20 SUMMARY OF ENVIRONMENTAL OUTCOMES

20.1.1 The major environmentally sensitive areas within the study area include the existing urban districts surrounding the former Kai Tak Airport, the planned development within Kai Tak, the seawater intakes and coral communities at the waterfront of the Victoria Harbour. With the implementation of the proposed environmental control and mitigation measures, the air, noise and water quality sensitive receivers within the study area would be protected from adverse environmental impacts arising from the proposed Project. A summary of the key environmental outcomes arising from the EIA study and environmental benefits of the environmental protection measures are presented in **Table 20.1** below.

Table 20.1 Summary of Key Environmental Outcomes / Benefits

Issue	Environmental Outcome / Benefits
Major environmental benefits of the Project	With the vision to create a distinguished, vibrant, attractive and people-oriented Kai Tak by Victoria Harbour, the key components of KTD shown on the RODP has adopted the principle to achieve economic, social and environmental sustainability in its preparation. In terms of environmental quality, the RODP would provide extensive open space and contribute to the area-based significant landscape features of the territory.
Environmentally friendly designs recommended	Environmental friendly transport modes are proposed to operate as a major internal mode of transport within KTD. The Environmentally Friendly Transport System (EFTS) will provide shuttle/feeder services between the SCL Kai Tak Station and Tourism Node for the residents and visitors of KTD. The EFTS will also provide shuttle service between the PTI at Kwun Tong Ferry Pier and the Tourism Node to enhance the connectivity between the former Runway and the hinterland on Kwun Tong side. With the adoption of EFTS, it is expected that there will be benefits on the environment from savings in fuel consumption and the efficiency in energy usage would also be increased. Major renewable energy such as hydropower and wind power will not be adopted in KTD. Nevertheless, environmental friendly initiatives such as District Cooling System (DCS) is proposed, which is subject to further study. If DCS is adopted, it is expected to contribute to the principle to promote the sustainable use of natural resources to minimize its ecological footprint through improving consumption efficiency.
Key environmental problems avoided	KTD itself is bounded by major instinctive constraints. Due to the high volume of traffic in existing roads like Prince Edward Road East (PERE) and Kwun Tong Bypass (KTB), the resultant traffic emissions in terms of exhaust air and noise limit the development potential of the site. On this basis, less sensitive uses such as commercial developments have been located along PERE, KTB and district distributors as shown in the RODP in order to provide a better environment. Meanwhile, grid patterns have been adopted in the Grid Neighbourhood and Runway Precinct. For the Grid Neighbourhood, 10m pedestrian streets have been designed around small development parcels to capture the prevailing wind. For the Runway Precinct, a 30m wide central boulevard is designed as its breezeway.

Issue	Environmental Outcome / Benefits
Population and Environmentally Sensitive Areas Protected	The major environmentally sensitive areas within the study area include residential buildings, commercial buildings, hotels, recreational areas, and educational institutions at Kai Tak Development. The population within the study area is approximately 85,400. With the implementation of the proposed control and mitigation measures, the air, noise and water quality sensitive receivers within the study area would be protected from adverse environmental impacts arising from the Project during both construction and operational phases. The population and environmental sensitive receivers protected, compensation areas included, and the environmental benefits of environmental protection measures recommended with respect to each environmental issue are summarized below.
Air Quality Impact	**Environmental benefits of environmental protection measures recommended:** ASRs identified near the construction sites are protected through implementation of dust suppression measures i.e. regular watering during construction phase. No unacceptable residual impacts from the emissions of road traffic, cruise terminal, industrial chimney, and the proposed hospital and heliport are anticipated at the existing and future ASRs. 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. With the implementation of the proposed odour mitigation measures, the predicted odour levels in the vicinity of KTAC would be reduced significantly. However, some exceedances of the odour criterion are still predicted at the representative ASRs under the worst case condition. 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. Monthly (from July to September) monitoring of odour impacts, for a period of 2 years, is proposed during the operational phase of the Project to ascertain the effectiveness of the proposed mitigation measures over time, and to monitor any on-going odour impacts at the ASRs. **Compensation areas included:** N/A **Population and environmental sensitive receivers protected:** Existing ASRs & planned developments, including residential, commercial and recreational areas within 500m from Project boundary.

Issue	Environmental Outcome / Benefits
Noise Impact	**Environmental benefits of environmental protection measures recommended:** NSRs are protected with implementation of quiet PME, movable barriers and full enclosure as well as good site practices during construction stage. The predicted mitigated noise levels complied with the noise standards at all NSRs except N4, N5, N11, N13, N14, N20B, N21, N23, N27, N28 & PN2. However, some of these affected NSRs are schools (N4, N5, N11, N13, N23, N27 and N28) and they all have been noise insulated with air conditioners. By keeping the windows closed during construction activities, noise impacts at the indoor environment of these NSRs can be avoided. Notwithstanding this, it is recommended that the particularly noisy construction activities should be scheduled to avoid examination periods of these NSRs as far as practicable. The following mitigation measures would be recommended for operational traffic noise: • Low noise surfacing for the section of Road L2 in front of Site 1B1 • Low noise surfacing for the section of Road L4 in front of Site 1I1 • Setback of buildings about 5m to the southwest direction from the site boundary of Site 1I1 • Setback of buildings about 5m to the northwest direction from the site boundary of Site 1L2 • Setback of buildings about 35m to the northwest direction from the site boundary of Site 1L3 • Building setback at site 2B6 and no openable window facing to the Road L16 or section of existing roads in Kowloon City area. • Avoid any sensitive facades with openable window facing the existing To Kwa Wan Road or 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 at Site 5A4. • 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 for the surrounding new local roads to minimise the potential traffic noise impacts from the slip road at Ex-San Po Kong Flatted Factory. The residual noise exceedances at the representative NSRs are due to the existing roads. 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 any of the representative NSRs.

Issue	Environmental Outcome / Benefits
	Acoustic louvers and silencer were proposed for air supply fans/extraction fans of sewage pumping stations, ESS and ventilation buildings, no residual operation noise impact is anticipated. **Compensation areas included:** N/A **Population and environmental sensitive receivers protected:** Existing and planned NSRs within 300m of the project boundary, including residential premises, schools, homes for the aged and institutional uses.
Construction Phase Water Quality Impact	**Environmental benefits of environmental protection measures recommended:** Implementation of the proposed mitigation measures including use of closed grab dredging, the deployment of silt curtains at appropriate dredging areas, and installation of silt screens at selected seawater intakes along the water front of Victoria Harbour would reduce the predicted water quality impact to an acceptable level. **Compensation areas included:** Not required. **Population and environmental sensitive receivers protected:** Seawater intakes along the waterfront of Victoria Harbour and corals identified in Junk Bay, Green Island and Cape Collinson (refer to Figure 8.2).
Operational Phase Water Quality Impact	**Environmental benefits of environmental protection measures recommended:** The proposed 600 m opening at the former airport runway would substantially improve the water quality in the KTD area. **Compensation areas included:** Not required. **Population and environmental sensitive receivers protected:** Seawater intakes along the waterfront of Victoria Harbour and corals identified in Junk Bay, Green Island and Cape Collinson (refer to Figure 8.2).

Issue	Environmental Outcome / Benefits
Waste Management Implications	**Environmental benefits of environmental protection measures recommended:** Implementation of the proposed waste control and mitigation measures (refer to Section 9.5 for details) would avoid the potential water quality, dust, odour, and noise impacts associated with handling, transportation and disposal of the identified wastes arising from the Project. **Compensation areas included:** Not required (no adverse waste impact is predicted after implementation of the mitigation measure). **Population and environmental sensitive receivers protected:** Water quality, air, and noise sensitive receivers at or near the Project site, the waste transportation routes and the waste disposal site.
Land Contamination Impact	**Environmental benefits of environmental protection measures recommended:** To minimise (1) the potentially adverse effects on the health and safety of construction workers and (2) the impacts arising from the handling of potentially contaminated materials. After the necessary remediation actions were undertaken at the contaminated areas confirmed by site investigation, no adverse residual impact in respect of land contamination would be anticipated. **Compensation areas included:** Not required. **Population and environmental sensitive receivers protected:** Construction workers during the construction and decommissioning stages. Future users/occupants of the contaminated areas.
Hazard to Life	**Environmental benefits of environmental protection measures recommended:** 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. **Compensation areas included:** Not required (no unacceptable risk predicted). **Population and environmental sensitive receivers protected:** N/A

Issue	Environmental Outcome / Benefits
Impact on Cultural Heritage	**Environmental benefits of environmental protection measures recommended:** 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. 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 large quantities of sherds from Sung Dynasty were recovered at two locations in the North Apron area. 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. 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. **Compensation areas included:** N/A **Population and environmental sensitive receivers protected:** N/A
Landscape & Visual Impact	**Environmental benefits of environmental protection measures recommended:** 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.

Issue	Environmental Outcome / Benefits
	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. 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. **Compensation areas included:** 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. **Population and environmental sensitive receivers protected:** Landscape resources, landscape character areas and visual sensitive receivers at and near the Project site.
Ecological Impact	**Environmental benefits of environmental protection measures recommended:** All the terrestrial and marine habitats and associated flora and fauna that would be directly impacted due to this Project are all of generally very low ecological values. However to protect the coral colonies that would be directly affected by the project they would be translocated, as far as practicable, to nearby suitable habitat. Water quality control measures would minimise indirect impact on marine habitats and associated life due to change of water quality. **Compensation areas included:** Direct removal of individual trees under the Project will be mitigated by compensatory planting of similar native species at not less than 1:1 ratio in terms of quality and quantity. Re-construction of new seawalls will be provided as another measure to recover temporary loss of artificial seawall habitats during the construction phase. **Population and environmental sensitive receivers protected:** Ecological resources at and near the Project area.

Issue	Environmental Outcome / Benefits
Fisheries Impact	**Environmental benefits of environmental protection measures recommended:** 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. Water quality control measures as described above would act to protect fisheries resources from indirect impacts associated with a deterioration of water quality during construction works and thus no significant adverse impacts resulting from the project are expected. No operational phase impacts on fisheries resources are expected to result from operation of the project. No fisheries specific mitigation measures are proposed. **Compensation areas included:** Not required (no significant adverse fisheries impact is predicted). **Population and environmental sensitive receivers protected:** No significant adverse impact is predicted but water quality control measures offer an added protection to fisheries resources at and near the Project site.
Sewerage and Sewage Treatment Implications	**Environmental benefits of environmental protection measures recommended:** No adverse impact on the existing and planned sewerage system, sewage treatment and disposal facilities by the project are indentified. Hence, the potential impacts on the environment due to the sewage generated from KTD to the sewerage facilities shall be minimal. No mitigation measures are proposed. **Compensation areas included:** Not required. **Population and environmental sensitive receivers protected:** Not required.