

## LC05: Measures to monitor condition of water mains

Following is a question by the Hon Yung Hoi-yan and a reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (June 18):

Question:

The earlier fresh water quality incidents at Queen's Hill Estate and Shan Lai Court, as well as the water mains burst incident in Tuen Mun, have aroused public concern about the condition of water mains. In this connection, will the Government inform this Council:

- (1) of the staff establishment and work details of the working group established in connection with the water quality incidents at Queen's Hill Estate and Shan Lai Court, including the estimated number of times that the water tanks will be cleansed and the water quality will be tested, as well as the expenditures involved; whether the group will investigate if the incidents involved human negligence; of the total number of enquiries or requests for assistance from residents on water quality problems received by the offices of the two housing estates/housing courts so far;
- (2) as the Water Supplies Department has indicated that it will replace all pipes in Hong Kong which are still coated with bitumen, of the distribution of the pipes concerned in various districts in Hong Kong at present, the names of the housing estates/housing courts involved, as well as the timetable for the relevant pipe replacement work; whether it has plans to inspect the fresh water supply systems of all housing estates/housing courts in Hong Kong to ascertain that they will not accumulate bitumen, resin or other impurities; if so, of the details (including the timetable, the manpower and the expenditure involved); if not, the reasons for that, and the measures in place to prevent similar incidents; and
- (3) whether it has plans to enhance the application of technology and artificial intelligence to conduct 24-hour continuous monitoring and analysis of the conditions of water mains and water quality, so as to identify abnormalities in water mains at an early stage and carry out repairs; if so, of the details; if not, the reasons for that?

Reply:

President,

My reply to the questions raised by the Hon Yung Hoi-yan is as follows:

- (1) The Government is highly concerned about the incident of bitumen sediments found in the fresh water at Queen's Hill Estate and Shan Lai Court.

After receiving reports of black spots in the water at the end of May, the Water Supplies Department (WSD) and the Housing Department (HD) immediately formed a joint working group to conduct a joint investigation on the incident and formulate measures to resolve the issue. The working group is co-led by the Director of Water Supplies and the Deputy Director (Estate Management) of the HD, with members including 11 staff such as in-service engineers and property management professionals responsible for the operation of the water supply facilities and estate management in that area. The WSD has cleaned 11 times for the water mains under its management and maintenance, while the HD has conducted six and three times of cleaning of the water pipes and water tanks under its management respectively. The HD has also installed 22 screen filters at the water inlet of each building and the estates. The WSD continues to collect water samples from the estates for testing. So far, all samples have complied with the Hong Kong Drinking Water Standards.

Since the establishment with promotion of the 24-hour hotline on June 7, the Government has received a total of about 700 enquiries. In addition, the WSD has received over 1 500 requests for flushing water meters through various channels, including street counters and home visits organised by the members of District Council, the three district committees and the Care Teams, and the WSD has completed the flushing of water meters within one to two days. Currently, most of the residents reported an improvement in water quality and follow-up action is not required.

The WSD believes that the black sediments in the fresh water originated from a 400-metre-long steel water main at the upstream water supply network at Ping Che Road. This water main uses bitumen as an inner lining serving as a protective coating, and the sediment is likely residue that was flushed into the inside service of the estates before the installation of screen filters at the WSD's water mains by the end of 2022. We have set up an expert group consisting of the Chairman and two members of the Drinking Water Safety Advisory Committee (DWSAC) to assist with the traceability work. The expert group believes that the above assessment is reasonable. The WSD will submit an investigation report of the incident to the DWSAC for review in the near term.

Learning from this experience, we should be able to make improvement in the aspects of the explanation process and handling time. We are now working at full steam on the various tasks and the expenditure involved is part of the expenditure of relevant departments in providing service, making it difficult to be separated out for the time being.

(2) Similar to Hong Kong, water mains with bitumen lining as protection still exist in the water supply systems of some advanced cities. The material is prone to peeling after prolonged use. The WSD has ceased applying bitumen lining on fresh water mains since 2005. At present, we have conducted further classification of water pipes that still contain this type of lining. Only about 230 km are fresh water distribution mains, representing roughly 3.9 per cent of Hong Kong's total fresh water distribution mains. The distribution of their locations is set out at Annex of the reply.

While the bitumen used in water supplies facilities is inert and insoluble in water, any peeled tiny particles in the water supply can still cause worries among the public. To address this situation, the WSD has installed over 1 000 screen filters in the related water supply network taking into account the amount of peeling, complaint cases and population supplied with the water, etc. These filters effectively prevent peeling materials from entering the inside service of the buildings. The WSD is reviewing the necessity of installing additional screen filters at suitable locations, and revising the guidelines to advise property management companies on the methods to maintain water mains and screen filters.

To expedite the decommissioning of the water mains with bitumen lining at Ping Che Road related to Queen's Hill incident, the WSD has explored to adopt an out-of-the-box approach over the past week by using exposed temporary water mains. They, together with the Development Bureau (DEVB) and the contractor, collaborate with the Transport Department, the Hong Kong Police Force and the North District Office on inter-departmental and collaborative basis to formulate traffic arrangements. Despite busy traffic conditions and narrow work space of the site, through collective efforts, the WSD will immediately commence the project and work around the clock to complete the temporary water mains by early July. In other words, this section of bitumen lining steel water mains will decommission from early July onwards. The WSD will also strive to replace the exposed temporary water mains with a permanent underground water mains by the end of this year.

Last year, the WSD obtained funding approval from the Legislative Council for replacing or rehabilitating about 20 km (Note) of steel mains with bitumen lining on the inner wall. In response to this incident and ageing water mains burst, the WSD will submit short and medium term proposals for water mains replacement to the DEVB for review. We expect to discuss this at the meeting of the Panel on Development next month.

(3) The WSD will expand the monitoring area of Water Intelligent Network (WIN) to include fresh water trunk mains and all fresh water distribution mains. The sensors used for monitoring the water flow and pressure will also be upgraded to expedite the identification and repair of water mains with potential burst risk. The entire project is expected to be completed in 2027. We have asked the WSD to explore the possibility of early completion.

The WSD will collaborate with the Hong Kong Polytechnic University to set up the joint laboratory of "In-line Robot" this August to conduct high-precision inspections of water mains.

As regards the monitoring of water quality, the WSD has installed 24-hour online water quality monitoring systems in some key reservoirs and water treatment works. In addition, the WSD randomly collects water samples from some 28 000 consumers' taps in Hong Kong for testing every year. The sampling ratio, testing methods, and parameters covered adhere to international standards. The WSD has also commenced a study since 2023 to construct more water quality monitoring points in the water supply network in the following few years to enhance the alert capability. The study is expected to be

completed within this year.

Thank you, President.

Note: Distributed in Sai Kung, Tuen Mun, Eastern and Sham Shui Po