

## Appendix 5.21 Key Assumptions for Compiling Non-Point Source Pollution from Surface Runoff

### Quantification of Surface Run-off

According to the "DSD Stormwater Drainage Manual", annual rainfall in Hong Kong is around 2200 mm. The EPD study namely "Update on Cumulative Water Quality and Hydrological Effect of Coastal Developments and Upgrading of Assessment Tool (Update Study)" suggested that only rainfall events of sufficient intensity and volume would give rise to run-off and that run-off percentage is about 44% and 82% for dry and wet season, respectively. Therefore, it is assumed that only 1386 mm of 2200 mm annual rainfall would be considered as effective rainfall that would generate construction site run-off (i.e.  $1386\text{mm} = 2200\text{mm} \times (82\% + 44\%) / 2$ ).

More surface run-off would be generated from the paved area and less from the unpaved area. The Project will add about 990m<sup>2</sup> additional paved area to the Project site. Assuming 0.9 as the run-off coefficient for paved areas while 0.3 as the run-off coefficient for unpaved surface, the average daily run-off generated under the Project is estimated to be about 3.38 m<sup>3</sup> /day (=  $0.9 \times 1386\text{mm}/\text{year} \times 0.00099\text{km}^2$ ). According to the Update Study, the typical concentration of suspended solids, biochemical oxygen demand, ammonia nitrogen, organic nitrogen, total nitrogen and total phosphorus in Hong Kong stormwater run-off would be 43.3 mg/L, 22.5 mg/L, 0.2 mg/L, 1.2 mg/L, 1.8 mg/L and 0.2 mg/L respectively. These typical run-off concentrations were applied to the daily run-off as mentioned above to estimate the non-point source pollution.