Stormwater Management Technology

November 2025

METAWATER Co., Ltd.

International Sales & Marketing Department

International Business Division

Outline

1. **Corporate Overview**
2. **Stormwater Management Technology for Unexpected Heavy Rainfall in Urban Areas**
   - I. Technological Overview
   - II. Constituent Technologies
   - III. Benefits

Corporate Overview

Corporate Overview

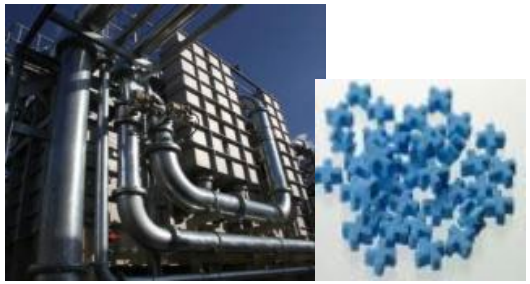
METAWATER is a leading engineering company with unique products and wide range of experiences from product supply, EPC up to O&M service **incl. PPP projects**.

Capital	JPY 11.9 Bil. (ca. US$ 80 Mil.)
Stock Market	Prime Market of Tokyo Stock Exchange (Code:9551)
Net Sales	JPY 179.1 Bil. (ca. US$ 1.2 Bil.)
Employees	3,883 (consolidated)
Location (JPN)	Tokyo (Head Office), Hino Office, Nagoya Office
(Intl.)	Vietnam, Cambodia, Switzerland, Germany, The Netherlands, USA

Ceramic Membrane

Ozone Generator

High Rate Filtration System

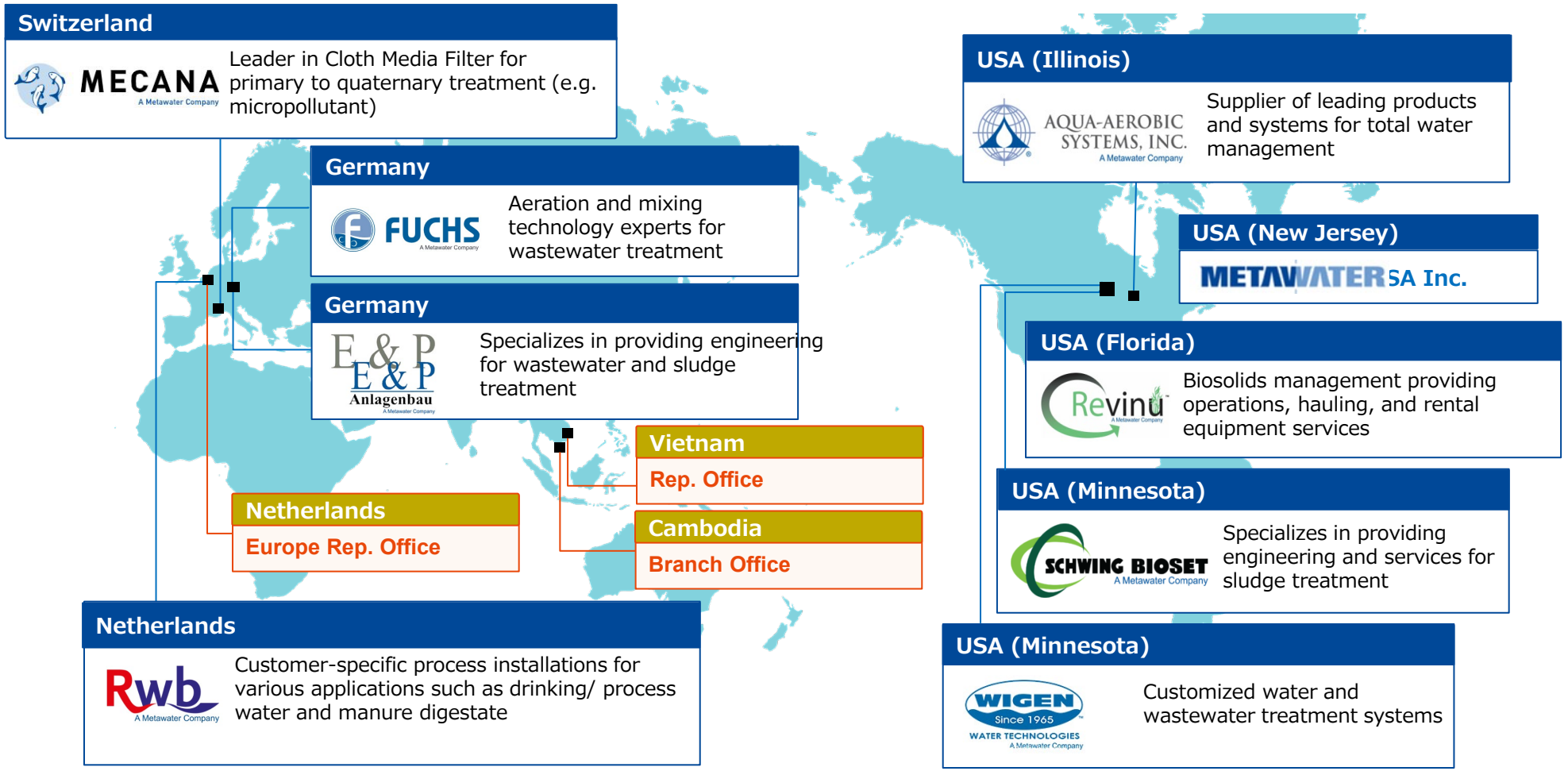


PTF System

International presence in Europe, NA, Asia

➢ Outside of Japan, we currently have a total of over **20** local bases and strategic partners

<Our subsidiaries and representative offices overseas>



Subsidiaries Branch office or Representative office

International track record

■ : Ceramic membranes (incl.ongoing PJTs)
■ : Ozone ((incl.ongoing PJTs)
■ : Other major references

UK

Hampton Loade WTP: 210,000 ㎥/d
- Ceramic membrane filtration system (CeraMac®)
- World's largest ceramic membrane filtration plant

Mayflower WTP: 96,000㎥/d
- Ceramic membrane filtration system (CeraMac®)

Witches Oak WTP: 89,000㎥/d
- Ceramic membrane filtration system (CeraMac®)

Hrobice WTP (Czech Republic):10,000㎥/d

Klenovec WTP (Slovakia):12,000㎥/d

China
>10 ozone installations

Japan
>170 ceramic membrane installations

Sonnenberg WTP (Switzerland):12,000㎥/d

Basin Creek WTP (Butte-Silver Bow, Montana): 26,400㎥/d

North America
Ozone installations at **>30 WTP/WWTPs**

Netherlands

Andijk Ⅲ WTP: 120,000㎥/d
- Ceramic membrane filtration system (CeraMac®)

New applications
- Anaerobic MBR system
- Digestate Treatment
- Backwash treatment

Cameroon WTP: 17,140㎥/d (2 sites)

Beijing No.9 WTP
- O3 output:66kg/h

Wylie WTP (Texas)
- O3 output: 73.7kgO3/h × 13 units

Mobile Ceramic Membrane Filtration Units
> 30 units in 10 countries across Africa and Asia

Project for Sewerage System Development in Phnom Penh (Cambodia): 5,000㎥/d
- Pre-treated Trickling Filter system

Chao Chu Kang WTP (Singapore): 180,000㎥/d
- Ceramic membrane filtration system (CeraMac®)

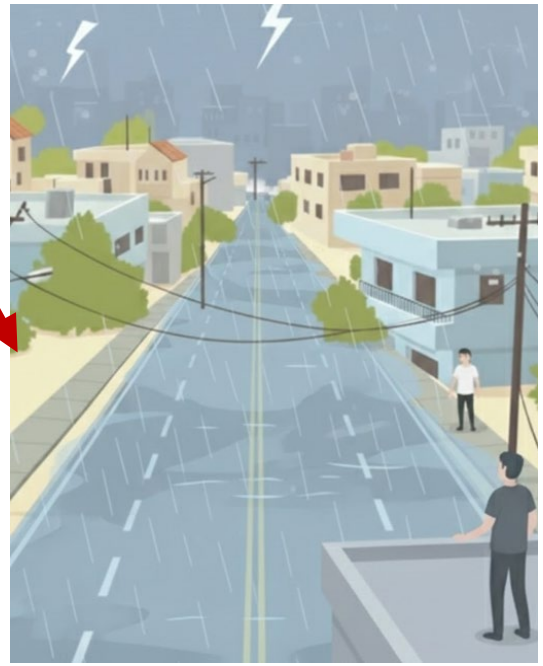
The Project for Water Quality Improvement for Japanese Bridge Area in Hoi An City (Vietnam): 2,000㎥/d
- Pre-treated Trickling Filter system

*Name of the new WTP where Ceramic membrane will be installed. It will be constructed in the vicinity of the existing Church Wilne WTP.

Stormwater Management Technology

Technological Overview

Stormwater Management Technology



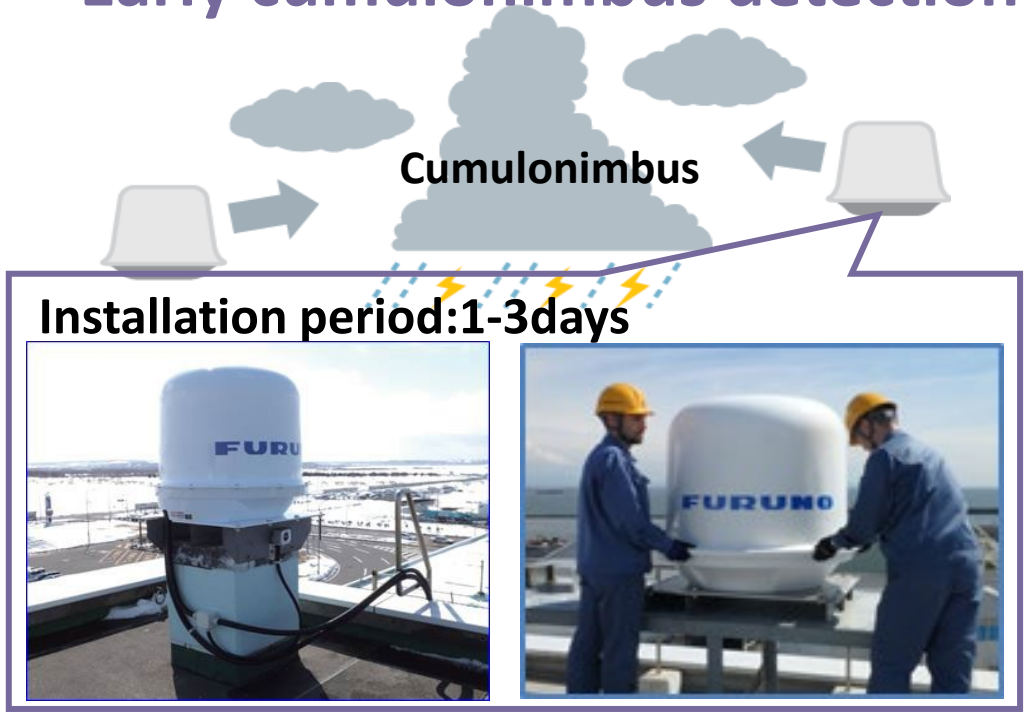
Support for facility operation

Evacuation

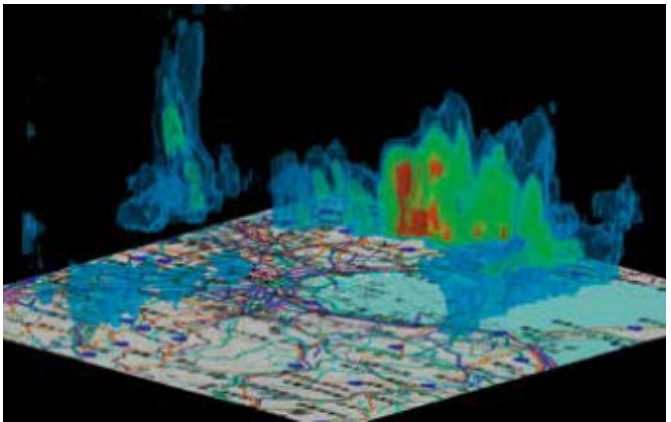
Preparation for sanding

1. Urban Radar

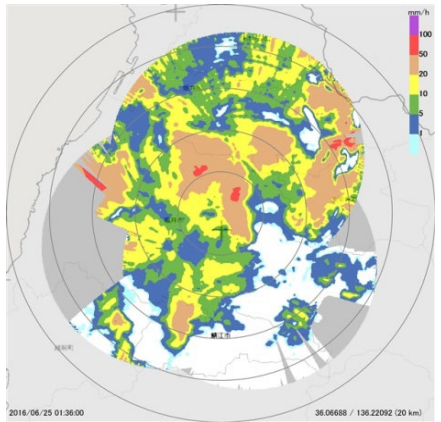
Early cumulonimbus detection



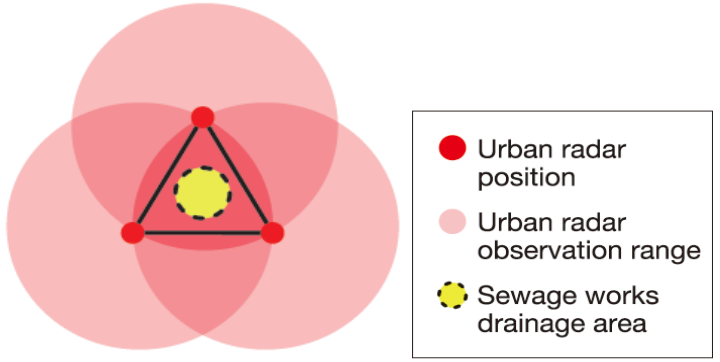
Real-time 3D observation



Observation Image



<Arrangement of urban radars>



Any rainfall within a 30km radius from the installation location can be observed.

>> Reduces missing areas due to radio wave dissipation.

<Effective area for Urban Radar installation>

- Areas where conventional radar (XMP) does not observe low altitude (500m)
- Areas where missing areas in XMP observations due to radio wave dissipation and shielding

<Urban Radar usage example>

＊To improve observation accuracy with large radar (Japan)

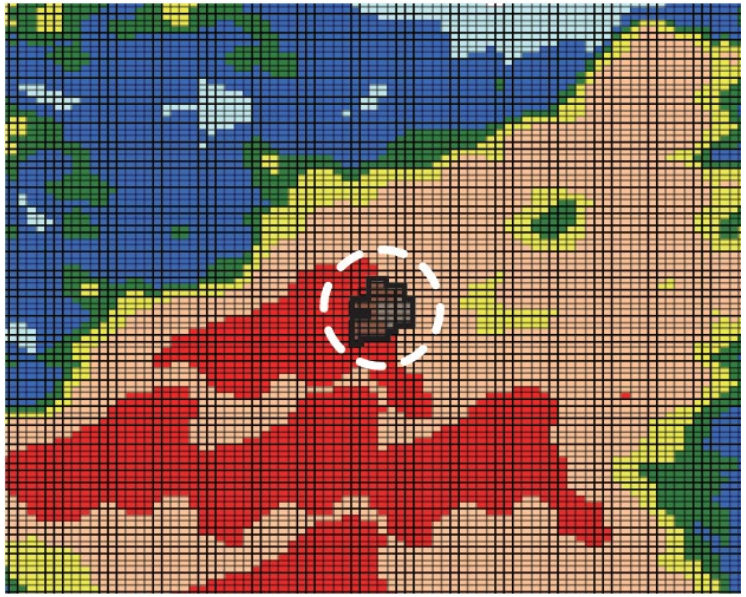
＊Volcanic ash and rainfall observations (Indonesia)

etc.

2. Short-term Rainfall Prediction Model

High-resolution, high-accuracy rainfall prediction by minute

Future rainfall is predicted in real time based on radar rainfall.



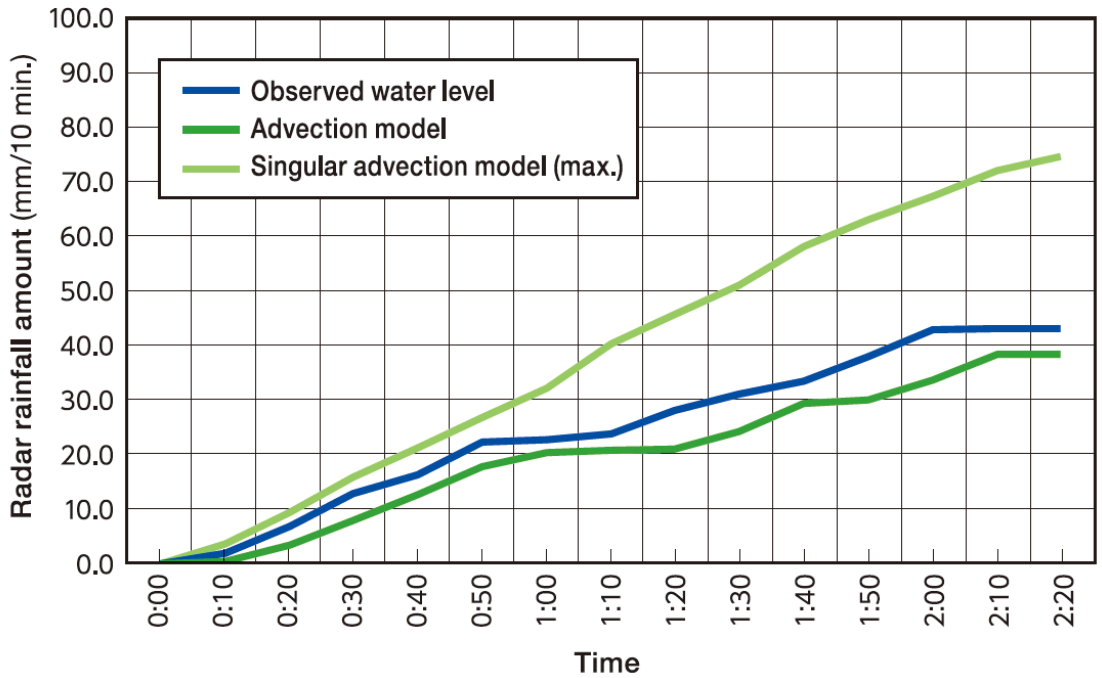
Advection model

: Effective for **facility operation** support

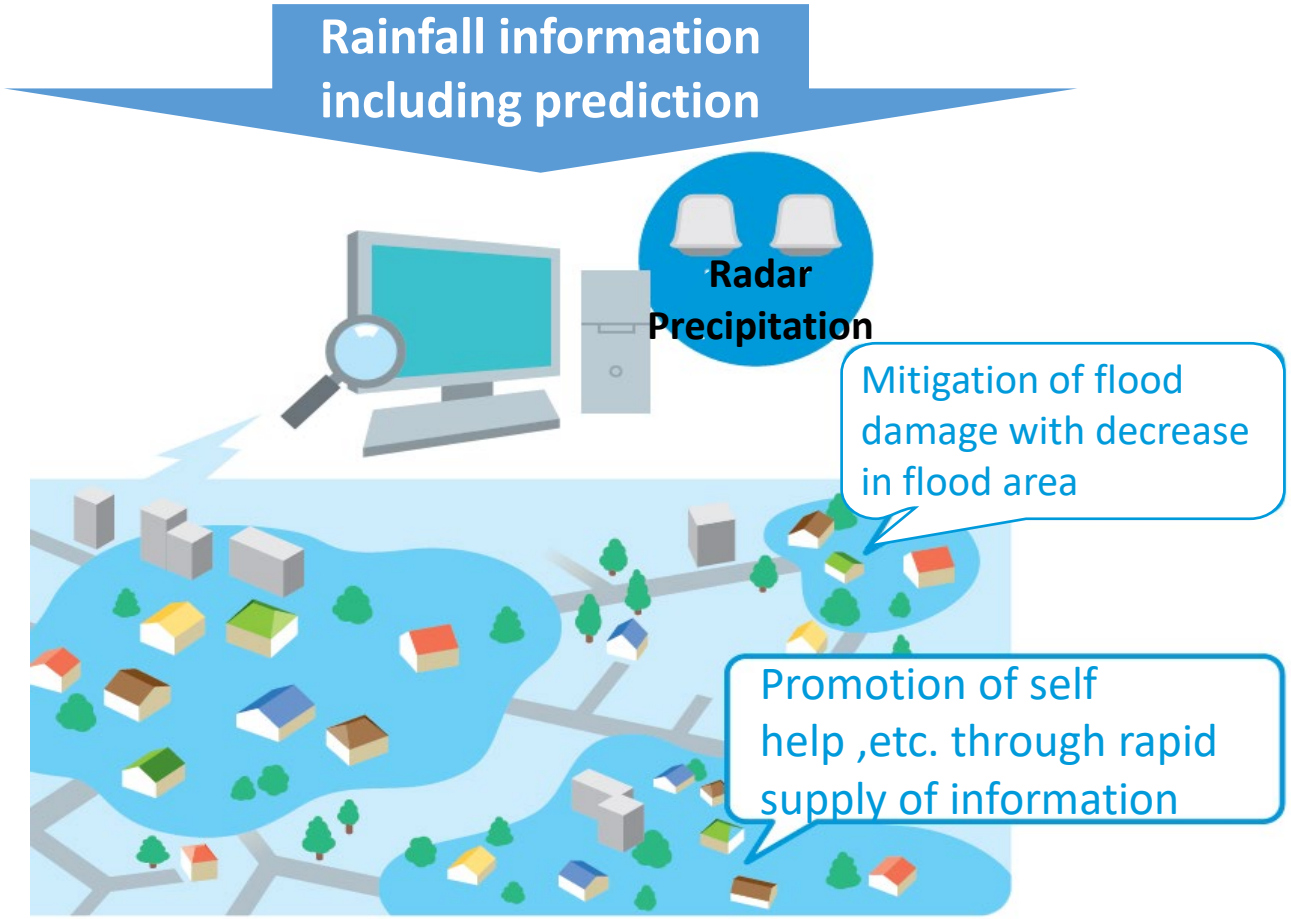
Singular advection model

: Effective for **residents** securing the lead time necessary for **self-help and mutual-help**

<Accumulated rainfall amount with the advection and singular advection models (max.)>



3. Fast Runoff Analysis System



High-accuracy , real-time flood prediction

Radar rainfall and water level gauge data are captured as needed

to predict the water level in sewer and flood locations by 60 minutes in advance.

＜Simulation analysis screen＞

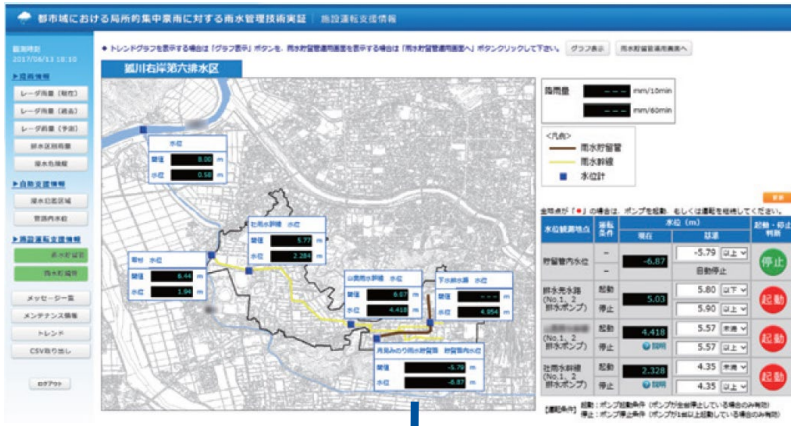
Reference: EMORI Infotech Co., Ltd.「ICM&ICMLive_Intro_for_WMA_2024.pptx」

Delivery System

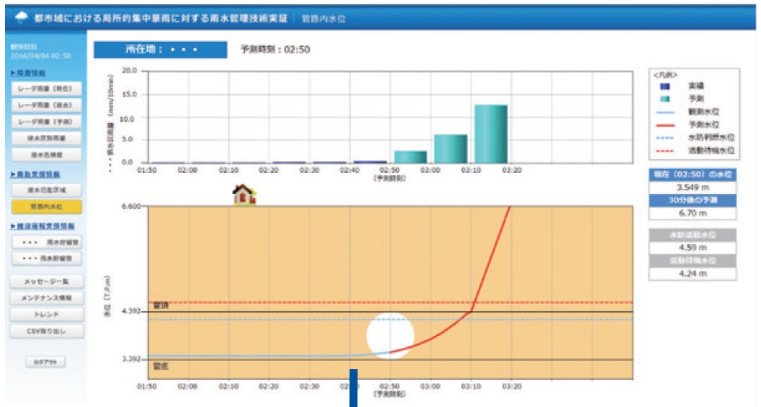
Delivery of detailed rainfall and flood prediction

Support residents and operators to make decision by delivering information such as predicted river levels.

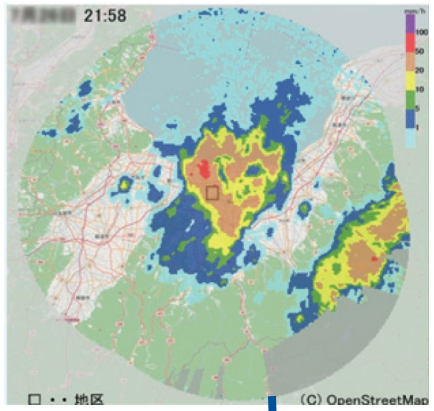
<Pump operation management display>



<Sewer water level screen>



<Rader rainfall display>



<u>Facility operation support</u>
To help operators make decisions

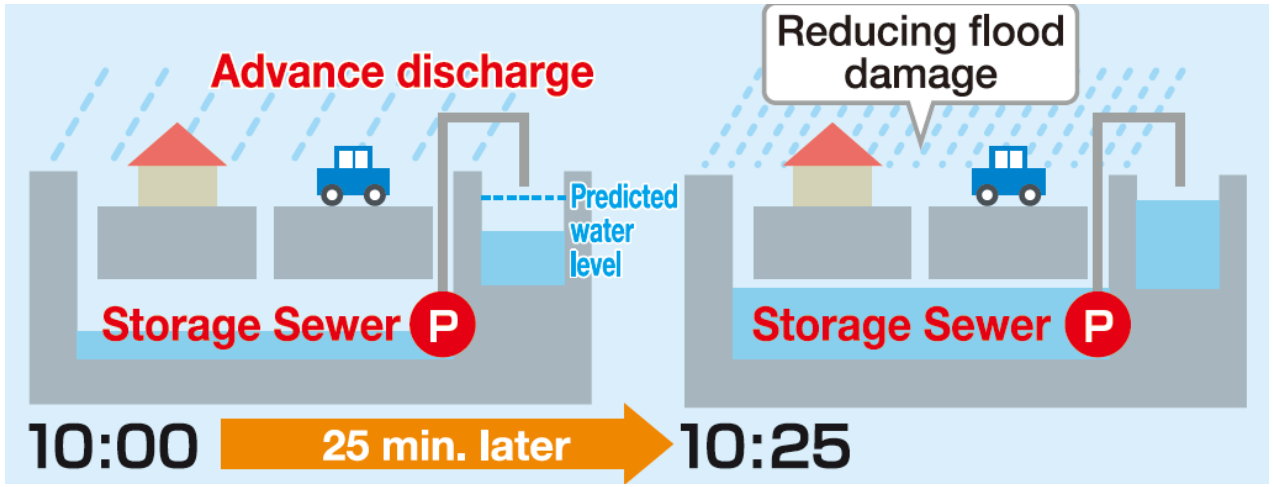
<u>Self-help/Mutual-help support</u>
To support early warning for residents

To urge operators and residents to make decisions on actions to take based on the path and intensity of the rain

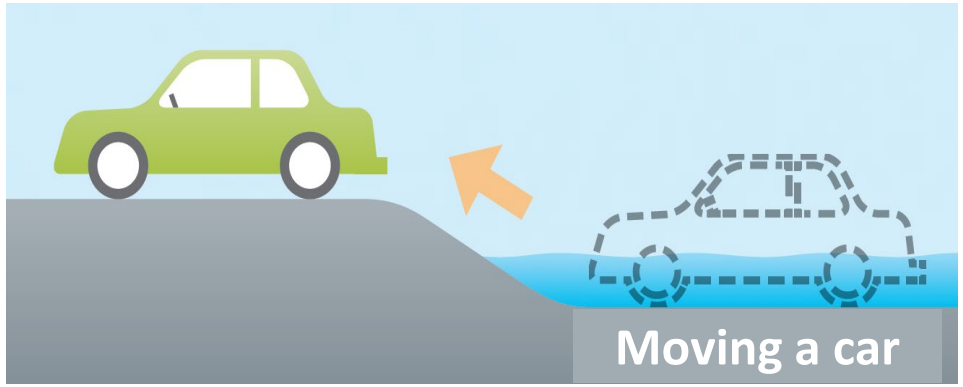
Benefits

<Facility Operation>

Optimizing facility operations according to precipitation



<For Residents>



Thank you for your attention.

Contact is as follows :

METAWATER Co., Ltd. Head Office
International Sales & Marketing Department
International Business Division

Attention : Yasuyuki Shinotsuka （General Manager）
E-mail : shinotsuka-yasuyuki@metawater.co.jp

Attention : Shintaro Seo（Chief）
E-mail : seo-shintaro@metawater.co.jp

Attention : Michiko Tamaru (Person in charge)
E-mail : tamaru-michiko@metawater.co.jp

TEL : +81-3-6853-7343