LCQ2: Coping with natural disasters

Following is a question by the Hon Tony Tse and a reply by the Secretary for Security, Mr Tang Ping-keung, in the Legislative Council today (August 18):

Question:

From the 20th to the 21st of last month, Henan Province was hit by record-breaking severe rainstorms, which caused serious flooding. Some underground railway conduits and road tunnels in Zhengzhou City, the provincial capital, were inundated, resulting in a number of casualties and serious economic loss. Some members of the public are worried that natural disasters of similar magnitude caused by extreme weather may occur in Hong Kong. In this connection, will the Government inform this Council:

(1) of the early alert, contingency and rescue measures in place in Hong Kong for coping with various types of natural disasters (e.g. flooding caused by severe rainstorms);

(2) of the requirements and guidelines formulated by the Government on the flood prevention measures for and the flood discharge capacity of underground facilities (including railways, road tunnels, pedestrian subways, basement shopping arcades and car parks), as well as those on the criteria for suspension of operation and the evacuation arrangements of such facilities during flooding; and

(3) whether the Government will, in collaboration with the relevant organisations, review and improve the measures, requirements and guidelines mentioned in (1) and (2), with a view to reducing the casualties and economic loss caused by natural disasters?

Reply:

President,

The infrequent torrential rainstorms leading to severe flooding in Henan Province last month has once again demonstrated the importance of our preventive measures against natural disasters.

Natural disasters that occur in Hong Kong are generally the result of severe weather conditions such as heavy rain, storm surges and tropical cyclones. Not only would these events pose threats to life and property, but they can also result in considerable disruption to transport and other essential services. With global warming, sea-level rise and the expected increase in adverse weather conditions, the Government conducted an inter-departmental review after Super Typhoon Mangkhut with a view to improving relevant mechanisms and capabilities to deal with the challenges brought about by extreme weather conditions and protecting the life and property of Hong Kong citizens.

Having consulted the relevant bureaux and departments, we set out below our consolidated reply to the questions raised:

(1) The Hong Kong Observatory (HKO) is responsible for monitoring weather conditions, and issuing warnings for inclement weather conditions. For instance, when heavy rain exceeding 70 millimetres per hour has fallen or is expected to fall generally over Hong Kong and is likely to continue, HKO will issue the Black Rainstorm Warning Signal to alert members of the public to serious road flooding and traffic congestion that may be caused by the heavy rain, and to remind government departments, major public transport operators and public utility companies, and more, to implement contingency measures.

Regarding response, the Government will act in all the stages of preparedness, response and recovery in accordance with the Contingency Plan for Natural Disasters to guard against the natural disasters by enhancing situation assessment in the early stage, devising the response strategy and plan as well as redeploying resources and manpower timely. In the event of a major natural disaster, the Security Bureau will immediately activate the Emergency Monitoring and Support Centre to provide a more comprehensive response.

With regard to rescue operations, they are mainly carried out by the emergency services such as the Fire Services Department (FSD), the Hong Kong Police Force (HKPF) and the Government Flying Service (GFS), with the support from other departments and agencies such as Civil Aid Service.

Departments responsible for carrying out rescue operations will make the best use of technology to improve the efficiency of rescue efforts. For example, the FSD and HKPF have procured unmanned aircraft systems in recent years to help personnel locate the search and rescue area. Regarding rescue equipment, the FSD has equipped its frontline duties with various related items, including multi-purpose suits, personal flotation devices, reach and rescue poles and inflatable rescue boats. The GFS's seven new H175 helicopters have been fully operational since Q3 2019. The new helicopters are equipped with better search and rescue and medical equipment. In addition to improving flight safety, they have also enhanced the search and rescue capability, endurance and the loading capacity of the helicopter fleet.

(2) The Transport Department (TD) has formulated a set of comprehensive contingency plans to handle various emergency situations happening at major transport infrastructures such as railways and road tunnels. In the event of an emergency, TD's Emergency Transport Coordination Centre will activate relevant contingency plans to temporarily close the concerned facilities and implement temporary traffic and public transport arrangements.

Regarding railway infrastructure, MTR Corporation Limited (MTRCL) carries out the design, construction and maintenance of the flood protection and drainage systems of the railway and its facilities in accordance with the requirements stipulated in the Drainage Services Department's (DSD) manual and MTRCL's manual. At the same time, the Electrical and Mechanical Services

Department requires MTRCL to formulate measures to cope with various emergencies, and conducts site inspections on MTRCL on a regular basis. Moreover, MTRCL has an emergency response mechanism to handle disruptions to railway operations caused by inclement weather.

The operators engaged by TD are responsible for the management, operation and maintenance of government road tunnels and control areas as well as Tsing Ma and Tsing Sha Control Areas, including the drainage facilities and equipment. The operators shall regularly clean, inspect and maintain the drainage facilities or equipment in accordance with the contract terms to ensure their normal operation.

With regard to roads, the drainage system of public road facilities such as road tunnels and pedestrian subways under the purview of the Highways Department (HyD) are designed, constructed and maintained in accordance with the drainage design standards as stipulated in the relevant design manual and guidance notes. Such design manual and guidance notes require that the public road facilities should be equipped with a proper drainage system to drain water ingress from various sources.

In addition, pursuant to the Building (Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines) Regulations (Cap. 123I) (the Regulations), private development projects shall be provided with such pipes, drains and channels necessary for the disposal of surface water within their boundaries. The authorised persons responsible for private development projects shall design the drainage systems of the projects in such manner as required under the Regulations, as well as preparing and submitting plans of the drainage systems for approval by the Buildings Department (BD) in accordance with the Buildings Ordinance. For plans' approval, BD will consult the DSD on the connection of such drains to the public drainage system. The DSD will provide technical advice based on standards as set out in the Stormwater Drainage Manual.

(3) Following the experience with Super Typhoon Mangkhut in September 2018, the Government conducted an inter-departmental review. One of the new measures was that, in case of super typhoon (or other natural disasters of a substantial scale) where the situation warrants, the Government will activate the Steering Committee (SC) for Handling Super Typhoons (or other natural disasters of a substantial scale), under the chairmanship of the Chief Secretary for Administration (CS) with relevant Principal Officials as members, to oversee all stages of work with assistance provided by the relevant bureaux and departments. The SC can ensure that one single high-level body will coordinate and supervise all stages of work and achieve coordinated priority-setting, thus ensuring that the resources available can be effectively utilised to enable the normal daily living of the community to resume as quickly as practicable.

Should a super typhoon (or other natural disasters of a substantial scale) cause damages that paralyse the city and seriously affect the working public to resume work effectively, the CS, having regard to the views of the SC, may make a territory-wide "extreme conditions" announcement to extend the

time for resumption of work, with the aim of reducing injuries which a member of the working public may sustain en-route to work.

Under the leadership of the SC, each relevant department is committed to improving the ability to respond to natural disasters, such as:

HKO strives to provide more detailed local weather forecasts and further enhance its ability to forecast extreme weather events through new technologies such as artificial intelligence and using more advanced computing facilities.

MTRCL regularly reviews and formulates preventive measures, and strengthens the protective equipment and updates its emergency response programme as needed. This will enhance the resilience of MTRCL's system against climate change.

HyD regularly reviews and updates its relevant design manual, guidance notes and emergency response plans. Meanwhile, it will also commission a consultancy study by end of this year to investigate the resilience of the existing critical infrastructures under its purview against rainfall flooding and wave impacts under the influence of climate change.

With reference to international and local literature and the related studies in respect of climate change, the DSD updated the Stormwater Drainage Manual in early 2018, incorporating the impacts of the increase in rainfall due to climate change as well as sea-level rise on the design of the drainage system. The DSD is also committed to the promotion of the concept of Blue Green Infrastructure in public works projects, which includes the use of flood retention lake, infiltrating porous pavement, rain garden, rainwater harvesting system and other sustainable drainage systems to enhance the city's flood resilience under the impact of climate change and to safeguard public safety.

Lastly, each relevant government department will continue to plan ahead to counter the potential occurrence of natural disasters which may occur more frequently as a result of climate change. Thank you, President.