

LCQ14: Handling water mains leakage

Following is a question by the Hon Yung Hoi-yan and a written reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (May 28):

Question:

It is learnt that the issue of water mains leakage in Hong Kong has become increasingly serious in recent years. There are views that the Water Supplies Department (WSD) should address this problem promptly to ensure the efficient use of water resources. In this connection, will the Government inform this Council:

(1) of the total volume of fresh water leaked from private water mains in each of the 18 districts in the territory in the past five years; and the following information on the top 10 private housing courts with the most severe water mains leakage: (i) name; (ii) year of completion; (iii) volume of water leakage involved; (iv) number of Repair Notices (RNs) and Disconnection Notices (DNs) received from the WSD; (v) number of times the water supply was suspended by the WSD; and (vi) repairs to the leaking water mains;

(2) given that according to the WSD's website, the number of RNs issued by the WSD under Section 16 of the Waterworks Ordinance (Cap. 102) (the Ordinance) was around 700 to 1 000 per year in the past 10 years with no apparent downward trend while the number of DNs issued under Section 11 of the Ordinance and the number of disconnection cases under Section 10 of the Ordinance have shown a decreasing trend, whether the WSD has studied the reasons for this situation;

(3) given that according to the WSD's website, the leakage rate of government water mains was approximately 13.4 per cent in 2024, and the WSD has also set a target to reduce the leakage rate to 10 per cent or below by 2030, but there are views that the aforesaid rate fails to cover the leakage situation of all water mains (e.g. leakage from non-government water mains), whether the WSD has plans to consolidate and make public the complete statistics concerned, and give an account of the annual amount of water loss from the water mains in the territory and the reasons for such loss in its annual reports; if so, of the details; if not, the reasons for that; and

(4) whether the WSD has plans to set up a committee to take full responsibility for and handle water mains leakage, and to expedite the implementation of "smart waterworks" through coordinating work across different departments and introducing new technologies, so as to further implement "smart leakage control"; if so, of the details and the timetable; if not, the reasons for that?

Reply:

President,

The Water Supplies Department (WSD) has been striving to enhance the management and maintenance of water mains and apply new technologies to enable effective operation of the water supply networks.

Regarding government water mains, the WSD implemented a territory-wide water mains replacement and rehabilitation programme between 2000 and 2015 to replace and rehabilitate about 3â€000 kilometres long aged water mains (including fresh and salt water mains), thereby raising the operational condition of the water supply networks. Since 2015, the WSD has implemented multi-pronged measures in phases, through establishment of Water Intelligent Network (WIN) and formulation and implementation of risk-based water mains improvement works under a risk-based asset management programme for water mains to continuously maintain the healthiness of the water supply networks and reduce the risks of water main bursts or leaks. Through these measures and efforts over the years, the leakage rate of fresh water mains has dropped from over 25 per cent in 2000 to around 13.4 per cent in 2024.

The replies to various parts of the Hon Yung Hoi-yan's question are as follows:

(1) Regarding the leakage of private fresh water mains (Note), the WSD calculates the volume of water loss in the communal service of a building by deducting the total fresh water consumption recorded by all water meters of individual units in the building from the master meter reading of the building to help monitor the fresh water leakage in the communal service of the building. The WSD has installed master meters in public housing estates across the territory and is currently installing master meters in private buildings in phases. Since not all buildings have been equipped with master meters, the WSD can currently only estimate the leakage rate and total volume of water loss of private fresh water mains over the past five years by referencing the volume of fresh water loss in buildings with master meters installed. The estimated results are as follows:

Year	2020	2021	2022	2023	2024
Leakage rate of water mains	9.6%	9.3%	10.3%	10.9%	11.6%
Total volume of leakage of water mains (100 million cubic metres)	0.97	0.95	1.06	1.14	1.21

As mentioned by the Hon Yung Hoi-yan, the WSD will follow up with the housing estates concerned regarding cases of suspected leakages in private fresh water mains and will issue Repair Notices (RNs) as necessary under section 16 of the Waterworks Ordinance (the Ordinance). If no follow-up action had been taken by the deadline, the WSD will, taking into account the

actual circumstances (e.g. larger scale of repair, more complicated pipe connections which require longer time for project planning and repair arrangement, etc), issue Disconnection Notices (DNs) in accordance with section 11 of the Ordinance for non-compliant cases with the RNs, where no valid justification are provided, to arrange for suspension of water supply to reduce fresh water loss.

The issuance of RNs or DNs to private housing estates involves case-specific circumstances. To avoid public misinterpretation and doubt, we consider it inappropriate to unilaterally provide the names of the housing estates.

(2) In recent years, the WSD has allocated resources to actively follow up the leakage in private fresh water mains. If water loss is identified, the WSD will issue RNs to owners as early as possible, requiring them to properly repair the leaking fresh water mains so as to reduce fresh water wastage. The WSD has also stepped up publicity targeting at property management companies for enabling them to distinguish between the maintenance responsibilities of the inside service in individual flats and that of the communal service in a building. This helps property management companies depict the respective responsibilities to fresh water consumers so that the water mains repair works can be carried out promptly. Also, the WSD actively provides technical support to consumers with difficulties for early compliance of the RNs. According to the WSD's record, most of the consumers have complied with the RNs and repaired the leaking water mains, resulting in a decrease in the number of DNs issued and the number of water disconnection cases executed by the WSD under sections 11 and 10 of the Ordinance respectively.

(3) The WSD has consistently addressed the public concerns on the leakage of government water mains by providing the annual leakage rate of government water mains in its annual reports, and has emphasised the target of reducing the leakage rate of fresh water mains of government network (as a percentage of total water supply) to 10 per cent or below by 2030.

As for the leakage of private fresh water mains, since many private housing estates still do not have master meters installed, the WSD is unable to fully grasp accurate data on the volume of water leakage of private housing estates in Hong Kong. As mentioned earlier, the leakage rate (as a percentage of total water supply) in 2024 was estimated to be approximately 11.6 per cent. We understand that the public is concerned about the leakage of private fresh water mains. As more private buildings progressively install master meters, the WSD will publish the leakage rate of private fresh water mains in future annual reports in a timely manner, following the practice adopted for the leakage rate of government water mains.

(4) The WSD has set up the Standing Committee on Unaccounted for Water, chaired by the Deputy Director of Water Supplies, with functions including monitoring the leakage situation of government water mains and private fresh water mains, and steering and co-ordinating the water loss management work of different divisions within the WSD, etc. In June 2024, the WSD established the Digital Water Office to drive for digitalisation of water supply

services, to formulate and expedite the development of smart water strategy, and to implement a series of digitalisation projects and measures in phases such as the expansion and upgrade of WIN to fully cover the fresh water supply networks and gradually upgrade the sensors for monitoring the water flow and water pressure of water mains to collect real-time data. Advanced Metering Infrastructure systems are also being installed in private buildings to monitor real-time water consumption for early detection of leaking fresh water mains. While the full digitalisation of water supply system is being implemented in a progressive manner, the water loss will be further improved gradually. The WSD will also actively maintain close contact with relevant stakeholders to explore different solutions for facilitating reduction of water loss.

Note: According to the WSD, the leakage of private fresh water mains includes the leakage of the communal service in various buildings (private buildings and public housing estates).