

Giving New Life to Water

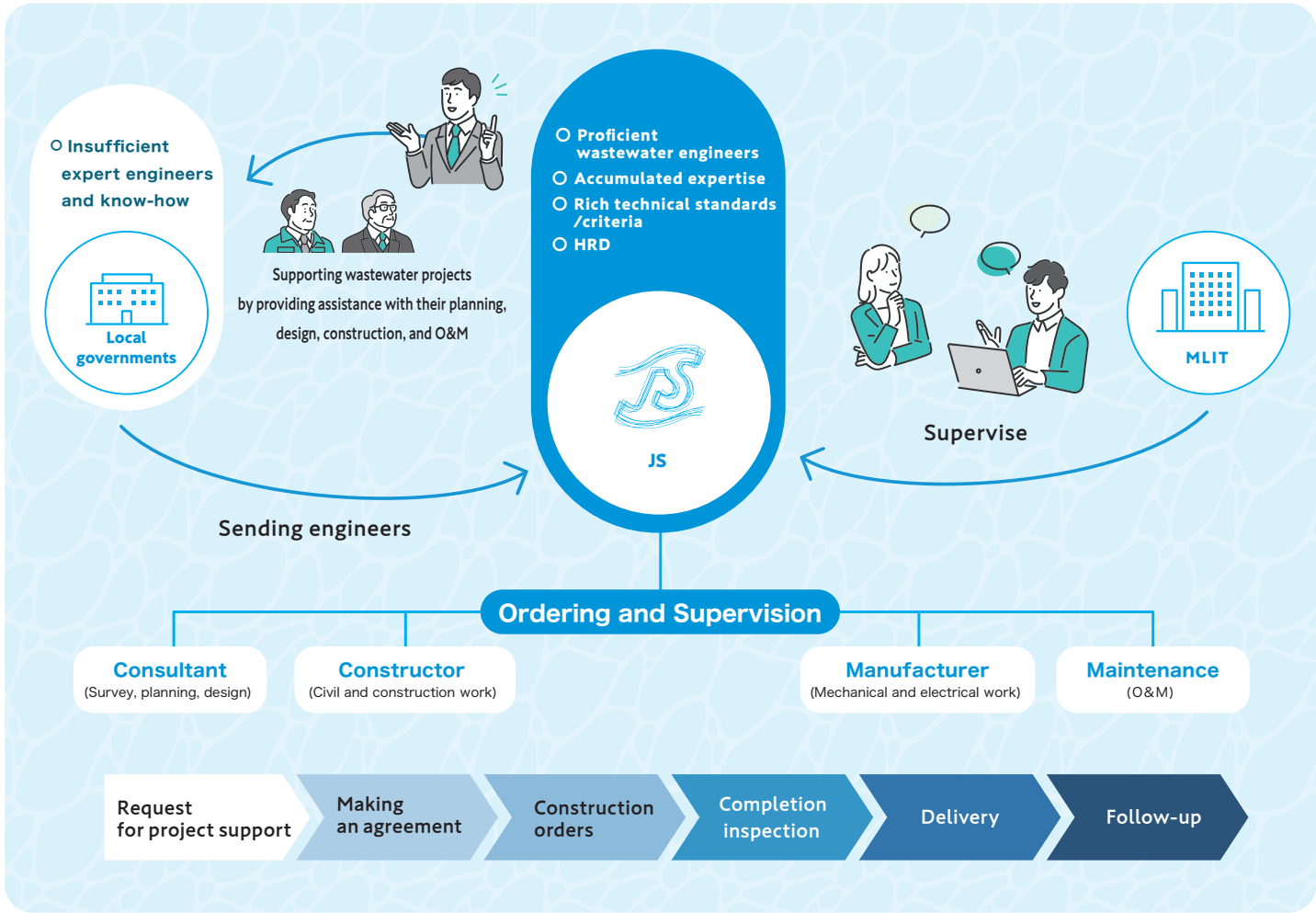


Contributing to the creation of an excellent
water environment, safe communities, and a sustainable society.

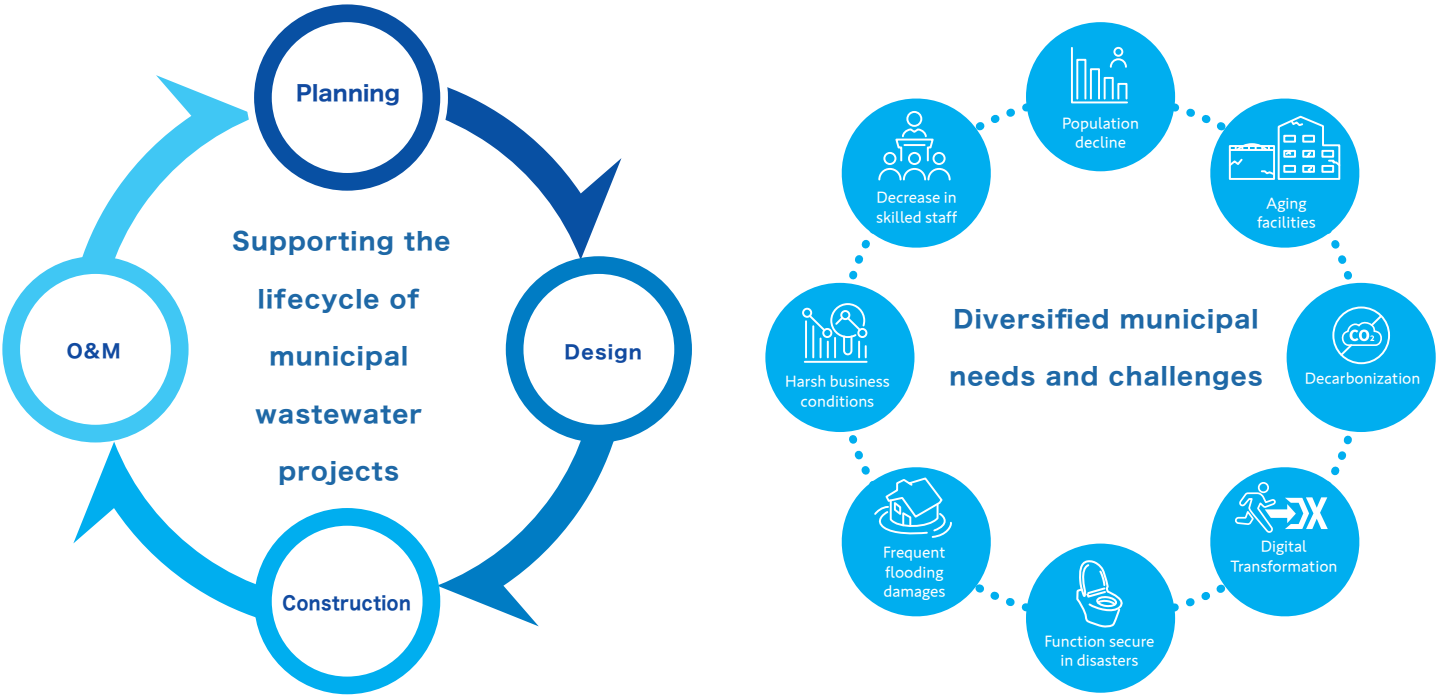
Japan Sewage Works Agency (JS) provides support for municipal wastewater projects at all stages, addressing their diverse needs and challenges

JS is

- The sole organization in Japan comprised of wastewater experts based on the related law
- A public corporation collaboratively funded by all prefectures
- A project manager who supports municipal wastewater projects at the request of local governments
- A developer of wastewater engineers, promoting R&D and practical applications in the field
- A contributor to creating a sustainable society by enhancing living environments, securing water quality, and working towards decarbonization



JS will contribute to achieving a sustainable society by fulfilling three key roles based on the Sixth Mid-Term Management Plan (FY2022-26)



Comprehensively support municipalities as a solution partner

Leading transformations for wastewater projects as an innovator

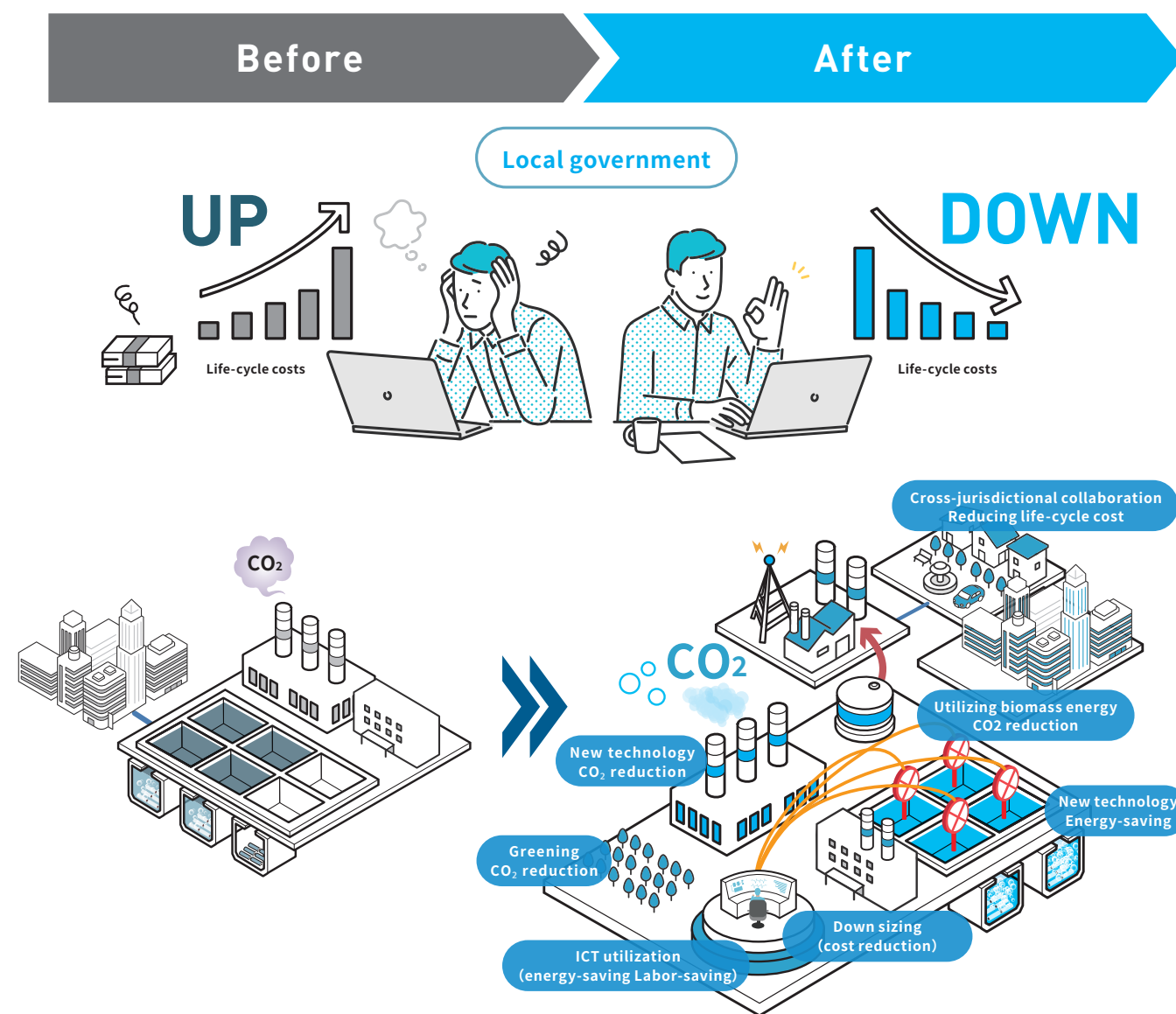
Contributing to social development through a common foundation as a platform

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Retrofit

The retrofit of wastewater facilities to address aging infrastructure, declining population, and energy conservation is a financial and systemic challenge for local governments. JS efficiently and systematically supports retrofit projects by reducing life cycle costs through facility planning, design, and construction using new technologies and ICT.



Case study

To address the aging facilities, a major update was carried out at the new location instead of the existing one. JS has implemented a "Sewage-derived Fiber Utilization System" registered at the JS New Tech Implementation Program. This system reduces the volume of dewatered sludge by lowering the water content rate, thus reducing sludge disposal costs.



Rendering

Management Support

The wastewater industry is facing increasing challenges due to population decline and aging facilities, necessitating improvements in business foundations and financial management. JS will develop comprehensive business management support to achieve a sustainable wastewater business, including cross-jurisdictional collaboration, selection and utilization of new technologies, decarbonization, reviewing wastewater charges, and supporting internal decision-making such as development and revision of management strategies and supporting council operations.



O&M Support

In the era of asset management for the wastewater business, JS will focus on developing and using technologies that contribute to facility management and cross-jurisdictional management. This includes IoT-based diagnosis and assessment of facility deterioration, as well as computerization of sewerage ledgers, to achieve high-quality O&M and business management of the entire sewerage system.

O&M for WWTP

Since 2015, JS has been providing O&M services for the Bannan WWTP with CAS process in Iwata City, Shizuoka, for its lifecycle support.



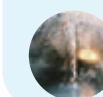
Bannan WWTP



On-site scenery

PFI (Private Finance Initiative) introduction for sewer facilities

In addition to the existing O&M support of WWTPs, in July 2022, JS concluded a partnership agreement with the Japan Institute of Wastewater Engineering and Technology, which has experience supporting the introduction of comprehensive private-sector outsourcing of pipeline facilities. We will support local governments in the comprehensive private-sector outsourcing of pipeline facilities. (Source: MLIT HP)

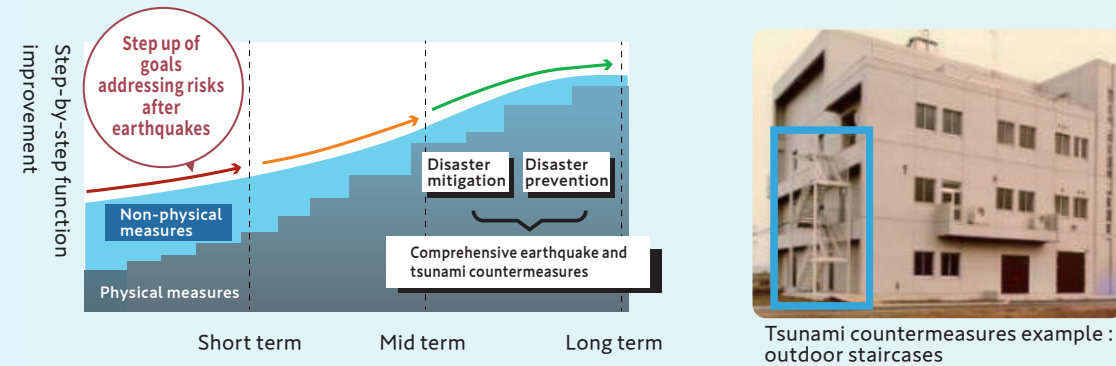


Interior of aging sewer facilities
A TV camera to check the internal condition of sewer facilities



Earthquake Countermeasures

It is essential to protect municipal facilities from powerful earthquakes and tsunamis that are likely to occur in the future and ensure that wastewater functions sustainably even during a disaster. JS promotes proactive disaster prevention by conducting seismic assessments and proposing earthquake and tsunami countermeasures for existing facilities.



Flooding Countermeasures

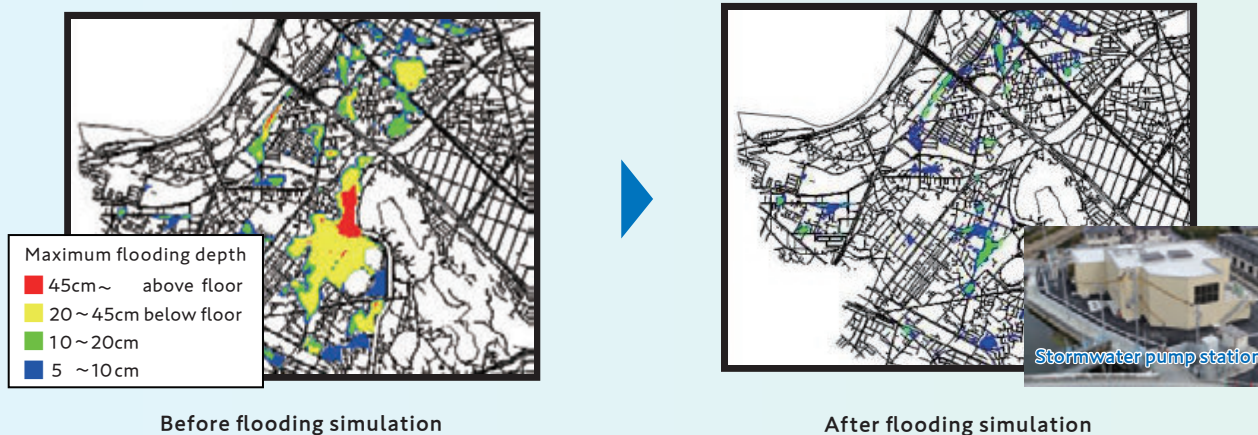
In accordance with the 2021 Law, JS offers comprehensive and systematic support for flood countermeasures. This includes both non-physical measures, such as assistance in creating maps of areas anticipated to be affected by inland flooding, as well as physical measures, such as the establishment of rainwater pump stations and other related facilities.

Support flow: from planning to facility design and construction



Case study

Flooding simulation, Reducing flooding damages by constructing stormwater pump stations



Disaster Management

When wastewater facilities are damaged, a prompt and effective response is crucial to support disaster prevention and mitigation efforts by enhancing cooperation with local governments and related organizations during normal times. JS offers immediate emergency support from its seven nationwide general offices in a disaster.

Normal time support

Disaster preparedness involves physical measures, such as earthquake-resistant facilities and flood control, and non-physical measures, such as developing business continuity plans (BCP) and conducting disaster drills. By integrating these measures, JS assists municipalities in minimizing damage and swiftly restoring functions during emergencies.

Physical measures

Earthquake-resistant, water-prevention for core facilities



Bracing system for steel structures

Non-physical measures

Flooding simulation and BCP development support

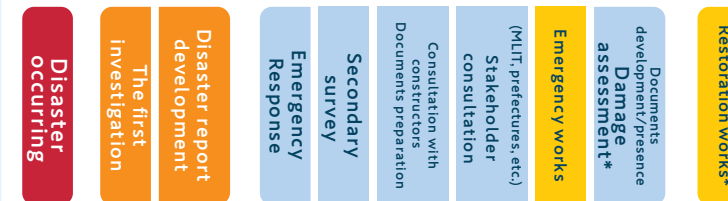


Joint emergency drills with local governments

Support for disasters

JS provides assistance to local governments through disaster support agreements. We will apply our expertise to aid in every phase of disaster management.

Disaster recovery support process as per the agreement



The first investigation after a disaster



Stakeholders meeting



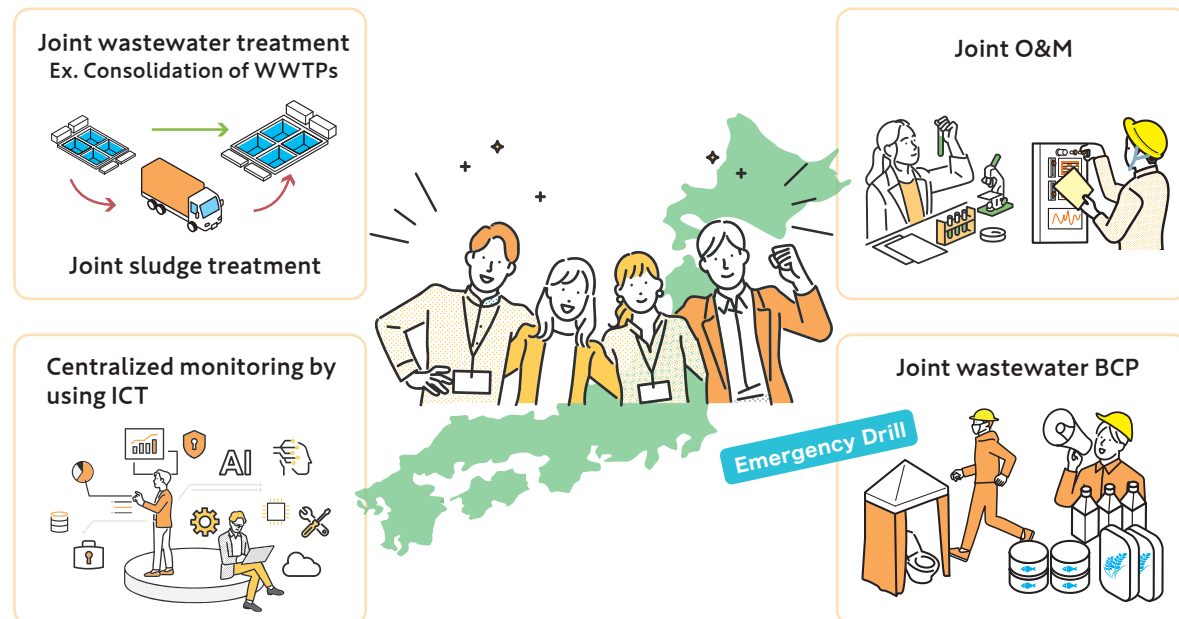
The recent performance of disaster support

FY	Name of disaster
2018	Wave overtopping and high tide caused by 2018 Typhoon 12 in July; the 2018 Hokkaido Eastern Iburi Earthquake
2019	Heavy rain caused by the Eastern Japan Typhoon in July
2020	Two thunderbolts, a heavy rain in July
2022	Heavy rain for six days from August 1, storm and heavy rain with the 2022 Typhoon 14
2023	Heavy rain by the Typhoon 13, The 2024 Noto Peninsula Earthquake



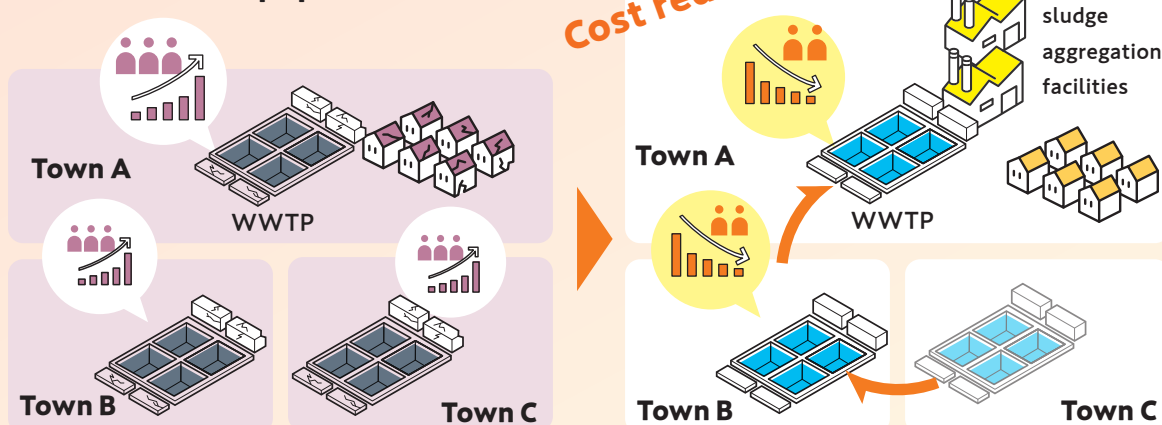
Cross-jurisdictional Collaboration

Each prefecture has formulated cross-jurisdictional collaboration plans by 2022. JS will support achieving their plans through the following proposals; Collaboration arrangements among local governments; Introduction of a wide-area management system utilizing ICT; Joint facilities for sludge treatment; Joint O&M; Coordination between wastewater and other lifeline projects.



Reviewing wastewater planning due to social changes

- Towns with depopulation crisis -



For efficient wastewater business management,

- Basic scheme for wastewater treatment
- Reviewing wastewater master plan

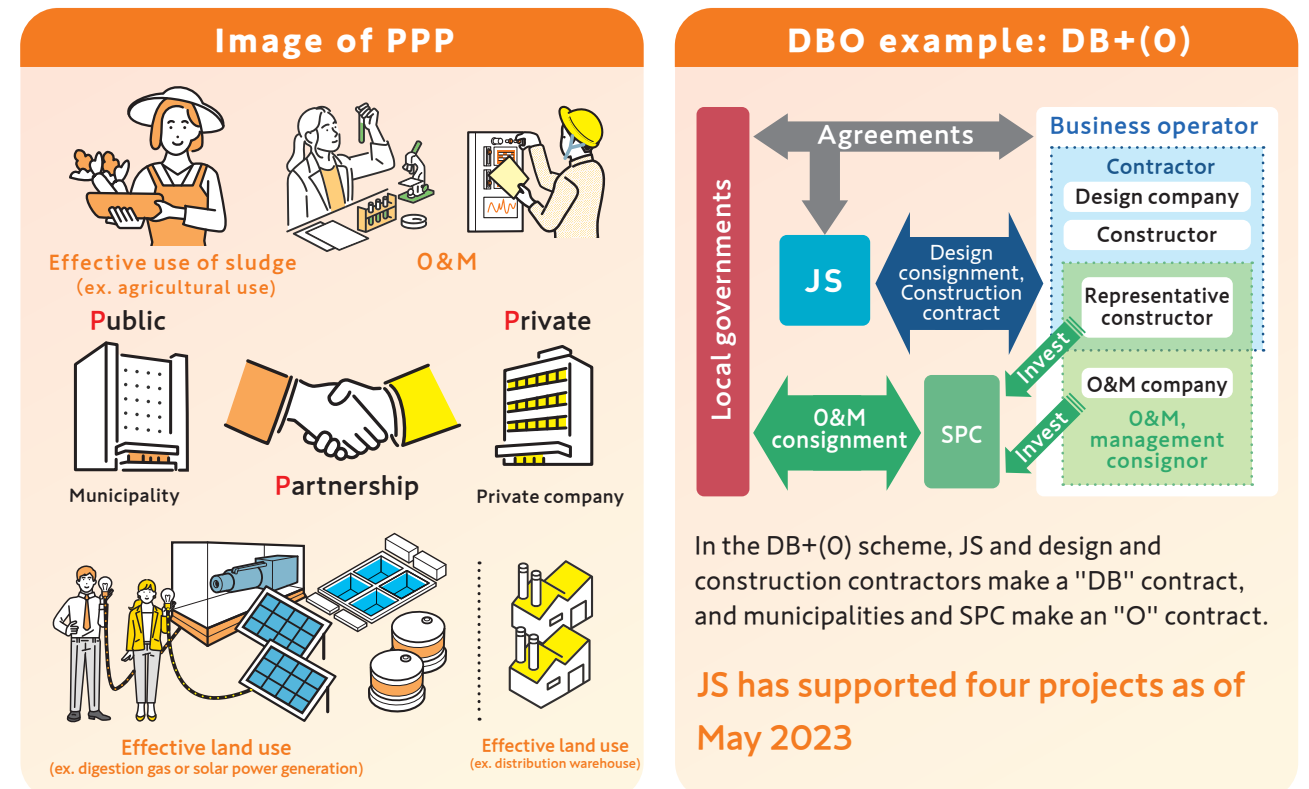
- Reorganization/consolidation of wastewater treatment district
- Aggregation of sludge treatment
- Joint order of O&M

Case Example

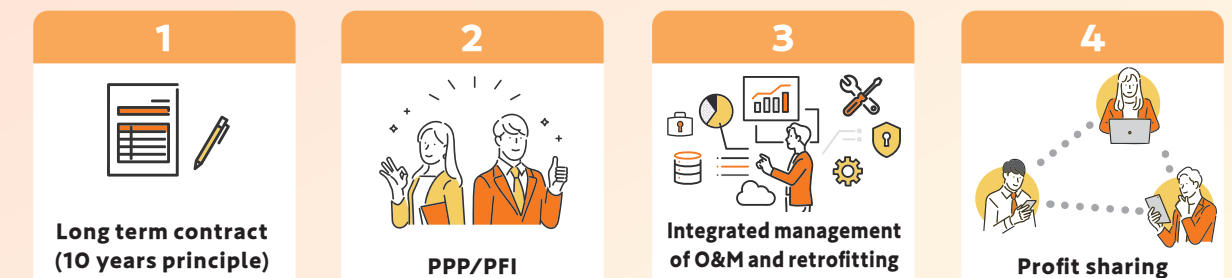
Explain points for cross-jurisdictional collaboration initiative at the meeting of responsible individuals

Public-Private Partnership (PPP)

PPP (Public Private Partnership) is a scheme to improve efficiency of public business by incorporating the know-how and technologies of the private sector. Water PPP has been promoted in recent years as a management scheme that integrates facilities' retrofit works and public responsible project management with the private sector's vitality. JS has fully supported for PPP/PFI in all phases of wastewater projects. We will use our experience to support PPP projects considering local governments' various needs.



Four requirements for the Water PPP (integrated system for management and retrofit)



JS' adoption and implementation flow of Water PPP



Case example

JS supports municipalities to study introducing Water-PPP since 2024 and provides training programs related to PPP at the JS Training Center

Decarbonization

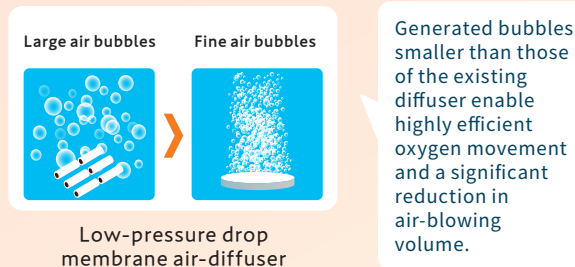
Toward "Carbon neutrality by 2050," establishing a decarbonized society is necessary. Wastewater projects should also play a part in achieving this goal. JS has devised the "JS Basic Decarbonization Policy" to expedite and spearhead the development of new technologies for decarbonization, including energy-saving and the utilization of sewerage resources and energy. JS will prioritize decarbonization in all the projects it undertakes.

One-stop proposal for the optimized decarbonization technology meeting municipal needs



Examples of decarbonization technology

CO2 reduction by energy-saving



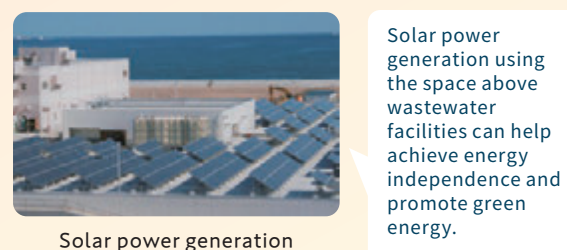
N2O reduction by high-temperature incineration



Sewage sludge energy conversion



Introduction of renewable energy



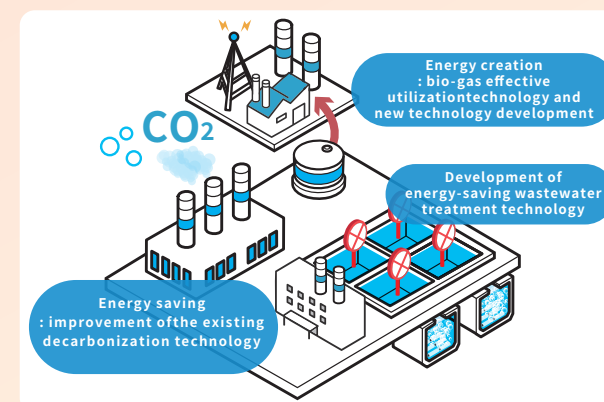
New Technology Development and Implementation

Wastewater-related R&D should focus not only on decarbonization but also on policies and needs. As per its R&D Basic Plan 2022, JS will conduct its own research or joint research and promote the development of new technologies that contribute to carbon-neutral and sustainable wastewater projects. Additionally, JS will take the lead in introducing new technology in wastewater projects by selecting excellent new technology through its "New Tech Implementation Program" and promoting the introduction of new technology in entrusted projects."

Promote the advancement and adoption of decarbonization technologies

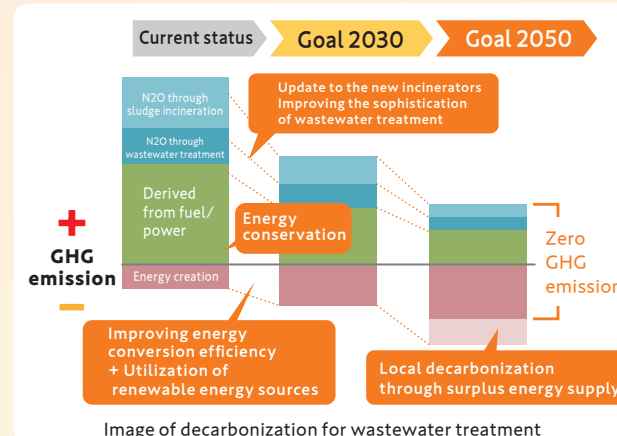
Development of decarbonization technology for the Goal 2030

To reduce greenhouse gas emissions by 2030, JS will expedite the improvement of existing energy-saving and energy-generating technologies and the development and practical application of new technologies in this field.



Development of carbon-neutral wastewater treatment systems

JS will develop new wastewater treatment systems to achieve carbon neutrality or zero greenhouse gas emissions by 2050.



Achievements FY2023

- Publication of R&D results - 24 presentations, including co-authored presentations, at research presentations and domestic and international seminars - Publication of Annual R&D Reports
- Selection and application of new technologies - Selected 2 new technologies (47 in total*) and decided to introduce 8 technologies (142 in total*) in contracted construction projects. *FY 2011-23



Promote the advancement and adoption of decarbonization technologies

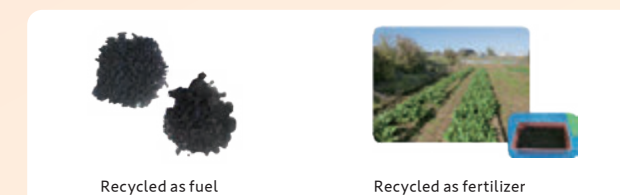
Development of additional low-cost wastewater treatment technology

JS will facilitate the development and enhancement of cost-effective technologies for sustainable management of wastewater businesses through infrastructure retrofitting and inter-jurisdictional cooperation.



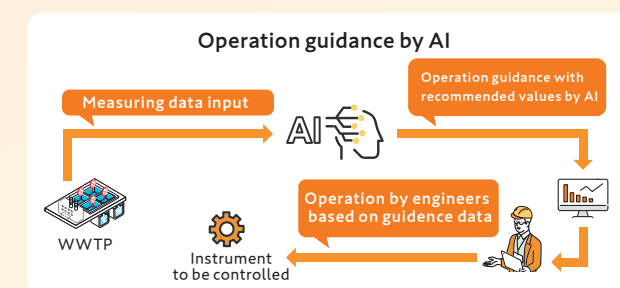
Development of sewage resource utilization technology

JS will advance technology development and practical applications for utilizing sewage sludge resources in energy and agriculture.



Development of ICT/AI technology for WWTPs

JJS will accelerate the development and practical application of ICT/AI technologies, contributing to the efficiency and sophistication of WWTP O&M.



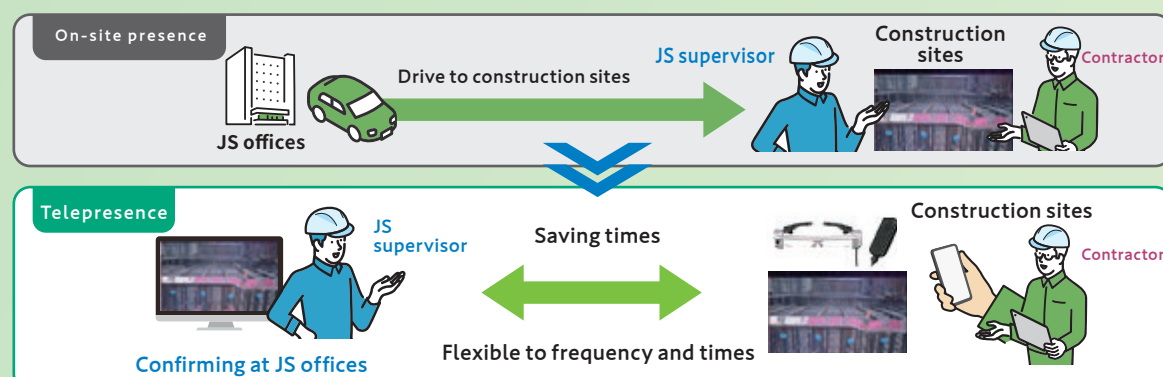


DX

Development, practical application, and popularization of leading-edge ICT

Promoting DX (Digital Transformation) is essential for addressing various issues related to wastewater management and for providing sustainable services. JS will focus on improving productivity and enhancing the sophistication of the wastewater business. This will be achieved through strengthening communication with relevant parties via DX promotion. Additionally, JS will drive the creation of new innovations using digital technology. This includes enhancing design and construction quality by promoting the use of BIM/CIM, expanding remote monitoring through digital devices, computerizing information on treatment plant and pump station facilities with a wastewater ledger system, and providing services to external parties using the internal backbone system. Our primary goal is to foster the creation of new innovations through the utilization of digital technology.

Popularizing telepresence at construction sites

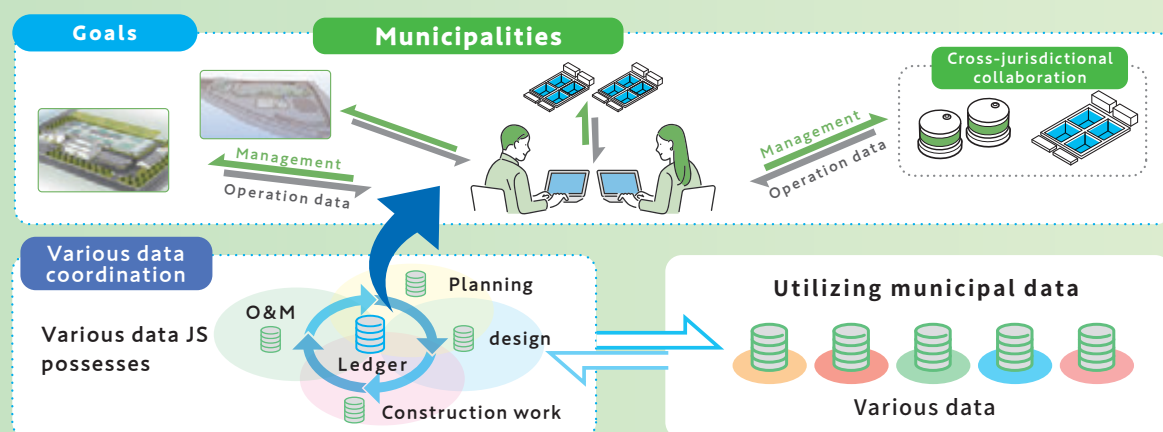


Telepresence can save time and allow experienced engineers to participate in construction projects, leading to better management and improved quality.

Utilizing BIM/CIM for design and construction promotes productivity and enhances sophistication through efficient information exchange.

Construction DX supports work-style reform in the construction industry by reducing overtime and ensuring a five-day work week.

Smooth, efficient, and sophisticated management of wastewater business by DX



Achievements in FY2023

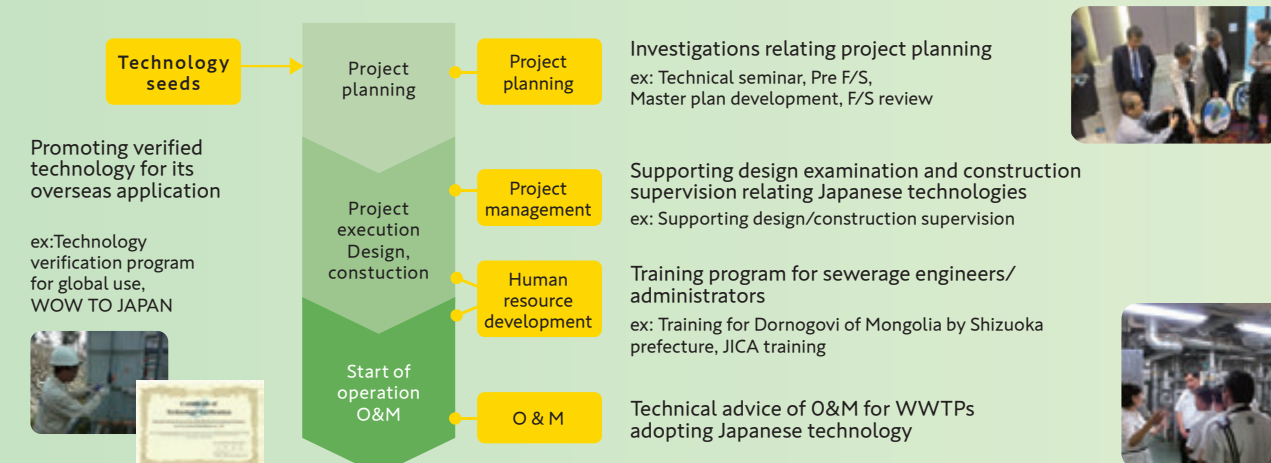
- Releasing "Draft BIM Utilization Scheme for wastewater projects, the first edition"
- Releasing "Draft Implementation Guidelines for the Telepresence at Construction Sites"
- Applying construction data sharing system for all works after July 2023



International Water Business Support

Many developing countries are grappling with serious issues such as poor hygiene, environmental degradation, and water pollution. Japan's advanced wastewater technology and skilled workforce can play a significant role in helping these countries achieve the Sustainable Development Goals (SDGs). JS facilitates the participation of local companies in global public infrastructure projects and assists municipalities with their initiatives, or JICA grassroots technical cooperation projects.

International wastewater project support



Assisting municipalities with their JICA grassroots technical cooperation projects

- Supporting Saitama prefecture's project for the Wastewater Management Authority (WMA) of Thailand (2012-14, 2016-18)
- Offering training programs in Japan, as well as surveys, training, seminars, and PPP support in Thailand
- MOU agreement with WMA in February 2020.
- Assisting training program in Japan for Laem Chabang City officials in 2023

Seminar in Bangkok



Training program at Si Racha WWTP



Assisting private companies with the development of their international wastewater projects

Fukuoka city and Fiji in 2023 Support for a field survey and technical seminar

Fiji faces challenges with inadequate or aging wastewater facilities. To address this, Fukuoka prefecture organized a technical seminar in Fiji to discuss potential solutions. During the seminar, JS presented Japanese examples and technologies to facilitate the discussions.

Seminar in Lautoka



Seminar in Lautoka

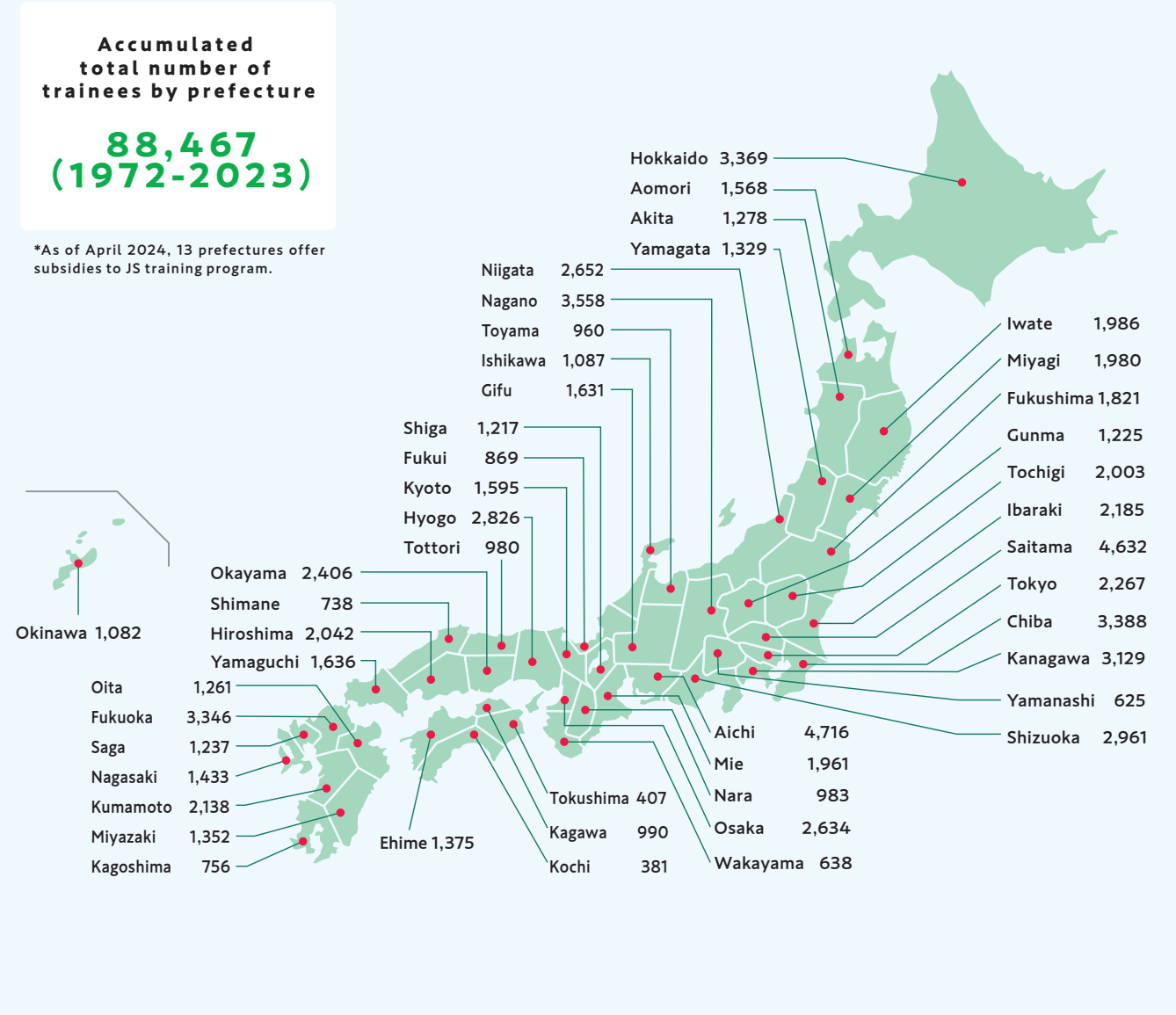




Human Resource Development Support

Training program

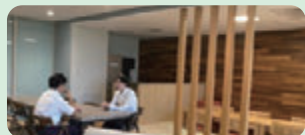
Since its establishment, JS has focused on the human resource development of wastewater engineers. We offer online and face-to-face training programs to meet various municipal needs. JS will improve Japan's technical capability through private-sector training, engineering verification, and certified examinations.



Fine facilities

Private dome rooms provide space where trainees can concentrate on their program.

The lounge room offers excellent networking opportunities for trainees.



Lounge room



New dorm appearance



About JS

Japan Sewerage Works Agency (JS) is a "local joint corporation" established by the 47 prefectures. Its primary role is to act for and support wastewater projects on behalf of local governments.

Since its establishment in 1972, JS has been involved in constructing approximately 70% of the wastewater treatment plants in Japan.

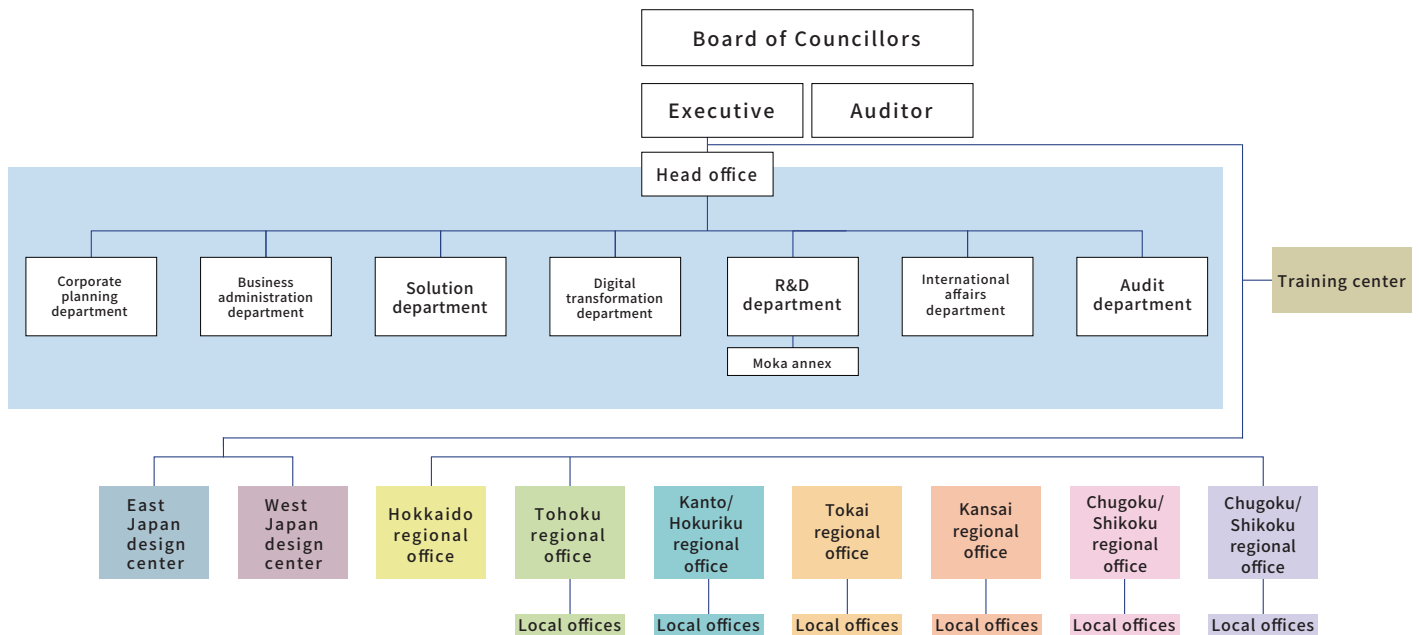
As the challenges and needs facing the wastewater business continue to diversify, JS will continue to support municipal wastewater projects throughout their lifecycles by leveraging its experience, performance, and accumulated technical capabilities and know-how as a trusted solutions partner.

**Kenji Kuroda, President,
Japan Sewerage Works Agency**

Name	Japan Sewages Works Agency (JS)
History	Established in 1972
Business	Construction, O&M, technical assistance for WWTPs
Operating cost	2 29.4 billion yen(As of FY 2024)
Capital	1275.1 million yen (equally funded by 47 prefectures)
Jurisdiction	The Ministry of Land, Infrastructure, Transportation and Tourism
Based law	Japan Sewage Works Agency Act
Board of Councillors	15 (4 governors, 6 mayors, 2 town/village mayors, and 3 academic experts)
Staff	750 (200 administrative staff and 550 technical staff) Civil, architectural, mechanical, electrical, and water quality engineers, as well as professional staff in management support.
Performance	1,500WWTPs (70% in Japan) 1,000 Pumping stations 280 Sewers 100 technical standards 130 Patents/utility models Trained 88,000 engineers (As of March 2024)

JS supports local governments through its nationwide office collaboration

Organization



Contact

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