

Report on the 16th A1-HRD Meeting (held in-person and online)

From October 19 to 20, 2023, the 16th A1-HRD Meeting was held in-person and online. Information and opinions were actively exchanged on the meeting theme, "Human Resources Development."

Participating Organizations:

[Japan]	Bureau of Waterworks, Tokyo Metropolitan Government
[Korea]	K-Water Academy Seoul Waterworks Authority
[Taiwan]	Taiwan Water Corporation (TWC) Taipei Water Department (TWD)
[Thailand]	Metropolitan Waterworks Authority (MWA)
[Vietnam]	Ho Chi Minh City College of Construction (HCC)
[Bangladesh]	Dhaka Water Supply and Sewerage Authority (Dhaka-ASA)
[Japan]	Tokyo Water Co., Ltd. (Observer Participation)

Presentation Contents:

Theme 1: Human Resources Development for Enhancing Water Supply Resilience

• Tokyo Water Co., Ltd.

- Overview of Tokyo Water Co., Ltd.
- Efforts for Skill Improvement:
 - Revision of operation manuals: Use of manuals for unified guidance in OJT.
 - Site tours: Addressing the lack of field experience.
 - Practical training: Deepening understanding through hands-on experience.
- Future Prospects:
 - It is important that those who learn through OJT grow into roles where they can teach others.

• Seoul Waterworks Authority

"Implementation Tasks for the Prevention of Serious Accidents"

- Status of Serious Accidents:
 - 8 serious accidents in the past decade (15 fatalities).
 - Approximately 660 workers per day at 114 construction sites (as of August 4, 2023).
 - ⇒ Need for efforts to prevent serious accidents caused by aging facilities, poor working conditions, and repeated accidents.
- Serious Accidents Punishment Act:
 - Enacted on January 26, 2021, implemented on January 27, 2022.

- Specific Measures:

- Conducting field inspections and promptly addressing issues that have been pointed out.
- Accident prevention in daily operations: Measures in labor hygiene (e.g., improving posters).
- Developing safety management plans for waterworks construction sites
⇒ Mandatory use of LED-light-equipped helmets for night work

- **Metropolitan Waterworks Authority (MWA)**

"Innovation Development to Support Water Loss Management"

- Development of an AI-based water leak detection system:

- MWA has a water loss rate of 27% (as of September 21, 2023).
- By total length, MWA operates approximately 40,522 km of pipeline.
- Issues such as worker fatigue due to the shortage of experienced staff in water leak detection.
- The training of new staff takes significant time.
⇒ Development of an AI-based water leak detection system using cloud technology.

- Accuracy of the AI-based water leak detection system:

- Leak detection rate by experienced staff: 95.56%
Leak detection rate by the AI-based system: 97.83%

- **Taipei Water Department (TWD)**

"An Implementation of Smart Water in Taipei"

- Overview of the Taipei Water Department:

- Serving a population of 3.95 million (1.65 million households), with 1,037 employees and a pipeline length of 3,600 km.

- Background Information on Smart Meter Implementation:

- 10 million inspections per year conducted by 87 inspectors.
⇒ Problem 1: High turnover rate among young employees due to low wages
⇒ Problem 2: Two-thirds of the 30,000 questionable inspection results were misreadings.

- Status of Smart Meter Implementation in Taipei:

- Pilot project (2015–2018) introduced to 4,000 households.
- Planning for full implementation covering every household from 2019.
- Implementation in all newly constructed buildings from 2020.

- Effects of Smart Meter Implementation:

- Leak detection and immediate repair (leakage volume of 4,000 m³, leakage period of 10 days).
- Without smart meters, the leakage volume could have reached 250,000 m³ over 60 days.

- **Taiwan Water Corporation (TWC)**

- "Types of Risk in Taiwan's Water Supply":

- Risks: (1) Drought, (2) Earthquake, (3) Pipe Burst, (4) Landslide (with (1) and (2) being primary risks).

- Drought Countermeasures:

- Securing water sources:
 - ⇒ Surface water, groundwater, and desalinated seawater.
 - ⇒ Desalination facilities on islands (capacity: 600 m³, completion in 2024).
- Reducing usage:
 - ⇒ Pressure management, prompt and appropriate leak repairs, proper water pipe maintenance, and preventive maintenance for leaks.

- Importance of Human Resources Development:

- Decisions on water supply have so far been determined in response to rapid demand. Going forward, Taiwan's limited water resources should also be considered in response formation.
 - ⇒ Developing human resources to meet these goals.
- Use of reclaimed water and desalinated seawater.
- Enhanced e-learning and practical education.

- Conclusion:

- Flexible HRD to maintain resilient water supply systems in response to climate change.
- Utilizing technology to reduce labor-intensive work and address labor shortages.
- Recognizing the need for continuous learning to prepare individuals and organizations for future uncertainties.

- **K-Water Academy**

- "Water Quality Issues in Korea":

- Introduction:

- Changes in water use in Korea (1950–2022): Sanitary water → Safe water → Tasty water → Healthy water → Water for sustenance.
- Changes in drinking water quality (1991–2020): Bad smell → Viruses in drinking water → DBPs in drinking water → Odors from algae in drinking water → Micro-bugs in drinking water.

- Latest Water Quality Issues: Micro-bugs in drinking water.

- Occurrence of Chironomus Larva:
 - Activated Carbon Filtration in Incheon Metropolitan City (2020)
 - Water supply pipeline in Jeju City (2020)

- Conclusion:

- Korea has experience in handling various sudden water quality accidents.

- Korea has improved emergency responses to provide cleaner and safer drinking water.
- Global climate change affects drinking water quality by eliciting massive larva production.
- In drinking water quality management systems, technologies have been developed to adapt to future drinking water risks.

• **Ho Chi Minh City College of Construction (HCC)**

- Training Programs at HCC
 - Training conducted for water supply and sewerage engineers
 - Short-term training courses (1–3 months) for working professionals, water supply and sewerage engineer training, and water supply and sewerage-related subject courses.
- Introduction of Business-oriented Courses:
 - ArcGIS courses
 - Hydraulic analysis of the water supply network
 - Training in water supply pipe installation and repair techniques (including safety education)
 - Building of GIS data for asset management in the water supply system

• **Dhaka Water Supply and Sewerage Authority (Dhaka-ASA)**

- Overview of Dhaka-ASA:
 - Jurisdiction: 400 km²
 - Population served: 22 million
 - Water coverage: 100%, with no water supply interruptions (24/7 water supply)
- Collaboration with global water operators and development agencies
- Aim to create a digital Dhaka-ASA with the cooperation of these organizations and agencies

Theme 2: Actions to Maintain a High Level of Compliance Awareness

• **Bureau of Waterworks, Tokyo Metropolitan Government**

- The Bureau delivers safe and tasty water, earning high customer trust.
 - Importance of Compliance:
 - ⇒ Case Analysis: One reason for inappropriate office procedures is a poor workplace atmosphere.
 - The Tokyo Metropolitan Government's compliance promotion measures focus on "legal compliance" and "operational improvement."
 - The Bureau of Waterworks, Tokyo Metropolitan Government declared a regime for compliance management by the Director General.
 - Internal Control Initiatives, Four Processes, and a Public Disclosure System:
 - ⇒ Contributing to psychological safety in the workplace.

- Role of the Training and Technical Development Center, Importance of Training:
 - Training makes up a significant part of compliance promotion efforts and is carried out sufficiently.
 - Employee survey results show that the training implemented is very effective.
 - Issues:
 - Promoting e-learning and ensuring opportunities for non-participants to attend the training.
 - Further promoting joint training with Tokyo Water Co., Ltd.

Discussion Contents:

• 17th Meeting:

K-Water Academy will host the 17th meeting. The themes will be "Human Resources Development for Balancing Environmental Conservation and Sound Business Management" and "Innovations in HRD for Digital Transformation in the Water Supply Industry."

• 18th Meeting:

The Metropolitan Waterworks Authority (MWA) will host the 18th meeting.



Exchange of Gifts



Conference Scene



Group Photo



Presentation