TGS Builds Services in Harmony and Develops Them with Skills.

Message from the President

Tokyo Metropolitan Sewerage Service Corporation (TGS: Tokyo Geisuido 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 then, we have worked to maintain and improve sewer service as a member of the Tokyo Metropolitan Government group by complementing or acting on behalf of the Bureau of Sewerage in sewerage projects of the Tokyo Metropolitan Government.

The projects which were started when TGS was originally established, centering on sludge treatment, have steadily grown and expanded, and now include a variety of commissioned projects from sewer pipes to wastewater treatment plants. Utilizing the advanced technologies, know-how, and human resources, which we have accumulated over the years, we have also developed businesses widely in both Japan and other countries, and have achieved many important results including development of new technologies, training of human resources and transmission of technologies to the younger generation, support in time of disasters, and international projects. In addition, in February of 2020, we registered as a construction consultant and are also promoting a consulting business using the human resources, know-how, and technologies of TGS.

Continuing these efforts, we are also working to surely transmit capabilities rooted at the site and technologies that TGS has cultivated up to the present to the young engineers who will be responsible for the next generation, and to further polish and improve the reliability, safety, efficiency, and efficacy of projects.

In the future as well, TGS will continue to contribute to realizing a safe, secure, and pleasant capital city of Tokyo through the concerted efforts of all our employees, utilizing the sewerage project operation capabilities developed to date.

Ryoichi Kishimoto
President

Corporate Philosophy

- Complementing and Acting as an Agency
  Complementing and acting as an agency for the Tokyo Metropolitan Government, TGS performs its sewerage services to maintain and improve their performances, aiming at achieving a better global environment.
- The Best Mix
  Ensuring safety and reliability, TGS utilizes administrative experience and brings together the vitality of the private sector to perform sewerage services efficiently.
- Ingenuity, and Technical Research and Development
  Based on a wealth of on-site practical experience, TGS encourages ingenuity, and technical research and development to improve overall technology.
- Pride and Faith
  With the pride and faith of contributing to society, TGS acts with sincerity.

Business Policy

As a member of a group related to sewerage in Tokyo, TGS carries out integrated business operations with the Bureau of Sewerage, Tokyo Metropolitan Government, and strives to ensure the public nature of those operations. While further strengthening collaboration and continuing to secure safety and reliability, TGS committed to realizing efficient business development, and to maintaining and improving sewer service.

*“Geisuido” means sewerage in Japanese.*

Corporate Outline

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<td>Vice President, Senior Managing Director</td>
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Compliance Promotion Office
- General Affairs Division
- Senior Director, Corporate Planning
- Sewerage Training Center
- Engineering Division
- Senior Director, Project Management
- Senior Director, Technical Development
- International Business Support Office
- Plant Division
- Senior Director, Maintenance and New Technology
- Sewer Management Division

Established on August 1, 1984

Organization Chart

Acquisition of ISO 9001 Certification

Scope of Registration:
- Operation and maintenance of sewage sludge treatment facilities (condensation, digestion, dewatering, and incineration/processing)
- Operation and maintenance of water recycling plants
- Operation and maintenance of construction of new and improvement of existing sewerage plants

Applicable Offices:

History

- August 1984: TGS established
- October 1984: Sludge treatment plant management service started
- Sludge Light Office service started
- Water Recycling Center service started
- Check service of drainage systems started
- Sewerage Call Center service started (nighttime and holidays)
- Parking lot management service started
- Cooperative development of PFI Method (Sewage Pipe Renewal Method) started
- January 1988: Bookselling service started
- July 1988: Construction Supplis Soil Improvement Plant service started (currently called Construction-dering Soil improvement Plant office)
- Non-life insurance agent service started (ended in October 2010)
- November 1994: Acquisition of ISO 9001 certification
- May 1998: Inspection and maintenance of sewerage facilities service started
- April 1999: Public inspection construction service started
- January 2000: Standards revision service for new Sewer Estimation System (SEES) started
- September 1999: Sewerage Mapping and Information System (SEIMS) maintenance service started
- May 2001: Manhole number character cap service started
- March 2003: Granularly controlled ash plant operation service started
- April 2003: Surplus soil temporary storage facility management service started
- April 2004: Sewer maintenance and operation service started
- April 2007: Water quality testing service started
- April 2008: Sewerage treatment facility maintenance service started
- January 2009: Construction supervision support service started
- Awarded from the Ministry of Land, Infrastructure, Transport, and Tourism in commemoration of 50th anniversary of the establishment of the Sewerage Law
- April 2009: Sewerage Training Center service started
- April 2010: Service for visitors to sewerage facilities started
- Service for guiding visitors to Pumping Station in the old Mikawashima Sewage Treatment Facilities started
- Management and operation services of Sewerage Technology Training Center started
- April 2014: Establishment of "symbol logotype"
- October 2013: Letter of acceptance for the Long Tamagawa Project has been issued by Malaysia Government
- April 2015: Sewerage operation and maintenance services expanded to 283 special wards
- February 2020: Registered as construction consultant
Utilizing technological expertise gained from abundant experiences, TGS contributes to society by complementing and acting as the agency for a wide range of sewerage services of the Tokyo Metropolitan Government with its high technology and broad vision.

I Supporting customer services at the forefront
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III Contributing to reduction of environmental load
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VII Contributing to the improvement of the global water environment
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Supporting customer services at the forefront

Utilizing a wealth of experience and expertise, TGS supports customer service at the forefront.

Sewer maintenance service

The branches that perform the maintenance of sewer facilities at the forefront have a key role as regional customer service bases. Entrusted with all branch services by Bureau of Sewerage, Tokyo Metropolitan Government, TGS acts as its agency utilizing a wealth of past experience. In 2004, TGS was entrusted with the services of Toshima Branch for the first time. Beginning in FY 2019, TGS has been entrusted with the service of all 23 branches in Tokyo’s special wards. To prevent damage to sewer facilities, TGS also inspects the construction work of other companies during nighttime as a maintenance service. Through the appropriate maintenance of these sewer facilities, TGS provides customers with safe, secure, and comfortable sewerage service.

Major services

- Understanding the current condition of sewer facilities
  - Patrol and inspection, survey in pipelines, survey of flooded areas, odor survey, basic survey for the maintenance and diagnosis of sewer facilities, organization of sewerage ledger data
  - Functional maintenance of sewer facilities
- Repair of sewer facilities
  - Design data preparation of repair works, supervision support of each work
- Emergency measures
  - Measures at the time of accidents, localized torrential rain, typhoons, etc.

Sewerage call center service

The Center receives all telephone calls about the failures, troubles, etc., on sewerage systems during the closing time (nighttime and holidays) of Bureau of Sewerage, Tokyo Metropolitan Government (about 13,000 cases per year). Utilizing a wealth of experience on sewerage services, TGS rapidly and appropriately deals with reports and messages to improve our service responding to the customers’ needs.

Major services

- Reception service of inquiries about sewerage systems (during nighttime and holidays)
- Service to collect, understand, and send information such as abnormal weather information (during nighttime and holidays)
- Blockage of storm surge gates on issuance of major tsunami warnings or tsunami warnings

Sewage Maintenance Co-operation

Phone reporting

Bureau of Sewerage, Tokyo Metropolitan Government (automatically transferred during nighttime and holidays)

Sewerage Call Center

- Telephone reception
  - Failures and troubles on sewerage systems, etc
  - Notices on other sewerage issues
- Monitoring
  - Earthquakes with a seismic intensity of 3 or greater
  - Observation of rainfall at a rate of 30mm/hr or greater, heavy rain and flood warnings, approaching typhoons, extraordinary disaster, emergency accidents, etc.
- Blockage of storm surge gates (on a major tsunami warning or a tsunami warning for Tokyo Bay)
Private sewer-related service

To train engineers responsible for private sewer works and improve their technical capabilities, TGS holds qualification tests and renewal courses for engineers responsible for private sewer works in cooperation with prefectural level sewage works associations. TGS also holds pre-test courses for some prefectures including Tokyo.

In Tokyo 23 Wards, TGS performs inspection and confirmation service to check if systems such as private sewer in residential land, and disposer drainage treatment systems are properly constructed and their performance is satisfactory.

Major services

- Qualification examinations and renewal courses for engineers responsible for private sewer works
  - Services related to the above examinations and courses in Tokyo Metropolis, Kanagawa, Saitama and Ehime Prefectures, etc.
  - Service to dispatch lecturers to Tokyo and 19 prefectures.
  - Opening of a preparatory course (e-learning) for taking "Examination for Engineers in Charge of Private Sewer Works"
- Inspection of private sewer
  - Private sewer/disposer drainage treatment systems in 23 Wards (Number of systems constructed by Tokyo Metropolitan Government designated contractors: about 5,600 cases per year)
  - Verification and confirmation of actual work with submitted plan documents

- Check of disposer maintenance
  - Disposer drainage treatment systems (Number of systems in 23 Wards after one or more years of service: about 330 cases per year)
  - Confirmation of maintenance conditions
  - Analysis of treated water quality and confirmation of cleaning conditions

(Sales of books such as guidebooks for the design of sewerage facilities edited by Bureau of Sewerage, Tokyo Metropolitan Government

• Manufacturing and sales of "manhole number character caps" attached to manhole covers
• Management of monthly parking lots using the planned service sites of Bureau of Sewerage, Tokyo Metropolitan Government
9 sites: [Higashisashita, Shinagawa, Ochiai (2), Ikejiri, Kuramae, Seijo, Nakagawa, Shibaura]

• Manufacturing and sales of Ido Mill Meters® (time meters) for measuring the operating time of power well pumps.
• Development and sales of the spot deodorization system "Aqua Ozone Master" using ozone water

Sewerage system visitor support service

TGS is in charge of receiving and guiding visitors to 13 water reclamation centers and the Kuramae Water House (Kuramae mizu no yakata), which is a visitors’ center for sewerage facilities in the ward area of Tokyo.

Other services

In addition to various services supporting the sewerage of Tokyo Metropolis, TGS is engaged in the sales of sewerage-related goods and books, parking lot management service, etc.

Major services

- Sales of books such as guidebooks for the design of sewerage facilities edited by Bureau of Sewerage, Tokyo Metropolitan Government
- Manufacturing and sales of "manhole number character caps" attached to manhole covers
- Management of monthly parking lots using the planned service sites of Bureau of Sewerage, Tokyo Metropolitan Government
- Opening of a preparatory course (e-learning) for taking "Examination for Engineers in Charge of Private Sewer Works"
- Inspection of private sewer
- Check of disposer maintenance

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Disaster recovery support service (Support period: March 2011 to March 2015)

At the request of Urayasu City and Katori City in Chiba Prefecture, damaged by liquefaction during the Great East Japan Earthquake, TGS provided disaster recovery support such as sewer cleaning, sewer inspection, and manhole damage investigation, utilizing a wealth of expertise in sewerage facilities, in cooperation with the Bureau of Sewerage of the Tokyo Metropolitan Government and Sewage Maintenance Co-operation. Establishing a support office in Urayasu City, TGS checked the execution design of disaster recovery work and supervised the construction.

TGS thus greatly contributed to disaster recovery support and recovery work for other municipalities in addition to Tokyo Metropolitan area.
II Supporting the operation and maintenance of sewerage treatment plants

Using advanced technology cultivated for a long time, TGS contributes to the stable and efficient operation and maintenance of sewerage treatment plants.

**Sewerage treatment service**

In sewerage treatment, maintenance/inspection of sewerage treatment facilities and water quality testing must be performed regularly. Among the 13 water reclamation centers in the ward area of Tokyo, TGS performs maintenance at 12 and water quality testing at all 13 centers.

**Facilities managed by TGS**

- Sewerage treatment maintenance service
  - Shibaura, Mikawashima, Ariake, Nakagawa, Kosuge, Kasai, Ochiai, Nakano, Miyagi, Shinagawa, Ukima, Morigasaki
- Pumping station maintenance service
  - Central Region Pumping Station, Northern Region Pumping Station, First Eastern Region Pumping Station, Second Eastern Region Pumping Station, Southern Region Pumping Station
- Water quality testing service
  - Shibaura, Mikawashima, Sunamachi, Ariake, Nakagawa, Kosuge, Kasai, Ochiai, Nakano, Miyagi, Shinagawa, Ukima, Morigasaki

**Major services**

- Sewerage treatment facility maintenance service
- Pumping station facility maintenance service
- Water quality testing service

**Sludge treatment service**

In 1984, TGS was entrusted with the operation service of a sludge treatment facility in Shibaura Water Reclamation Center, and has gained 30 years and more of experience since then. At present it comprehensively manages all 6 sludge treatment plants in the ward area of Tokyo, treating about 970 thousand tons of sludge per year (actual amount in FY 2019).

**Facilities comprehensively managed by TGS**

- Water Reclamation Center: Kasai, Miyagi, Shingashi, Morigasaki
- Sludge Treatment Plant: Eastern Region, Southern Region

**Major services**

- Operation service for sludge treatment plants
- Maintenance service for sludge treatment plants
- Procurement and management of chemicals such as coagulants

**Optical fiber network facilities management service**

The optical fiber network facilities of the Bureau of Sewerage, Tokyo Metropolitan Government, laid inside of sewers, are used for data communication for OA systems, remote monitoring control, rainfall information systems, etc., playing a part in the efficiency improvement of sewerage services.

TGS carries out the 24-hour monitoring and maintenance management of these optical fiber network facilities. TGS is also entrusted by the Bureau of Sewerage, Tokyo Metropolitan Government, with the survey of the Bureau’s optical fiber network facilities, and is entrusted by private communication companies with the survey and design services on the use of sewerage optical fibers.

**Major services**

- Twenty-four-hour monitoring and maintenance management of optical fiber network facilities
- Maintenance management of optical fiber cable facilities
- Survey on optical fiber network facilities
III Contributing to reduction of environmental load

Utilizing the expertise gained from a long time experience, TGS is contributing to the formation of recycling-oriented society in cities.

Water recycling service

In the ward area of Tokyo, treated wastewater is further treated using advanced method. It is then effectively used for toilet water, sprinkling water, water for restoring clear streams, etc. as a new water resource (recycled water).

TGS is entrusted by Bureau of Sewerage, Tokyo Metropolitan Government with the management service of three water recycling plants, contributing to creating recycling-oriented society.

Major services

- Shinjuku Water Recycling Plant
  - Daily treatment amount about 3,500 m³/day
  - Distributed as toilet water to high buildings in Nishi-shinjuku/Nakano-sakaue District
- Shibaura Water Recycling Plant
  - Project for restoring clear stream in three rivers in Joran area
  - Daily treatment amount about 80,500 m³/day
- Ariake Water Recycling Plant
  - Daily treatment amount about 2,500 m³/day
  - Distributed as toilet water to Tokyo Waterfront City

This service contributes to the realization of a city with low environmental impacts, including creating recycling-oriented society.

Sludge recycling service

Together with the sludge treatment service, TGS efficiently performs the operation, management, etc. of sludge recycling plants. It also makes a study of expanding the use of recycled goods, contributing to creating recycling-oriented society.

Major services

- Operation and maintenance management services of granularity controlled ash
- Sludge carbonization service
- Sales of granularity controlled ash
- Sludge recycling service

To utilize surplus soil generated from sewerage construction as a resource, TGS improves the soil to soil with superior compacting characteristics and earthquake resistance (measures against liquefaction). This service contributes to the realization of a city with low environmental impacts, including preservation of the natural environment by reducing extraction of pit sand, prolongation of the life of landfill disposal sites, and reduction of CO₂ by shortening transport distances.

The amount of improved soil reused from FY 1988 (service started) to FY 2019 is about 3.55 million m³.

Major services

- Operation service
  - Treatment capacity: 150 tons/hr
  - Annual production of improved soil: 198,000 tons (120 thousand m³/yr)
- Management service such as reception of construction surplus soil and delivery of improved soil
- Quality control service (Carrying out soil tests such as CBR)

IV Supporting reconstruction and improvement services

Utilizing a wealth of experience and technical expertise, TGS contributes to smoothly carry on reconstruction and improvement services in Tokyo Metropolitan Government’s Sewerage Services.

Survey service

TGS is entrusted by Bureau of Sewerage, Tokyo Metropolitan Government with various surveys and design, contributing to implementing effective reconstruction/improvement service.

Major services

- Basic survey of mechanical/electrical systems related to reconstruction service
- Various surveys and design of pipeline facilities related to reconstruction service
- Survey on reconstruction of main line by the free cross section SPR construction method
- Survey related to optical fiber networks

Sewer design estimation service/Estimation system service

TGS performs sewer design estimation service for the Bureau of Sewerage, Tokyo Metropolitan Government, and also is responsible for improvement and maintenance of the estimation system, contributing to appropriate and efficient sewer facility reconstruction, improvement, seismic retrofitting, and optical fiber services.

Major services

- Sewer design estimation service (reconstruction work, improvement work, earthquake-resistance reinforcement work, etc.)
- Improvement and maintenance of “System for New Sewerage Construction Work Compendium”
- Revision of design unit prices
- Functional improvement, maintenance of Quantity Calculation System

Construction supervision support service

Using its abundant experience and expertise in the supervision of sewers, and complementing and covering part of the services of the Bureau of Sewerage, Tokyo Metropolitan Government, TGS facilitates the efficient and secure execution of reconstruction and improvement projects, contributing to build comfortable and safe wards.

Major service

- Construction supervision support service
V Building a future sewerage system

Positively utilizing on-site wisdom gained from practice, TGS addresses the technical research and development of new sewerage and the fostering of future sewerage engineers.

Technical research and development projects

- Setting technical research and development themes directly related to sewerage services, TGS is conducting joint research with Bureau of Sewerage, Tokyo Metropolitan Government and private companies.
- Cooperating with Bureau of Sewerage, Tokyo Metropolitan Government, TGS tackles technical research and development in practical fields.
- With the participation of development-oriented companies, TGS grapples with technical research and development.
- Displaying “mobility” and “flexibility,” TGS aims at creating business in a short period.
- TGS secures income from industrial property rights such as patents obtained by research and development.

Industrial Property Rights
Number of industrial patent rights: 229

TGS has been placing emphasis on technical research and development since its establishment. As of the end of March 2020, TGS had applied for a cumulative total of 522 industrial property rights such as patents, and 229 had been granted, including patents and utility models. International patents have also been obtained for some technologies.

Examples of development themes and results

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<th>Development themes</th>
<th>Examples of development results</th>
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<td>Improvement of measures for aging facilities</td>
<td>- Sewer renovation method, SPR Method™, Omega Liner Method™</td>
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<td>- Shield tunneling method/jacket method, Compact Shield Tunneling Method™, DO-Jet Method™ (non-open cut construction method for dealing with obstacles in the ground), Mechanical T-junction shield Tunneling method (RT-QG Method)</td>
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<td>- Manhole-related methods, Footstop metal automatic replacement equipment, Manhole frame removal and renewal method (AW Method), Eco-guard method hybrid (manhole rehabilitation method)</td>
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<td>Improvement of flood countermeasure</td>
<td>- Optical fiber water level gauge, Optical level switch, Backflow prevention valve for house water (Kantan-kun), Communication-Enabled Manhole Cover</td>
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<td>Improvement of earthquake countermeasures</td>
<td>- Earthquake-resisting construction method for sewerage, Non-open cut method to prevent manhole flooding (flat less method), Earthquake resistance reinforcement method for existing manholes (Ganjiri-kun), Earthquake resistance reinforcement method for sewer pipe-manhole junction (Sashin Irapatsu-kun), Earthquake resistance reinforcement method for existing large diameter pipes, Preventing horizontal deviation of the joint of a manhole frame (Bondo-kun)</td>
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<td>Improvement of combined sewer system</td>
<td>- Water surface control device, Grease interceptor (Kyushaku Os), Automatic flushing device for sewers (flush gate)</td>
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<td>Advanced treatment</td>
<td>- Anaerobic and simultaneous nitrification-denitrification treatment method</td>
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<td>- Decolorization cap (Ryosan-Oda), Ozone degradation equipment (Aqua Oxygen Master), Photoacalytic air cleaning filter, Pipeline pressure release device, Rust prevention and degradation type pressure relief device</td>
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<tr>
<td>Improvement of treatment efficiency</td>
<td>- Encouragement of soft plan™</td>
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<td>- Optical fiber cable installation robot, Optical fiber water level gauge system, Optical level switch</td>
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<td>Improvement of maintenance</td>
<td>- Sewer facilities, Void inspection device around house connection, Closing method of unconnected connection, Miror type television camera for inspection, Inspection and diagnosis support system by pipe inner surface mapping, Comprehensive sewerage information control system, Automatic flushing device for sewers (Flush Gate), Communication-Enabled Manhole Cover, Blade less air blower (Hidden air streamer ™) (HAST™), Inner drop pipe (Smart Catch), Eco-guard method™ (anti-corrosive coating method, using ultraviolet rays) (as coating material)</td>
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<td>- Skidup and sewage treatment facilities: Phosphorus fixing agent (Hom另行™), Laser beam type sludge density meter, Honeycomb sludge concentrator, Untoushalec VP, Simple dehydrogenation test kit, Sewerage system maintenance and management system (S-Code Plus™)</td>
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<td>- Water delivery type water flow generator for scam accumulation prevention (Aquastreamer)</td>
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In cooperation with relevant Associations, TGS provides introduction and education about the developed technologies so that they are widely used at home and abroad. Methods marked with “™” have their own association. Please refer to each association’s website.

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- Soft Plan means “Sewer Optical Fiber Teleway Network PLAN.” Registered trademark in Japan.

Actual examples of technical research and development

- Improvement of safety (reconstruction of aging facilities)
  - Development of SPR Method™
    - This method enables reconstruction in sewage-flowing sewers. It is a pipe reconstruction method available for various cross section shapes such as circular, horseshoe-shaped, rectangular-ones. (Received 59th Ohsaki Memorial Award)

- Conservation of the global environment (effective use of resources)
  - Application development of granularity controlled ash
    - The granularity controlled ash is made by classifying and grading sewage sludge incineration ash and controlling its grain sizes. It is effectively used as high quality raw materials for civil engineering works such as concrete secondary products.

- Human resource development/Technology succession
  - Training service
    - To stably provide sewerage services in the future, the three parties supporting Tokyo’s sewerage works - the Bureau of Sewerage, TGS, and private companies - need to cooperate in acquiring enough manpower and ensuring the inheritance of the technology and know-how acquired up to date. In April 2009, TGS was entrusted by the Bureau of Sewerage, Tokyo Metropolitan Government, with projects on human resource development and technical inheritance. TGS is now carrying out training and other activities.

    - In October 2013, TGS was also entrusted with the management and operation of Sewage Technology Training Center, and hence TGS instructors are providing training to private companies that use Sewage Technology Training Center.

  - Archives service
    - TGS collects, sorts out, stores, and utilizes valuable materials such as historical facilities, old books, pictures related to Tokyo’s sewerage facilities. TGS is studying ideas for utilizing the historical assets located around the former main pump house at the Mikawashima Treatment plant, which was designated as an important cultural property first as a sewage facility in 2007, and also comprehensively conducting the management and guided tour operation of the Facilities.

VI Contributing to problem-solving for municipal governments and others nationwide

- Consulting business
  - Utilizing TGS’s human resources, know-how, and technology to strengthen support for municipal governments.
  - Operation and maintenance support service for Yagawara-machi Clean water center

- Approval and Registration
  - Registered as construction consultant (sewerage division): Ken 02 No. 10714
  - Registered measurement certification business (concentration): No. 1413

Development of a water surface control device
- This device is developed to reduce the outflow of debris from the storm overflow chambers of sewerage facilities. It is easily installed. It reduces the outflow of debris into public water body with no power, and has an economic benefit due to low initial investment and low maintenance costs.
  - After installing a water surface control device
    - Blueless blower (Workers moving in and out of the facility)

Effective use of services (Enhancement of maintenance management)
- Development of a bladless air blower (hole air streamer™) (HAST™)
  - This is a new ventilation system developed for improving work safety in sewer facilities. It can be easily installed without blocking the manhole and can continuously send a large volume of air. It enables easy movement of workers and carrying of materials in and out of the facility while air is being sent.

Rehabilitation of large diameter pipes (under construction)
Twenty four hundred million people in the world do not seem to be able to access appropriate sanitary facilities, and the needs for the sewerage that play an important role in securing safe and sanitary water environment is increasing especially in Asian countries.

Responding to these needs, the Tokyo Sewerage groupe, which consists of Bureau of Sewerage, Tokyo Metropolitan Government, TMG and Tokyo Metropolitan Sewerage Service Corporation, TGS actively pursues international contribution, using various sewerage-related technologies, expertise, management methods, human resources, etc. accumulated in its history of more than 100 years, according to the needs of countries and regions.

As the management organization complementing and acting as a policy cooperation organization for the sewerage services of Bureau of Sewerage, TMG, TGS is pursuing international development in cooperation and integrated with Bureau of Sewerage, TMG, sharing responsibilities with each other depending on cases.

**VI Contributing to the improvement of the global water environment**

**Project Content**
- **Promotion of overseas infrastructure development projects**
  - Feasibility study / planning
  - Instruction of operation and maintenance
- **Overseas promotion of development technologies**
  - SPR Method
  - Water surface control device
  - Floatless Method
  - Hole air streamer
- **Strengthening of information dissemination**
- Promotion of personnel exchange and training

**Major technical support activities and their action areas**

**European countries (Germany, France, Belgium, United Kingdom)**
- Jan 14, 2010: Water surface control device License agreement with Steinhudt GmbH
- May 7, 2014: TGS concluded an Letter of Intent with Steinhudt GmbH to demonstrate the performance evaluation of water surface control.
- On May 17, 2018: TGS concluded a Memorandum of Understanding on joint development of a water surface control device with Steinhudt GmbH

**Indonesia**
- November 2010: Visit to India as member of delegation of Tokyo Waterworks International Development (Bureau of Waterworks, TMG)
- July 2011-February 2012: Part of “Commissioned project for investigation of infrastructure systems, and export promotion (Feasibility study for businesses such as smart community in global market)” (Order from MITSU)
- November 2012: Investigation in India (state F/S (Water Sector))

**New Zealand**
- December 10, 2012: Floatless method Technical Assistance Agreement with HYNDS
- November 20, 2013: Greater Wellington Regional Council and other municipalities visited the facilities of TMG
- August 2014: Test construction in Porirua City, Wellington Region

**India**
- November 2010: Visit to India as member of delegation of Tokyo Waterworks International Development (Bureau of Waterworks, TMG)
- May 2011-February 2012: Part of “Commissioned project for investigation of infrastructure systems, and export promotion (Feasibility study for businesses such as smart community in global market)” (Order from MITSU)
- November 2012: Investigation in India (state F/S (Water Sector))

**Malaysia**
- August 2010 - March 2011: Preparation of National Water Service Master Plan (Order from Ministry of Economy, Trade and Industry (METI))
- September 2011 - June 2012: Preparatory study on PPP project of Water Sector in Malaysian metropolitan area (Order from JICA)
- February 2012 - March 2012: Dispatch of Experts for Capacity Building of O&M of Parit Aman sewage treatment plant (Order from JICA, TGS is the sole contractor)
- July 19, 2012: Malaysia-Japan Workshop on Sewerage
- November 19, 2013: Malaysian SPAN visited the facilities of the Bureau of Sewerage, TMG
- October 10, 2014: Letter of acceptance, for the Langat sewerage Project has been issued from Malaysia Government.
- March 4, 2015: Technical support for the Langat Sewerage Project by TGS has been commenced
- July 30, 2015: Involvement of high Malaysian government officials to Sewage Works Exhibition (Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Bureau of Sewerage, TMG)
- February 2017-September 2018: Human resource development project for practicing engineers by JCA Partnership Program
- November 3, 2019: Ceremony for the first incoming flow to Langat Centralised Sewage Treatment Plant (CSTP)

**Mongolia**
- September 2012 - August 2013: Project to establish development plan for water and sewerage sectors in Ulaanbaatar City, Mongolia (Order from JICA)
- 2019 Dispatch of Operation Guidance Survey Mission for strengthening safety measures of Central Wastewater Treatment Plant (CWWTP) in Ulaanbaatar City (Order from JICA)

**North and South American countries**
- July 2016: Field study on sewerage services in Brazil

**Asian countries**
- Expansion of SPR Method
  - Total of 6 countries/regions including Singapore, Republic of Korea, China, Taiwan, Malaysia, and Vietnam
- July 5, 2010: Water surface control device
  - Republic of Korea License agreement with NMTEC DI Co., Ltd.
- June 25, 2020: Hole air streamer (MATS-e)
  - Taiwan License agreement with NO ING Co., Ltd.

**Legend**
- Promotion of overseas infrastructure development projects
- Overseas promotion of development technologies