LCQ5: Flood prevention capacity in rural areas

Following is a question by the Hon Steven Ho and a reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (July 17):

Question:

It has been reported that the frequent occurrence of extreme weather conditions in recent years has caused severe flooding problems in rural areas, and a pig farm in Ta Kwu Ling was even hit by flooding twice in three years, resulting in heavy losses. I have learnt that one of the main causes of flooding in some rural areas last year was illegal land-filling of watercourses, and the laying of drainage channels on top of certain land-filling locations by the Government as a solution to the problem has led to a much lower drainage capacity of the watercourses concerned than the original design, rendering them unable to withstand extreme weather conditions and hence the frequent flooding. In this connection, will the Government inform this Council:

(1) of the monthly numbers of flooding reports in rural areas and residents' expressions of views received by the Drainage Services Department in the past five years, with a breakdown by the 18 districts across the territory; whether it has reviewed if there is a need to update the flood protection standards for the drainage systems in rural areas;

(2) of the monthly number of complaints about illegal land-filling of watercourses in the 18 districts across the territory received by the authorities in the past five years, and the specific handling approach of such cases (including the average expenditure incurred in each case and the parties responsible for the costs); whether it will review the recovery plans for such cases to ensure that the drainage capacity of the watercourses concerned is restored to the original level; and

(3) of the number of instances where rural areas were hit by a "once-in-a-century" torrential rain or flooding in the past five years; the Government's respective improvement measures in the four areas of planning and design of drainage facilities, disaster alert, emergency response capabilities, and disaster protection mechanism, so as to ensure that rural areas can cope with the rising trend of extreme weather conditions?

Reply:

President,

Regarding each part of the questions, my reply is as below:

(1) In the past five years (i.e. 2019 to June 2024), the Drainage Services

Department (DSD) received 150 flooding reports in rural areas. The monthly flooding report figures by district are provided in Appendix.

The flood protection standards of main drainage channels in rural areas are generally based on a 50-year return period for design. The relative low population density and less economic and commercial activities in rural areas, striking a balance between the flooding risks involved and the corresponding social costs were considered. Such drainage design standard for rural areas is similar to those adopted in other advanced cities. Making reference to the report published by the Intergovernmental Panel on Climate Change of the United Nations and the results of its relevant studies, and the rainfall data of heavy rainstorm in Hong Kong in September last year, the DSD updated the Stormwater Drainage Manual (SDM). In the updated SDM, the design rainfall intensity for 50-year return period, i.e. the design standard for the main drainage channels in rural areas, is increased from 128 millimetres per hour to 134 mm per hour, in order to enhance the design drainage capacity of new stormwater drainage systems in rural areas. On the other hand, the DSD is conducting a long-term study to assess the impact of climate change on Hong Kong's stormwater drainage systems till the end of the century. It is anticipated that the study will be completed in the fourth quarter this year.

(2) In the past five years, the DSD received a total of 39 cases of suspected illegal landfilling in watercourses, and had carried out investigation and follow-up actions on these cases. Reinstatement works at the watercourses for six cases that posed a higher potential flooding risk were completed. The remaining 33 cases were referred to relevant departments for follow-up actions. For those illegal landfilling cases, the Government would charge the relevant cost of watercourse reinstatement works to the persons concerned with the illegal landfilling works.

(3) In the past five years, there were two rainstorms in the rural areas with rainfall intensities larger than that of a "100-year return period".

The DSD has been adopting various strategies to upgrade the flood protection ability of the stormwater drainage systems. The flood prevention works in rural areas mainly involve river training works and village flood protection scheme. Over some 30 years in the past, the DSD completed a total length of over 100 kilometres river training works in rural areas, and implemented village flood protection schemes for 27 low-lying villages. Upon the completion of the above drainage improvement works, widespread flooding situation in relevant areas has been significantly reduced.

In response to the new land planning and developments, the DSD has conducted the Drainage Master Plan Review Studies for the rural areas in phases and formulated and progressively commenced relevant drainage improvement works. Currently, three drainage improvement works in North District and Yuen Long District are in progress. In addition, the two drainage improvement works in Tai Po, Sha Tin and Sai Kung Districts are targeted for commencement this year after obtaining the funding approval from the Finance Committee of the Legislative Council. Upon completion, the risk of flooding in the relevant rural areas will be greatly reduced.

In addition, the DSD keeps close liaison with the Hong Kong Observatory. For areas where flooding is anticipated to be caused by heavy rainstorm, the DSD will early deploy emergency teams for inspection. Currently, there are about 220 flooding prone locations, of which more than half are in rural areas.

The DSD also proactively applied innovative technology by making use of approximately 320 remote flood control devices, most of them in rural areas, to collect rainfall, tidal level and water level data for real-time monitoring to ascertain whether the water level would exceed the alert level in order to take appropriate contingency measures, notify relevant departments and evacuate residents. The department has planned to conduct trial on artificial intelligence flood monitoring system in Yuen Long this year, analysing real-time street footage to assist early detection and response to flooding incidents.

In addition, the DSD has increased the number of emergency response teams and emergency support stations covering 18 districts in Hong Kong to support emergency operations.

The Development Bureau will integrate and allocate the contractors' resources in various public works departments, including labours, machines and equipment to ensure that sufficient resources could be flexibly deployed during emergency situations.