

14 May 2025

Nihon Suido Consultants Co., Ltd.

# Real-time Stormwater Management System (Blitz-GIS)

Overseas Supervisory Division,  
Business Development Headquarters

TOBE Tatsuya  
Professional Engineer (Civil)  
Manager in charge of Project Strategy

# Company Introduction of Nihon Suido

Water  
Supply



Sewerage



Digital  
Transformation



Environment



Construction



500  
professionals

65<sup>th</sup>  
Established in 1959

70  
countries

We are an engineering consultant company specializing in water and sewerage infrastructure.

Overseas



River



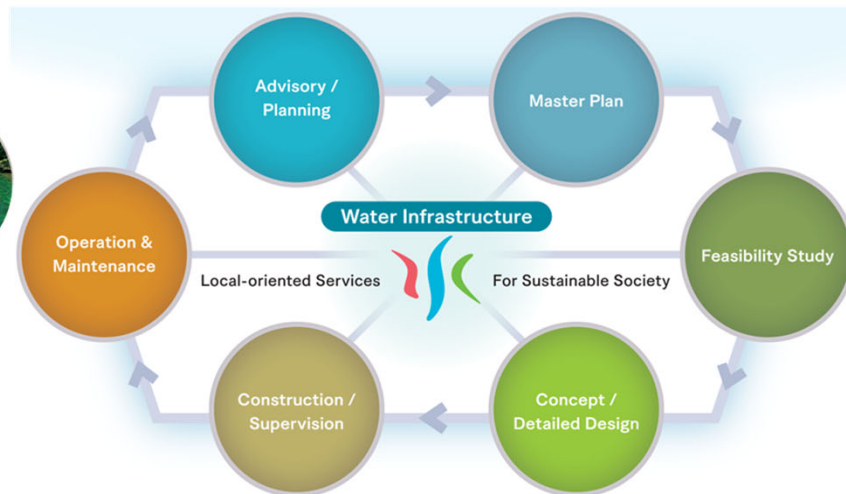
Machinery,  
Electricity,  
Plant



Architecture

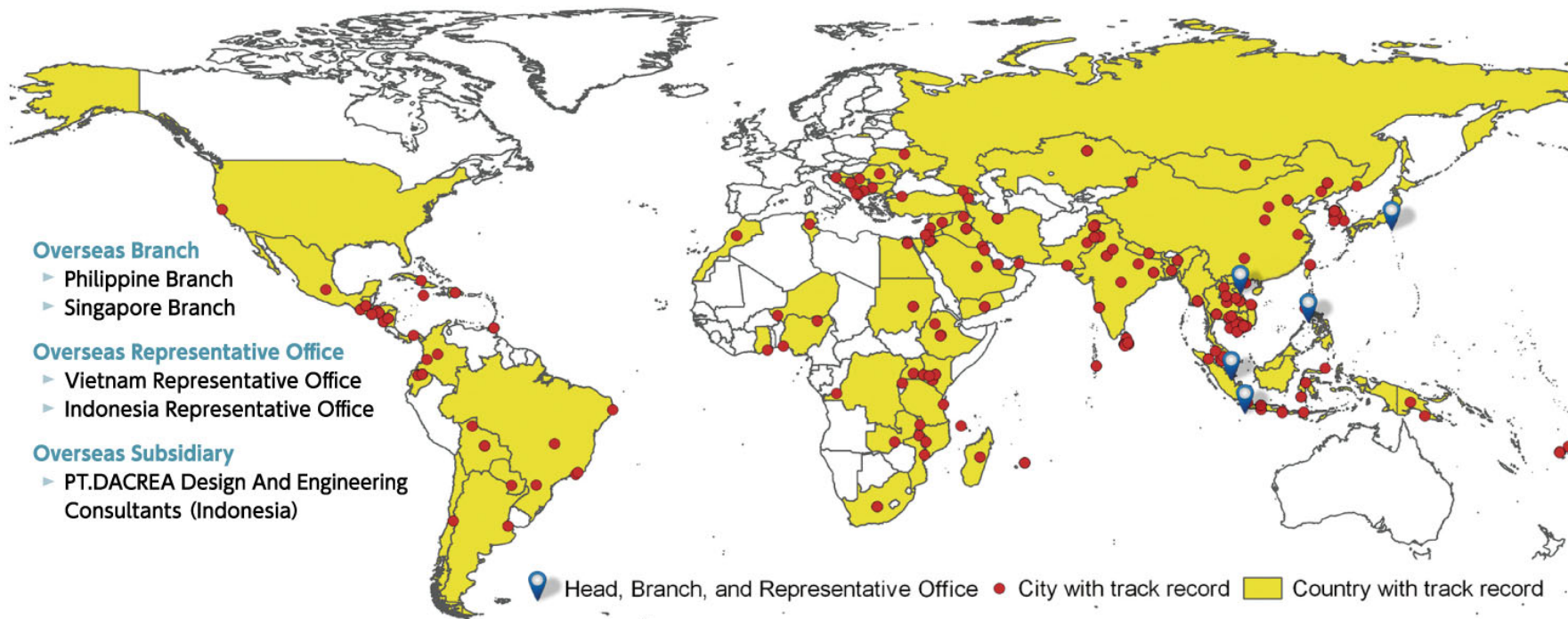


Structural  
Design



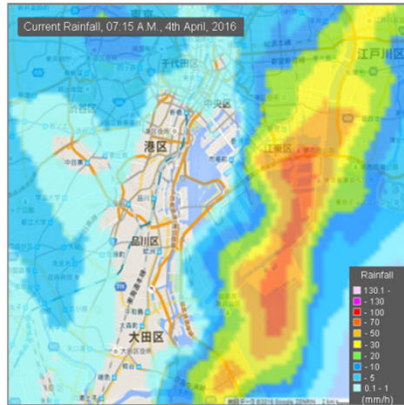
We will provide total solution for Water-related Projects at Every Stage

# Our Presence in the World

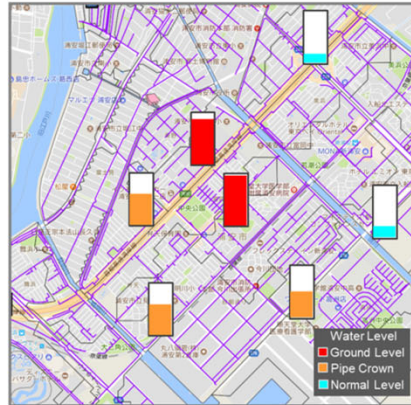


# Our Innovative SMART Technology

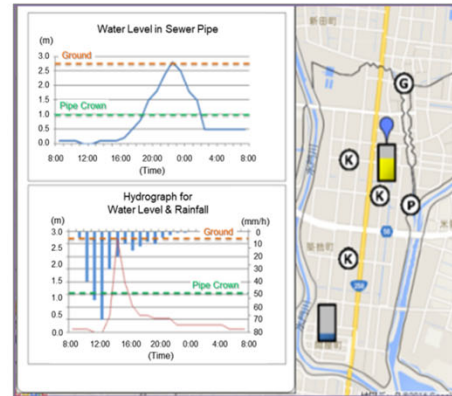
## Real-time Stormwater Management System (Blitz-GIS)



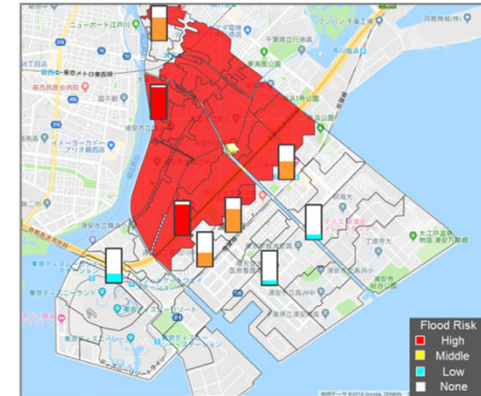
**Rainfall Forecast**  
(Current and Forecasted Rainfall)



**Water Level Forecast**  
(Current and Forecasted Water Level)



**Hydrograph for Water Level and Rainfall**



**Flood Risk Distribution**  
(Forecasted by Rainfall and Water Level)

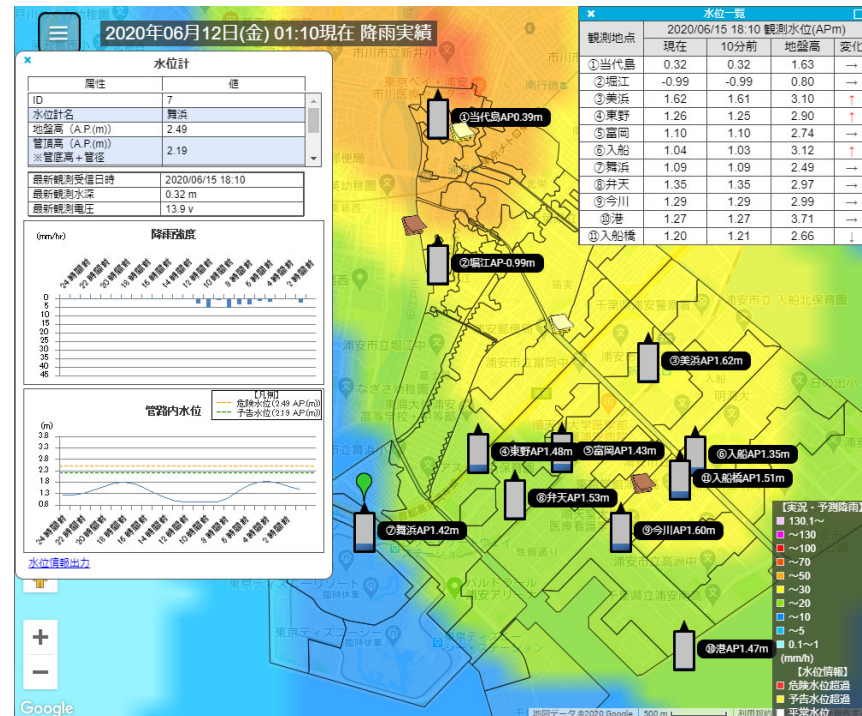


# Function of Blitz-GIS

## 1. Asset Management



## 2. Stormwater Management



# Track Records

Reason for Introduction	No. of cases	Notes
Asset Management for Water Pipe	23	Kagawa Pref, Hanshin Suido, Fukuoka Pref, Amagasaki city, etc
Asset Management for Sewer Pipe	34	Akita Pref, Tochigi Pref, Toyama city, Noboribetsu City, Samukawa Town, etc
Disaster drill	1	Saitama Prefecture
Stormwater management	9	Urayasu City, Izumiotsu City, Okazaki City, Davao City, etc
Dam discharge and river monitoring	2	Koshigaya City, Hyogo Pref

Facility & asset management

Water and sewer ledger  
(facility and drawing  
management)

Maintenance  
(Stock management)

Maintenance information  
(registration of survey result)

Risk Management

Disaster relief support  
(earthquake, flood measure)

Business stakeholders  
(watershed, public, comprehensive, operation  
and management companies)

Localization / Co-operation  
Localization / Co-operation

Other businesses (disaster support)

# Smart JAMP Project in Davao

- Project Name: Smart JAMP – Feasibility Study for Smart City (Disaster Prevention) in Davao City
- Period: June 2024 to March 2025
- Funded by: Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Japan
- Counterpart in Philippines: City Government of Davao
- Implemented by: Yachiyo Engineering Co., Ltd.  
Nihon Suido Consultants Co., Ltd.

## Project Description

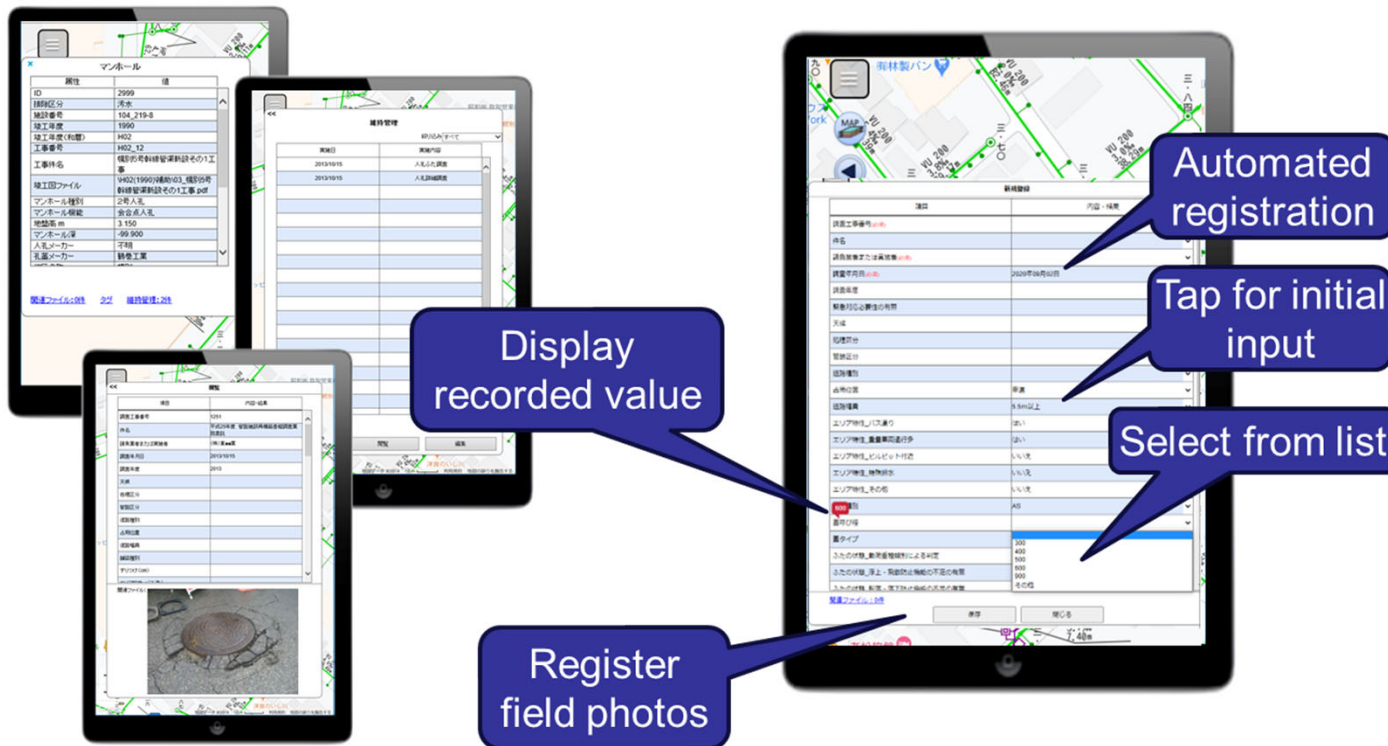
1. PoC for the stormwater management system (Blitz GIS) in Davao
2. Enhance the capacity for flood management in Davao City
3. Enhance urban functions and citizen quality of life



# 1. Asset Management System

## Record Management

## New Registration






# Drainage Maintenance Record in Davao City

For Drainage Maintenance  
in the Month of  
**APRIL 2024**

NO.	LOCATION	ACTIVITY	AREA COVERED	DURATION		EQUIPMENT USED	PLATE NUMBER	DRIVER OPERATOR	MATERIALS USED/SCRAPPED	FOREMAN ASSIGNED
				STARTED	COMPLETED					
1	TULIP DRIVE, MATINA	RODDING	TULIP DRIVE	APR 1, 2024	APR 14, 2024	RODDING MACHINE			R. MACHINE	B. DUGRO
2	QUIMPO BLVD, ECORNO	RODDING	QUIMPO BLVD	APR 1, 2024	APR 14, 2024	RODDING MACHINE			R. MACHINE	B. DUGRO
3	TULIP DRIVE MATINA	RODDING / WASTE DISPOSAL	TULIP DRIVE	APR 15, 2024	APR 15, 2024	DUMP TRUCK SEC 855		J. PRITE	D. TRUCK	B. DUGRO
4	QUIMPO BLVD, ECORNO	RODDING / WASTE DISPOSAL	QUIMPO BLVD	APR 15, 2024	APR 15, 2024	DUMP TRUCK SEC 855		J. PRITE	D. TRUCK	B. DUGRO
5	TULIP DRIVE MATINA	RODDING	TULIP DRIVE	APR 16, 2024	APR 24, 2024	R. MACHINE				B. DUGRO
6	QUIMPO BLVD, ECORNO	RODDING	QUIMPO BLVD	APR 16, 2024	APR 24, 2024	R. MACHINE				B. DUGRO
7	TULIP DRIVE MATINA	RODDING / WASTE DISPOSAL	TULIP DRIVE	APR 25, 2024	APR 25, 2024	DUMP TRUCK SEC 855		J. PRITE	D. TRUCK	B. DUGRO
8	QUIMPO BLVD ECORNO	RODDING / WASTE DISPOSAL	QUIMPO BLVD	APR 25, 2024	APR 25, 2024	DUMP TRUCK SEC 855		J. PRITE	D. TRUCK	B. DUGRO
9	TULIP DRIVE MATINA	RODDING	TULIP DRIVE	APR 26, 2024	APR 30, 2024	RODDING MACHINE			R. MACHINE	B. DUGRO
10	QUIMPO BLVD ECORNO	RODDING	QUIMPO BLVD	APR 26, 2024	APR 30, 2024	RODDING MACHINE			R. MACHINE	B. DUGRO
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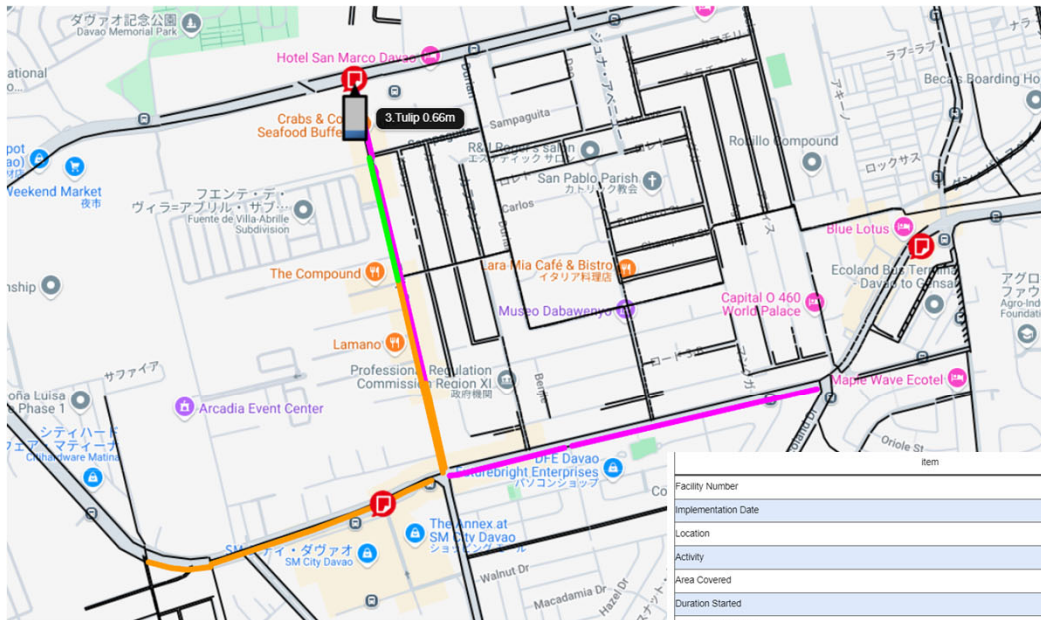
Prepared by:  Checked by: \_\_\_\_\_ Submitted by: \_\_\_\_\_ Noted by: \_\_\_\_\_

**MANUEL D. CELONA**  
 Assistant City Engineer for Operations/  
 Head, Maintenance Division

**ATTY. JOSEPH DOMINIC S. FI**  
 Officer in Charge

# Asset Management System in Davao City

## ■ Registration of drainage maintenance record in Apr to June 2024 in Davao

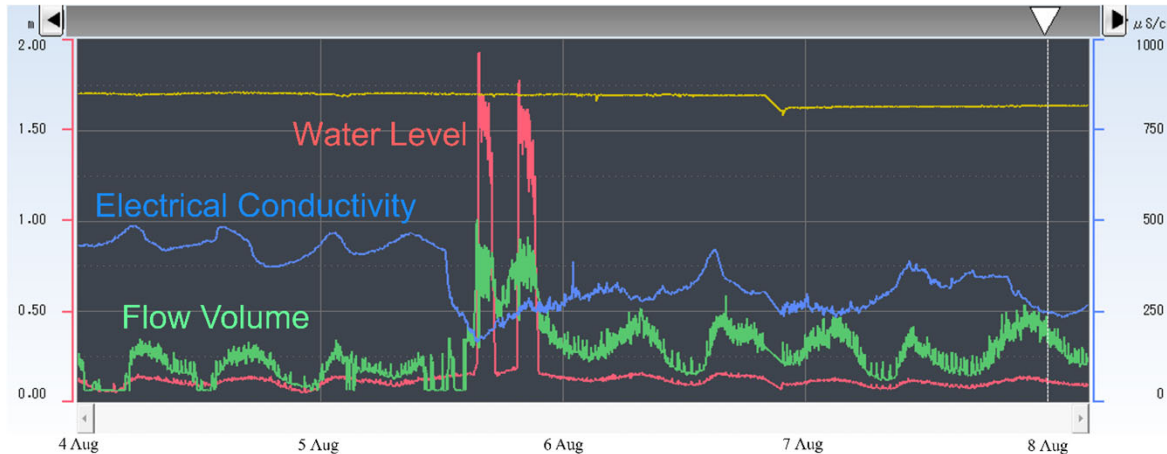
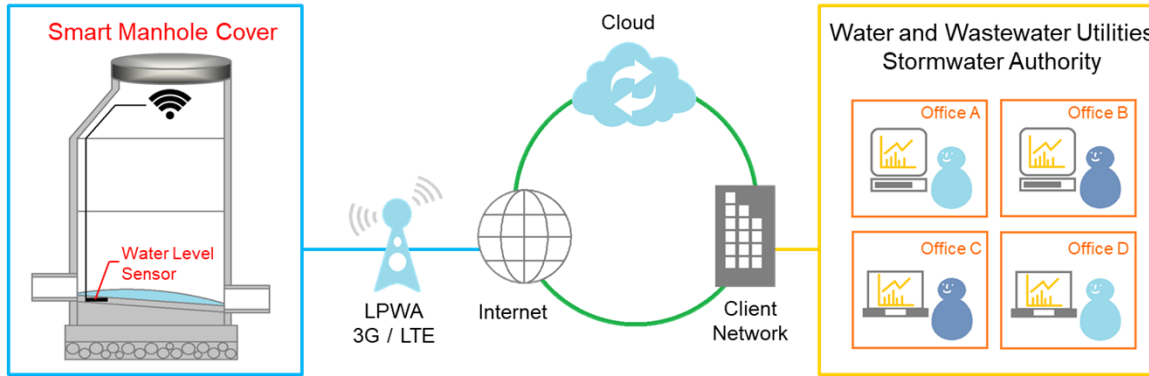


- : Drainage Maintenance in Apr 2024
- : Drainage Maintenance in May 2024
- : Drainage Maintenance in June 2024



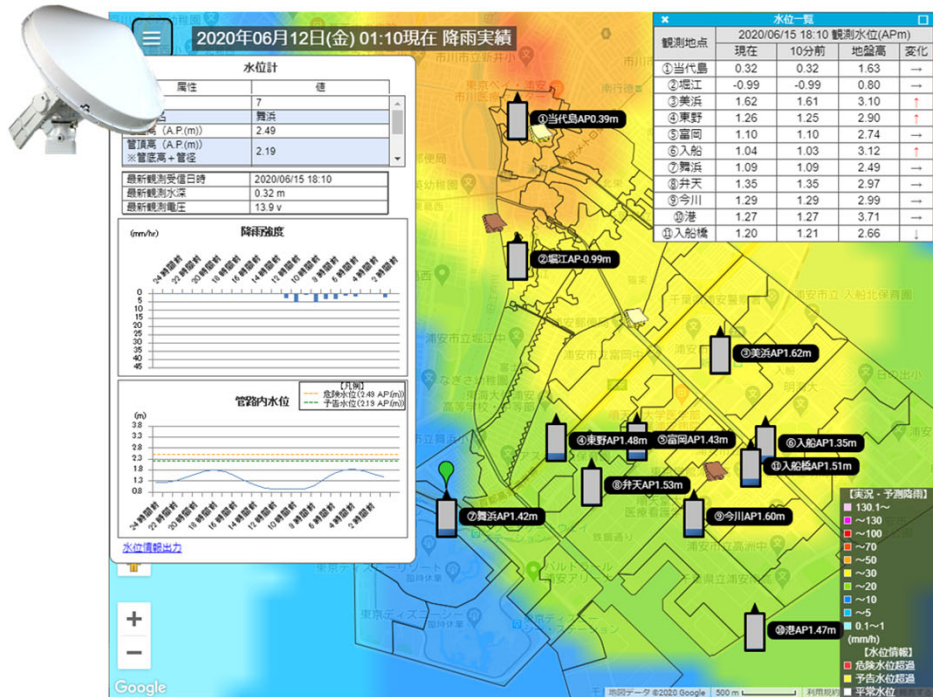
Item	Contents/Results
Facility Number	1562
Implementation Date	2024年06月14日
Location	Tulip Drive, Matina
Activity	Rodding, Waste Disposal
Area Covered	Tulip Drive
Duration Started	14 June 2024
Duration Completed	14 June 2024
Equipment Used	Dump Truck
Plate Number	SK6 855
Driver Operator	J Paefe
Materials Used	Dump Truck
Foreman Assigned	B Diabro

## 2. Stormwater Management System



# Stormwater Management System Overview

## Rainfall information (weather radar) & water level: Real-time observation



### Alert Notification (E-mail)

Water Level Alert(Tulip Drive: Tul01s)

Alert@nisuicon-rd-dashboard.link  
宛先: ● 平部 達也 (Tobe Tatsuya)

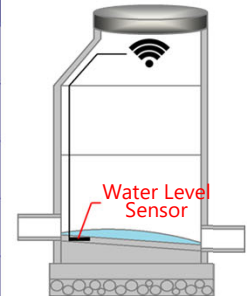
● 保持: アイテム10年保持ポリシー (10 年) 有効期限: 2034/10/05 (木) 23:35

The water level has been over the Hazardous Water Level (Pipe Crown Level)

[Over Hazardous Water Level (0.9 m)]  
10:30 PM, 07/10/2024 at Tulip Drive: Tul01s, Observed Water Level: 1.127 m

### Alert Symbol in Blitz-GIS

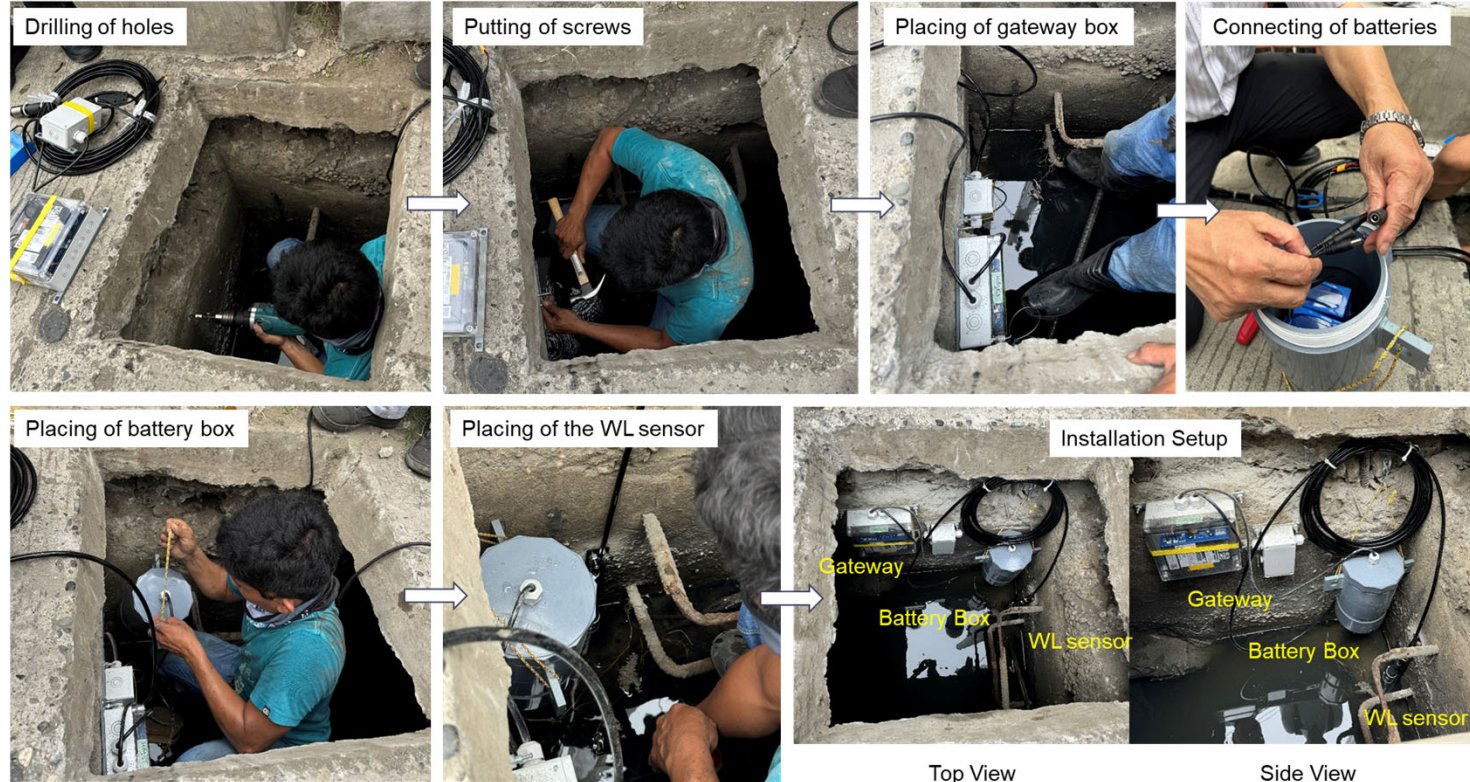
Water Level	Condition	Symbol
Flooding	Over Flooding Water Level (Ground Level)	
Hazardous	Over Hazardous Water Level (Pipe Crown Level)	
Normal	Water Flow over 80% of Pipe Crown Height	
	Water Flow over 20% of Pipe Crown Height	
	Water Flow below 20% of Pipe Crown Height	





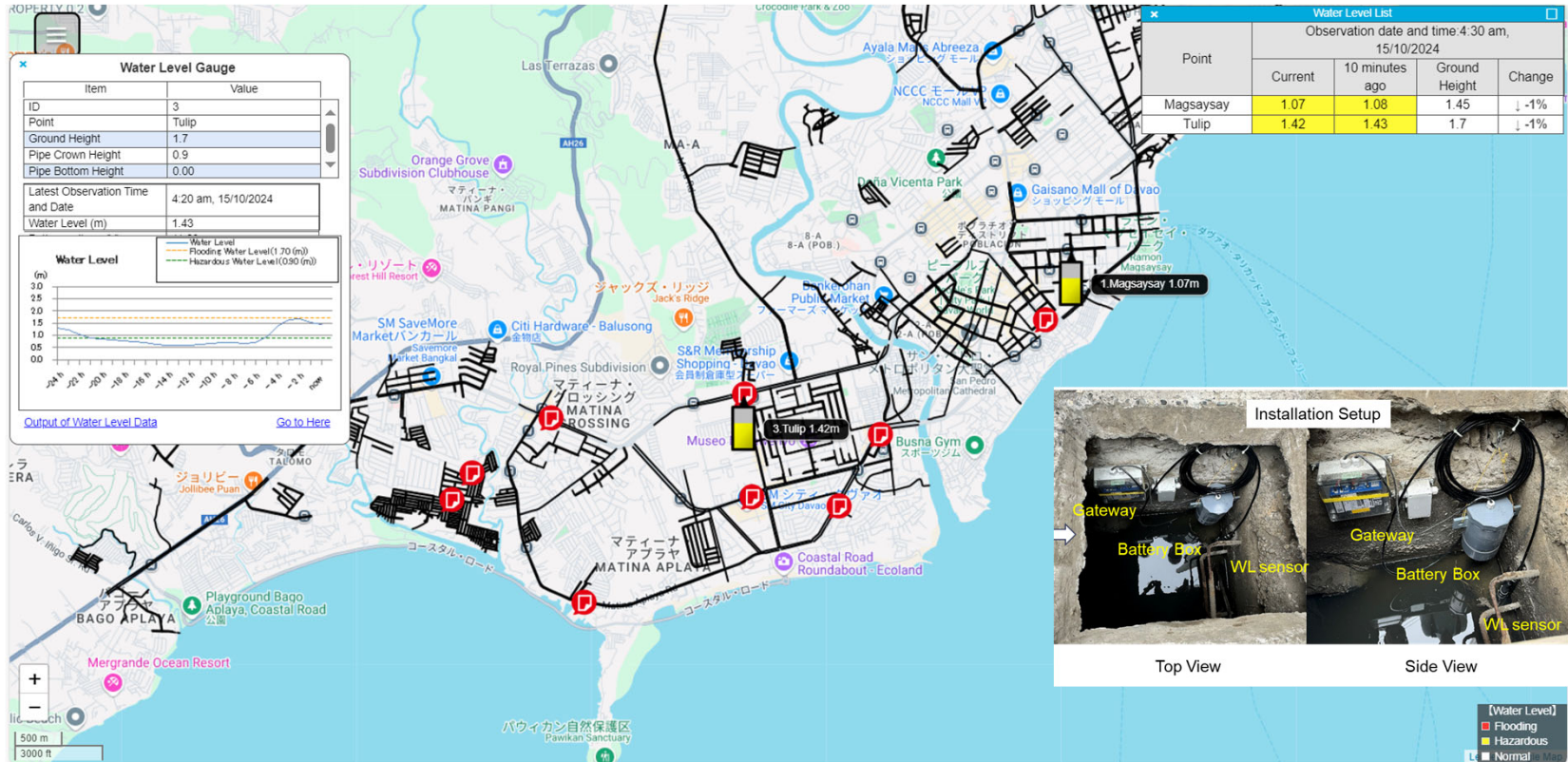
# Installation of Stormwater Management System

## ■ Installation of water level gauges and start the operation at Magsaysay



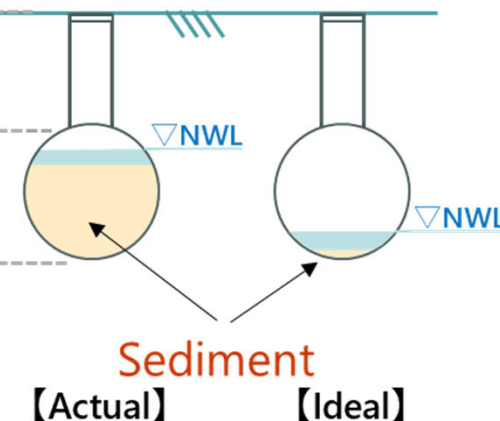
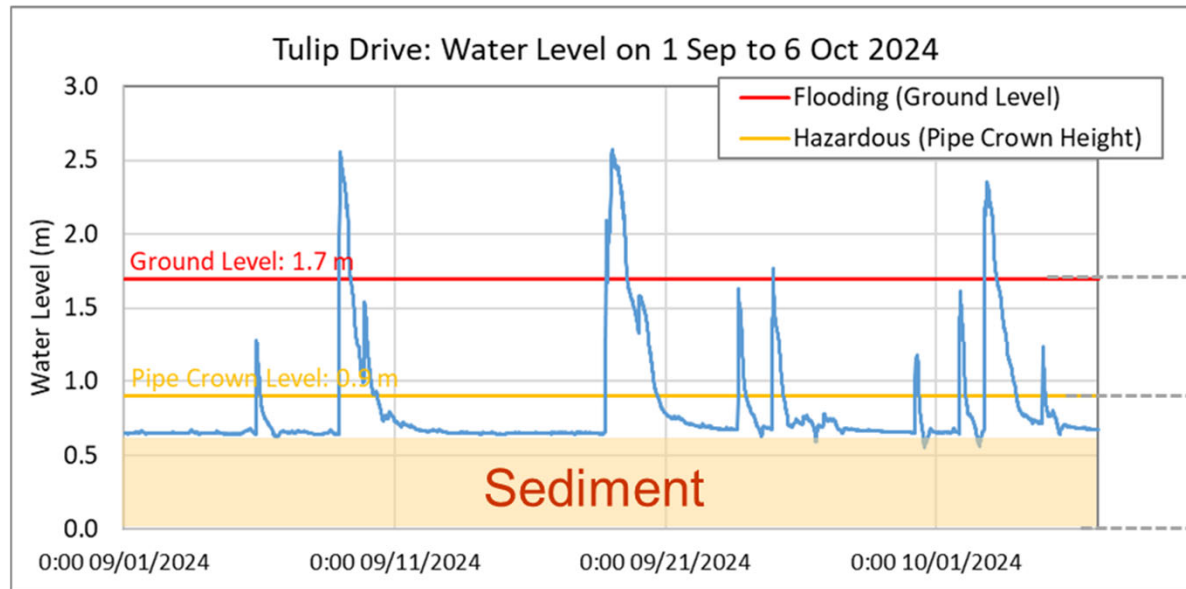
# Stormwater Management System in Davao

■ Actual dashboard of Blitz-GIS during the heavy flood on 8 Sep 2024



# Monitoring Record: Water Level

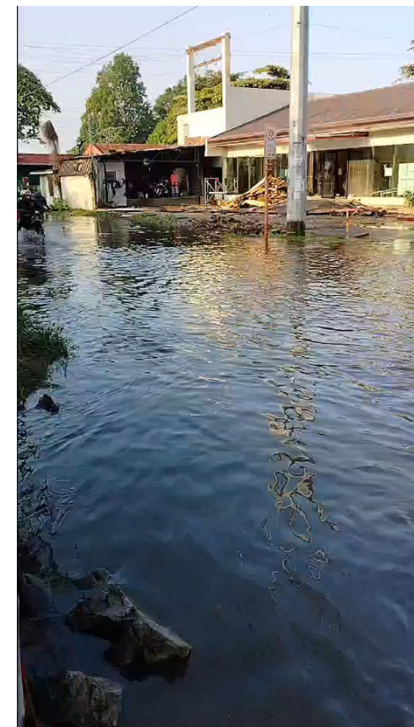
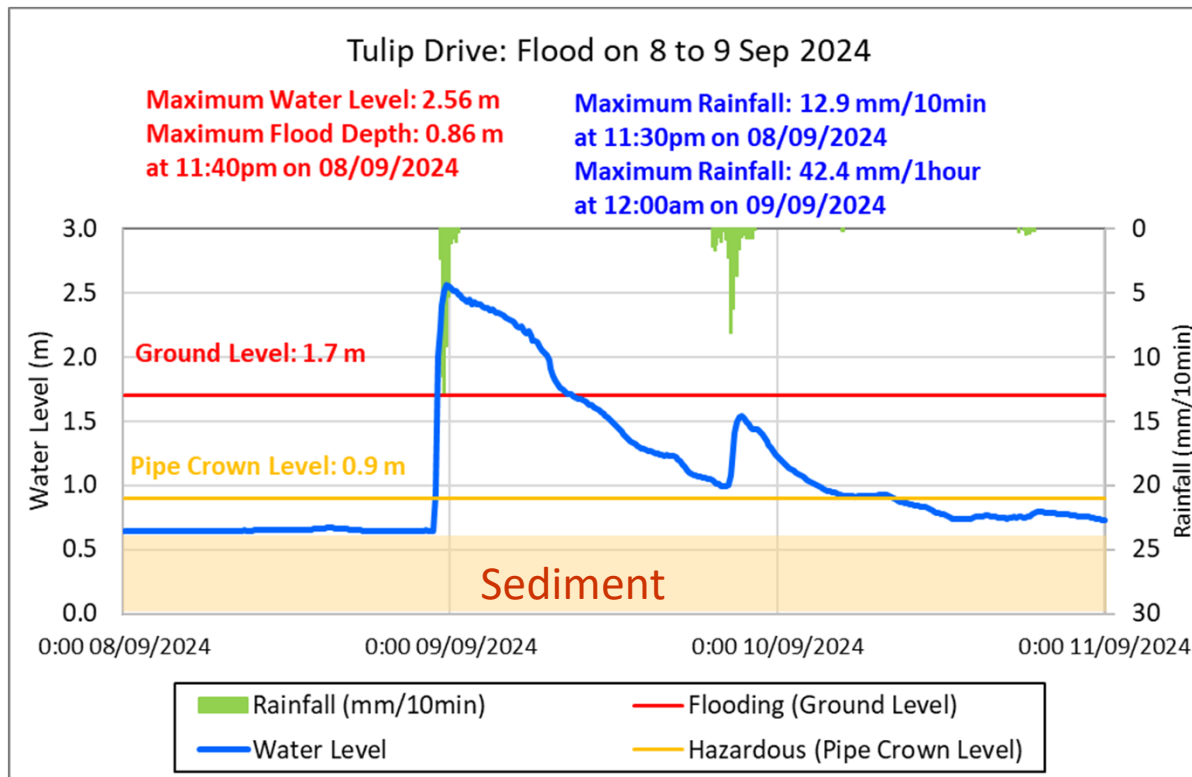
## ■ Monitoring of Heavy Flood during Sep and Oct 2024 at Tulip





# Monitoring Record: Flood

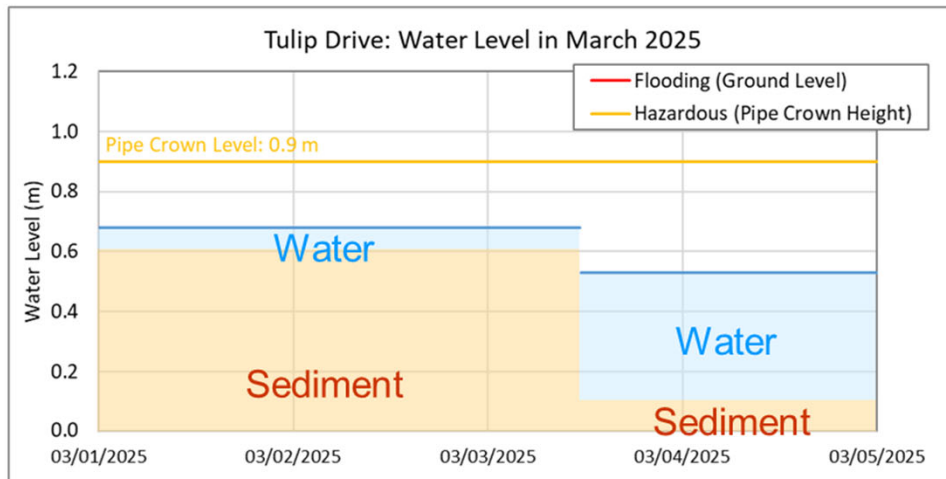
## ■ Monitoring of Heavy Flood on 8 to 9 Sep at Tulip





# Outcome of Drainage Cleaning: Davao City

## ■ Cleaning at Tulip on March 3, 2025: 1 section, by ASU of Davao City



### Outcome

1. Decrease of sediment depth: 60cm to 10cm (-50cm)
2. Decrease of water level: 0.68m to 0.53m (-0.15m)

### Recommendation

- Need to clean this section further and the downstream to decrease the water level



### Alert Notification (E-mail) for Sedimentation

Sediment Alert (Tulip Drive: Tul01S)

 [Alert@nисуicon-rd-dashboard.link](mailto:Alert@nисуicon-rd-dashboard.link)  
宛先: 戸部 達也 (Tobe Tatsuya)

 保持: アイテム10年保持ポリシー (10 年) 有効期限: 2034/10/05 (木) 23:35

The sediment level has been over the Hazardous Level.

[Over Hazardous Level (0.6m)]  
10:30 PM, 02/03/2025 at Tulip Drive: Tul01s,  
Observed Sediment Level: 0.61 m

# Application of Stormwater Management System

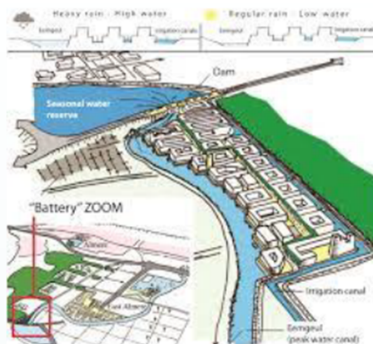
## Flood Prevention and Mitigation

- Assessment of flood damage
- Rapid flood response (e.g. effective deployment of operators, pump trucks, water bars and sandbags)
- Disaster recovery response



## Flood Control Master Plan and Design

- Improvement of accuracy of flood simulation
- Update of flood control master plan and design for flood control facility



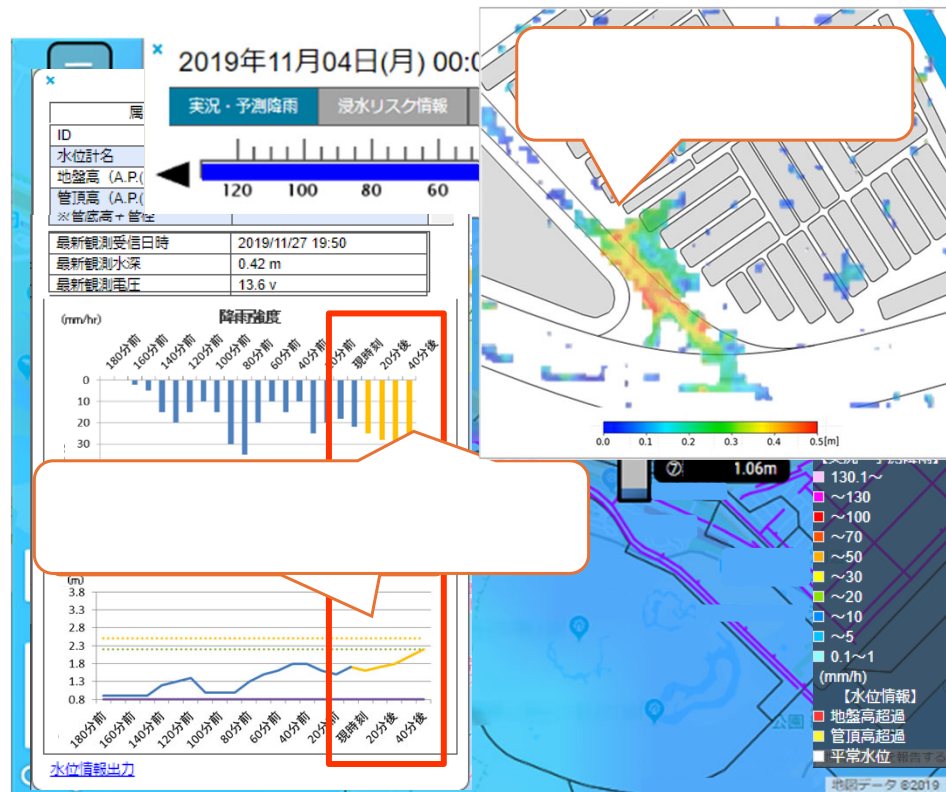
## Promotion of Maintenance/Cleaning

- Visualize the sedimentation conditions inside drainage
- Prioritize the drainage for maintenance/cleaning



# Optional Features

## 1. Real-time Flood Forecasting



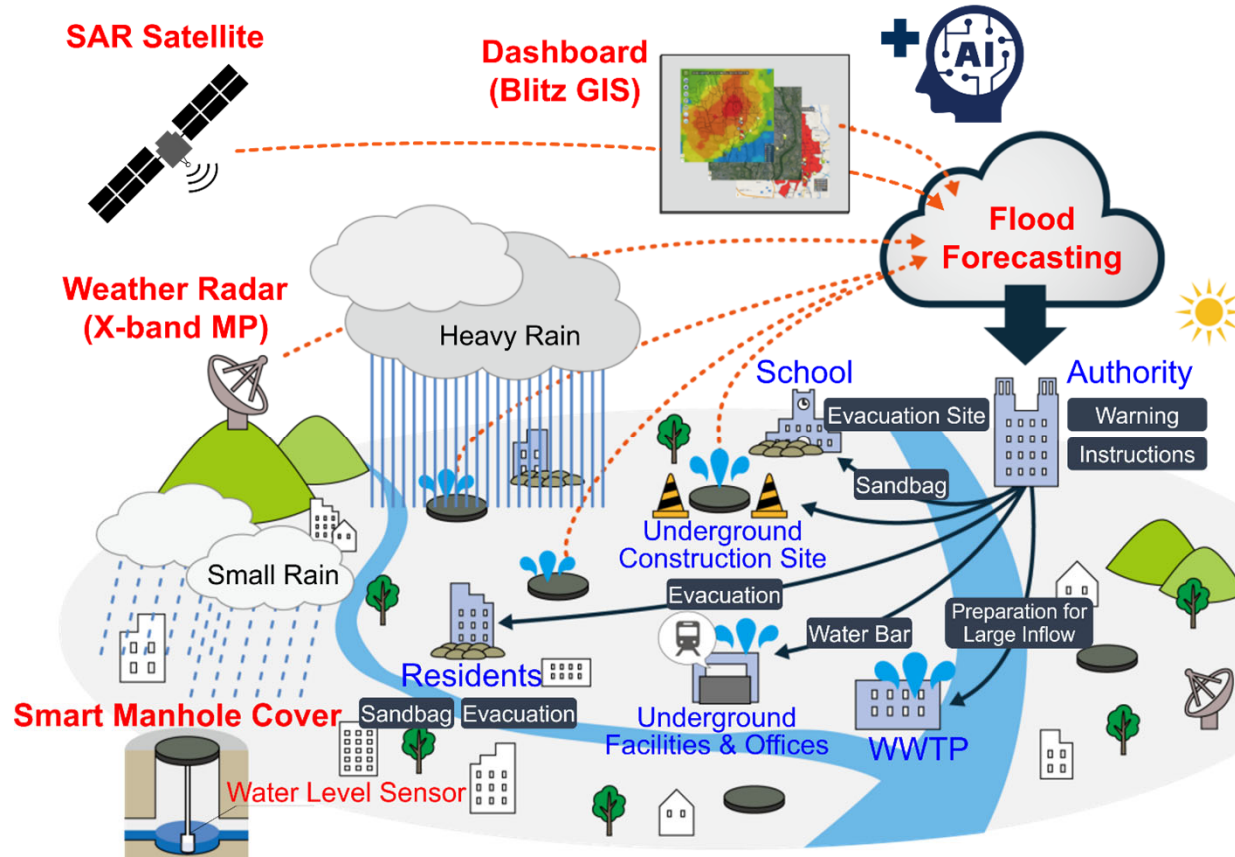
## 2. Flooded area map using SAR satellite (semi-real time)



## 3. Disaster Information from Social Media



# Outline of Smart Stormwater Management System







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Water and Environmental Consultants

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