Advisory Committee on Water Supplies (2022-2024)
Minutes of Fifth Meeting

Date: 23 February 2024 (Friday)

Time: 3:00 p.m.

Venue: Room 4819, Water Supplies Department, 48/F, Immigration Tower, 7 Gloucester Road, Wan Chai, Hong Kong

Present

Prof KWAN Kai Cho, Joseph	Chairman
Mr CHEUNG Hau Wai	Working Group Chairman
Mr LAU Che Feng, Edwin	Working Group Chairman
Ms CHAU Ka Wing, Rachel	Member
Ms CHUNG Lai Kam, Kathy	Member
Dr DUAN Huan Feng	Member
Mr LI Kam Wong, Arthur	Member
Prof SHIH Kaimin	Member
Mr WONG Kwun Kit, William	Member
Ms YUEN Yan Ling, Elaine	Member
Mr YAU Kwok Ting, Tony	Member (Water Supplies Department)
Mr SEN Hok Bunn, Paul	Member's Representative (Development Bureau)
Ms HO Kit Yee, Kitty	Member (Architectural Services Department)
Mr SHEK Kin Tang, Kenneth	Member's Representative (Drainage Services Department)
Ms WONG Kam Wah	Member (Housing Department)
Mr LAM Chun Ngai, Avery	Secretary (Water Supplies Department)

Water Supplies Department Representatives in Attendance

Mr MA Hon Wing, Wilson	Assistant Director
Mr CHOY Tak Yip	Chief Chemist
Mr CHENG Kam Pong, Patrick	Chief Engineer
Mr YIP Ka Chun, Gary	Chief Engineer
Mr CHIU Man Fat	Senior Engineer
Mr KAN Ka Man, Raymond	Senior Engineer
Ms KONG Tsz Yan	Senior Engineer
Mr LEE Hong Nin, Kevin	Senior Engineer
Mr YUEN Tik Hong	Senior Engineer
Ms SIN Pui Yee, Grace	Engineer (Note-Taker)

Adbrownies Advertising Limited Representatives (WSD's contractor) in Attendance

Ms Karin WONG	Project Director
Ms Teresa KWAN	Project Manager

Absent with Apologies

Ir NG Chun Keung	Working Group Chairman
Dr CHENG Kam Wah, Edmond	Working Group Vice-Chairman
Mr LAM Yat Fung, James	Working Group Vice-Chairman
Ir TANG Ming Sum, Michelle	Working Group Vice-Chairman
Prof CHE Chi Ming	Member
Prof SHANG Chii	Member
Prof TSE Lap Ah, Shelly	Member
Dr WANG Peng	Member
Sr WONG Kwok Leung, Paul	Member
Mr YAU Kam Wing, Kelvin	Member
Mr YIU Ming, Jeff	Member
Dr YU Yuen Ping, William	Member
Dr AU Wing Yee, Winnie	Member (Department of Health)
Dr YANG Rong, Ron	Member (Environmental Protection Department)

Item

1. Opening Remarks

1.1 The Chairman welcomed all Members and representatives of Water Supplies Department (WSD) to the meeting.

1.2 The Chairman informed the meeting that Ir NG Chun Keung, Dr CHENG Kam Wah, Edmond, Mr Lam Yat Fung, James, Ir TANG Ming Sum, Michelle, Prof CHE Chi Ming, Prof SHANG Chii, Prof TSE Lap Ah, Shelly, Dr WANG Peng, Sr WONG Kwok Leung, Paul, Mr YAU Kam Wing, Kelvin, Mr YIU Ming, Jeff, Dr YU Yuen Ping, William, Dr AU Wing Yee, Winnie and Dr YANG Rong, Ron were unable to attend the meeting and had sent in their apologies.

Agenda Items

2. Confirmation of Minutes of Last Meeting

2.1 The Chairman advised that the draft minutes for last meeting had been

circulated to the Members on 9 February 2024 with no comments received. As no further amendments were proposed at the meeting, the draft minutes were confirmed.

3. Report of Working Group on Operational Matters

3.1 The Chairman invited Mr CHEUNG Hau Wai, the Chairman of the Working Group (WG) on Operational Matters, to report the key issues discussed at the 4th and 5th WG meetings held on 27 September 2023 and 31 January 2024 respectively.

Publication of Salt Water Quality Data for Flushing Supply on WSD's Website (the 4th WG meeting)

3.2 Mr CHEUNG Hau Wai reported the following:

- WSD introduced the Water Quality Objectives (WQO) of Salt Water for Flushing Supply, departmental performance pledge for flushing water quality, salt water quality monitoring and publication of salt water quality data for flushing supply on WSD's website.
- WG Members supported WSD to publish the salt water quality data as this could clarify the public's misunderstandings about the quality of flushing water, and suggested to conduct more publicity and promotions to convey the establishment of WQO and the information on the quality of flushing water in Hong Kong.
- WG Members appreciated WSD's effort to implement salt water supply for flushing as this could save fresh water and the environment.

Update on Disinfection Technologies (the 5th WG meeting)

3.3 Mr CHEUNG Hau Wai reported the following:

- WSD presented an overview of the water disinfection technologies adopted in Hong Kong including liquid chlorine, on-site chlorine generation (OSCG), ozonation and ultraviolet (UV) disinfection.
- The WG Vice Chairman inquired about the reason for not fully adopting UV disinfection as the primary method of disinfection. WSD explained that UV light could not last long in the water being treated, and other disinfectants (such as chlorine) would be required for water treatment. Maintaining a controlled amout of residual chlorine would help protect the drinking water from microbiological contamination and suppress bacterial growth during distribution and storage.
- WG Members appreciated WSD's work to apply OSCG Technology for chlorination in water treatment works (WTW) to reduce the risk and cost

in transportation and storage of liquid chlorine. With chlorine gas being generated on site by OSCG, supply of chlorine gas becomes more reliable and thus enhances the operational resilience of water treatment processes.

3.4 Mr LAU Che Feng, Edwin suggested sharing the experience of using salt water for flushing with the Mainland and other countries as this could promote Hong Kong's achievement in water conservation. Mr YAU Kwok Ting, Tony of WSD supplemented that Hong Kong has been using salt water for flushing since 1950s and at present accounted for over 20% of total water supply. Promotion of salt water supply for flushing has been continually conducted through overseas conferences and site visits for officials from the Mainland and foreign countries. Mr CHOY Tak Yip of WSD further supplemented that WSD had also held site visits for some jurisdictions for experience sharing. The Chairman remarked that apart from promotion to enhance public understanding, legal requirement plays an important role in implementing the salt water supply system in Hong Kong.

3.5 The Chairman appreciated WSD's effort to adopt new technology such as OSCG with an aim to reducing the risk of transportation and storage of liquid chlorine at WTWs. Apart from reducing cost and carbon emissions arising from transportation of liquid chlorine, implementation of OSCG also contributed to enhanced safety.

4. Report of Working Group on Government Network and Inside Service

4.1 The Chairman invited Mr LI Kam Wong, Arthur to report the key issues discussed at the 4th and 5th WG meetings on Government Network and Inside Service held on 4 October 2023 and 22 January 2024 respectively.

4.2 Mr LI Kam Wong, Arthur reported that the Chairman and the Vice-Chairman of the WG were unavailable to attend the meeting and he was grateful to report for the WG.

Overview of Water Loss Management in Hong Kong (the 4th WG meeting)

4.3 Mr LI Kam Wong, Arthur reported the following:

- WSD has been serving over 7 million population with water supply through more than 8,000 km water mains. Similar to most of the developed countries/areas, water loss in the water distribution network of Hong Kong

was a perennial problem. Factors such as high water supply pressure due to the hilly topography, congested urban setting and the large number of underground utilities services posed challenges to WSD for maintaining a highly reliable and sustainable water supply network.

- WSD adopted the following four pillars of network management to manage and control water loss in Hong Kong:
  - active leakage detection;
  - pressure management;
  - speedy repair of water main leaks; and
  - replacement and rehabilitation of water mains.
- In parallel, WSD has been implementing the Water Intelligent Network (WIN) to help maintain the healthiness of the water distribution network through analyzing the network condition and determining the most cost-effective means to maintain its healthiness. Implementation of WIN enabled problematic District Metering Areas (DMAs) and Pressure Management Areas (PMAs) to be identified for prioritized follow-up actions according to their severity of water loss with a view to maintaining the healthiness of the network.
- WG Members in general appreciated WSD's effort in taking forward various initiatives to maintain the healthiness of the water supply network, and exchanged views with WSD regarding the technical details for establishment of PMAs and master meters (MMs) and also WSD's collaboration with local universities for research and development on leakage detection. WSD would continue to take forward multipronged measures for continuous improvement of the water supply network.

IT System for Identification of WSD's Water Main Asset (the 4th WG meeting)

4.4 Mr LI Kam Wong, Arthur reported the following:

- The second topic presented in the 4th WG meeting related to IT system for Identification of WSD's Water Main Asset. WSD gave presentations on the topics of "Common Spatial Data Infrastructure (CSDI) Portal" and "Adoption of Building Information Modelling (BIM) in WSD".
- CSDI Portal was beneficial to trace and manage the water main assets, WSD briefed on how to acquire information of water main assets (such as facility ID) in CSDI Portal.
- WSD also presented adoption of BIM technology in design and construction of WSD's facilities and shared the planning of BIM

applications in future.

- WG Members in general appreciated WSD's effort in adopting various IT systems for identification and management of WSD's assets, and exchanged views with WSD regarding the procedure and control of updating of water main records in WSD's IT system. Members also discussed with WSD on the adoption of BIM for asset management purposes. WSD would continue to improve IT systems for enhancement of the performance of asset management.

Development of Leak Detection in Q-Leak (the 5th WG meeting)

4.5 Mr LI Kam Wong, Arthur reported the following:

- WSD and the representative of the Hong Kong Polytechnic University (PolyU) gave presentations on the topics of "Development of Leak Detection in Q-Leak" and "Seminars and talks organized for professional bodies and secondary school students in Q-Leak".
- Since the commissioning of "Q-Leak" – the underground water mains leak detection training centre" in 2021, it has been serving as a teaching and research cooperation platform amongst the department, the trade and post-secondary education institutions in Hong Kong in the field of water mains leak detection.
- WSD has been collaborating with PolyU in Q-Leak for leak detection research using Ground Penetrating Radar (GPR). In the latest trial surveys, the GPR technology successfully identified several potential uncharted water mains. The results have demonstrated the effectiveness of GPR in leak detection. Moving forward, more trial surveys would be conducted to gather more data for improving the accuracy of leak detection.
- In addition to facilitate research study, Q-Leak has provided training and development for technicians and students in Acoustic Leak Detection and Pipe Cable Locating. A systematic approach has been developed to differentiate the positional accuracy of leak points and pipe alignments identified by the students/candidates under the simulated environments of Q-Leak. At the same time, it facilitated the data collection for leak classification through machine learning, enhancing the sensitivity and specificity of leak detection. These collaborative efforts were currently undergoing between WSD and PolyU.
- In terms of training, WSD has been organizing training programmes, technical visits and talks to professional bodies and students in Q-Leak. These activities aimed to introduce the water loss management in Hong

Kong and demonstrated the use of leak detection equipment. WSD would continually collaborate with different parties for organizing more activities in Q-Leak, allowing the industry professionals to share their insights and exchange views on leak detection.

Public Engagement for Proper Maintenance of the Inside Service (the 5th WG meeting)

4.6 Mr LI Kam Wong, Arthur reported the following:

- WSD gave a presentation on "Public Engagement for Proper Maintenance of the Inside Service".
- WSD has been promoting the good practice on maintaining the inside service, including the following:
  - promotion of Quality Water Supply Scheme for Building - Fresh Water (Management System) (QMS) and Water Safety Plan Subsidy Scheme (WSPSS) via forums, continuing professional development courses, seminars, TV programme and radio broadcast.
  - promotion of WSPSS via on-the-spot visits to eligible private residential buildings, schools, hospitals and residential care homes for the elderly. The visits provided support for WSPSS application and on-site assistance in formulating and implementing the Water Safety Plan for Buildings.
  - publication of revised Fresh Water Plumbing Maintenance Guide and Leaflet on Inspection and Flushing of Inside Service in New Buildings and Flats, with a view to providing advices on how to manage, inspect and maintain the internal plumbing system properly.

- WG Members appreciated WSD's efforts in developing Q-Leak and promoting proper maintenance of inside water services and applauded WSD of the outstanding achievements. WG members and WSD also exchanged views with the representative of PolyU regarding the application of Artificial Intelligence (AI) and cloud computing for leak analysis. WSD would continue to utilize Q-Leak to improve Hong Kong's leak detection performance and at the same time promoting proper maintenance of inside water services via various public engagement activities in order to enhance public understanding on total water management.

4.7 The Chairman appreciated WSD's effort in leak detection and implementation of water safety plan over years and inquired the details of promotion of QMS to schools, hospitals and residential homes for the elderly and the degree of participation. Mr CHOY Tak Yip of WSD advised that WSD had been proactively engaging schools, hospitals and residential homes for the elderly by providing on-site assistance for completion of the QMS applications and formulation of the Water Safety Plan. Currently, over 50% of private hospitals and 10 private schools had applied for QMS. Coordination with the Education Bureau continued for promotion of QMS to the subsidized schools. Promotion to residential homes for the elderly resumed after the epidemic and currently around 3 elderly centres had applied for QMS. Hospital Authority did have its own water safety plans for inside water services system similar to our QMS and WSD would seek its view in joining QMS at the appropriate time. Mr YAU Kwok Ting, Tony of WSD supplemented that meeting with the eligible property management proactively and the launch of graded certificates contributed to the success in promoting QMS in 2023. Leakage rate was reduced from 14.4% to 14.0% in 2023. With about 2 000 out of the total 2 400 District Metering Areas (DMAs) already established for continuous monitoring the healthiness of the fresh water distribution system under the Water Intelligent Network (WIN), the ultimate goal was to reduce leakage rate to 10% in 2030.

5. Report of Working Group on Water Conservation and Education

5.1 The Chairman invited Mr LAU Che Feng, Edwin, the Chairman of the WG on Water Conservation and Education, to report the key issues discussed at the 4th and 5th WG meetings held on 10 October 2023 and 29 January 2024 respectively.

Publicity Campaign on Water Conservation (the 4th WG meeting)

5.2 Mr LAU Che Feng, Edwin reported the following:

- WSD briefed Members about an upcoming publicity campaign on water conservation. It included video production on water conservation and roving pop-up exhibition with interactive activities in the community (e.g. in shopping centres where families visit in weekends).
- WG Members appreciated the efforts of WSD and supported WSD to continue the publicity campaign.

Cherish Water Campus – the Integrated Education Programme (IEP) Awards Ceremony (the 4th and 5 th WG meeting))

5.3 Mr LAU Che Feng, Edwin reported the following:

- WSD briefed the Members with the rundown and arrangement of "Cherish Water Campus" – IEP Awards Ceremony at the 4th WG meeting and presented the highlights of the Ceremony at the 5th WG meeting. The Ceremony, which aimed to recognise outstanding cherish water performance of sponsoring bodies, principals, teachers and students over the past school year, was held on 18 January 2024 at Hang Hau Community Hall. There were awards for Kindergarten Category in "Cherish Water Sticker and Slogan" design competition and Primary School Category in Outstanding cherish water performance.
- WG Members appreciated the efforts of WSD and supported WSD to continue the programme.

"ACWS Visit to Dongjiang Water Supply System" (the 4th WG meeting)

5.4 Mr LAU Che Feng, Edwin reported the following:

- WSD briefed the Members the tentative itinerary for the ACWS visit to the Dongjiang (DJ) Water Supply System which was held on 13 – 14 November 2023.
- WG Members appreciated WSD for organizing the 2-day visit which had provided Members in-depth understanding of the DJ water supply system and a valuable opportunity to exchange views with Mainland officials.

"Experiential Challenge" (the 5th WG meeting)

5.5 Mr LAU Che Feng, Edwin reported the following:

- Representatives of WSD's Consultant (Crossroad Foundation) briefed the Members that an experiential simulation programme would be developed to facilitate students and public to understand water conservation. The programme included (1) research and curation of the experiential simulation; (2) delivery of simulation and development of home engagement toolkits to participants of the simulation to sustain behavioural change and (3) development of facilitation guides for the simulation for use by NGOs and schools to conduct the simulation by themselves.
- WG Members supported WSD to implement the Experiential Challenge, which could help students and public understand the importance of water

conservation through experience.

6. Report on ACWS's Visit to Dongjiang Water Supply System

6.1 The Secretary reported on the ACWS's Visit to Dongjiang Water Supply System from 13 to 14 November 2023.

6.2 The Chairman appreciated the work of the various Authorities of Guangdong (GD) in improving the Dongjiang (DJ) water quality and implementing the protection measures to safeguard clean water supply. Prof SHIH Kaimin inquired whether visit to the water quality monitoring station and the laboratory were included in the trip. Mr YAU Kwok Ting, Tony of WSD responded that the control centre which displayed water quality data had been visited in this trip and visit to the water quality monitoring station and the laboratory would be considered in the coming visit this year.

6.3 Ms CHUNG Lai Kam, Kathy stated that the Education Bureau (EDB) has been organising "Mainland Exchange Programme for Junior Secondary and Upper Primary Students (the programme)" aiming to enhance students' understanding of the culture, history and development in the Mainland and she enquired whether WSD could collaborate with EDB and the relevant authorities of the Mainland in arranging visit to DJ water supply system for students. Mr YAU Kwok Ting, Tony and Mr YIP Ka Chun, Gary of WSD replied that a series of publicity activities including exhibitions, seminars, publicity programme are being organised to celebrate the 60th anniversary of DJ water supply to Hong Kong in 2025. Arrangement of visits to DJ water supply for students was a part of the publicity programme and EDB was being approached for consultation and possible collaboration. Mr YIP Ka Chun, Gary of WSD further supplemented that school talks on DJ water supply would also be arranged starting this year with an aim to enhancing student's understanding of DJ water and the importance of water conservation. Ms CHUNG Lai Kam, Kathy suggested that Cherish Water Programme could crossover with the upcoming student tours to DJ water supply system, for example winners from Cherish Water Programme would be awarded a trip to visit DJ water supply system.

7. New Water Conservation Campaign

7.1 Ms Karin WONG of Adbrownies Advertising Limited gave a presentation on "New Water Conservation Campaign" (hereinafter called "the Campaign").

7.2 Prof SHIH Kaimin inquired the challenge faced to save water during pandemic because hygiene was more of a concern over water conservation from public point of view. Ms Karin Wong replied that water conservation was a long term target and "the Campaign" aimed to enhance public's understanding of why saving water is needed and eventually to change their water consumption behaviour.

7.3 The Chairman appreciated WSD's effort in putting forward such sustaining Water Conservation Campaign and enquired any approaches to measure the changes of public behaviour in respect of water consumption after the launch of "the Campaign". Ms Karin WONG replied that a baseline research would be conducted subject to further study and consultation with WSD. "The Campaign" would have synergy effect with the undergoing water conservation activities with proper planning and programming.

7.4 Mr LAU Che Feng, Edwin inquired whether there would be targets set for the "the Campaign" similar to the current clear goal for " Let's Save 10L Water 2.0" Campaign and suggested to conduct a numbers of performance assessments periodically by means of Key Performance Indicators (KPIs) to measure the progress of "the Campaign" toward achieving the targets. Ms Karin WONG replied that the first year of "the Campaign" would focus on enhancement of public's awareness and understanding of water conservation so the baseline research could be conducted with reference to these goals subject to further consultation with WSD. Regarding setting goals for "the Campaign", Ms Karin WONG recommended to make use of the current goal of "Saving 10L" in order to avoid confusion. Mr YIP Ka Chun, Gary of WSD supplemented that Domestic Water Consumption Survey was conducted last year and the data, including household water consumption behaviours and their awareness of the WSD's public education and promotion activities, would be used as a baseline for "the Campaign". Another survey would be scheduled to kick start in end of this year to measure the progress of the Campaign and the behavioural changes of public. Available data from schools and the daily consumption per capita would also be used as KPIs to measure the performance of the Campaign.

7.5 Ms CHUNG Lai Kam, Kathy suggested to strengthen promotion and marketing of WSD's mascot because it could help students and public to instantly perceive water conservation. Mr CHEUNG Hau Wai suggested to engage specific trades including hospitals, catering and other non-domestic sectors to share their

knowledge, ideas and the current practice in enhancement of water use efficiency. YIP Ka Chun, Gary of WSD advised that WSD has organised Enterprises Cherish Water Campaign (ECH_2O) since 2022 which aimed to provide a platform for non-domestic sector to cherish water together through different initiates and the above-mentioned proposal for experience sharing could integrate into the upcoming ECH_2O competition for synergistic effect.

7.6 Mr YAU Kwok Ting, Tony of WSD appreciated the suggestions from the Members and would holistically review "the Campaign" with an aim to achieving synergistic effect from combinations of a series of publicity programme and education activities.

8. Any Other Business

8.1 The Chairman expressed gratitude to all Members for their contributions to the ACWS in this term (2022 – 2024) in the past 2 years, particularly the hard times we have overcome during the pandemic.

8.2 There being no other business, the Chairman adjourned the meeting at 5:00 p.m.