

# 1 Management Policy

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## Management Policy

The Bureau of Sewerage, Tokyo Metropolitan Government will continue to operate the wastewater service stably into the future and provide high-quality services of wastewater system to our customers, the citizens of Tokyo, based on the following three management policies :

- Ensure the safe and comfortable living environment,
- Contributing to improving the water environment and creating an environmentally friendly city,
- Consistently provide the best service at the lowest cost.

## What We Should Aim For

### <Ensure the safe and comfortable living environment>

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- Steadily fulfill the basic roles of sewerage systems, such as “improving living environments by treating wastewater” , “preventing flooding by removing stormwater” , and “conserving water quality in public water bodies” .
- Secure the function of sewers in the event of natural disasters, such as heavy rains which are becoming increasingly severe over the years and Tokyo Inland Earthquake.

### <Contributing to improving the water environment and creating an environmentally friendly city>

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- Pass on a good water environment to the next generation, and improve the water quality of oceans and rivers.
- Make progress in reducing energy use and greenhouse gas emissions, and contribute to the creation of an environmentally friendly city.

### <Consistently provide the best service at the lowest cost>

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- Maximize publicity and economic efficiency, which are the principle of public enterprise management, and provide the best services at the least cost.
- Strengthen the management base through improvement of technological capabilities, development of human resources, and sound financial management, and conduct stable business operations with understanding and cooperation of our customers.

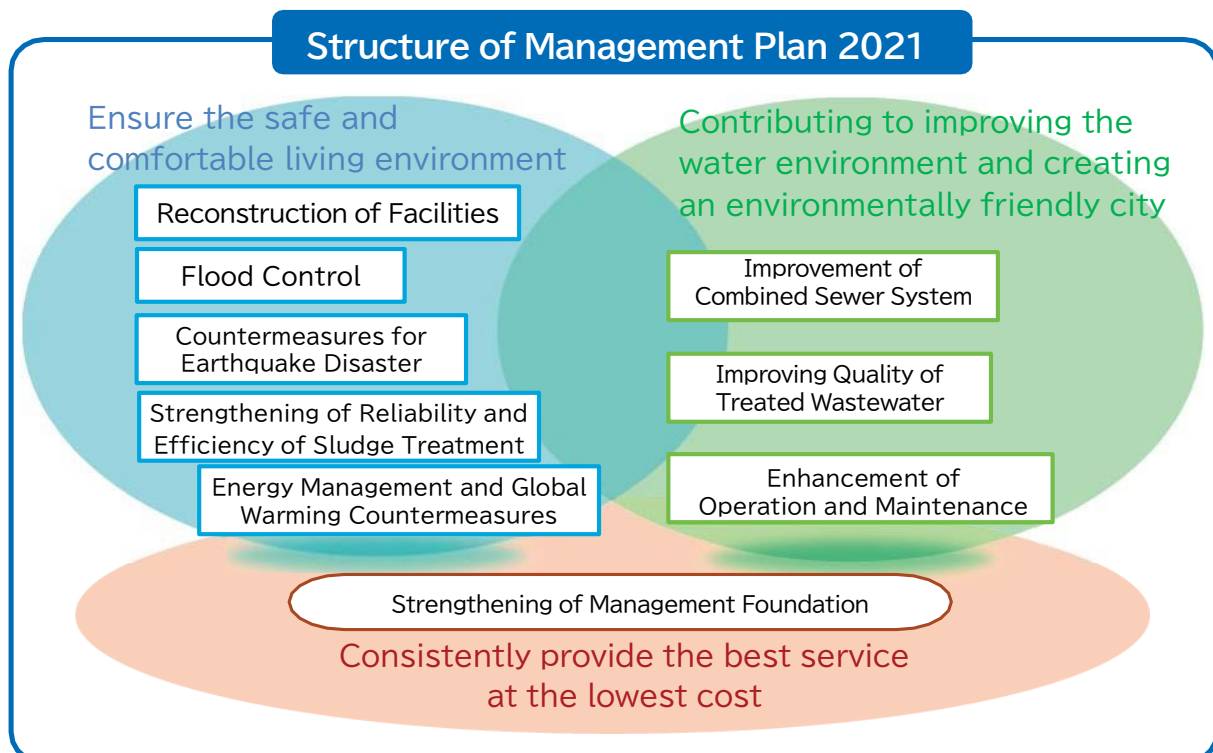
## Policies for Formulation of Management Plan 2021

### [Basic Concept]

In addition to keeping an eye on future changes in socioeconomic conditions, such as population decline and climate change, we will work to further improve customer service from a long-term perspective, based on the “Future Tokyo: Tokyo’s Long-Term Strategy” (formulated in March 2021).

- Even in the midst of a difficult management environment in terms of both revenues and expenditures, we will steadily promote principal measures such as the reconstruction of aged facilities and flood control.
- We will enhance operation and maintenance (O&M) to ensure stable wastewater system functions, while promoting energy and global warming countermeasures.
- We will work to improve the quality of our services by developing and introducing technologies that utilize AI and other technologies, as well as by digitizing procedures.
- We have introduced comprehensive outsourcing for part of the wastewater treatment plant (WWTP), and the Bureau of Sewerage, the TMG policy coordination organization, and private business operators will work together to operate the facility efficiently and stably.
- We will properly manage corporate bonds in consideration of future burdens in order to achieve sustainable financial management, while striving for constant improvement of management efficiency.

[Planning period] Five years from FY2021 to FY2025



## 2 Principal initiatives within the planning period

~ Ensure the safe and comfortable living environment ~

Tokyo's wastewater service system, which began in the Meiji era (1868-1912), achieved approximately 100% coverage in Wards at the end of FY1994, and reached 99% coverage in the Tama Region at the end of FY2010.

However, the sewer pipes and wastewater treatment plants that had been developed in the early days are aging, and measures are needed to keep the facilities in operation without a single day's break. In addition, measures must be taken to cope with the intensifying rainstorms or earthquakes centered directly under the capital.

To this end, we will steadily promote projects such as "reconstruction" to improve functions along with measures against aging, "flood control" to protect the city from rainstorms, and "countermeasures for earthquake disaster" to prepare for earthquakes centered directly under the capital, etc.

In addition, through periodic surveys or planned mending, we are also engaged in the operation and maintenance of wastewater pipes and wastewater treatment plants to secure stable sewer system functions, ensuring the safe and comfortable living environment



Situation of inundation damage  
(September 18, 2018)

### Reconstruction of Facilities

By reconstructing aged wastewater pipes and wastewater treatment plants, we will continue to ensure the functions to treat stably wastewater and to remove rainwater into the future.

- ▶ **Promoting efforts with a view to completing the reconstruction of the four treatment districts in the center of Tokyo**
  - By FY2029, we will complete the reconstruction of the four treatment districts in the center of Tokyo that were built in the early stages of the project (first stage reconstruction area: 16,300 hectares), and within the next five years we will reconstruct 3,500 hectares of branch lines. (62% at the end of FY2020 → 83% at the end of FY2025)
  - We will begin to study the possibility of starting the second stage reconstruction area with an eye toward the completion of the first stage reconstruction area.
- ▶ **Promoting the reconstruction of trunk sewers and the development of alternative trunk sewers according to their soundness**
  - Combining rehabilitation methods and mending, we will reconstruct 35 km of trunk sewer within the next five years.
  - For trunk sewers with high water levels and pressure pipes that are difficult to reconstruct, we will promote the development of alternative trunk sewers that switch the flow of wastewater ahead of time.
- ▶ **In addition to measures to deal with aging at wastewater treatment plants and other facilities, systematically promoting improvements in earthquake resistance and energy conservation.**
  - In order to maintain the functionality of civil engineering and architectural structures, in addition to mending, we will implement large-scale renovations to replace some parts, such as pillars.
  - While maintaining the economic useful life as the basis, we will implement reconstruction of the facilities that can be improved in terms of significant energy efficiency and other functions ahead of schedule.



Reconstruction of trunk sewer by  
rehabilitation method  
(Yatagawa Trunk Sewer)



Rebuilt mechanical equipment of grit chamber

## Flood control

By promoting flood control, we ensure the urban functions and realize safe and worry-free lifestyles.

### ► Reinforcement of initiatives in light of the recent intensifying rainstorms and other factors

- We will steadily promote the flood control that have been focused on districts at high risk of inundation, and will complete the development of seven districts within the next five years.
- Furthermore, based on verification using hydrological modeling simulation technology and the recent situation with flooding damage, three new districts will be added to the priority districts, and work will begin on nine districts within the next five years.

### ► New construction of a trunk sewer for rainwater in regional sewerage

- We will start the construction of a new trunk sewer for rainwater of regional sewerage at the southern area of the upper basin of the Karabori River.



Construction of wastewater system trunk sewer  
(Senkawa Reinforcement Trunk Sewer)

## Countermeasures for earthquake disaster

In preparation for earthquakes centered directly under the capital, we will promote earthquake disaster prevention measures to ensure the functionality of the wastewater system and transportation functions such as emergency transport routes.

### ► Expand facilities subject to earthquake retrofit of sewer pipes

- In addition to temporary accommodation facilities, we will complete the earthquake retrofit of 1,200 locations within the next five years at the connection points between sewer pipes and maintenance holes.
- We will complete 250km of measures to prevent the surfacing of maintenance holes within the next five years, including pole-free roads.

### ► Expand facilities subject to earthquake retrofit such as wastewater treatment plants and pumping stations

- In addition to initiatives to ensure minimum wastewater system functionality in the event of an earthquake disaster, we will also promote the earthquake retrofit of new influent channels, water transportation channels, or sludge treatment-related facilities.

## Strengthening of reliability and efficiency of sludge treatment

By promoting enhanced reliability and efficiency in sludge treatment, we ensure a stable function for wastewater treatment into the future.

### ► Enhancing the reliability of sludge treatment in the event of an earthquake disaster, and further improving efficiency through the adjustment and apportion of sludge volumes

- We will promote the development of mutual sludge transfer facilities between each wastewater treatment plants and the installation of multiple sludge transportation pipes, as well as reconstructing of aged sludge transportation pipes.
- In order to optimally apportion sludge volumes between sludge treatment facilities and to efficiently treat them, we will promote the development of adjustment and apportion functions at the Miyagi Wastewater Treatment Plant.

## Enhancement of operation and maintenance

We will ensure the stable function of the wastewater system into the future by properly operating and maintaining sewer pipes and wastewater treatment plants.

### ► Enhancement of longevity of sewer pipes, wastewater treatment plants

- We will carry out regular inspections and surveys, as well as carry out mending systematically in accordance with the situation of deterioration, and we will also consider how to deal with each facility that is difficult to inspect and survey.

## 2 Principal initiatives within the planning period

~ Contributing to improving the water environment and creating an environmentally friendly city ~

The wastewater service plays an important role in preserving the water environment by cleaning up the dirty water generated by our daily lives and urban activities and discharging it into the sea and rivers.

On the other hand, most of the Wards are served by a combined sewer system in which sanitary wastewater and rainwater are discharged through a single sewer pipe. When it rains heavily, rainwater mixed with sanitary wastewater is discharged into rivers and other waterways to protect urban areas from flooding. Nitrogen and phosphorus contained in treated wastewater are also factors in the occurrence of red tides in Tokyo Bay.

Therefore, in order to further improve the water quality of Tokyo Bay and rivers and create a favorable water environment, we will steadily promote projects such as "Improvement of combined sewer system" to reduce the pollutant load discharged during rainy weather and "Improving quality of treated wastewater" to further reduce nitrogen and phosphorus.

In addition, the wastewater service requires a large amount of energy, consuming approximately 1% of the annual electricity consumption in Tokyo, and also takes a great responsibility in terms of global warming countermeasures. For this reason, we are actively working to reduce energy consumption and greenhouse gas emissions, thereby contributing to the realization of a favorable water environment and a city with a low environmental impact.



Revived Sumida River

### Improvement of combined sewer system

By reducing the amount of pollutant load discharged from the combined sewer system into rivers and oceans during rainy weather, we create a favorable water environment.

- ▶ **Completion of measures necessary for compliance with the Order for Enforcement of the Sewerage Act**
  - By the end of FY2023, we will have developed a storage facility with a capacity of 200,000 m<sup>3</sup> to store particularly dirty wastewater from the initial stages of rainfall, and will have completed the development of a storage facility with a capacity of 1.7 million m<sup>3</sup> required to comply with the Order for Enforcement of the Sewerage Act.
- ▶ **Improving the water quality of 14 bodies of water, including river sections where water tends to accumulate, and the Sumida River**
  - Improvement of water quality in 14 bodies of water, including river sections where water tends to accumulate, and in the Sumida River.
  - We will work with related wards and other organizations to promote the construction of separate sewer systems in public facilities and redevelopment districts.



Storage facility at Mikawashima Wastewater Treatment Plant



Kamimeguro Trunk Sewer (Storage facility)

## Improving quality of treated wastewater

To create a favorable water environment, we will further improve the effluent quality of treated wastewater discharged into Tokyo Bay and the Tama River, while also taking energy conservation into consideration.

### ► Further reduction of nitrogen and phosphorus to improve water quality in Tokyo Bay and other areas

- In addition to the development of advanced wastewater treatment and semi-advanced treatment, we will promote the introduction of new phosphorus removal facilities in accordance with the issues faced by each wastewater treatment plant.
- We will promote the development of facilities for advanced and semi-advanced wastewater treatment to improve effluent quality. (Percentage of facilities for advanced wastewater treatment: 58% at the end of FY2020 → 75% at the end of FY2025)



Tokyo Bay where red tides occurred



People familiarizing themselves with the Tama River through nature experiences

## Energy management and global warming countermeasures

By promoting energy and global warming countermeasures, we will actively reduce energy consumption and greenhouse gas emissions to contribute to the realization of a city with low environmental impact.

### ► Further reduction of energy consumption and greenhouse gas emissions

- In addition to the initiatives to the "Earth Plan 2017," we will work to further reduce greenhouse gas emissions.
- We will introduce energy-saving equipment and use AI-based technologies to reduce energy consumption.
- We will promote the expansion of the use of renewable energy by making full use of the potential of the wastewater system, such as by promoting the introduction of energy-independent incinerators.
- We will promote the development of technologies that can significantly reduce greenhouse gas emissions, in line with the goal of the strategy "Zero Emission TOKYO."



Toubu Sludge Plant  
Belt-type sludge thickener  
(Energy-saving equipment)



Kiyose Wastewater Treatment Plant  
Solar power generation  
(Renewable energy)

## 2 Principal initiatives within the planning period

~ Consistently provide the best service at the lowest cost ~

As an important urban infrastructure that supports Tokyo's urban activities and the lives of its citizens, the wastewater service must, above all, be operated in a sustainable manner.

In addition to initiatives to enhance customers' understanding and trust in wastewater service, we will continue to strengthen our management base by developing human resources, improving our technical capabilities, and taking steps toward more efficient business operations, in order to provide stable, high-quality services in the future.

### Introduction of facility management methods appropriate for Tokyo

In order to continue stable management of the wastewater service in the future, we will introduce comprehensive outsourcing for part of the water treatment facilities of wastewater treatment plants, based on the characteristics of the Tokyo's wastewater system.

#### ► Concept of introduction

- In the water treatment facilities of wastewater treatment plants, comprehensive outsourcing (performance-based contracting, multi-year contracts) will be introduced at WWTPs with relatively low levels of difficulty in terms of operation and management, based on the structure of the Bureau of Sewerage, policy coordination organizations, and private business operators.
- The Bureau of Sewerage, the TMG policy coordination organization, and private business operators will compete for the stable provision of wastewater services from their respective standpoints, and aim to further improve services by utilizing their ingenuity and demonstrating their technological and economical capabilities.
- Under the new facility management methods, we aim to build a next-generation wastewater system that utilizes digital technology, including AI, for automated operation.

#### ► Management methods for water treatment facilities

Area	Management Entity	Management methods	Concept
Wards	Bureau of Sewerage	Direct management (partially outsourced)	In consideration of the degree of difficulty in terms of operation and management, comprehensive outsourcing will be introduced at some wastewater treatment plants
	Policy coordination organization	Comprehensive outsourcing	
Tama	Private business operators	Comprehensive outsourcing	

### Corporate efforts

We will make a total of 65 billion yen in corporate efforts in five years within the planning period. We will achieve sustainable financial management through constantly striving for improvement of management efficiency.

#### ► Reduction of construction, operation and maintenance costs: 20 billion yen

- We will reduce construction, operation and maintenance costs by introducing new technologies, while utilizing our accumulated knowledge and experience.
- We will promote further business efficiency by developing and introducing new technologies through the use of digital technologies including AI.

#### ► Effective use of assets: 45 billion yen

- We will actively work to secure revenue by making effective use of assets and resources, such as utilizing the upper space of wastewater system facilities, leasing or selling land and buildings, and using wastewater heat.
- We will continue to consider the possibility of utilizing the assets owned by the Bureau of Sewerage, including listening to the opinions of private business operators, based on market trends.



Examples of utilizing the upper space of facilities  
Upper building of Shibaura Wastewater Treatment Plant  
"SHINAGAWA SEASON TERRACE"

## Public relations strategy

In order to achieve sustainable business operations, we will increase understanding and interest in the wastewater service by providing customers with easy-to-understand information on the structure and basic roles of the wastewater system, which they do not usually get to see.

### ▶ Initiatives utilizing the wastewater system facilities

- We will enhance the publication of VR videos and movies about construction sites for trunk sewers that reduce the damage from inundation on our website.
- During the tour of the Shibaura Wastewater Treatment Plant, we will use a combination of digital technologies such as AR to introduce the plant's facilities, which are not easily visible.
- We will enhance initiatives to provide hands-on learning experiences (real and virtual) using wastewater system facilities.



VR TOURS OF TOKYO SEWERAGE SYSTEM

### ▶ Create environmental learning opportunities for the younger generation

- We will hold "Demae Lesson" and "Wastewater System Research Report Contest for Elementary School Students" for elementary school students, as well as work to improve our web content.
- We will develop a variety of initiatives to convey the importance of wastewater systems and the water environment to the younger generation, including the use of the Tokyo Sewerage Museum "Rainbow", an interactive public relations facility.



A scene from a "Demae Lesson"  
(Delivery lesson)

## Human resource development and improvement of technical capabilities

In order to train "professionals in wastewater system administration", we will revise the "Human Resources Development Policy of the Bureau of Sewerage" and strengthen the systems and initiatives for human resources development, technology transfer, and improvement of technical capabilities.

### ▶ Promotion of technology transfer

- We will implement initiatives to deepen the awareness of our staff of their responsibilities and the significance of their duties in the wastewater service, and to improve their awareness as Tokyo Metropolitan Government technical staff.
- We will work on staff development from a medium- to long-term perspective so that we can steadily pass on and further improve the wastewater system technology we have cultivated to date.

### ▶ Further utilization of the Wastewater System Technology Training Center

- In addition to training young staff, we will also strengthen the leadership skills of mid-career and veteran staff by utilizing practical training facilities to pass on technical know-how through hands-on training and simulated experience in various fields.
- We also contribute to the development of human resources, technology transfer, and the improvement of technical capabilities throughout the wastewater system industry, including by promoting the use of private business operators and other organizations.

Practical training facilities at the  
Wastewater System Technology  
Training Center



Walking underwater in sewerage  
reticulation



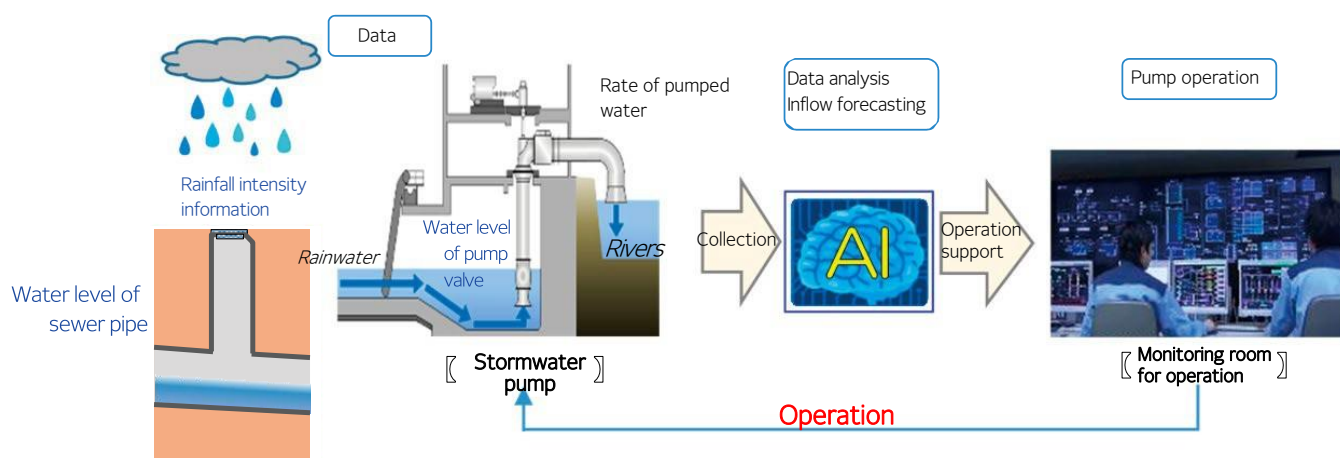
Operation simulation

### 3 Promoting Digital Transformation (DX) <sup>1</sup>

In order to accurately respond to issues such as a shortage of human resources and Work Style Reform, the Bureau of Sewerage will promote the introduction of new technologies that utilize digital technologies, including AI, and the digitization of administrative procedures.

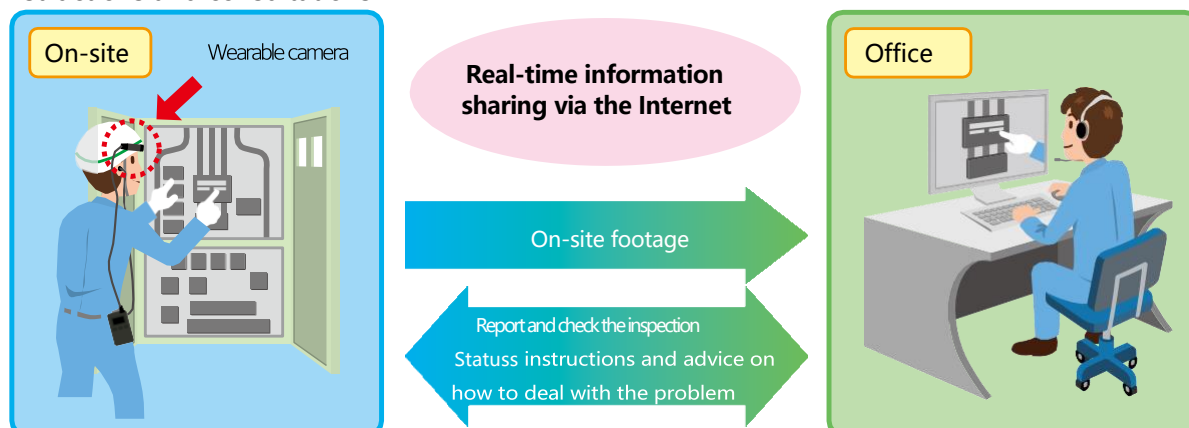
#### Development of inflow forecasting technology to support the operation of stormwater pumps

- Promoting the development of inflow forecasting technology that utilizes AI to support the decision-making process for starting up stormwater pumps at the right time



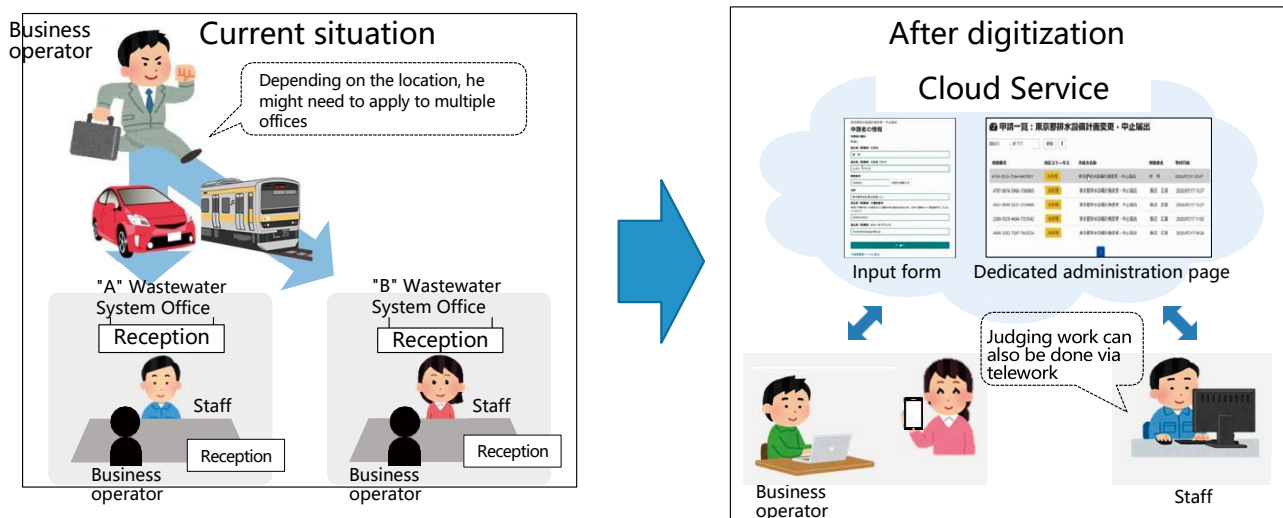
#### Research and development on operation and maintenance of wastewater system facilities using digital technology

- Promoting the use of digital technology that can automatically diagnose damage to sewer pipes to improve the diagnostic accuracy of TV camera surveys
- Considering drone and ship-type robot technology that can be used to conduct unmanned surveys in locations where it is difficult to work in sewer pipes, such as when the water level is high
- Promoting operational efficiency through the use of wearable cameras that allow real-time sharing of on-site footage with offices and other locations, as well as interactive communication for instructions and consultations



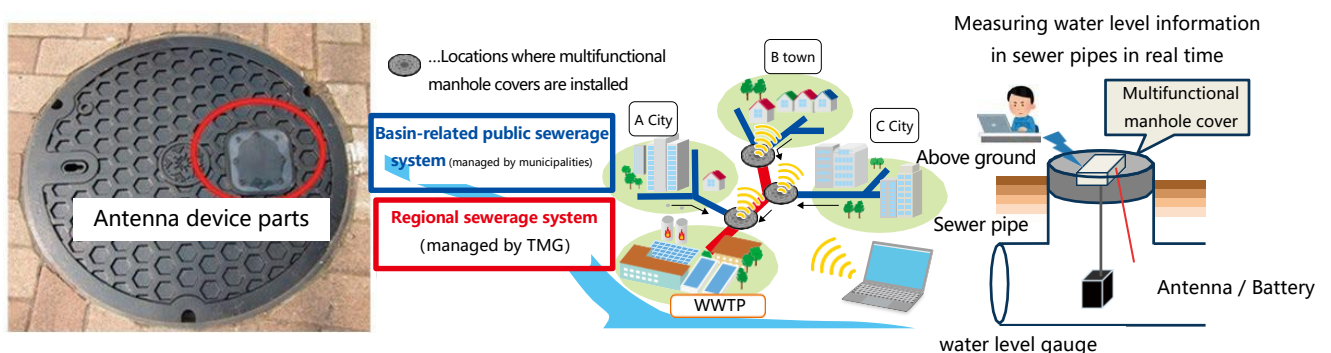
## Project to digitize procedures and operations, such as notifying plans for residential plumbing

- We will introduce an online application service that allows customers to complete administrative procedures for four procedures related to the installation of residential plumbing and public cleanouts, which are procedures that are often applied for each year, at any time and from anywhere without having to come to our office.



## Promotion of measures to prevent water influx during rainy weather through the use of multifunctional manhole covers

- By utilizing multifunctional manhole covers that measure water levels in sewer pipes in real time and sharing the results, municipalities can also conduct efficient investigations and implement



# 4 Principal business indicators and targets

Many wastewater system facilities are massive and take a long time to maintain. The following shows business indicators of the principal measures. We will continue to appropriately carry out our business while socioeconomic conditions. (The figures are cumulative totals up to the year of achievement.)

		Principal measures and business indicators	Achievements to date Until the end of FY2020
Ensure the safe and comfortable living environment	Wards	<b>Reconstruction of facilities</b> <ul style="list-style-type: none"> <li>• Surface areas of the first stage reconstruction area (four treatment districts in the center of Tokyo) where the branch lines have been rebuilt</li> <li>• Rebuilt extension includes 47 aged trunk sewers and trunk sewers that require measures based on surveys</li> </ul>	<ul style="list-style-type: none"> <li>• Reconstruction of branch lines Completed in 10,082 ha</li> <li>• Reconstruction of trunk sewers Completed in 87 km</li> </ul>
		<b>Flood control</b> <ul style="list-style-type: none"> <li>• District with reinforced measures (Development of facilities to cope with 75mm/hr rainfall)</li> <li>• District with priority measures</li> </ul>	<ul style="list-style-type: none"> <li>• District with reinforced measures Completed in 6 districts</li> <li>• District with priority measures Completed in 19 districts</li> </ul>
		<b>Countermeasures for earthquake disaster</b> <ul style="list-style-type: none"> <li>• Number of facilities that have implemented earthquake retrofit of sewer pipes that receive wastewater from evacuation shelters, etc.</li> <li>• Extension of roads where measures to prevent the surfacing of maintenance holes, such as emergency transport routes, have been implemented</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake retrofit for sewer pipes Completed at 4,315 locations</li> <li>• Measures to prevent the surfacing of maintenance holes Completed in 1,250 km</li> </ul>
	Wards & Tama	<ul style="list-style-type: none"> <li>• Number of facilities at wastewater treatment plants and pumping stations that have been made earthquake retrofit in all systems to ensure that the necessary wastewater system functions are maintained in the event of an earthquake disaster</li> </ul>	<ul style="list-style-type: none"> <li>• Earthquake retrofit for wastewater treatment plants, pumping stations, etc. Completed at 31 facilities</li> </ul>
	Wards	<b>Strengthening of reliability and efficiency of sludge treatment</b> <ul style="list-style-type: none"> <li>• Number of sections where the development of mutual sludge transfer facilities has been completed</li> <li>• Number of sections where the installation of multiple sludge transportation pipes has been completed</li> </ul>	<ul style="list-style-type: none"> <li>• Development of mutual sludge transfer facilities Completed in 3 sections</li> <li>• Installation of multiple sludge transportation pipes Completed in 10 sections</li> </ul>
	Wards	<b>Improvement of combined sewer system</b> <ul style="list-style-type: none"> <li>• Storage capacity of storage facilities, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Storage facilities, etc. Developed 1.5 million m<sup>3</sup> of facilities</li> </ul>
Contributing to improving the water environment and creating an environmentally friendly city	Wards & Tama	<b>Improving quality of treated wastewater</b> <ul style="list-style-type: none"> <li>• Combined capacity for advanced and semi-advanced wastewater treatment</li> </ul>	<ul style="list-style-type: none"> <li>• Combined capacity for advanced and semi-advanced wastewater treatment Developed 4.55 million m<sup>3</sup>/day</li> </ul>
	Wards & Tama	<b>Energy management and global warming countermeasures</b> <ul style="list-style-type: none"> <li>• Reduction rate of greenhouse gas emissions from wastewater services</li> </ul>	<ul style="list-style-type: none"> <li>• 26% reduction in greenhouse gas emissions compared to FY2000 levels</li> </ul>

the achievements to date, progress during the implementation plan period, and medium- to long-term targets for the principal verifying our medium- to long-term targets in light of changes in the business environment and

Period of Management Plan 2021 End of FY2025		Medium- to long-term targets From FY2026	
<ul style="list-style-type: none"> <li>Reconstruction of branch lines</li> </ul>	Completed in 13,582 ha	<ul style="list-style-type: none"> <li>Reconstruction of branch lines</li> </ul>	Aiming to be completed in FY2029, the first stage reconstruction area in total 16,300 hectares of branch lines
<ul style="list-style-type: none"> <li>Reconstruction of trunk sewers</li> </ul>	Completed in 122 km	<ul style="list-style-type: none"> <li>Reconstruction of trunk sewers</li> </ul>	Completed in total 300km of trunk sewers requiring measures
<ul style="list-style-type: none"> <li>District with reinforced measures</li> </ul>	Completed in 9 districts	<ul style="list-style-type: none"> <li>District with reinforced measures</li> </ul>	Completed in all 15 districts
<ul style="list-style-type: none"> <li>District with priority measures</li> </ul>	Completed in 23 districts	<ul style="list-style-type: none"> <li>District with priority measures</li> </ul>	Completed in all 42 districts
<ul style="list-style-type: none"> <li>Earthquake retrofit for sewer pipes</li> </ul>	Completed at 5,515 locations	<ul style="list-style-type: none"> <li>Earthquake retrofit for sewer pipes</li> </ul>	Completed at all 5,900 locations
<ul style="list-style-type: none"> <li>Measures to prevent the surfacing of maintenance holes</li> </ul>	Completed in 1,500 km	<ul style="list-style-type: none"> <li>Measures to prevent the surfacing of maintenance holes</li> </ul>	Completed in all 1,620 km
<ul style="list-style-type: none"> <li>Earthquake retrofit for wastewater treatment plants, pumping stations, etc.</li> </ul>	Completed at 45 facilities	<ul style="list-style-type: none"> <li>Earthquake retrofit for wastewater treatment plants, pumping stations, etc.</li> </ul>	Completed at all 107 facilities
<ul style="list-style-type: none"> <li>Development of mutual sludge transfer facilities</li> </ul>	Completed in 3 sections	<ul style="list-style-type: none"> <li>Development of mutual sludge transfer facilities</li> </ul>	Completed in all 5 sections
<ul style="list-style-type: none"> <li>Installation of multiple sludge transportation pipes</li> </ul>	Completed in 12	<ul style="list-style-type: none"> <li>Installation of multiple sludge transportation pipes</li> </ul>	Completed in all 13 sections
<ul style="list-style-type: none"> <li>Storage facilities, etc.</li> </ul>	Developed 1.75 million m <sup>3</sup> of facilities	<ul style="list-style-type: none"> <li>Storage facilities, etc.</li> </ul>	Developed equivalent to all 2.8 million m <sup>3</sup> of storage facilities in 14 bodies of water
<ul style="list-style-type: none"> <li>Combined capacity for advanced and semi-advanced wastewater treatment</li> </ul>	Developed 5.89 million m <sup>3</sup> /day	<ul style="list-style-type: none"> <li>Combined capacity for advanced and semi-advanced wastewater treatment</li> </ul>	Developed all 7.82 million m <sup>3</sup> /day
<ul style="list-style-type: none"> <li>27% reduction in greenhouse gas emissions compared to FY2000 levels</li> </ul>		<ul style="list-style-type: none"> <li>In addition to the initiatives of the “Earth Plan 2017,” further reduction in greenhouse gas emissions</li> </ul>	