16.3 Water Quality Impact

16.3.1 Implementation of mitigation measures reduces the water quality impacts arising from the construction and operational phases of the development. The remaining water quality impacts after implementation of mitigation measures are referred to as residual impacts.

16.3.2 The reduction in cross-sectional area in the harbour after reclamation would slightly increase the current speeds and reduce the quantity of flow passing through the harbour. Based on the model predictions, the resulting hydrodynamic and water quality would not be adversely affected by the SEKD.

16.3.3 The existing water quality in Victoria Harbour exceeds the WQO values for some parameters monitored by EPD. The background level of TIN is high. The predicted water quality condition also showed high TIN concentrations in the harbour. It is not likely that the SEKD would increase the exceedances of the WQO for TIN. In fact, the water quality in the harbour would be improved in 2016 as the pollution flows and loads entering the harbour would be reduced.

16.3.4 Diversion of flows from the KTAC to Kowloon Bay would increase the pollution loads in the Kowloon Bay area. Redistribution of pollutants from the low flushing capacity area at KTAC to the relatively high flushing capacity area at Kowloon Bay would enhance the dispersion and dilution of pollutants. The option of adopting the shortest route of the KTN diversion is not likely to cause unacceptable water quality changes in TKWTS. The proposed fall back option of diverting the flows away from TKWTS provides an alternative to further prevent deterioration of water quality in the typhoon shelter.

16.3.5 The discharges from cooling water for air-conditioning would have little impact on the nearby sensitive receivers. The area of influence as a result of the increases in water temperature and anti-fouling chemicals would be in the close proximity of the discharge point.

16.3.6 The modelling results indicated no adverse water quality impacts on the nearby water quality sensitive receivers as a result of storm and emergency overflows from KTPTW and TKWPTW.

16.3.7 Implementation of mitigation measures would minimise the water quality impacts arising from the construction and operational phases of the SEKD. With the inclusion of suitable mitigation measures in the Environmental Monitoring and Audit programme, the potential water quality impacts are expected to be within acceptable levels. There would be no insurmountable water quality impacts to the environment due to the proposed development.

16.4 Sediment Contamination Impact

16.4.1 Three reclamation options including the no dredged, dredge for ex-situ treatment and minimum dredged reclamation options have been proposed in this section. It has been demonstrated that these reclamation options are technically feasible.

16.4.2 The vertical sea wall is usually constructed with large concrete blocks, filled with sand and founded on dredged seabed. The soft materials at the base may have to be removed to ensure the stability of the sea wall. The sloping sea wall, in its simplest form, is usually constructed with quarry-run rockfill core with blocks at the seaward side for erosion protection. The marine deposits are dredged to provide a suitable foundation. In both cases, despite the removal of the soft marine deposits, stability may remain a problem due to trapped marine deposit beneath the reclamation, giving weak planes for slip surfaces; and inadequate shear strength in the alluvial clay.