

## 1. Introduction

- 1.1 The purpose of this report is to present the findings of the Drainage Impact Assessment (DIA) that has been carried out for the proposed development of the Desalination Plant at Tseung Kwan O (TKO) Area 137.
- 1.2 TKO Area 137 is located to the south of the Southeast New Territories (SENT) Landfill and the Tseung Kwan O Industrial Estate. To its east is the Clearwater Bay Country Park. The site is on reclaimed land which was reclaimed between 1998 and 2000 with no permanent major infrastructure built in and around the proposed site.

## 2. Drainage Impact Assessment

- 2.1 The assessment is conducted to identify, assess and mitigate potential adverse drainage impacts arising from the proposed development of the Desalination Plant. The design criteria for this assessment are based on standards as set out in the Stormwater Drainage Manual (SDM) of Drainage Services Department.
- 2.2 A 50-year design return period is recommended for the design of urban drainage branch system and a 200-year design return period is assessed for the urban drainage trunk system to ensure adequacy of the stormwater drainage system. The design criteria for flood level depend on a combination of rainstorm event and tidal level, as well as the catchment characteristics.
- 2.3 The proposed development of the Desalination Plant would have the following hydraulic impact on the downstream stormwater drainage system:
  - a. Change in land use from new reclamation to GIC would increase the amount of runoff entering into the stormwater drainage system.
  - b. Change in formation level and cross-fall in the study area would alter the overland flow pattern and discharge point into the stormwater drainage system.
  - c. Formation of the proposed desalination plant would cut off the flow of the existing drainage channels, which would result in ponding at some low-lying area
- 2.4 The existing open channel within the site will be demolished and drainage works involving underground drains and U-channels installed to convey the stormwater runoff from the surrounding catchments and runoff generated from the low-lying areas to the existing box culvert.
- 2.5 Internal underground drainage system would be constructed to collect the runoff within the plant to the downstream existing box culvert to avoid potential contamination of seawater in the intake system area from stormwater discharge. Desilting facilities should be provided at strategic locations along the Sites before discharging into stream courses or permanent drainage systems.

## 3. Conclusion

- 3.1 The results of this DIA reveal that the proposed development of the desalination plant with implementation of the mitigation measures proposed will not pose any significant adverse impact on the existing drainage system.