

For Discussion

Legislative Council Panel on Transport

Emergency Works for Public Roads During Typhoon and Rainy Season

Purpose

This paper sets out the arrangements and procedures for handling emergency works for public roads by the Highways Department (HyD) during the typhoon and rainy season.

Background

2. Hong Kong is most likely affected by rainstorm and tropical cyclones in the period around May to September each year. Because of its hilly terrain, gale-force wind and torrential rain brought about by such severe weather conditions make Hong Kong particularly susceptible to fallen objects, landslides and flooding. Notwithstanding the efforts of the Administration to bolster our resilience against the severe weather impacts by adopting preventive measures such as landslip prevention and drainage improvement works throughout the territory in the past decades, it is unavoidable that exceptional weather would cause emergency incidents from time to time.

3. As far as public roads are concerned, fallen objects, landslides and flooding can cause blockages at road sections and in turn affect the operation of the road, and the impact will be more serious if the roads are also damaged as a result. At major routes, such blockages may affect essential logistical services to widespread areas, or even cause traffic chaos if the problem cannot be handled in a timely manner. Being responsible for the maintenance of the over 2 000 km of public roads and the 12 500 slopes along such roads, HyD plays a leading role in handling the necessary emergency works.

HyD Responsibilities

4. The aim of HyD's handling of emergency works on public road is to keep the road network open for public service at all times, and to facilitate the swift deployment of inspection and recovery services during emergencies. In particular, when the rainstorm or typhoon condition is called off, the road

network has to be operational to enable the territory to resume business as usual as soon as possible. The works performed by HyD in this regard mainly include the following aspects –

- (a) clearance of blocked public roads and/or emergency repair of damaged public roads;
- (b) handling of landslips occurring at roadside slopes¹;
- (c) coordination of repairs to utilities; and
- (d) clearance or repair of road drainage or roadside slope drainage systems to enable flooding to subside.

5. Apart from its dedicated duties relating to the maintenance of public roads, HyD also provides support to the other departments in their handling of emergency incidents, including the saving of lives and protection of properties, within the resources of the Department during such severe weather conditions.

Prevention of Emergency

6. Well appreciating the importance of prevention in dealing with emergency, and taking into account the problems encountered on public roads during rainstorms and typhoons in the past, HyD carries out the following preventive measures with the aim of minimizing the possible occurrence of problems on public roads during severe weather conditions –

- (a) regularly inspects public roads and roadside slopes and arranges timely repair works;
- (b) regularly cleanses road and slope drainages and identifies road flooding blackspots for necessary improvement works;
- (c) conducts regular vegetation maintenance operation at roadside slopes and expressways (such as pruning of tree crowns and firming up of tree stakes) to ensure road safety;
- (d) patrols public roads after hoisting of Tropical Cyclone No. 3 Signal and arranges removal of fallen trees or other small objects on the carriageway; and
- (e) stations plant and standby gangs for handling emergency cases.

¹ In incidents involving landslips (including boulder fall and rockfall), specialist advice will be sought from the Geotechnical Engineering Office of the Civil Engineering and Development Department, which is responsible for advising Government departments on potential dangers due to landslip incidents, and on measures to deal with them.

Preparedness for Emergency

7. To handle emergency works systematically and efficiently, HyD sets up Emergency Control Centres (ECCs) that are activated during severe weather conditions². At present, HyD has four ECCs (namely Hong Kong, Kowloon, New Territories and Tsing Ma and Tsing Sha Control Areas) to coordinate the emergency works on public roads. Engineering and technical staff are required, in addition to their normal duties, to stand by round-the-clock on a roster basis so that they are ready for emergency duties, during or outside office hours, as and when the ECCs are activated. To ensure that all staff concerned are familiar with the duties and procedures associated with emergency incidents, HyD has prepared an Emergency Handbook and training materials for officers' reference, and also arranges briefings for these officers from time to time.

8. Apart from the internal team within the Department, HyD also engages nine term maintenance contactors to provide, among other normal maintenance works, operational and manpower support to the emergency works of HyD on a round-the-clock basis. Each contractor is responsible for a specific geographical location and is required to maintain prescribed numbers and types of mechanical equipment to deal with emergency services³. In severe weather conditions, mobile gangs provided by these contractors will carry out patrol along major roads to remove fallen trees or other small objects on the carriageway. If necessary, HyD will also call upon the resources of its capital works project contractors in the vicinity of the incident site to assist in the emergency works.

Handling of Emergency Incidents

9. During typhoons or rainstorms when the ECCs are activated, the centres receive reports of emergency incidents from other Government Departments (including the Police and the Transport Department (TD)), the mobile gangs of HyD's contractors or the public via the Integrated Call Centre. Internally, appropriate Directorate officers who act as the controllers of ECCs will be notified immediately of serious incidents, in which case they will closely liaise with the Director or Deputy Director for speedy direction as necessary.

² The ECCs shall be activated whenever –

- a Tropical Cyclone No. 8 signal or higher;
- a Rainstorm Red Warning or Black Warning;
- a Landslip Warning; or
- Earthquake Intensity VI or above comes into effect.

³ Such equipment includes general construction plant such as mobile cranes, diggers and dump trucks, as well as special plant for road works such as paving machines and rollers. The equipment is stationed at 24 depots at strategic locations to facilitate swift deployment to incident sites.

10. The ECCs also work in tandem with the 24-hour Emergency Transport Co-ordination Centre of the TD to inform the latter of incidents that would seriously affect traffic. Moreover, the ECCs also provide support to the overall handling of emergency incidents within the Administration through the provision of regular reports during their operation, on top of the actual support provided by HyD to other departments in their handling of emergency incidents (as mentioned in paragraph 5 above).

11. Upon receiving report of an incident during ECC operation, HyD staff will ascertain the nature, location, scope and traffic impact of the incident. This will enable them to arrange resources for emergency works, and inform the relevant contractor(s) to standby or mobilize emergency plant/materials accordingly. For major emergency incidents, HyD staff will also attend incident sites⁴.

12. At the incident site, HyD staff will act as the focal point of contact between the ECC and contractor's emergency works team. They will decide and arrange for contractor for the necessary emergency works to be put into effect. Where necessary, HyD will arrange for the contractor to cordon off the incident site to safeguard the safety of road users during the road works. HyD will keep the Police and TD informed of the progress of emergency works and work closely with them to devise the temporary traffic and public transport services diversion when necessary.

13. During the emergency works, HyD officers will maintain close supervision to ensure the contractor(s) make available sufficient human and plant resources for completion of the works as early as possible. The contractors will also be required to provide a best-endeavour estimation of the time required to complete remedial works (including the resurfacing or cleaning of road debris before re-opening) such that overall traffic impact can be assessed, while HyD staff will monitor the progress of the emergency works. HyD staff will also assist Police officers and representatives from other relevant works departments, TD or utility undertakers to decide on other necessary actions with a view to re-opening the road to traffic as soon as possible.

⁴ HyD staff are required to arrive at the scene within specified timeframe : during office hours, within 1 hour for urban area and New Towns and 2 hours for the remaining parts of the New Territories and Lantau Island; and for outside office hours, within 2 hours and 3 hours respectively.

Continuous Improvement

14. HyD is committed to continuously improving its emergency response system to enhance the services and the quality of the works. In this regard, the department is already making use of 3G data transmission technology in communication between site and office support to facilitate viewing instant site situation for advice, decisions or reporting. A computer mapping system containing information of HyD-maintained facilities and utilities is also used by frontline staff to quickly retrieve information in the course of the emergency works. The department will continue to review new technologies for incorporation into the handling system, as appropriate.

Highways Department
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