

LCQ12: Prevention of water mains bursts

Following is a question by the Hon Yang Wing-kit and a written reply by the Secretary for Development, Ms Bernadette Linn, in the Legislative Council today (May 14):

Question:

It has been reported that there have been many water mains burst incidents in Hong Kong in the past year, with the ageing of water mains in old districts being a particular cause for concern. In this connection, will the Government inform this Council:

(1) of the number of water mains burst incidents in each of the 18 districts in Hong Kong in the past year;

(2) whether it will conduct a comprehensive inspection of water mains and expedite the replacement of damaged or aged water mains; if so, of the details; if not, the reasons for that;

(3) as the Government has advised, in the reply to a question raised by a Member of this Council in relation to the Estimates of Expenditure 2025-2026, that it will expand the monitoring area of the Water Intelligent Network (WIN) to include fresh water trunk mains and the remaining part of the fresh water distribution mains not currently covered by WIN, of the number of District Metering Areas (DMAs) under the expanded WIN and the implementation timetable (set out by District Council district);

(4) whether additional stop valves will be installed for water mains in non-DMAs not covered by WIN to reduce the risk of a large-scale water outage in the event of a water mains burst; if so, of the details; if not, the reasons for that; and

(5) whether it has drawn reference from the experience of the Mainland in using advanced smart technologies to monitor and manage underground water mains to further prevent water mains bursts; if so, of the details; if not, the reasons for that?

Reply:

President,

The Water Supplies Department (WSD) has all along been committing to providing reliable, sufficient and quality water supply to the public. The WSD ensures that the water supply networks could effectively operate through continuous improvement in asset management and making good use of technology.

From 2000 to 2015, the WSD carried out a territory-wide replacement and rehabilitation of water mains programme to replace and rehabilitate about 3 000 kilometres long aged water mains (including fresh and salt water mains), thereby raising the operational effectiveness of the water supply networks.

Since 2015, the WSD has implemented multi-pronged measures, through establishing Water Intelligent Network (WIN) and adopting risk-based asset management programme for water mains for formulating and implementing water main improvement works on risk-based approach, continuously maintaining the healthiness of the water supply networks and reducing the risks of water main bursts or leaks.

Through the above-mentioned measures and efforts made over the years, the number of annual water main burst cases has been greatly reduced from around 2 500 cases in 2000 to around 40 cases in 2023 and to 27 cases in 2024. The leakage rate of fresh water mains has also dropped from over 25 per cent in 2000 to around 13.4 per cent in 2024.

The replies to various parts of the Hon Yang Wing-kit's question are as follows:

(1) According to records from the WSD, the numbers of water main burst cases in various districts for the entire year of 2024 and the first three months of 2025 are listed in the table below:

Region	District	Burst cases	
		2024	2025 (as at March 31)
Hong Kong and Islands	Central and Western	2	0
	Eastern	1	3
	Islands	1	0
	Southern	4	0
	Wan Chai	4	0
Kowloon	Kowloon City	3	0
	Kwun Tong	1	0
	Sham Shui Po	3	0
	Wong Tai Sin	0	0
	Yau Tsim Mong	2	0

New Territories	North	1	0
	Sai Kung	1	0
	Sha Tin	0	0
	Tai Po	0	0
	Kwai Tsing	1	1
	Tuen Mun	2	0
	Tsuen Wan	1	0
	Yuen Long	0	0
	Total	27	4

(2), (3) and (5) Since 2016, the WSD has been establishing WIN within the fresh water distribution networks in the territory (covering approximately 80 per cent of the fresh water distribution networks). By the end of March 2025, the WSD completed the establishment of all 2 400 district metering areas (DMAs). It helps to strengthen management of leakage in water supply networks with the strategy of "divide and conquer" and continuous monitoring, and to implement targeted measures including active leakage detection, pressure management, speedy repair of water main with leakage and replacement or rehabilitation of water mains, to maintain the healthiness of the water supply networks. The numbers of DMAs by District Council districts are tabulated as follows:

District Council districts	Number established
Central and Western	69
Eastern	81
Islands	115
Southern	143
Wan Chai	64
Kowloon City	85
Sham Shui Po	87
Wong Tai Sin	57
Kwun Tong	121
Yau Tsim Mong	55
North	181
Sai Kung	286
Sha Tin	224
Tai Po	148
Kwai Tsing	132
Tsuen Wan	147
Tuen Mun	171
Yuen Long	234
Total	2 400

Meanwhile, the WSD has commenced the enhancement of WIN, focusing on the following two aspects:

- (i) Expanding, in phases, the monitoring area of WIN to include fresh water trunk mains and the remaining fresh water distribution mains (covering approximately 20 per cent of the fresh water distribution networks) that are currently not covered by WIN by installing sensors to monitor water flow and pressure at strategic locations to provide a more comprehensive coverage of the fresh water supply networks; and
- (ii) Upgrading the functions of the existing WIN, which includes upgrading the sensors used for monitoring the water flow and pressure in phases to collect real-time data with a view to speeding up detection of any abnormal conditions in the pipe networks.

The WSD is currently carrying out the planning and design works and hence the numbers and locations of sensors are not yet available. The above expansion and upgrading work are expected to be completed by 2027.

The WSD consistently collaborates with local and mainland academic and research organisations to study the use of other advanced technologies, such as acoustic detection and optical fiber, to facilitate early detection of leakage situations of water mains.

(4) When water main burst incident occurs, the WSD will implement appropriate measures with a view to minimising the water suspension area and duration. The relevant measures include temporary redirecting of water supply in inter-connecting water supply networks to maintain the water supply during emergency repair work of the water main burst. If redirecting of water supplies is infeasible, the WSD will close the water valves in the vicinity to stop the water outflow from the burst water main for emergency repair work, thus minimising the suspension area. Therefore, considering the actual operational need of water supply networks, we will install water valves at suitable locations, with due balance to reducing water supply impact to individual buildings and avoiding inconvenience caused to road users by the valve installation works.

In addition, the WSD has strengthened management of emergency water supply incidents. Regarding the mechanism for dissemination of information for emergency repair works of water mains, the WSD has updated its internal guidelines that outline specific factors to be considered for emergency repair of water mains and associated time required, ensuring dissemination of more accurate information about the anticipated water resumption time for residents to make appropriate preparations. We have also strengthened the communication with various stakeholders of different districts (including District Offices, members of District Council and Care Teams) through setting up instant messaging platforms for rapid two-sided communication, providing information to the public regarding the arrangement of temporary water supplies and progress of repair work, etc. The WSD has also established mechanism to bring together resources of government departments for deploying sufficient water wagons to provide temporary water supply during emergency

situation, providing timely support to the public and businesses affected.