Abstract

The New Priority Classification Systems (NPCS), developed by the GEO (Wong, 1998), provide a basis for ranking old man-made slope features for further action. Under the NPCS, different facilities affected by landslides are classified under a 5-tier grouping system in terms of consequence to life. High-speed mass transportation facilities, e.g. Kowloon-Canton Railway (KCR) and Mass Transit Railway (MTR) currently fall within Facility Group No. 2.

This paper describes the methodology formulated for the landslide consequence classification of high-speed mass transportation facilities using quantitative risk assessment (QRA) techniques. Fatal train incidents and landslip incidents affecting railway tracks are reviewed, and the characteristics of the current railway operations in Hong Kong are considered in the assessment. The methodology was applied to KCR East Rail and MTR Lantau and Airport Railway. The estimated probable average fatalities for KCR and MTR systems, given the occurrence of a reference landslide (taken to be a 10 m-wide failure of 50 m³ in volume), suggest that the current facility grouping assigned for mass transportation facilities (i.e. Group 2) is appropriate.