City, San Po Kong, Kowloon Bay and Kwun Tong.

18.9.6 Overall, it is considered that the landscape and visual impact due to the Kai Tak Development is considered to be acceptable with mitigation measures (including incorporation of all design measures in the layout plan).

18.10 Ecological Impact

Terrestrial Ecology

18.10.1 Literature review and recent reconnaissance surveys identified five habitat types within the Assessment Areas of this Project, including developed area, wasteland, plantation / grassland mosaic, watercourse and artificial coastline. Considering their highly artificial and disturbed nature, all the identified habitats are considered of very low to low in ecological values.

18.10.2 No area of conservation importance is located within the Assessment Area. However, nine bird species of conservation importance, including Little Egret, Great Egret, Cattle Egret, Grey Heron, Black-crowned Night Heron, Chinese Pond Heron, Common Cormorant, Black Kite and Greater Coucal were recorded in the Assessment Areas during the recent surveys. All the recorded species of conservation importance are common and widespread in Hong Kong.

18.10.3 Permanent loss of 202.7 ha of wasteland, 15.8 ha of plantation / grassland mosaic and 0.7 km artificial coastline in the former Kai Tak Airport would be resulted under the Project. These habitats were ranked as very low to low in ecological values and supported floral and faunal communities of low diversity with common and widespread species. In addition, provision of about 127 ha open space area, including a 24 ha Metro Park, with planting of native tree and vegetation species after the construction of the Project would provide more diverse and suitable habitats for the uses of existing fauna assemblages. The impact of habitat loss under this Project is therefore considered as very minor in nature.

18.10.4 Other impact of the Project would be the removal of about 2250 existing trees within the Project area. However, as all of the affected trees are common and widespread species of low ecological importance, potential impact to the vegetation was considered low. No protected species or other flora of conservation importance would be affected under this Project. To mitigate such impact, it is recommended that, as far as possible, compensatory planting should be provided in a ratio of not less than 1:1 in terms of quality and quantity after the construction works.

18.10.5 Other potential impacts arising from the Project would be mostly temporary and recovered after the completion of the Project. Overall, no significant and unacceptable impact on terrestrial ecological resources would be expected under this Project.

Marine Ecology

18.10.6 Literature reviews of existing information with supplement findings from recent field surveys indicated that identified marine habitats within the Project area are of generally very low ecological value. There are no ecological sensitive receivers, such as Sites of Specific Scientific Interest (SSSIs), Fish Culture Zones and Marine Parks and / or Reserves and other areas of ecological importance or conservation interest, in and within the immediate vicinity of the Project area.

- 18.10.7 Marine habitats within the Project area include soft bottom seabed, artificial seawalls and subtidal habitats. All the identified habitats are considered to have a generally very low ecological value due to their highly artificial and disturbed nature. Species diversity and abundance in these habitats were low and no rare or restricted species was recorded. The species of conservation importance recorded within the Project area only include a single species of common hard coral (*Oulastrea crispata*) (but all colonies found are small in size, sparsely distributed and in very low coverage). All these species of conservation importance recorded within the Project area are common and widespread in other Hong Kong waters.
- 18.10.8 Direct and indirect ecological impacts arising from the Project were identified and evaluated. The Project will result in the temporary loss of approximately 74.4 hectares of soft bottom benthic and subtidal habitats, temporary loss of about 1.6 km long of artificial intertidal habitat and permanent loss of about 0.7 km long of artificial intertidal habitat. Considering that the benthic and intertidal habitats within the proposed marine works areas are of very low ecological value and direct impact on some isolated coral colonies would largely be mitigated by translocation, no significant adverse impact is expected.
- 18.10.9 Other indirect impacts arising from the Project would be temporary and minimised with implementation of proper mitigation measures. Overall, no significant and unacceptable ecological impact on marine resource is anticipated in this assessment.

18.11 Fisheries Impact

- 18.11.1 Literature reviews of existing information indicated that identified fishing area in Kowloon Bay, eastern Victoria Harbour and KTTS are of moderate to high fisheries values while that in To Kwa Wan Typhoon Shelter and KTAC are of relatively low value. There are no fish culture zones (FCZs) and important spawning or nursery grounds identified in and within the immediate vicinity of the Project area. The nearest mariculture areas are FCZs at Tung Lung Chau and Ma Wan which are 8 km and over 10 km away, respectively, of the Project area.
- 18.11.2 Direct and indirect impacts on fisheries resources arising from the Project were identified and evaluated. The Project will result in the temporary loss of approximately 74.4 hectares of fishing area due to dredging works associated with the Project. In view of the small size of affected areas, temporary and insignificant loss of fisheries production and low impact on fishing activities, fisheries impacts due to loss of fishing area within the dredging areas is considered as minor and acceptable.
- 18.11.3 Indirect impacts of change of water quality arising from the Project would be temporary and insignificant based on the predictions from water quality modelling. Mitigation measures suggested in the water quality impact assessment to control water quality would also serve to protect fisheries resources from indirect impacts. No significant adverse impact on fisheries resources would be expected from the Project and therefore no necessary fisheries-specific mitigation measures would be required. No cumulative impacts on fisheries resources are expected.
- 18.11.4 No operational phase impacts on fisheries resources are expected to result from operation of the Project as fishing activity will not be restricted in the sea area (turning area) off the proposed cruise terminal and public landing steps cum fireboat berth. If cruise ships or other vessels are manoeuvring in these areas, then they would not be accessible to fishing vessels but this is no different from the other areas of the harbour where other vessel traffic would impose similar restriction on fishing activities. No permanent impact is expected. Additionally, all construction works would take place within the existing land limits of the Kai Tak Development site and no structures would extend beyond these land limits. Thus, no loss of fishing ground is expected to result from operation of the Project.

18.12 Sewerage and Sewage Treatment Implications

- 18.12.1 The sewage generated from northwest portion of KTD will be conveyed to the existing To Kwa Wan Preliminary Treatment Works (TKWPTW); while the sewage generated from the southeast portion of KTD will be conveyed to the existing Kwun Tong Preliminary Treatment Works (KTPTW) via the trunk sewers along Hoi Bun Road and Kai Tak Intermediate Pumping Station (KTIPS). The sewage flows from KTD will eventually be collected by the existing HATS conveyance tunnels to Stonecutters Island Sewage Treatment Works (SCISTW).
- 18.12.2 Hydraulic analysis has been conducted to assess the hydraulic capacities of the trunk sewers along Hoi Bun Road, KTIPS, KTPTW, TKWPTW and HATS conveyance tunnels. The assessment results reveal that the above-mentioned existing sewerage facilities are able to handle the additional sewage flows from KTD for Year 2016 Scenario in general.
- 18.12.3 For the long-term impact, Year 2030 and Ultimate Scenarios are used and the assessment results show that the capacity of KTPTW would be exceeded only because of the potential population increase in KTPTW catchments in 2030 and beyond. It is understood that the project of investigation for the upgrading of Kwun Tong Sewage Preliminary Treatment Works by EPD will commence in June/July 2008 and will last for 17 months. The details of the upgrading of KTPTW will be determined under that project.
- 18.12.4 Since no adverse sewerage impact due to KTD is identified, no proposed mitigation measures nor upgrading works on the existing sewerage system are required based on the sewage flow estimated from the latest population data.

18.13 Overall Summary

- 18.13.1 This EIA has been conducted based on the best and latest information available during the course of the EIA study. The findings of this EIA have provided information on the nature and extent of environmental impacts arising from the Project. The EIA has, where appropriate, identified mitigation measures to ensure compliance with environmental legislation and standards. Overall, this EIA has demonstrated the general acceptability of the residual impacts from the Project and the protection of the population and environmentally sensitive resources. Environmental monitoring and audit mechanisms have been recommended during the construction and operation phases of the Project, where necessary, to verify the accuracy of the EIA predictions and the effectiveness of recommended mitigation measures. A summary of the environmental impacts associated with the Project is presented in **Table 18.2**.

Table 18.2 Summary of Environmental Impacts Associated with the Project

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|--|---|------------------------|---|--|
| Air Quality Impact | | | | | |
| Construction Phase | | | | | |
| 85 assessment points | 1-hour Average TSP Conc.: 152-481 µg/m ³ 24-hour Average TSP Conc.: 100-220µg/m ³ | EIAO-TM and Air Quality Objective 1-hour Average TSP Conc.: 500 µg/m ³ 24-hour Average TSP Conc.: 260µg/m ³ | Nil | <p>Eight times daily watering with complete coverage of active dust emitting area(s) or other alternative equivalent effective dust suppression measures.</p> <p>Requirements of the Air Pollution Control (Construction Dust) Regulation</p> <p>The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts.</p> <ul style="list-style-type: none"> • Stockpiling site(s) should be lined with impermeable sheeting and bundled. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. • Misting for the dusty material should be carried out before being loaded into the vehicle. • Any vehicle with an open load carrying area should have properly fitted side and tail boards. • Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. • The tarpaulin should be properly secured and should extent at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. | Nil |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|---|--|------------------------|--|--|
| | | | | <ul style="list-style-type: none"> The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials. Vehicle washing facilities should be provided at every vehicle exit point. 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. Every main haul road should be sealed with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. | |
| Construction Phase (Decommissioning works) | | | | | |
| 9 assessment points | No adverse construction dust impacts arising from demolition works, excavation works, transportation, loading and unloading of contaminated soils, and mixing process in solidification expected at the representative ASRs | EIAO-TM and Air Quality Objective 1-hour Average TSP Conc.: $500 \mu\text{g}/\text{m}^3$ 24-hour Average TSP Conc.: $260 \mu\text{g}/\text{m}^3$ | Not Applicable | Eight times daily watering with complete coverage of active dust emitting area(s) or other alternative equivalent effective dust suppression measures. Requirements of the Air Pollution Control (Construction Dust) Regulation | Nil |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|---------------------------|-------------------------------------|------------------------|--|---|
| | | | | <p>The following mitigation measures, good site practices and a comprehensive dust monitoring and audit programme are recommended to minimise cumulative dust impacts.</p> <ul style="list-style-type: none"> • Stockpiling site(s) should be lined with impermeable sheeting and bunded. Stockpiles should be fully covered by impermeable sheeting to reduce dust emission. • Misting for the dusty material should be carried out before being loaded into the vehicle. • Any vehicle with an open load carrying area should have properly fitted side and tail boards. • Material having the potential to create dust should not be loaded from a level higher than the side and tail boards and should be dampened and covered by a clean tarpaulin. • The tarpaulin should be properly secured and should extend at least 300 mm over the edges of the sides and tailboards. The material should also be dampened if necessary before transportation. • The vehicles should be restricted to maximum speed of 10 km per hour and confined haulage and delivery vehicle to designated roadways inside the site. On-site unpaved roads should be compacted and kept free of loose materials. • Vehicle washing facilities should be provided at every vehicle exit point. | |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|---------------------------|-------------------------------------|------------------------|--|---|
| | | | | <ul style="list-style-type: none"> • 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. • Every main haul road should be scaled with concrete and kept clear of dusty materials or sprayed with water so as to maintain the entire road surface wet. • Every stock of more than 20 bags of cement should be covered entirely by impervious sheeting placed in an area sheltered on the top and the three sides. • Every vehicle should be washed to remove any dusty materials from its body and wheels before leaving the construction sites. <p><u>Solidification</u></p> <ul style="list-style-type: none"> • The solidification pit/area should be provided with dust suppression measures. • Handling and mixing of cement shall follow Air Pollution Control (Construction Dust) Regulation to limit cement emission. • The bin should be covered during residence period after mixing process. | |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|---------------------------|-------------------------------------|------------------------|---|---|
| | | | | <p><u>Biopiling</u></p> <ul style="list-style-type: none"> During the course of biopile formation, the stockpiled soils at the biopiles should be covered by tarpaulin or low permeable sheet to avoid fugitive emissions of dust or any air pollutants from the biopiles affecting the surrounding environment and to minimise runoff from the stockpiled soils. Biopile(s) should be covered by impermeable sheeting (such that no longer than 5m of a biopile should be exposed to open air) to avoid fugitive emissions of dust or any pollutants from the biopile(s). Upon formation of a biopile, the biopile should be covered by low permeable geotextiles to prevent dust emission and runoff. During the operation of biopile, the biopiles should be fully covered to control the extraction of VOCs. The vented air from the biopile(s) should be connected to blower and carbon adsorption system with 99% control efficiency for treatment before release to the atmosphere. Exhaust air from the blower and carbon adsorption system should be monitored for TVOC bi-weekly to check the performance of the carbon filter. The frequency of monitoring might be adjusted subject to review on site. The location of the exhaust of the carbon filter should be sited as far away as possible from the nearby ASRs. | |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|--|---|---|---|--|
| | | | | <ul style="list-style-type: none"> Spent activated carbon of the carbon adsorption system should be replaced at appropriate intervals such that the TVOC emission concentration from the system is acceptable (i.e. the measured TVOC concentration is below 20ppm). | |
| Operational Phase (Vehicular Emission) | | | | | |
| 175 assessment points | 1-hour Average NO ₂ Conc.: 72 - 190 µg/m ³ 24-hour Average NO ₂ Conc.: 68 - 106 µg/m ³ 24-hour Average RSP Conc.: 57-70 µg/m ³ | Air Quality Objective 1-hour Average NO ₂ Conc.: 300 µg/m ³ 24-hour Average NO ₂ Conc.: 150 µg/m ³ 24-hour Average RSP Conc.: 180 µg/m ³ | Nil | Not Applicable | Nil |
| Air quality inside deckover for planned landscape deck for Road D2 and Road L1 tunnel. | Achieve EPD recommended standard of 1 ppm NO ₂ concentration | EPD Tunnel Air Quality Guidelines 1 ppm NO ₂ concentration | Nil | Not Applicable | Nil |
| Operational Phase (Sewage Pumping Stations) | | | | | |
| 139 assessment points | No adverse odour impacts arising sewage pumping stations | EIAO-TM Meet 5 odour units based on an averaging time of 5 seconds for odour prediction assessment. | Nil | Provision of deodorization system and odour sources being enclosed. | Nil |
| Operational Phase (Cumulative) | | | | | |
| 175 assessment points | Cumulative 1-hour Average NO ₂ Conc.: 114-835 µg/m ³ Cumulative 24-hour Average NO ₂ Conc.: 77 -384 µg/m ³ Cumulative 1-hour Average SO ₂ Conc.: 125-4075 µg/m ³ Cumulative 24-hour Average SO ₂ Conc.: 52-1698 µg/m ³ Cumulative 24-hour Average RSP Conc.: 61-229 µg/m ³ | Air Quality Objective 1-hour Average NO ₂ Conc.: 300 µg/m ³ 24-hour Average NO ₂ Conc.: 150 µg/m ³ 1-hour Average SO ₂ Conc.: 800 µg/m ³ 24-hour Average SO ₂ Conc.: 350 µg/m ³ 24-hour Average RSP Conc.: 180 µg/m ³ | Exceed 1-hour Average NO ₂ Conc. by up to 535 µg/m ³ Exceed 24-hour Average NO ₂ Conc. by up to 234 µg/m ³ Exceed 1-hour Average SO ₂ Conc. by up to 3274 µg/m ³ Exceed 24-hour Average SO ₂ Conc. by up to 1348 µg/m ³ Exceed 24-hour Average RSP Conc by up to 49 µg/m ³ | The only affected planned ASR is the proposed Tourism Node and would be provided with central air conditioning, no adverse air quality impact would be expected with the provision of appropriate fresh air intake locations for this ASR. | Nil |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|--|---|--|---|--|
| 42 assessment points | The predicted odour concentrations range from 1.9 to 32.2 ou/m ³ over averaging time of 5 seconds under worst case condition. | EIAO-TM Meet 5 odour units based on an averaging time of 5 seconds for odour prediction assessment. | Exceed the odour criterion up to 27 ou/m ³ | Odour nuisance associated with the KTAC and the KTN is an existing environmental problem. In order to improve the environment, this Project will take the opportunity to mitigate the potential sources of odour nuisance within the Project area so as to alleviate this existing environmental problem, as well as to provide an acceptable environment for the future land uses within the project area. Mitigation measures have been formulated to alleviate this existing odour problem. These include reconstruction or decking of KTN within the former apron area, full mitigation of the potential odour emissions from the headspace of KTN and JVBC near the existing discharge locations, localised maintenance dredging within KTAC, 600m gap opening at the northern section of the former runway to improve the water circulation in KTAC, and the implementation of in-situ bioremediation to treat the sediment accumulated at KTAC and KTTS. | Residual odour impact is predicted at the planned ASRs. Nevertheless, the residual odour levels are predicted to be very low and no adverse health effect on human is expected. Hence, with the implementation of the proposed odour mitigation measures, adverse odour impact is not expected at the existing and planned ASRs in the vicinity of the Kai Tak Development. |
| Noise Impact | | | | | |
| Construction Phase | | | | | |
| 36 assessment points | Predicted noise levels would be in the range of 45 to 92 dB(A) | Domestic premises: 75dB(A) Educational institutions: 70 dB (A) during normal teaching periods & 65 dB(A) during examinations | Domestic premises: Exceed the noise standard by up to 17dB(A). Educational institutions: Exceed the noise standard by 21 dB(A) during normal teaching period and up to 26dB(A) during examination period. | Use of quiet equipment and movable/temporary noise barriers grouping to minimise construction noise impact | For N4 (Buddhist Chi King Primary School), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 3 dB(A) during examination periods from Jul 2010 to Dec 2015. For N5 (S.K.H Kowloon Bay Kei Lok Primary School), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 5 dB(A) during examination periods from Jul 2010 to Dec 2015. |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|---------------------------|-------------------------------|------------------------|---|--|
| | | | | | <p>For N11 (Cognitio College), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 10 dB(A) during examination periods from Sept 2009 to Apr 2010 and Jul 2010 to Dec 2015. The noise level also exceed the noise standard of 70dB(A) by up to 5 dB(A) during normal teaching period from Jul 2010 to Dec 2015.</p> <p>For N13 (Lee Kau Yan Memorial School), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 9 dB(A) during examination periods from Sept 2009 to Apr 2010 and Jul 2010 to Dec 2015. The noise level also exceed the noise standard of 70dB(A) by up to 4 dB(A) during normal teaching period from Jul 2010 to Dec 2015.</p> <p>For N23 (Holly Carpenter Primary School), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 21 dB(A) during examination periods from Jan 2015 to Dec 2016. The noise level also exceed the noise standard of 70dB(A) by up to 16 dB(A) during normal teaching period from Jan 2015 to Dec 2016.</p> <p>For N27 (CCC Kei To Secondary School), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 3 dB(A) during examination periods from Jan 2015 to Dec 2016.</p> |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|---------------------------|-------------------------------------|------------------------|---|--|
| | | | | | <p>For N28 (Po Leung Kuk Ngan Po Ling College), the predicted noise level would exceed the noise standard of 65 dB(A) by up to 5 dB(A) during examination periods from Jan 2015 to Dec 2016.</p> <p>For N14 (South Mansion), the predicted noise level would exceed the noise standard of 75 dB(A) by up to 2 dB(A) from Jan 2015 to Dec 2015.</p> <p>For N18 (HK Society for Blind hostel), the predicted noise level would exceed the noise standard of 75 dB(A) by up to 1 dB(A) from Jan 2015 to July 2015.</p> <p>For N20B (Grand Waterfront), the predicted noise level would exceed the noise standard of 75 dB(A) by up to 3 dB(A) from Jan 2012 to Dec 2016.</p> <p>For N21 (Hang Chien Court), the predicted noise level would exceed the noise standard of 75 dB(A) by up to 3 dB(A) from Jan 2012 to Dec 2016.</p> <p>For PN2 (Site 1A1 (Planned)), the predicted noise level would exceed the noise standard of 75 dB(A) by up to 11 dB(A) from Oct 2012 to Dec 2015.</p> |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|----------------------------------|---|---|--|--|
| Operational Phase (Traffic Noise) | | | | | |
| 158 assessment points | L ₁₀ : 42 to 87 dB(A) | Domestic premises: 70 dB(A) Educational institutions and all others where unaided voice communication is required: 65dB(A) | Domestic premises: Exceed the noise standard by up to 17dB(A). Education institution: Exceed the noise standard by up to 22dB(A) | Low noise surfacing at (i) Road L2 (ii) Road L3 (for through road option) (iii) Road L4 Building setback about 5m at site 111, 5m at 1L2 & 35m at 1L3. Building setback at site 2B6 and no openable window facing to the Road L16 or section of existing roads in Kowloon City area. For site 5A4, (i) avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or (ii) provision of 17.5m high noise tolerant building fronting To Kwa Wan Road and restrict the height of the residential block(s) located at less than 55m away from To Kwa Wan Road to no more than 25m above ground. For ex-San Po Kong Flatted Factory, avoid any sensitive facades with openable window facing the slip road connecting Prince Edward Road East and San Po Kong or other alternative mitigation measures to minimise the potential traffic noise impacts from the slip road. | With the proposed noise mitigation measures in place, the 'New' road noise contributions to the overall noise levels at all representative NSRs would be less than 1.0 dB(A) and the 'New' road noise levels would all be below the relevant noise criteria. No adverse noise impacts arising from the 'New' roads are predicted at representative NSRs. Noise exceedances at the representative NSRs, if any, would be due to the existing roads. |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|---|--|--|---|--|
| Operational (Fixed Plant Noise) | | | | | |
| 23 assessment points | All predicted Noise levels are within NCO criteria | ASR B Daytime & Evening: 60 dB(A) Nighttime: 50dB(A) ASR C: Daytime & Evening: 65 dB(A) Nighttime: 55dB(A) | Nil | <ul style="list-style-type: none"> The exhaust of the ventilation system and any opening of the building should be located facing away from any NSRs; and Louver or other acoustic treatment equipment could also be applied to the exhaust exit of the building. | Nil |
| Noise impacts from Open Air Entertainment Activities | | | | | |
| 1 assessment point | The predicted Noise level is within criteria | Noise Control Guidelines for Holding Open Air Entertainment Activities | Nil | <ul style="list-style-type: none"> Installation of retractable roof or the main stadium could consider a fixed roof design. | Nil |
| Helipad Noise | | | | | |
| 1 assessment point | The predicted Noise level is within NCO criteria | EIAO-TM | Nil | <ul style="list-style-type: none"> Nil | Nil |
| Noise from EFTS | | | | | |
| 1 assessment point | All predicted Noise levels are within NCO criteria | NCO | Nil | <ul style="list-style-type: none"> Multi-plenum system and vertical noise barrier at the all elevated sections of the alignment on viaduct would be considered. | Nil |
| Marine traffic noise (include noise from typhoon shelters) | | | | | |
| 2 assessment points | Nil | Nil | Nil | <ul style="list-style-type: none"> Nil | Nil |
| Construction Phase Water Quality Impact | | | | | |
| Seawater intakes along the waterfront of Victoria Harbour and far field coral sites identified in Junk Bay, Green Island and Cape Collinson | The model results indicate exceedances of WSD water quality (SS) criterion at 6 flushing water intakes along the water front of Victoria Harbour. | 1. WSD flushing water quality intake criterion for SS: < 10 mg/l 2. Target water quality objectives at coral sites for SS elevations: < 30 % of the background ambient levels 3. Sedimentation rate at corals: <100g/m ² /day | Full compliance would be achieved with implementation of all the recommended mitigation measures | Use of closed grab dredger during dredging and filling operations. Deployment of silt curtains at appropriate dredging areas, and installation of silt screens at selected seawater intakes during dredging. Avoid maintenance dredging for cruise terminal in wet season (April to September). | None |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|---|---|---|---|--|
| Operational Phase Water Quality Impact | | | | | |
| Seawater intakes along the waterfront of Victoria Harbour and far field coral sites identified in Junk Bay, Green Island and Cape Collinson | Operation of KTD would not cause unacceptable impacts upon the water quality in Victoria Harbour | Relevant WQO for marine water stipulated under the WPCO | No WQO exceedance is induced by the Project | Cleansing contractor will provide scavenging service (floating refuse) in the accessible water area surrounding the ex-Kai Tak Airport runway. Monitoring and audit programme will be implemented to ascertain the runway opening and bioremediation for the sediment at KTAC and KTTS would not result in unacceptable impact. | None |
| Waste Management Implications | | | | | |
| Water quality, air, and noise sensitive receivers at or near the Project site, the waste transportation routes and the waste disposal site. | <p>Main waste: dredged marine sediment with a total volume of approximately 4.57 Mm³ from capital dredging and 0.35 Mm³ once every 5 to 10 years from maintenance dredging</p> <p>Of the sediment to be generated from capital dredging, approximately 3,615,000 m³ was classified as contaminated dredged sediment (Category M and H) and approximately 950,600 m³ was classified as Category L sediment</p> <p>The total volume of dredged sediment generated from 600m runway opening, localized maintenance dredging at KTAC, and immersed tunnel sections of Road T2 and Central Kowloon Route (CKR) are estimated to be approximately 3,200m³, 120,000m³ and 2,260,000 m³ respectively. Sediment to be tested and disposed in accordance with the ETWB TCW No. 34/2002</p> <p>Other wastes: Chemical waste from plant and equipment maintenance during capital and maintenance dredging; and</p> | <ul style="list-style-type: none"> Waste Disposal Ordinance (Cap. 354) Waste Disposal (Chemical Waste) (General) Regulation (Cap. 354) Land (Miscellaneous Provisions) Ordinance (Cap. 28) Public Health and Municipal Services Ordinance (Cap. 132) - Public Cleansing and Prevention of Nuisances Regulation Annexes 7 & 15 of EIAO TM | Not applicable | <ul style="list-style-type: none"> Contaminated dredged sediment (Category M and H) would require either Type 1 – Open Sea Disposal (Dedicated Sites) or Type 2 - Confined Marine Disposal at contaminated mud pit allocated by MFC. Category L sediment is suitable for Type 1 - Open Sea Disposal at gazetted marine disposal ground allocated by MFC. Mitigation measures and good site practices recommended in the EIA report on waste management should be incorporated into the contract document to control potential environmental impact from handling of the identified wastes arising from the Project | None |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|---|--|--|--|--|
| | Total volume of 5,946,250 m ³ of C&D material from construction activities such as site clearance, excavation works, demolition of 600m runway opening, site formation and various civil works for the construction of buildings and infrastructure within the Project boundary. | | | | |
| Land Contamination | | | | | |
| Construction workers during the construction and decommissioning stages. | <ul style="list-style-type: none"> Land contaminations impacts were identified by carrying out land contamination assessment/ comprehensive review of the historical/ current land uses of potential contaminative areas. Specific hotspots within the KTD study area were recognized. Soil contamination identified was mainly organics (TPH, VOCs and SVOCs) and heavy metals (lead, copper, zinc, cadmium, nickel cobalt and arsenic) Free product was observed in 3 groundwater monitoring wells at ex-GFS apron area. | <ul style="list-style-type: none"> EIAO TM; Practice Note for Professional Persons ProPECC PN3/94 "Contaminated Land Assessment and Remediation"; Guidance Notes for Investigation and Remediation of Contaminated Sites of Petrol Filling Stations, Boatyards and Car Repair /Dismantling Workshop; Guidance Note for Contaminated Land Assessment and Remediation; and Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management | <ul style="list-style-type: none"> South Apron of the former Kai Tak Airport, Ex-GFS apron area; Localised spot near Kai Tak Tunnel; Ex-GFS building | <ul style="list-style-type: none"> The contaminated soil identified should be excavated and treated on-site by biopiling and/or solidification / stabilization. Free product should be treated by skimming as recommended in KTA Decommissioning EIA. The recommended environmental mitigation and safety measures, progress monitoring and/or confirmation sampling / testing recommended during the course of remedial works should be implemented. | None |
| Hazard to Life | | | | | |
| Population near the hazardous installations | <ul style="list-style-type: none"> The risk levels of the examined hazardous installations at the assessment year of 2012, 2016 and 2021 to the future occupants of the Project are considered to be in compliance with the risk guidelines and no adverse impact is expected. | <ul style="list-style-type: none"> Annex 4 of EIAO TM | Not applicable | Not applicable | Not applicable |

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|---|---|--|------------------------|--|---|
| Cultural Heritage | | | | | |
| Built Heritage Resources | A desk-based study and a built heritage field survey have been conducted and revealed several heritage resources associated with the former Kai Tak Airport, which include two wind poles, the airport pier, Fire Station A, Fire Station B (and associated pier), Fire Station C, seawall and the runway, the Old Far East Flying Training School, Sung Wong Toi Inscription Rock, Fish Tail Rock, and Kowloon Rock. The heritage significance of the Old Far East Flying Training School and Fish Tail Rock are moderate. The heritage significance of the Sung Wong Toi Inscription Rock is high. The heritage significance of the other examined heritage resources are low. No mitigation is required for the examined heritage resources except appropriate protective measures for the structures within the site of Old Far East Flying Training School during any laying of services in its vicinity and protective measures for the Sung Wong Toi Inscription Rock in case of relocation. | <ul style="list-style-type: none"> Criteria for Cultural Heritage Impact Assessment | Not applicable | Not applicable | Not applicable |
| Terrestrial Archaeological Resources | The remains of the Longjin Pier and sherds from Sung Dynasty were recovered at two locations in the North Apron area. | <ul style="list-style-type: none"> Criteria for Cultural Heritage Impact Assessment Guidelines for Handling of Archaeological Finds and Archives | Not applicable | <ul style="list-style-type: none"> Further archaeological investigation and rescue excavation will be undertaken at location with sherds from Sung Dynasty. Whereas for Longjin Pier, preservation in situ of all identified sections of the Longjin Pier as part of the KTD is recommended after the completion of further archaeological investigation. | Once further archaeological investigation at location with sherds from Song dynasty and subsequent rescue excavation have been completed, there will be no residual impacts from terrestrial archaeology. Once further archaeological investigation for Longjin Pier has been completed and all identified sections of the Longjin Pier have been preserved in-situ there will be no residual impacts from terrestrial archaeology. |
| Marine Archaeological Resources | Destruction of marine archaeological resources by dredging | <ul style="list-style-type: none"> Guidelines for Marine Archaeological investigation | Not applicable | <ul style="list-style-type: none"> Monitoring of dredged material | None |

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|--|---|--|------------------------|--|--|
| Landscape and Visual | | | | | |
| Landscape Resources, Landscape Character Areas, Visual Sensitive Receivers | <ul style="list-style-type: none"> Based on a very broad brush estimate, approximate 2,250 existing trees will be affected by Kai Tak Development. Approximate 5,000 nos. of trees will be planted within new open spaces and approximate 1,000 nos. of trees will be planted for new distributor roads to compensate for the loss of existing trees. A total of approximately 89.5 ha of open space will be provided within the development. These open spaces are well connected within the development and to the adjacent surrounding districts. The overall residual impact on open space system is considered acceptable with mitigation measures. The overall landscape character of the area will be dramatically changed from a flat open area with various temporary uses to a high-rise contemporary development with sports and entertainment nodes. The overall residual impact on LCAs is considered acceptable with mitigation measures. There will unavoidably be moderate residual impact on the residential VSRs at high rise buildings in To Kwa Wan, Kowloon City, San Po Kong, Kowloon Bay and Kwun Tong. Overall, it is considered that the landscape and visual impact due to the Kai Tak Development is considered to be acceptable with mitigation measures | <ul style="list-style-type: none"> Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). EIAO Technical Memorandum on EIA Process (EIAO-TM) Annex 10 and Annex 18 ETWB 2/2004 ETWB 3/2006 | Not applicable | <ul style="list-style-type: none"> All existing trees shall be carefully protected during construction. Trees unavoidably affected by the works shall be transplanted where practical. Detailed transplanting proposal will be submitted to relevant government departments for approval in accordance with ETWBC 2/2004 and 3/2006. Final locations of transplanted trees shall be agreed prior to commencement of the work. Control of night-time lighting. Erection of decorative screen hoarding. <p>Operation Phase</p> <ul style="list-style-type: none"> Compensatory tree planting should be incorporated into the proposed projects where trees are affected. Tall buffer screen tree planting should be incorporated to soften hard engineering structures. Sensitive streetscape design should be incorporated along all new roads to reflect the new urban development in Kai Tak. Structure and ornamental tree planting should be provided along roadside amenity strips and central dividers to enhance the townscape quality, where space is available. Aesthetically pleasing design as regard to the form, material and finishes shall be incorporated to all engineering structures and infrastructure facility buildings. | None |

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|---|--|--|------------------------|--|--|
| Ecological Impact | | | | | |
| Ecological resources at and near the Project area | <p><u>Terrestrial Ecology</u></p> <ul style="list-style-type: none"> Permanent loss of 202.7 ha of wasteland, 15.8 ha of plantation/grassland mosaic in the former Kai Tak Airport. These affected habitats are considered of very low ecological values. Permanent and temporary loss of 0.7 km and 1.6 km artificial coastline at the KTAC and part of the runway area. With provision of new artificial coastline after the construction phase, permanent loss of short length (~4%) of this habitat is not expected to cause significant adverse impact to the existing waterbird population under the Project. Direct removal of about 2250 existing trees of common species within the Project area. Indirect disturbance impact to nearby highly disturbed developed area and associated wildlife during construction and operation phases. Potential secondary impact on waterbirds due to reduction of food available by deterioration of marine water quality during the construction works. Such impact is considered as minor and acceptable in view of its temporary nature and presence of similar alternative feeding area in the vicinity of Assessment Area. | <ul style="list-style-type: none"> Environmental Impact Assessment Ordinance (EIAO) (Cap. 499). EIAO Technical Memorandum on EIA Process (EIAO-TM) Annex 8 and Annex 16 EIAO Guidance Note No. 3/2002 EIAO Guidance Note No. 6/2002 EIAO Guidance Note No. 11/2004 Wild Animals Protection Ordinance (Cap. 170) Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) Town Planning Ordinance (Cap.131) The Marine Parks Ordinance (Cap.476) and Subsidiary Legislation The Country Parks Ordinance (Cap. 208) The Forests and Countryside Ordinance (Cap. 96) The Marine Fish Culture Ordinance (Cap.353) | Not applicable | <ul style="list-style-type: none"> As far as possible, implementation of compensatory planting of similar composition of native trees and vegetation within the Project area should be provided at a ratio not less than 1:1 in terms of quality and quantity after the construction works Coral translocation of directly affected colonies, as far as practicable, to avoid and minimize direct loss of this fauna of conservation interest Water quality control measures such as installation of silt curtains around dredger(s) and use of closed grab dredger to minimise indirect impact on marine life due to change of water quality. Re-construction of new seawalls to provide large area of hard substrate for re-colonization of existing intertidal and subtidal assemblages after the construction works. | <ul style="list-style-type: none"> Permanent loss of 202.7 ha wasteland, 15.8 ha plantation/grassland mosaic habitats of very low ecological values Permanent loss of 0.7km of artificial coastline / seawall habitat of low ecological value. |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|--|--|---|------------------------|--|--|
| | <p><u>Marine Ecology</u></p> <ul style="list-style-type: none"> Direct impacts to the marine ecological resources would include temporary loss of approximately 74.4 hectares of soft bottom and subtidal habitat and about 1.6km of artificial intertidal habitat as well as permanent loss of about 0.7 km long of artificial intertidal habitat. All the marine habitats and associated marine life that would be directly lost are all of very low ecological values and taking into account of all the mitigation measures proposed including coral translocation and provision of newly constructed seawalls, such impact is considered as minor. Indirect impacts on the marine ecology would be associated with changes of water quality due to dredging activities. Considering that the benthic, intertidal and subtidal communities identified in the Project area are of generally very low ecological value and in view of the temporary nature of such impact, only minor indirect impact on marine resources is anticipated. | <ul style="list-style-type: none"> The Protection of the Harbour Ordinance (Cap.531) The Water Pollution Control Ordinance (Cap.358) International Union for Conservation of Nature and Natural Resources (IUCN) 2006 Red Data Books The PRC National Protection Lists of Important Wild Animals and Plants | | | |
| Fisheries Impact | | | | | |
| Fisheries resources at and near the Project area | <ul style="list-style-type: none"> The Project will result in the temporary loss of about 74.4 hectares of fishing area. In view of the small size of affected area, temporary and insignificant loss of fisheries production and low impact on fishing activities, fisheries impacts due to direct loss of fishing area within the dredging area is considered as minor and acceptable. | <ul style="list-style-type: none"> EIAO-TM Annex 9 and Annex 17 Fisheries Protection Ordinance (Cap. 171) Marine Fish Culture Ordinance (Cap. 353) The Water Pollution Control Ordinance (Cap.358) | Not Applicable | No necessary fisheries-specific mitigation measures would be required. | <ul style="list-style-type: none"> Temporary loss of 74.4 hectares of fishing area. |

| Sensitive Receivers / Assessment Points | Impact Prediction Results | Relevant Standards / Criteria | Extents of Exceedances | Impact Avoidance Measures / Mitigation Measures | Residual Impacts (After Implementation of Mitigation Measures) |
|---|--|---|------------------------|---|--|
| | <ul style="list-style-type: none"> Indirect impacts on fisheries resources would be associated with changes of water quality due to dredging activities. In view of the temporary and localised nature of such impact, only minor impact on capture fisheries resources is anticipated. No impact on culture fisheries resources is anticipated as the nearest FCZs Tung Lung Chau and Ma Wan are over 8km and 10km away from the project area respectively. No operational phase impact on fisheries resources are expected to result from operation of the project as all construction works would take place within the existing land limits of the Kai Tak Development site and no structures would extend beyond these land limits. In addition, fishing activity will not be restricted in the sea area (turning area) off the cruise ship terminal and public landing steps cum fireboat berth during the operation of the project. | | | | |
| Sewerage and Sewage Treatment Implications | | | | | |
| Existing and planned sewerage system, sewage treatment and disposal facilities. | No adverse impact on the existing and planned sewerage system, sewage treatment and disposal facilities by the project are identified. | EIAO Technical Memorandum on EIA Process (EIAO-TM) Annex 14 | Not Applicable | No necessary mitigation measures would be required. | None |