

## LCQ18: Preparation for and follow-up work after the onslaught of typhoons

Following is a question by the Hon Paul Tse, and a written reply by the Secretary for Development, Mr Michael Wong, in the Legislative Council today (June 5):

Question:

In the past two years, super typhoons Hato and Mangkhut successively hit Hong Kong and caused huge damage. For instance, at the low-lying areas by the seaside in Lei Yue Mun and its vicinity, storm surges and huge waves tossed up tonnes of seawater together with silts onto the shore, threatening the lives of shop operators and residents along the shore and causing substantial damage to properties. I and the District Council members of the district concerned have repeatedly called on the authorities to construct flood protection barriers along the shoreline of Lei Yue Mun to guard against typhoons. It is understood that the Tourism Commission is implementing the Lei Yue Mun Waterfront Enhancement Project in the district concerned, and the Civil Engineering and Development Department is also conducting a study on the impact of storm surges on the low-lying or exposed coastal areas in Lei Yue Mun and its vicinity as well as in other districts during extreme weather. As both initiatives will take more than a year to complete, they cannot provide a solution to the imminent problems. Moreover, some shop operators and residents who have been victimised twice are worried that in the absence of short-term protective measures, disasters will happen again in this year's typhoon season to the area around the Lei Yue Mun Lighthouse where it is most seriously affected by silts tossed up onto the shore during the onslaught of typhoons in Hong Kong every year. The Observatory has forecast that four to seven typhoons will hit Hong Kong this year. In this connection, will the Government inform this Council:

(1) of the latest progress of the post-Hato and post-Mangkhut clearance work; the manpower and resources involved in such work, including the expenditure on hiring service contractors to carry out the relevant work, with a breakdown by policy bureau/government department;

(2) whether it has assessed, during the onslaught of Mangkhut and Hato in Hong Kong, the volume of silts that was tossed up, in particular through the gap near the Lei Yue Mun Lighthouse, onto the shore by storm surges and then poured into nearby shops and residential premises at Lei Yue Mun waterfront, as well as the amount of economic loss so caused;

(3) whether it has assessed, in the absence of short-term protective measures, the casualties and economic loss that will be caused to the area along the shore at Lei Yue Mun by rainstorms and typhoons this year, and whether last year's disasters will recur; and

(4) as the aforesaid two initiatives will take more than a year to complete, whether the authorities have put in place targeted short-term measures (e.g. some members of the public have proposed the placing of a number of breakwater columns horizontally) to enhance the capability of Lei Yue Mun waterfront (in particular the area around the aforesaid Lei Yue Mun Lighthouse) to withstand rough sea conditions, so as to avoid the recurrence of the disaster of tonnes of silts and rocks pouring into residential premises and shops; if so, of the details; if not, whether they will conduct a study immediately?

Reply:

President,

The geographical position of Hong Kong makes it susceptible to weather-related threats such as tropical cyclone, rainstorm and storm surge. As climate change goes drastic, threats induced by extreme weathers are expected to be more frequent and severe. Therefore, the Government has been strengthening resilience of Hong Kong in various aspects to cope with extreme weather. Earlier on, the Government completed the review on the handling of super typhoons and briefed the Legislative Council Panel on Security at its meeting of May 7, 2019 on the outcome of the review, as well as the Government's preparedness, emergency response and recovery work for future super typhoons. Moreover, on May 30 this year, the Security Bureau held an inter-departmental table-top exercise in the Emergency Monitoring and Support Centre at the Central Government Offices. This exercise tested the preparedness, contingency measures and capabilities of relevant bureaux and departments, as well as their decision-making process and interoperability before the onset of typhoon season this year with a view to enhancing relevant bureaux and departments' general awareness and co-ordination in various aspects of contingency handling. All relevant departments also continue to review design and construction standards of infrastructures as well as carry out technical studies to strengthen the resilience of public infrastructure facilities to cope with extreme weather. In addition, they would continue to undertake various protection and mitigation works against storm surges, wave attack and flooding in districts.

As regards the four parts of the question raised by the Hon Tse, the bureau has consulted the views of relevant bureaux and departments and provided below a consolidated response.

(1) The Government has been actively handling the clearance work in the aftermath of super typhoon. According to the information provided by the relevant bureaux, government departments and their service contractors (if any) have co-operated in dealing with the aftermath of Super Typhoon Mangkhut after its passage in Hong Kong last year, details shown in the Annex. As for Super Typhoon Hato which attacked Hong Kong as early as 2017, relevant departments have not archived the information on its post-typhoon clearance work.

(2) to (4) The Government has been concerned about the impact of extreme

weather on low-lying coastal and windy locations (including Lei Yue Mun) and is committed to strengthening the resilience and protection measures in those areas. To this end, the Civil Engineering and Development Department (CEDD) has commissioned a consultant in this April to undertake a feasibility study entitled "Coastal Hazards under Climate Change and Extreme Weather and Formulation of Improvement Measures". The study aims to conduct a comprehensive review of the low-lying coastal and windy locations (including the seashore of Lei Yue Mun and areas adjacent to its lighthouse), and to carry out relevant investigations on storm surge and wave in order to assess the impacts of extreme weather on the low-lying coastal and windy locations. Based on the outcome of the study, the Government will formulate appropriate protection measures, including improvement works, management measures, and other options, to strengthen the resilience to wave impacts at the coastal areas in the long run.

As to the enhancement measures against wave impacts on the seashore of Lei Yue Mun, after the passage of Super Typhoon Hato in 2017, various government departments joined hands to carry out a series of protective measures in the Lei Yue Mun areas. Among them, the CEDD constructed rock-armoured bunds/gabion walls along the seashore of Lei Yue Mun to relieve wave overtopping the seawalls; the Home Affairs Department built concrete wave walls behind the rock-armoured bunds along an existing footpath to alleviate the influx of wave into the villages; the Drainage Services Department (DSD) deployed emergency response teams for inspections and assistance in clearing drainage facilities, as well as assisted villagers for installation of flood boards and placement of sandbags to reduce the risks of seawater getting into their houses. In addition, in order to enable villagers to better understand the possible increase in sea level before storm surge, the DSD installed water gauges at Lei Yue Mun with indications of the highest water level records (in Chart Datum) of the previous super typhoons on the water gauges, thus increasing the awareness of villagers on flooding prevention.

The above protection measures were substantially completed before the onset of typhoon season in 2018. Therefore, during the passage of Super Typhoon Mangkhut in 2018, despite its recorded maximum wind and maximum water level being higher than those of Hato, the above protection measures greatly alleviated the impacts of Mangkhut on Lei Yue Mun and effectively reduced damage arising from flooding. The villagers of Lei Yue Mun gave compliment on the work by relevant departments and their effectiveness. At present, the CEDD and the Architectural Services Department continue to liaise with the Tourism Commission to explore the feasibility of introducing resilient design against the threats of seawater inundation to the coastal areas, such as an existing observatory platform adjacent to the lighthouse of Lei Yue Mun, under the "Lei Yue Mun Waterfront Enhancement Project". About the quantity of sand brought to Lei Yue Mun by the super typhoons and storm surges, as well as the related financial loss, they are hard to quantify and relevant departments have not made such estimates.