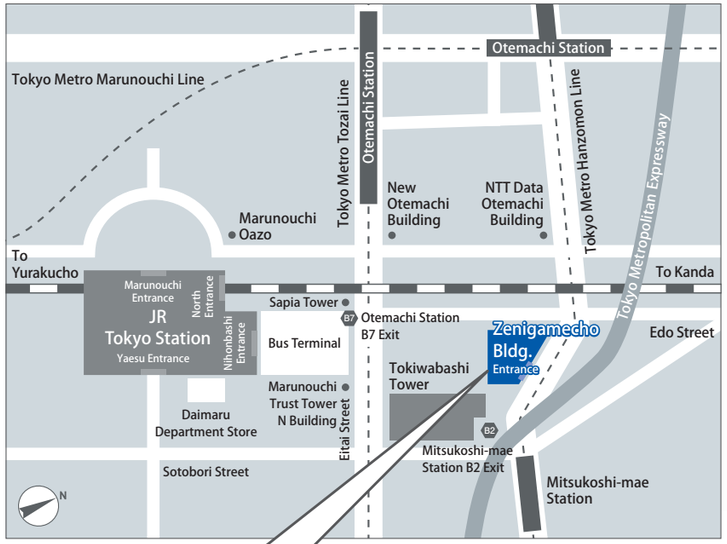
Corporate Outline

Corporate name	Tokyo Metropolitan Sewerage Service Corporation
President	Mamoru Kamiyama
Headquarters	Zenigamecho Bldg., Otemachi 2-6-3, Chiyoda-ku, Tokyo 100-0004 JAPAN
Phone	+81-3-3241-0711 (Main number)
URL	https://www.tgs-sw.co.jp/
Capital	100 million yen
Sales amount	27,123 million yen (FY 2022)
Established on	August 1, 1984
No. of employees	969 (as of April 1, 2023)
Stockholders	Tokyo Metropolitan Government Tokyo Sewerage Facility Association Sompo Japan Insurance Inc. Meiji Yasuda Life Insurance Company Mizuho Bank, Ltd. Mizuho Trust & Banking Co., Ltd. MUFG Bank, Ltd. Asahi Mutual Life Insurance Co. Tokio Marine & Nichido Fire Insurance Co., Ltd.



TOKYO METROPOLITAN SEWERAGE SERVICE CORPORATION

Link to the website

SUSTAINABLE DEVELOPMENT GOALS

We support the Sustainable Development Goals (SDGs).

ISO 9001
JQA-QM3589

Acquisition of ISO 9001 Certification

Scope of Registration:
Operation and maintenance of sewage sludge treatment facilities (condensation, digestion, dewatering, and incineration process)

Applicable Offices:
Miyagi Sludge Office, Shingashi Sludge Office, Morigasaki Office, Kasai Sludge Office, Eastern Region Sludge Office, Southern Region Sludge Office

VEGETABLE OIL INK

Published in July 2024
6-002

TOKYO METROPOLITAN SEWERAGE SERVICE CORPORATION

Corporate Profile

Message from the President

President and
Representative Director

Mamoru Kamiyama

Tokyo Metropolitan Sewerage Service Corporation (TGS: Tokyo Gesuido Service) was established in 1984 to pursue efficiency and economy, while continuing to serve the public welfare, by integrating and utilizing the funding and technological capabilities of the Tokyo Metropolitan Government and private companies.

Since that time, we have worked to maintain and improve sewerage service as a member of the Tokyo Metropolitan Government group through integrated business operation with the Bureau of Sewerage, Tokyo Metropolitan Government.

In April of 2022, TGS was entrusted with the overall management of the Ochiai sewage treatment plant. As a result, the projects that we started when TGS was established, which centered on sludge treatment, have now grown to include comprehensive responsibility from upstream services related to sewers to downstream, encompassing work from maintenance management and design/construction management of sewer pipes to the operation and maintenance management of sewage treatment plant, pumping stations and sludge treatment facilities.

Utilizing our accumulated advanced technologies, know-how and human resources, we have also become a driving force for the sewerage industry through efforts which are not limited to the Tokyo Metropolitan area, but also include other parts of Japan as well as overseas countries, for example, human resources development and transmission of technologies to the next generation, support in time of disasters and international expansion of Tokyo-originated sewerage technologies.

In the future, we will contribute to realizing a sustainable society by supporting safe, pleasant life and the growth of the Tokyo Metropolitan area through the concerted efforts of all our employees, to ensure that sewers function 24 hours a day, 365 days a year, utilizing the sewerage business operation capabilities we have developed to date.

Contents

Corporate Philosophy

Using the power of sewerage to make a sustainable society the “new normal”

Diverse roles of sewerage

Sewerage has 3 basic roles in supporting life and the urban cities: "Treating sewage to ensure a clean, healthy environment in the city," "Protecting the city from floods" and "Protecting the water environment of oceans and rivers." It also has diverse roles in recycling sewage as a resource and effectively utilizing its energy, including "Recycling sludge as a resource," "Reusing treated water," "Use of digestion gas and heat," etc.

Division of roles of the Bureau of Sewerage and TGS

Correct functioning of the sewerage system contributes to protecting the day-to-day lives of Tokyo residents and preserving the environment, including rivers and oceans.

Based on its sharing roles with the Bureau of Sewerage (Tokyo 23 wards), Tokyo Metropolitan Government, the Tokyo Metropolitan Sewerage Service Corporation (TGS) is responsible for front-line work at the actual site in each of the stages of "Designing and planning," "Construction" and "Operation and maintenance," and is working to ensure the functioning of the sewerage system.

Bureau of Sewerage (Tokyo 23 Wards)

Designing and Planning

Drafting of sewerage plans, construction of new facilities and reconstruction of aging facilities.

- Establishment of regulations, etc.
- Management planning
- Public relations/ public hearings
- Human resources
- Asset management
- Contracts
- Basic plans for facility maintenance, etc.
- Technology development, etc.

Construction

- Planning of construction and improvement projects
- Design and supervision of facility construction/ improvement projects etc.

Operation & Maintenance

Sewerage systems consist mainly of 4 facilities: Sewer pipes, pumping stations, sewage treatment plants and the sludge plants (sludge treatment facilities). TGS performs operation, inspections, cleaning, repairs, and other activities to ensure that all of these facilities can function as an integrated system 24 hours a day, 365 days a year.

Sewer pipes

Approx. 16,100km

Wastewater (sewage) discharged from homes and factories and rainwater from roads is collected in "sewer pipes."

Pumping stations

82 locations

"Pumping stations" are provided in places where sewer pipes are deep underground in order to pump up sewage.
During rainfall, the rainwater is drained off to protect the city from flooding.

Sewage treatment plants

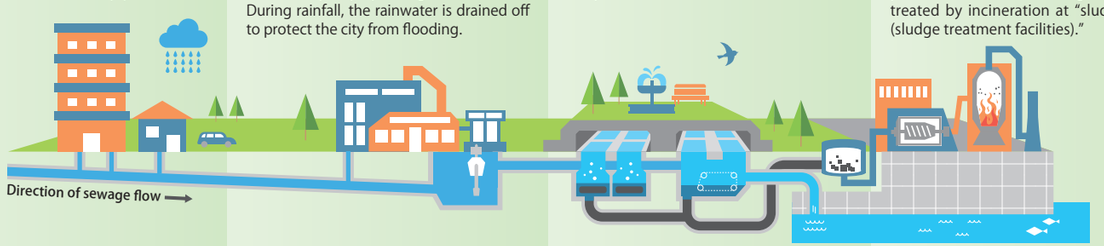
13 locations (Sewage treatment facilities)

"Sewage treatment plants" purify sewage through a multi-stage process and return the purified water to rivers or the ocean.

Sludge plants

5 locations (sludge treatment facilities)

The waste accumulated in the sewage treatment process at "sewage treatment plants" is collected as sewage sludge and treated by incineration at "sludge plants (sludge treatment facilities)."



- Design, supervision, etc. of repair work
- Operation & maintenance (O&M), maintenance management (some facilities) and water quality control

TGS

- Research and development of new technologies
- Expansion to other parts of Japan/other countries
- Training for other organizations, etc.

- Investigation of reconstruction projects
- Sewer pipe design estimation
- Supervision of sewer pipe construction

- Sewer maintenance service (patrol and inspection, investigation, supervision of repair construction work, etc.)
- Call center service (emergency contact during nighttime/holidays)
- Inspection and confirmation of private sewers in residential areas

- Recycling of construction surplus soil
- Sewerage mapping and information system service

- O&M of sewage treatment plants/ pumping stations (some facilities), maintenance management, water quality control (some facilities)

- O&M of sludge treatment facilities (operation management, maintenance management)
- Sludge recycling/utilization of renewable energy

- Water quality testing/investigation
- Supply of recycled water
- Optical fiber network facilities management service

History of TGS

TGS was established as an organization that performs precise operation and maintenance of Tokyo's vast system of sewerage facilities.
Since then, we have steadily operated, developed and expanded our businesses in response to changes in the social environment surrounding the sewerage business, the expectations of society, and other needs.

- Supporting safe and pleasant life
- Supporting the growth of Metropolitan Tokyo
- Creating a good water environment
- Utilizing resources and energy
- Responding to issues at actual sites in Japan and other countries

1984

●1984.8.1

Establishment of TGS

●1984～
Parking lot management service

●1984～
Drainage equipment-related service

●1984～
Investigation service

●1984～
Sludge treatment service

●1984～
Recycled water service

●1984～
Sludge recycling service

●1984～
Technology development service

1985

●1985～

Sewerage call center service

●Trunk sewer survey

1988

●1988～

Construction surplus soil improvement service

●Restoration of clean water in Meguro River using recycled water

1998

●1998～

Drainage equipment workshop service

1999

●1999～

Estimation system service

2000

●2000～

Sewerage mapping and information system/maintenance management service

2004

●2004～

Sewer maintenance service

●2004～

Optical fiber network facilities management service

2005

●2005～

International promotion service

2007

●2007～

Sewer design estimation service

●2007～

Water quality testing service

2008

●2008～

Human resources development/ technology succession

●2008～

Construction supervision support service

●2008～

Sludge recycling service

Carbonizing furnace

●2008～

Sewage treatment maintenance service

2010

●2010～

Visitor guiding service at sewerage facility

●2010～15

Disaster recovery support for Urayasu City and Katori City

2012

●2012～

Operation of sewerage equipment operation & maintenance system

2019

●2019～

TGS entrusted with all sewer line operation and maintenance services in the 23 wards of Tokyo

2020

●2020～

Registration as construction consultant

2022

●2022～

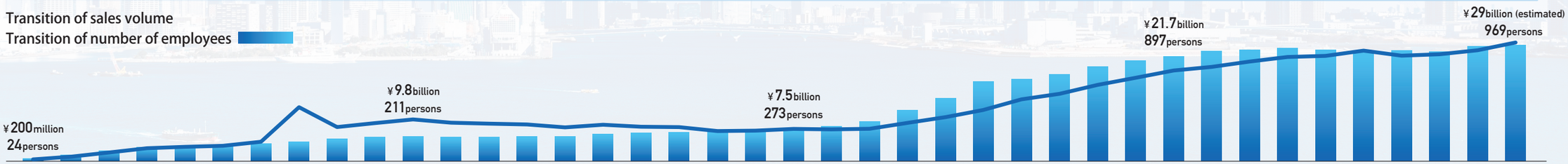
Ochiai Office-Comprehensive management of sewage treatment facilities

●2022～

Head Office relocated

1984 — 1994 — 2004 — 2014 — 2023

Transition of sales volume
Transition of number of employees



Main Award-Winning Technologies

TGS is actively engaged in technology development to solve the problems facing the Tokyo sewerage system based on ideas proposed by workers at frontline sites. The developed technologies have been adopted not only in the Tokyo Metropolitan area, but also in other parts of Japan and overseas, and have earned a high evaluation, including winning many prestigious awards, etc.

① Earthquake-resisting construction method (floatless method) (●)

Technology for preventing floating of manholes caused by ground liquefaction in earthquakes

- FY 2012 Japan Society of Civil Engineers Innovative Technique Award

② Total Information System for Sewerage Management (Total-ISM) (●)

Pipeline facility information system with diverse functions enabling effective coupled use of the sewer pipe inner surface expansion plan drawing system, sewer pipe design CAD system and other tools

- FY 2017 Ministry of Land, Infrastructure, Transport and Tourism Minister's Infrastructure Maintenance Award Grand Prize
- FY 2018 Tokyo Metropolitan Government Employee Award, Policy Issue Division (Governor of Tokyo Award)

③ SPR construction method (sewage pipe renewal method) (●●)

Sewage Pipeline Renewal (SPR) method by wrapping the inside of existing pipelines with a hard polyvinyl chloride (PVC) profile

- FY 2012 Okochi Prize, Okochi Memorial Prize ● FY 2013 Good Design Award
- FY 2013 Ministry of Land, Infrastructure, Transport and Tourism Minister's Award, Circulation Path and Sewerage Award

④ Water surface control device (●●●)

Construction method for suppressing pollutant outflows due to overflows from combined sewage systems during rainy weather

- FY 2011 Ministry of Land, Infrastructure, Transport and Tourism Minister's Award, Circulation Path and Sewerage Award
- FY 2019 Japan Society of Civil Engineers Environmental Award
- FY 2022 Japan Sewage Works Association (JSWA) Encouragement Paper Award (received in June 2022)

⑤ DO-Jet construction method (●)

Method for ground improvement and cutting/removing obstacles from underground by an ultra-high pressure jet

- FY 2012 Infrastructure Technology Development Award Excellence Prize ● FY 2022 Japan Society of Civil Engineers Technology Award

⑥ Omega Liner construction method (sewer renovation method) (●)

Method for renovating sewer pipes by using steam heating to restore folded shape-memory polyvinyl chloride (PVC) pipes

- FY 2018 Environment and Equipment Design Award First Prize ● FY 2023 Okochi Memorial Production Prize

⑦ Ido Mill Meter* (time meter) (●)

Meter for measuring the operating time of well pumps to calculate sewage charges

- FY 2013 Tokyo Metropolitan Government Employee Award, Grand Prize (Governor of Tokyo Award)

⑧ Anaerobic and simultaneous nitrification-denitrification treatment method (●●)

Method that combines nitrogen treatment and the anaerobic method by simultaneously performing digestion and denitrification in the same tank

- FY 2014 Nikkei Global Environmental Technology Award, Prize for Excellence
- FY 2016 Japan Sewage Works Association Excellent Paper Award
- FY 2016 Society of Environmental Instrumentation, Control and Automation Encouragement Award
- FY 2020 Excellent Environmental Equipment Award, Ministry of Economy, Trade and Industry (METI) Minister's Award

⑨ Hole Air Streamer (bladeless air blower) (●●)

New ventilation system developed with the aim of improving the safety of work in pipelines

- FY 2014 Nagasaki Prefecture Invention and Innovation Exhibition, Prefectural Governor's Award
- FY 2014 Award of the Japan Construction and Occupational Safety and Health Association, First Prize
- FY 2015 Monodzukuri Nippon Grand Award, Award of the Director-General of the Kyushu Bureau of Economy, Trade and Industry

⑩ Infrared laser light-type continuous methane concentration measuring device (●)

Measuring device that calculates methane concentration by measuring infrared absorption of methane gas

- FY 2015 Society of Environmental Instrumentation, Control and Automation Encouragement Award

⑪ Optical fiber sensing box (●)

Device that transmits data on the sewage level measured using optical fiber

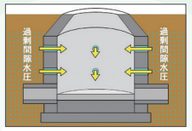
- FY 2016 Society of Environmental Instrumentation, Control and Automation Encouragement Award

⑫ Ecolo-guard construction method (●)

Coating-type lining method for removing deteriorated parts of concrete structures and protection/repair of the concrete surface

- FY 2018 Japan Sewage Works Association Encouragement Paper Award

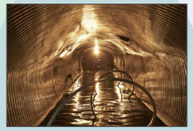
Technologies recognized for social contribution

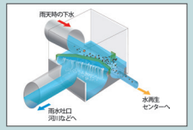


① Earthquake-resisting construction method (floatless method)


② Total Information System for Sewerage Management (Total-ISM)

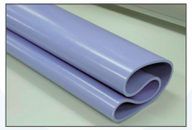
Technologies recognized for invention/development


③ SPR construction method (sewage pipe renewal method)



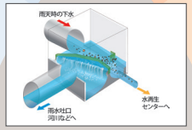
④ Water surface control device


⑤ DO-Jet construction method

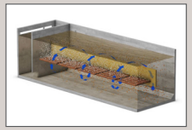

⑥ Omega Liner construction method (sewer renovation method)

⑦ Ido Mill Meter (time meter)

Technologies recognized for employee achievements

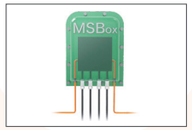


④ Water surface control device

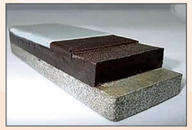

⑧ Anaerobic and simultaneous nitrification-denitrification treatment method


⑨ Hole Air Streamer (bladeless air blower)


⑩ Infrared laser light-type continuous methane concentration measuring device



⑪ Optical fiber sensing box


⑫ Ecolo-guard construction method

◉ For details of each award-winning technology, please refer to:
https://www.tgs-sw.co.jp/business/technical/c01/

＊For details of the "Ido Mill Meter," please refer to:
https://www.tgs-sw.co.jp/business/service/c03/

01 Supporting safe and pleasant life

01-01 Sewer maintenance service

Based on the division of roles with the Bureau of Sewerage, Tokyo Metropolitan Government, TGS is responsible for sewer pipe operation and maintenance services (branch services) at branch offices which the Bureau has established at one location in each of the 23 wards of Tokyo.

When a road caves in or flooding occurs, TGS works to prevent recurrence by using original maps created by this company. The results of these efforts are utilized in preventive maintenance-type facility operation and maintenance, such as measures for advance prevention of road cave-ins and other accidents.

At work sites, we develop and propose various innovative solutions. Feasible technologies based on excellent proposals are developed as new site-originated technologies. One example is the "Smart Catch inside drop pipe*," which makes it possible to eliminate the outside drop pipes of manholes which had been one cause of road cave-ins.

In the future, we will continue to improve the quality of our services and operational efficiency by improving and increasing our efforts to date.

＊For details of "Smart Catch inside drop pipe", please refer to:
https://www.tgs-sw.co.jp/business/technical/c01

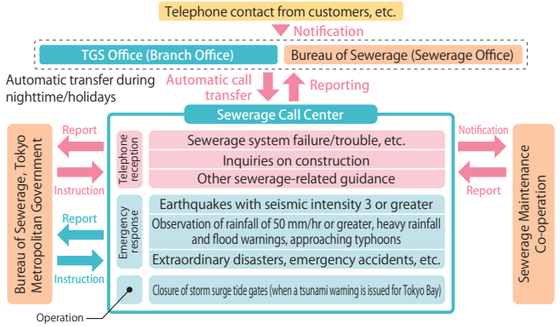
Table 1 Main sewer pipe operation and maintenance work under responsibility of TGS

Class of work	Content of work
Response	Emergency response to road cave-in or sewer clogging, etc.
	Coordination with road administrator and police
	Response to customer inquiries, complaints, etc.
Preventive maintenance	Repair work and operation (※)
	Preparation of design documents for repair work, support for supervision of the work
	Preparation of design documents for cleaning work and pipe inner investigation, support for supervision of the work
	Preparation of design documents for public inlet installation
	Patrol and inspection
	Survey work (surveys to check current condition)
	In sewer lines, manholes, inlets
	Witnessing work
	Construction for road administrators and other companies
Other	Safety management
	Investigation of dangerous gases (e.g., H_2S) and accident prevention action

※The Bureau of Sewerage, Tokyo Metropolitan Government performs the design work and construction supervision work.

01-02 Night/holiday sewerage call center service

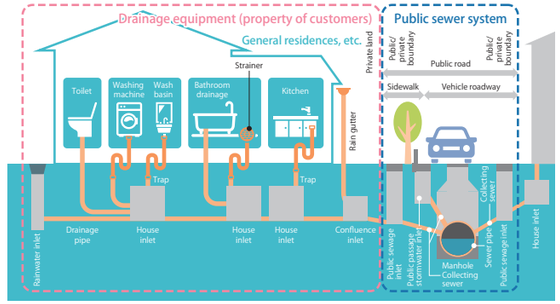
TGS has been entrusted with operation of the sewerage call center service during times (nighttime and holidays) when the Bureau of Sewerage, Tokyo Metropolitan Government is closed as a one-stop service that receives all telephone calls from customers, road administrators and others. Since this is a front-line service with direct contact with customers, we strive to respond quickly and appropriately in order to improve customer services.



01-03 Inspections of private sewer-related services

Private sewer-related facilities consist of drainage equipment such as "drainage pipes" and "house inlets" located on residential land space. These are important facilities that connect the customer to the public sewerage system.

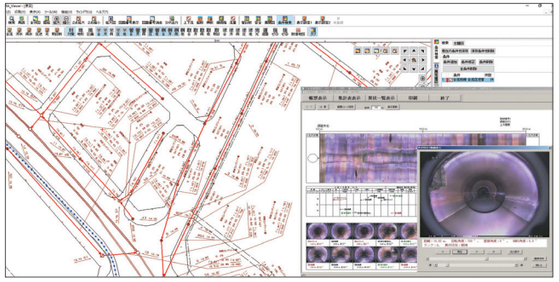
TGS provides inspection services at the actual site to check whether these private sewer facilities are properly constructed and maintained. At the site, inspections are conducted by TGS engineers with specialized knowledge and a deep understanding of construction technology.



02 Supporting the development of Metropolitan Tokyo

02-01 Sewerage Mapping and Information System (SEMIS)

TGS is responsible for functional improvement, maintenance management and data updating of the Sewerage Mapping and Information System (SEMIS) operated by the Bureau of Sewerage, Tokyo Metropolitan Government. We are contributing to stable operation of the sewerage system and improvement of sewerage services by properly managing the SEMIS system and making it possible to use a wide variety of data.



Screen of Sewerage Mapping and Information System

02-02 Surveys of reconstruction projects

Because TGS is extremely familiar with the actual conditions at the site, we have been entrusted with inspection services for trunk sewer lines, sewage treatment plants and pumping stations which are scheduled for reconstruction. TGS prepares the drawings and other documents necessary for issuing reconstruction work orders, contributing to smooth implementation of reconstruction projects being carried out by the Bureau of Sewerage.

Survey for trunk sewer reconstruction (core sampling survey)

Survey for equipment reconstruction at sewage treatment plant and pumping station (survey of the current condition of electrical equipment)

02-03 Sewer pipe design/estimation

As part of support for design/estimation business of the Bureau of Sewerage, Tokyo Metropolitan Government, TGS is engaged in the business of assisting in designing, aiming to provide guidance for the consultancy that has received an order for designing.

Also, TGS is assisting in preparing a design document, aiming to help to create a quantity calculation statement and data on a design document for placing an order for construction based on a design drawing, as well as providing functional improvement/maintenance and management of estimation systems.

Furthermore, TGS is proceeding with its business efficiently by making good use of tele-working and the company's original quantity calculation system.

Design/estimation service

02-04 Supervision of sewer pipe construction

TGS provides construction supervision support for achievement of the targets set for reconstruction by the Bureau of Sewerage, Tokyo Metropolitan Government. We perform a variety of work related to construction safety and ensuring, beginning with technical guidance and coordination with contractors from the administrative viewpoint.

In Tokyo, sewer pipe reconstruction is being carried out targeting 700 ha/yr. TGS provides construction supervision support for approximately 70% of that work.

In the future, we will work to further improve business operation by actively utilizing ICT and other innovative technologies with the aim of providing quick and appropriate service.

Construction supervision support work

03 Creating a good water environment

03-01 Maintenance management of sewage treatment plants and pumping stations

In the 23 wards of Tokyo, there are 13 sewage treatment plants that treat wastewater and 82 pumping stations for the related pumping.

To ensure stable operation of sewage treatment plants and pumping stations at all times, TGS performs maintenance management with priority to preventing equipment failures in advance.

Maintenance inspection work

Beginning in FY 2022, we were also entrusted with operation and maintenance services for some sewage treatment plants by the Bureau of Sewerage, Tokyo Metropolitan Government.

03-02 Operation and maintenance of sludge treatment facilities

The sludge generated by the 13 sewage treatment plants in Tokyo's 23 wards is collected at 5 sludge treatment facilities, and its amount reaches as much as about 60 million m^3 each year. At the sludge treatment facilities, the physical volume of this huge amount of sewage sludge is reduced through the respective processes of thickening, dewatering and incineration. We are also grappling with recycling of the ash that remains after the incineration process, for example, through effective utilization as a raw material for cement and as granularity controlled ash.


Energy-efficient incinerator

TGS performs operational and maintenance management of all five sludge treatment facilities and one sludge digestion facility.

As the sludge treatment process is extremely energy-intensive, it is important to reduce energy consumption and CO_2 emissions.

03-03 Operation and maintenance of the optical fiber network

An optical fiber network, laid inside sewer pipes, links the sewerage facilities in the 23 wards of Tokyo. This network is used for remote monitoring and control of pumping stations from sewage treatment plants, etc. TGS has created a system for regular inspections of the optical fiber facilities and communications equipment, 24-hour monitoring of the operating condition of the network and quick response when problems occur.

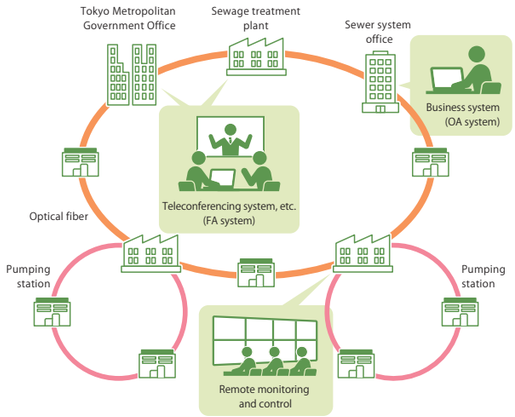


Diagram of the sewerage optical fiber network (image)

03-04 Water quality testing/ investigations

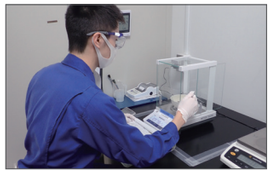
TGS performs water quality tests of water released from the sewage treatment plants to ensure that it meets water quality standards. From FY 2022, we were responsible for all water quality management work at some sewage treatment plants.

In sludge treatment, we confirm the properties of the sludge by sludge testing and reflect the results in daily optimum operation management.

We also secure the stability and reliability of the supply of recycled water by accurate measurement of the treated water quality and precise operation management in the recycled water production process.

On the other hand, TGS not only performs regular testing, but also conducts more specialized investigations and research in order to solve problems in the field from a scientific standpoint.


Water sampling
in water treatment process


Water quality
and related testing services

04 Effective utilization of resources and energy

04-01 Supply of recycled water

Recycled water, which is produced by more advanced treatment processes of treated wastewater, is used as a valuable water resource that forms part of the water circulation system in Tokyo.

In the 23 wards of Tokyo, recycled water is supplied from three sewage treatment plants. TGS has been entrusted with this recycled water supply service, and is responsible for operation management and maintenance management at these recycled water supply facilities.

Recycled water is effectively utilized as toilet water, etc. in approximately 200 facilities and is also used to restore clear streams in the 3 rivers in the Jonan area (Shibuya River/Furukawa River, Meguro River, Nomikawa River).


Seseragi-no-Sato Park

04-02 Sludge recycling and use of renewable energy

The volume of sewage sludge as incineration ash is greatly reduced through the treatment processes of "thickening → digestion → dewatering → incineration," and this incineration ash is recycled as a resource as much as possible.

The sewage treatment plants also generate electric power by utilizing the waste heat produced by sludge incineration and the energy of effluent drop (height difference) when the treated water is released.

TGS is responsible for some of the maintenance management work that enables stable, efficient operation of these businesses.

Granularity controlled ash (Super Ash) business

TGS developed a product called granularity controlled ash ("Super Ash") using incineration ash as the raw material, and is engaged in a business that uses this product as a compounding agent for concrete.

Super Ash is contributing to recycling of sludge, as it can be used as a raw material for the production of concrete secondary products such as Hume pipes, manholes, concrete segments, etc. which are used in public works construction in Tokyo.


Granularity controlled ash
(Super Ash)

Recycling


Concrete secondary products

04-03 Construction surplus soil recycling

At the Nakagawa Construction-Generated Soil Improvement Plant, TGS operates a service that produces improved soil for use in backfilling from the surplus soil generated by sewerage construction. During the 32 years from the start of this service in 1988 to the end of FY 2019, the plant produced 3.55 million m^3 of improved soil.

After the plant opened, a complete renovation was carried out in 2003, but aging deterioration also progressed at the facilities that were started up after the renovation, and operation was suspended temporarily at the end of FY 2020.

At present, a new facility is under construction by the Bureau of Sewerage, Tokyo Metropolitan Government.


General view of the Nakagawa Construction-Generated Soil Improvement Plant

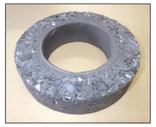

Production of improved soil

e-CON

TGS jointly developed the new type of concrete e-CON, in which industrial byproducts such as blast furnace slag, fly ash, etc. and Super Ash are effectively utilized as a substitute for cement.

Since e-CON not only has excellent sulfuric acid corrosion resistance, but also reduces carbon dioxide (CO_2) emissions in the production process by about 80%, use of this new product contributes to preservation of the global environment.

Test body after immersion in 5% sulfuric acid aqueous solution for 112 days


e-CON


Ordinary cement

05 Responding to issues at the site in Japan and other countries

05-01 Technology development aimed at commercialization

TGS is conducting joint research with the Bureau of Sewerage, Tokyo Metropolitan Government and private companies on the theme of technology development directly linked to sewerage services. In addition, technology development themes are selected from among various issues that arise in the entrusted services performed by TGS, as part of active efforts to promote development of operation site-originated technologies.

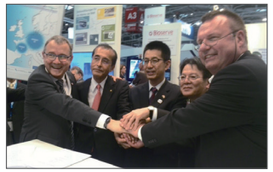
Together with aiming at practical application and commercialization of the developed technologies, we are also working to continuously refine and improve technologies in cooperation with our development partners.

Developed technology
(SPR construction method)

Photo by Ray Shirao

05-02 Domestic and overseas expansion of developed technologies

The technologies developed by TGS are contributing to problem-solving not only in the Tokyo sewerage system, but also in sewerage businesses in other parts of Japan and overseas.



Signing ceremony for a Memorandum of Understanding for joint development of TGS's water surface control device (Munich, Germany)

In order to expand the use of TGS-developed technologies in Japan and other countries, it is necessary to win a high public evaluation for these technologies, and effective PR activities to encourage adoption are also required in addition to the proven record of Tokyo sewerage system. It is also important to respond to the conditions and thinking in other regions and countries, for example, the applicable technical standards in each area, and local business customs must be considered, especially in overseas countries.

We are making these efforts in collaboration with our joint development partners with the cooperation of construction method associations and other related parties.

05-03 Contributing to the improvement of overseas project

Utilizing the strengths of technological capabilities and management know-how that TGS has cultivated until now, we are promoting international expansion of Tokyo-originated sewerage technologies. In Malaysia's Langat Sewerage Project, we provided technical support to Malaysian government agencies for all aspects of the sewerage system, through processes ranging from planning to design, construction and operation. This 12-year project was completed with no problems in November 2022.

In addition to participating in overseas sewerage projects based on the needs of large metropolitan areas in other countries through collaboration/cooperation with the Bureau of Sewerage, Tokyo Metropolitan Government and Japan's national government and administrative agencies (JICA, etc.), we are also involved in technology exchanges though participation in international conferences and other activities.

Hand-over ceremony of the Langat Sewerage Project (Malaysia)

05-04 Support for Engineer Training and Study

Sewerage services in Tokyo are conducted by three organizations, the Bureau of Sewerage of the Tokyo Metropolitan Government, private-sector companies and TGS. In order to provide sewerage services consistently, it is important to ensure transmission of the technologies and know-how developed by these three organizations. TGS established the Sewerage Training Center in 2009 and began training Bureau of Sewerage staff and employees, and in 2013, we started the management and operation of training for private companies at the Sewerage Technology Training Center opened by the Bureau of Sewerage, thereby contributing to human resources development for the three parties. To deepen the public understanding of the history of sewerage, TGS also conducts tours of the former main pump house of the Mikawashima Sewage Treatment Plant, which has been designated as an important cultural property.

TGS has also been entrusted with qualification test and renewal course services for engineers responsible for private sewer works, including the nationwide Japan Sewage Works Association (JSA).

Practicing walking in water in a sewer pipe

For details on engineers responsible for sewer works, please refer to:
https://www.tgs-sw.co.jp/haisui-enjineer/

A foundation of human resources – People are the treasure

01 A diverse team of active colleagues

What supports the sewerage system in the Tokyo metropolitan area is the individual employees. Because TGS values the idea that "it is precisely people that are a company's asset (= treasure)," we work hard to hire and train human resources.

Our company, which aims is to achieve a sustainable society through the power of sewerage, is made up of diverse human resources who possess high technical capabilities and a strong sense of mission.

Employees in various types of jobs mutually cooperate to support the Tokyo sewerage system. These include the people in civil engineering, who are responsible for sewer maintenance service, the mechanical and electrical engineers who manage sewage treatment plant and sludge treatment facilities, environmental inspection personnel in charge of water quality management, and the business staff who are the management foundation of the company.

In addition to newly-graduated and hired young employees, we also have a number of veteran employees such as experienced persons from other companies, persons dispatched from the Tokyo Metropolitan Government and persons with administrative experience. Thus, employees with a wide range of ages are working together, taking full advantage of their respective technologies and experience.

With many of our veteran employees expected to retire in the coming years, we will look for people with spirit, who will protect the water environment and contribute to the safety and growth of Tokyo together with us.

02 A workplace where employees can shine

By providing a workplace environment where employees can continue to work vigorously and with a feeling of security and realizing diverse workstyles, we aim to be a company where each employee can shine and all employees can work in mutual cooperation.

So that employees can maintain good physical and mental health and satisfy the balance of work and family life, TGS has established a vacation and leave system that includes 20 days of paid vacation each year, summer vacation, leave for personal events such as weddings and funerals, long continuous holidays, and time off for childbirth and child rearing, nursing care and care for elderly parents. We have also established a support system for a complete annual medical checkup and a mental health consultation system as efforts that consider a work-friendly environment and employee health, and we are expanding and improving our welfare and benefit program for younger employees, for example, by offering fully-furnished rental apartments in company dormitories.

The TGS career advancement system makes it possible for outstanding employees to rise to managerial positions at an early stage and supports the efforts of highly motivated employees who are eager to take on difficult challenges.

03 Training employees and self-study

With expanded hiring of young employees, the number with limited experience of sewerage in general is also increasing. To provide sewerage services consistently over the coming years, TGS works to ensure transmission of the technologies and know-how cultivated in the past reliably, to each individual employee, and to train the human resources that will support a sustainable society.

Experiential-type actual site training

Beginning with new employee training and on-the-job (OJT) training by employees with a wealth of practical experience, we provide training in the 2nd and 3rd years after hiring, as well as training when employees are promoted to higher positions, giving employees opportunities to acquire knowledge corresponding to their careers.

In practical training, in addition to "desktop" exercises, we also conduct full-scale model training at the Sewerage Technology Training Center, and experiential-type actual site training using actual equipment and machinery.

To support employees' desire for self-improvement, we offer financial support for those who wish to acquire sewerage-related qualifications such as sewage engineering or technology certifications, as well as in-house training and online training for acquiring qualifications, with the aim of improving their technical levels.