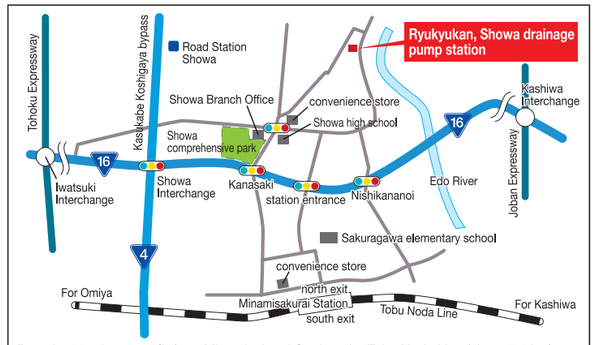
Location of the Metropolitan Area Outer Underground Discharge Channel



By train: 30 minutes walk from Minamisakurai Station, the Tobu Noda Line (about 2.2 km)
By car: 30 minutes' drive for Noda on Route 16, from Iwatsuki IC of Tohoku Expressway (about 17 km)
40 minutes' drive for Noda on Route 16, from Kashiwa IC of Joban Expressway (about 20 km)

Visitor Information

We offer tours to the Metropolitan Area Outer Underground Discharge Channel to the general public. For reservations, please call Reservation Desk or visit the website of the Edo River Office (reservation is required).

●Reservation Desk
TEL 048-747-0281
(from 9:00 to 16:30, Monday through Friday)

■ **Metropolitan Area Outer Underground Discharge Channel Information Branch Administration Office (Second floor of Showa Drainage Pump Station)**
Phone: 048-746-7524

■ **Ryukyukan (On the premise of Showa Drainage Pump Station)**
Open: 9:30 to 16:30 (Entry by 16:00)
Closed: Mondays/Year-end and new year holidays
No admission fee required
Post code: 344-0111
720 Kamikanasaki, Kasukabe City, Saitama Prefecture
Phone: 048-746-0748

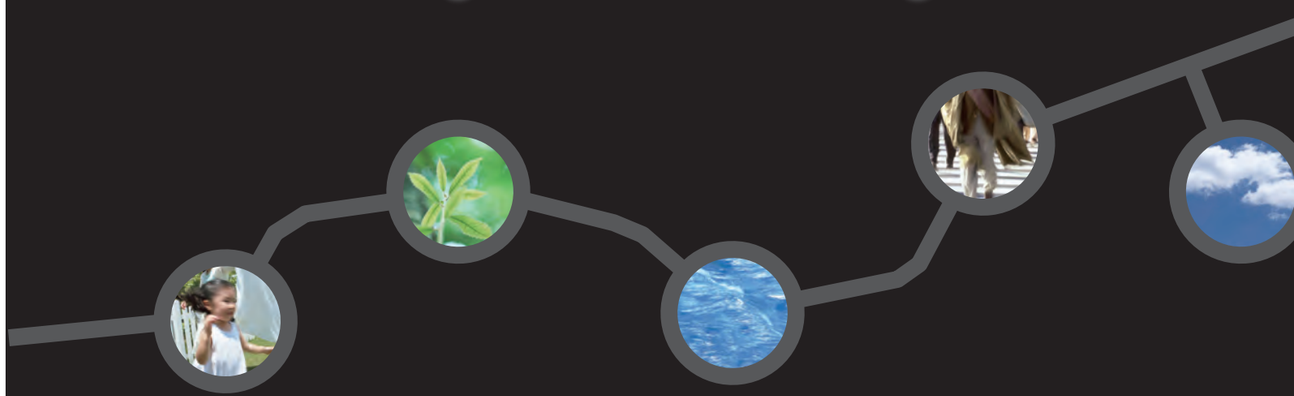
Showa Drainage Pump Station of the Metropolitan Area Outer Underground Discharge Channel is selected as one of the "A hundred Mt. Fuji viewing spots in Kanto".

"A hundred Mt. Fuji viewing spots" selects the spots that command a fine view of Mt. Fuji. Its purpose is to improve the scenery of the selected areas by supporting conservation and utilization of the neighboring landscape. The Showa Drainage Pump Station of the Metropolitan Area Outer Underground Discharge Channel, where "Ryukyukan" situates, has been selected as one of these 100 spots. From "Ryukyukan", a typical viewing spot in the town, you can see Mt. Fuji with the buildings of Saitama New Urban Center in the foreground.

Edo River Office, Kanto Regional Development Bureau, Ministry of Land, Infrastructure, Transportation and Tourism
Post code: 278-0005
134 Miyazaki, Noda City, Chiba Prefecture Phone: 04-7125-7311 (Main switchboard)
Web site address http://www.ktr.mlit.go.jp/edogawa

2010 First edition
2014 Revised edition

The Metropolitan Area Outer Underground Discharge Channel



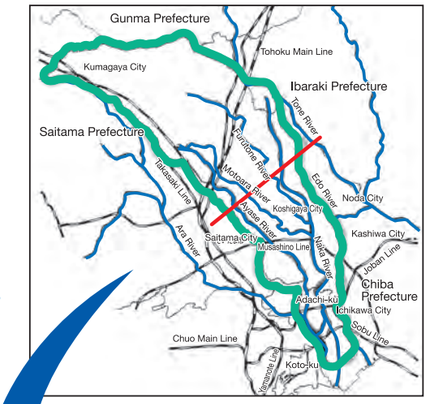
Large Underground Discharge Channels Provide Safety and Reassurance for People Living in the Metropolitan Area

"Sairyu no Kawa"

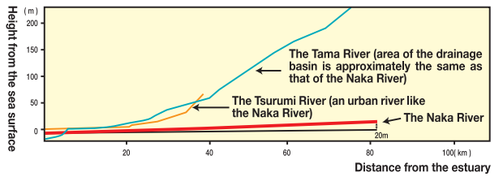
Why were the Naka, and Ayase River basins Repeatedly Devastated by Rain-related Flooding?

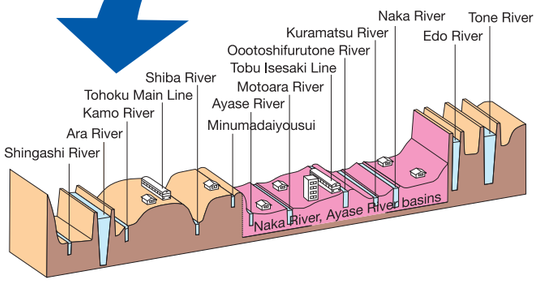
◆ A Bowl-like Ground Surface Tends to Accumulate Water

The Naka River drainage basin had been devastated since early times due to its changed flow channel caused by flooding of the Tone and Ara Rivers. Being surrounded by large rivers like the Tone, Edo and Ara Rivers, it has topography like a bowl that easily accumulate water. And since the water level inclines gradually, the area remains in a dangerous state after heavy rains fall because water levels do not fall quickly.



The Naka and Ayase Rivers showing gradual inclination

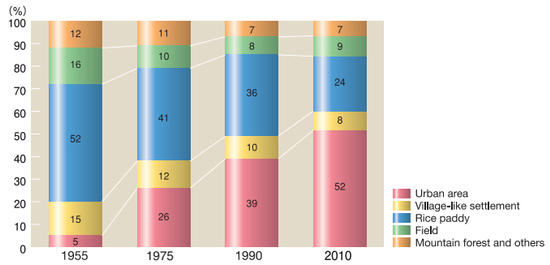




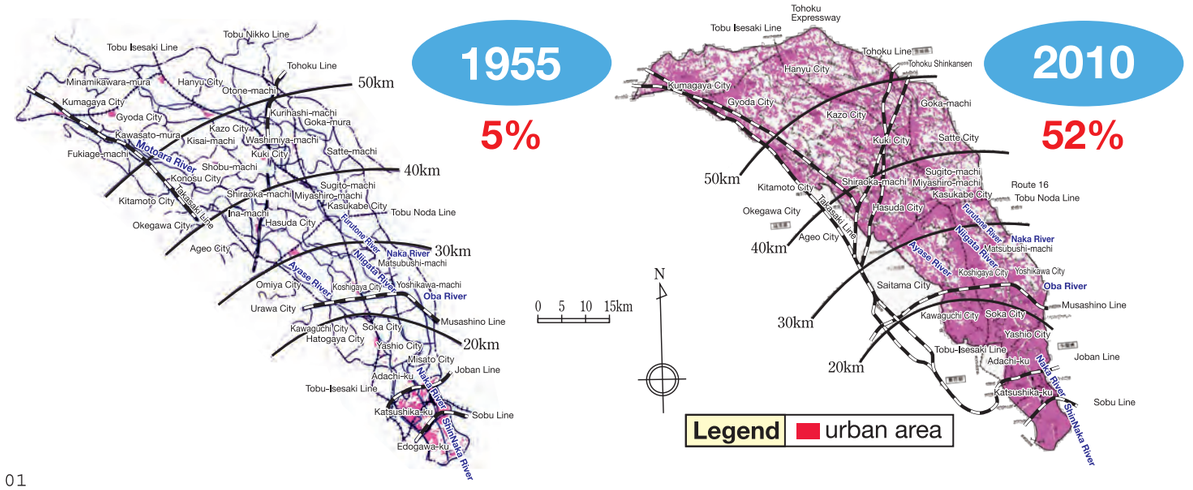
◆ Rapidly Upcoming Waves of Urbanization

The recent sprawling development of the metropolitan area (disorganized expansion of the urban area) is accelerating the concentration of population and assets from downstream to the mid and upstream drainage basins despite a risk of potential flooding. In particular, the rate of urbanization of the area within 20 to 40 km of Tokyo is approaching 50%, suggesting that development of the midstream drainage basin will, together with the upgrading of transportation facility and the promotion of the urbanization improvement plan, advance significantly.

Changes in utilization of the land in the Naka and Ayase River basins



The Naka and Ayase River basins being urbanized



◆ Repeated Flood Damage

The low lying ground easily accumulates water. This area suffered flood damage many times because the river and sewage projects designed to prevent flood damage were not able to keep up with rapid urbanization. If urbanization continues, damage to this area will be incomparably greater than in the past.

List of Major Floods of Recent Years

Date flood hit	Scale of rainfall (mm/48 hours)	Flooded house (number of houses)	Flooded area (ha)
Flood on September 25, 1958 (Typhoon No. 22 - Kanogawa Typhoon)	282.0	41,544	27840
Flood on September 10, 1982 (Typhoon No. 18)	210.4	36,425	27690
Flood on August 4, 1986 (Typhoon No. 10)	196.6	22,962	6531
Flood on September 19, 1991 (Typhoon No. 18)	186.5	31,431	9236
Flood on August 26, 1993 (Typhoon No. 11)	180.4	15,977	6962
Flood on September 21, 1996 (Typhoon No. 17)	152.4	2,825	2469
Flood on September 16, 1998 (Typhoon No. 5)	126.8	239	700
Flood on August 14, 1999 (Tropical Cyclone)	172.6	634	635
Flood on July 7, 2000 (Typhoon No. 3)	159.5	826	1107
Flood in July, 2002 (Typhoon No. 6)	163.8	69	46
Flood on October 9, 2004 (Typhoon No. 22)	199.2	1,273	1029
Flood on December 26, 2006 (Atmospheric depression)	171.9	245	65
Severe rainstorm at the End of August 2008 (Concentrated heavy rain)	124.8	2,108	574

* Total average volume of rainfall in the Naka, Ayase River basin
* Flooded houses and area in the Naka, Ayase River basin

July 1985
Upstream of the Niigata River

October 1981 Ukizuka, Yashio City

September 1982 Teshiro-cho, Soka City

September 1991 Higashi Iwatsuki, Iwatsuki City (now Iwatsuki-ku, Saitama City)

◆ "The Naka and Ayase Rivers' Comprehensive Flood Control Measures" for Developing a Town Less Vulnerable to Flood Damage

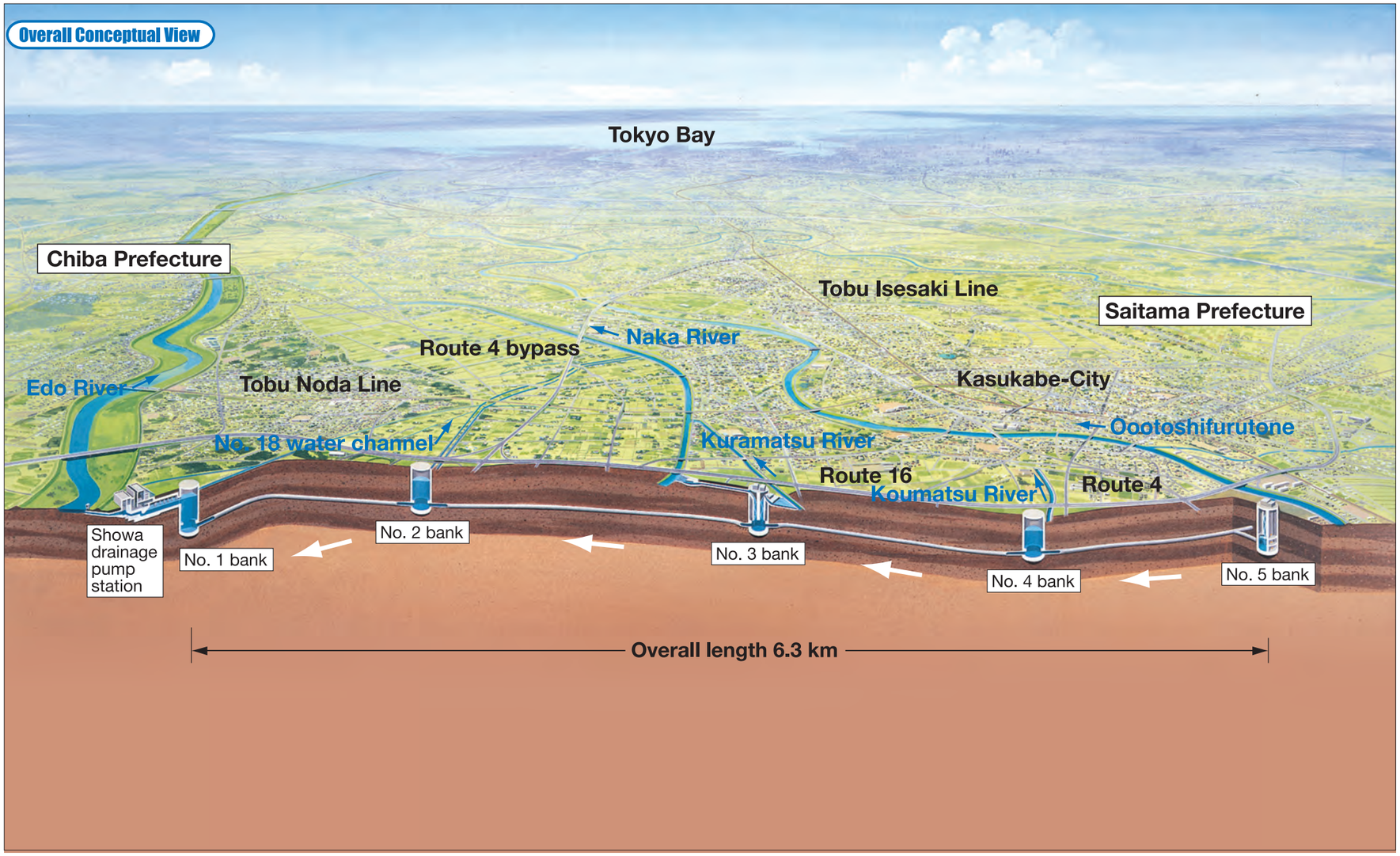
In order to protect the area from flood damage, it is necessary, in addition to improving flood control facilities being carried out so far, to restore the water-retaining and flood control functions the original river lost due to the development, through an integrated effort carried out in the area. We must develop such drainage basin measures to prevent rain water from running into and bursting rivers. "The Naka and Ayase Rivers' Comprehensive Flood Control Measures" are aimed at making the town resistant to flood damage based on the integrated effort of everyone living in the drainage basin. The Metropolitan Area Outer Underground Discharge Channel is, in particular, expected to be the main pillar of the measures.

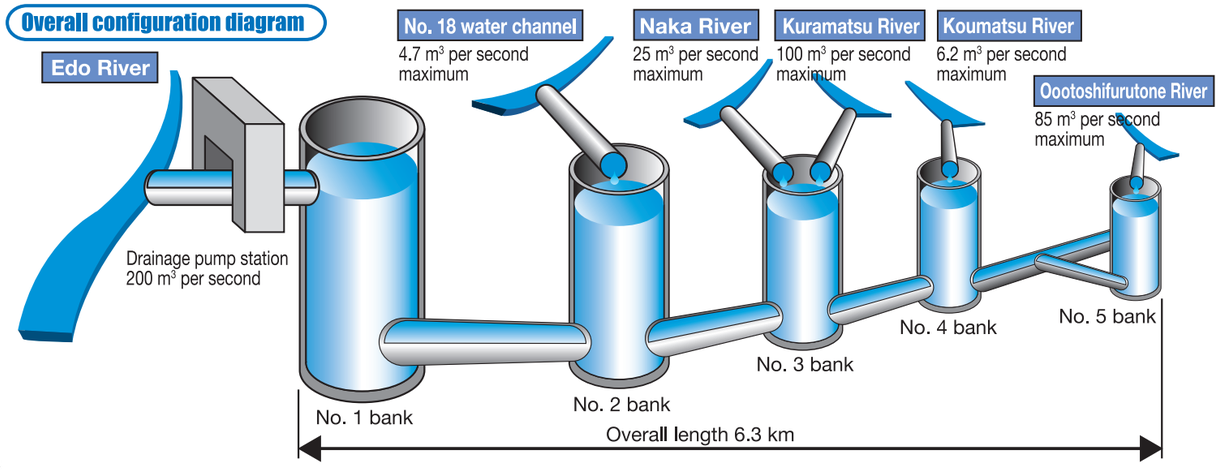
Comprehensive Flood Control Measures

- **Measures planned along the rivers**
  - The embankment will be improved
  - Discharge channels will be constructed
  - Drainage pump station will be constructed
- **Measures planned for the drainage basins**
  - Unnecessary earth filling will be avoided
  - Measures will be developed to have rainwater soak into the ground
  - Facilities for storing rainwater will be built
- **Other software-based measures**
  - Evacuation places will be located and you will be informed
  - Your cooperation with flood prevention and other activities will be requested
  - Pump operation method will be determined
  - Construction of buildings resistant to flood damage will be promoted

"Sairyu no Kawa"-The Metropolitan Area Outer Underground Discharge Channel

One of the World's Largest Underground Discharge Channels at 50 Meters Below Ground



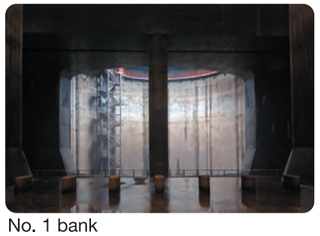


The Metropolitan Area Outer Underground Discharge Channel is one of the world's largest underground discharge channels, which takes water overflow underground from small- to mid-size rivers such as the Naka, Kuramatsu and Oootoshifurutone and directs it to the Edo River through a 6.3 kilometers long tunnel that runs 50 meters below ground. Construction was started in March 1993 utilizing world-class Japanese civil engineering technologies. After a construction period of 13 years, in June 2006 it became possible to direct water from the Oootoshifurutone River into the Edo River.

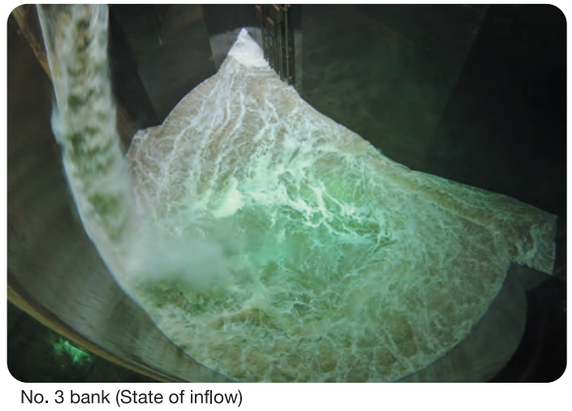

No. 5 bank (State of inflow)


Showa Drainage Pump Station


No. 2 bank


No. 1 bank


No. 4 bank (Overflow levee)


No. 3 bank (State of inflow)


Pressure-adjusting water tank

Major Facilities of the Metropolitan Area Outer Underground Discharge Channel

The Metropolitan Area Outer Underground Discharge Channel consists of the "Inflow facilities" and "Banks" for taking water from the rivers, the "Tunnel" of the underground water channel for directing flood water downstream, the "Pressure-adjusting water tank" for reducing the water flow in the underground area and securing a smooth flow, and the "Draining pump station" and "Drainage sluiceway" for draining flooding from underground areas.

Bank

Maintains and Controls inflow Flooding and Discharge Channel

The five "banks" from No. 1 to No. 5 are interconnected to each other through the underground tunnel and used for taking in flood water from the rivers including the Naka, Kuramatsu and Ootoshifurutone. On top of that, they play an important role in the maintenance and management of the Outer Underground Discharge Channel, by being intake areas for vehicles and by installing ventilation systems, for example. These are gigantic cylindrical facilities. Each of them is approximately 70 meters deep and has an inner diameter of approximately 30 meters. They are large enough to accommodate a space shuttle or the Statue of Liberty.

No. 5 bank

Specification of Bank

	Upper side wall	Lower side wall	Bank depth	Construction method
No. 1 bank	Φ31.6 m Wall thickness 2.5m	Φ30.0 m Wall thickness 3.3m	GL-72.1m	Inverted lining method and permanent lining method
No. 2 bank			GL-71.5m	
No. 3 bank			GL-73.7m	
No. 4 bank	Φ25.1 m Wall thickness 2.0m	Φ22.5 m Wall thickness 3.3m	GL-69.0m	
No. 5 bank	Φ15.0 m Wall thickness 2.0m	Φ15.0 m Wall thickness 2.0m	GL-74.5m	Super Open Caisson System (SOCS)

Inflow Facility

Takes in Water from "Overflow Levee" during Flooding.

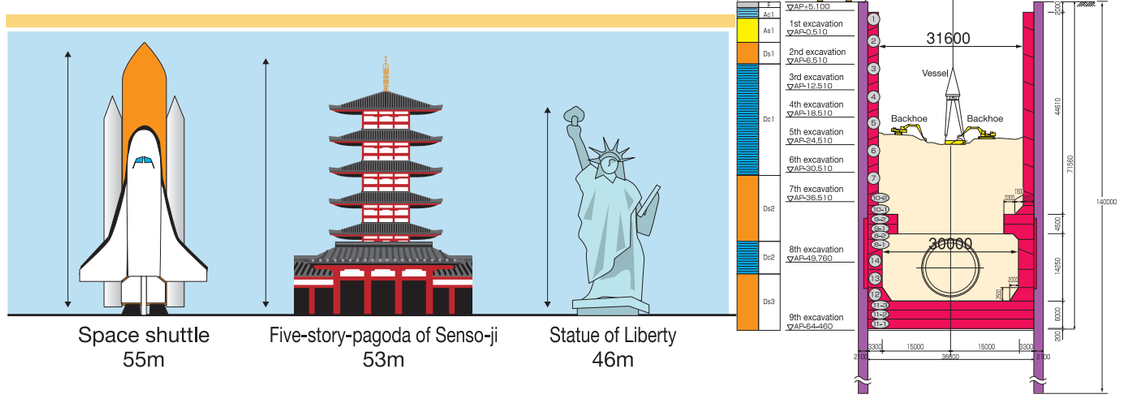
Flood waters are taken into the Outer Underground Discharge Channel at the "overflow levee" provided on the embankment of the rivers including the Naka, Kuramatsu and Ootoshifurutone. If the water level of each river surpasses the height of the overflow levee, flood water will go into the inflow facility on its own. The height of the overflow levee is set to much the same height as that of the lowest nearby ground so that it can function sufficiently to cope with even small- to mid-size floods.

Inflow facility
(Kuramatsu River inflow facility)

Specification of inflow

River (inflow facility)	Volume of inflow	Width of overflow	Planned volume	Inflow method
Naka River	25m³/s	17m	250m³/s	Overflow levee method
Kuramatsu River	100m³/s	53m	100m³/s	
Ootoshifurutone River	85m³/s	33m	365m³/s	
No. 18 water channel	4.7m³/s	4.1m		
Koumatsu River	6.2m³/s	9.0m		

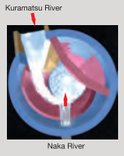
Cross-sectional diagram of bank (No. 2 bank)



New attempt at this Project

No. 3 bank and No. 5 bank (vortex drop shaft)

No. 3 bank employs the vortex drop shaft at the Kuramatsu River inflow facility to cause inflow of flood water from the Kuramatsu and Naka Rivers. The shape of the inflow port has been modified so that water runs down from the inflow port of the bank along the wall surface of the bank. This structure has been employed to prevent unnecessary resistance resulting from the intersection of linear run-on of water of the two rivers by alleviating impacts of falling water levels from the 60-meter height. This approach has also been employed for No. 5 bank.



All-out Recycling

Among the types of soil produced by excavation during construction work carried out using the slurry shield method, secondary soil of a finer grain size has so far been treated as industrial waste. However, since such soil became recyclable according to the revision of the law in 1997 if necessary requirements are met, this project was approved as No. 1 and No. 2 of the Health and Welfare Minister certification on July 23, 1998 and was approved as No. 3 on October 1 of the same year. Treated soil generated from this construction work is used to construct the Edo River Super Embankment.

Tunnel

"Underground River" that Runs a total Distance of 6.3 km at 50 m below Ground

This is an "underground river" constructed to lead flood water flowing in from the Naka, Kuramatsu, Ootoshifurutone Rivers and others to the Edo River. The tunnel connecting five banks is constructed along Route 16 at a depth of 50 meters below ground level. It has an inner diameter of approximately 10 meters, and an overall length of 6.3 kilometers. It can drain flood waters at a speed of up to 200 m³ per second.

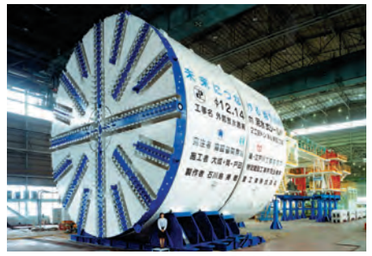
Section 4 tunnel

Shield Tunnel

Employing the Shield Method for the Tunnel (Underground river)

Shield tunnel

The hermetic slurry shield method has been employed for the construction since it must be carried out at greater underground depths (50 meters below ground level) and a large caliber (inner diameter of the tunnel is 10.6 meters) is required. The excavator installed on a cylindrical steel tube digs the soil while protecting the machine from the earth and sand at the front and pushing the shield machine forward. Behind the pushed out shield machine, "segments" are automatically assembled into a cylindrical form. This work is continued sequentially to build the tunnel. The tunnel breakthrough was in 2002 between Tunnel Section No.1 and No.2, which starts at Bank No.1 and ends at Bank No.3. Subsequently, Tunnel Section No. 3 to No.4, which begins at Bank No.3 and terminates at the Ootoshifurutone River, and the connecting tunnel between Bank No.5 and Tunnel Section No.4 broke through in 2004 and 2005, respectively.



Shield machine

Specification of tunnel

Section	Tunneling section	Extension of tunneling	Inside diameter of tunnel
No. 1 tunnel	From No. 1 bank to No. 2 bank	1,396m	10.6m
No. 2 tunnel	From No. 2 bank to No. 3 bank	1,920m	10.6m
No. 3 tunnel	From No. 3 bank to No. 4 bank	1,384m	10.6m
No. 4 tunnel	From No. 4 bank to Ootoshifurutone River	1,235m	10.9m
Connecting tunnel	From No. 5 bank to No. 4 tunnel	380m	6.5m

Development of New Type of Segments

The Metropolitan Area Outer Underground Discharge Channel is an internal water pressure shield tunnel of a large caliber, and new technologies have been employed for its construction. A new type of segments have been developed using a state-of-the-art technology, so that the work carried out utilizing them is made easier and so that the intended finish is achieved.

Features

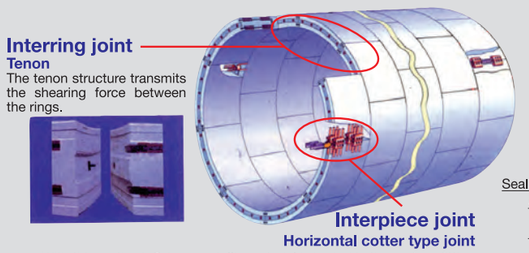
Supports internal water pressure ···· Safe not only against the outer pressure of the shield but also against internal pressure

Inner surface smooth ···· A segment free from concavities and convexities resulting from coming in contact with flowing water

High rigidity ···· Enhancement of bonding force of segments by employing "wedge structures" for the joint

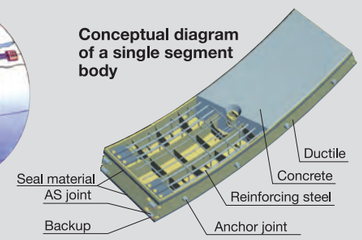
High-speed automatic assembly ···· Wedge effect-based management of fastening and elimination of supplementary work

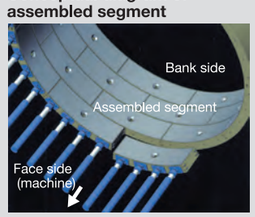
Horizontal Cotter Type RC segment (Section 1 tunnel)



With this method, C-type metallic material is buried in the surface fitting. When assembling a segment, H-type metallic material is inserted from the tunnel shaft direction to the space where a pair of C-type metallic materials is formed in order to bond them.

DRC Segment (Section 4 tunnel)





Major Facilities of the Metropolitan Area Outer Underground Discharge Channel

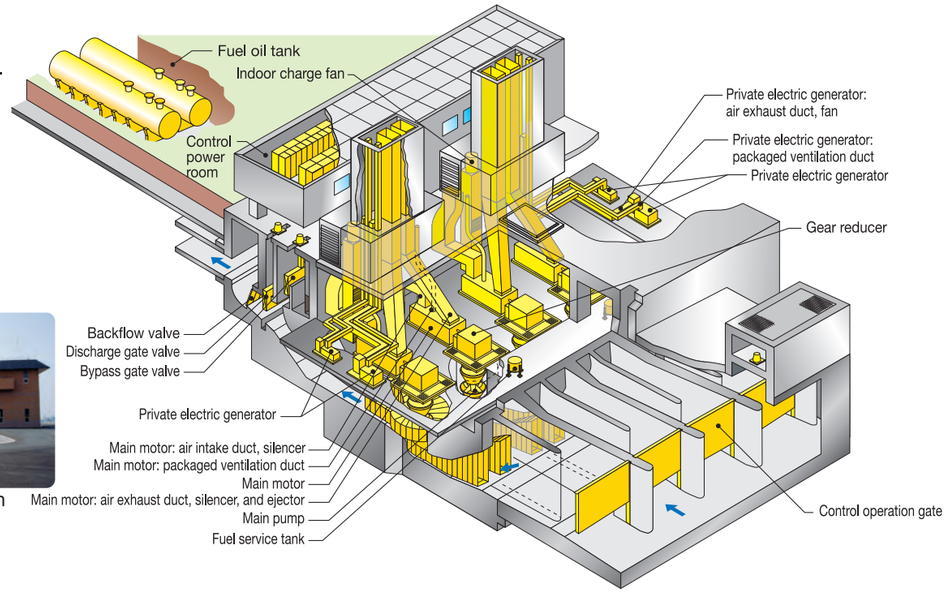
Drainage Facility

The "Heart" for Controlling a Gigantic System

The Showa Drainage Pump Station is the "heart" of the Metropolitan Area Outer Underground Discharge Channel, and has two roles. One role is to drain the flood water that ran down from underground tunnels, from the pressure-adjusting water tank through giant pump and drainage sluiceway to the Edo River. The other role is to operate and centrally monitor each inflow facility.

Showa Drainage Pump Station

Birds-eye View of Drainage Facility



Drain Pump

Specification

1. Installation location

Chisaki, Kamikanasaki, Kasukabe City, Saitama Prefecture

2. Drain pump facility

(1) Pump specification
Pump model: Neutral axis vortex diagonal pump (high-flow rate type)
Planned drainage capacity: 50 m^3 per second (per pump)
Planned total pump head: 14 meters
Flow control: Pump speed-based 0 to 100% control of flow
Number of installed pumps: 4 units

(2) Motor specification
Motor model: Two-shaft transverse gas turbine (converted from the one for aircraft)
Rated output: 10300 kW (14000 PS)
Fuel: Bunker A

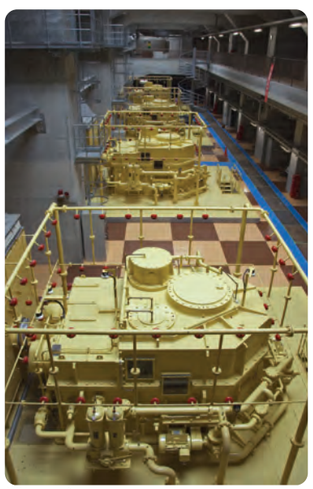
(3) Gear reducer specification
Gear reducer model: Orthogonal axis gear reducer (locked train structure)
Reduction ratio: 1/27.6

3. Operation control

Offers the machine side control in each facility and centralized monitoring and operation control from the central operation room

Drains Water Full of 25-meter Swimming Pool per Second

Four gigantic pumps, the largest of their kind in Japan with 50 m^3/sec. of discharge capacity, have been installed. Using the power of the gas turbine, they rotate the bladed wheel called an "impeller" at a high speed to give energy (lifting and centrifugal forces) to water and generate water flow. The gas turbine used is the modified version of the one designed for aircraft. Its key characteristics are its compact size and reduced noise and vibrations. The maximum drainage capacity is 200 m^3 (equivalent to water in a full 25-meter swimming pool) per second.



View of pump room

Gear reducer

the bladed wheel

Pressure-adjusting Water Tank

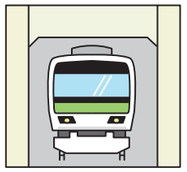
Shrine-Like Gigantic Underground Space

This is an enormous water cisten built at a position approximately 22 meters below ground level to reduce the flow of water and drain it smoothly into the Edo River. It is 177 meters long, 78 meters wide and 18 meters high. It is responsible for stable operation of the pumps and adjusting radical water pressure changes that can result from an emergency. Each of fifty nine pillars is 7 meters long, 2 meters wide and 18 meters high, and weighs 500 tons. The pillars stand supporting the cistern ceiling as if a shrine built under the ground.

Drainage Sluiceway

Drains Flood Water into the Edo River

This facility is used for draining flood water from the Metropolitan Area Outer Underground Discharge Channel. Flood water sucked up by the pump at the drainage pump station is drained into the Edo River through six drainage sluiceways, each 5.4-meter x 4.2-meter. It has another function of preventing backwater coming from the Edo River.



A single carriage of [E231series]
(2.95 meters wideand 3.98 meters high)
ofthe JR Yamanote line canbe easily housed in adrainage sluiceway.

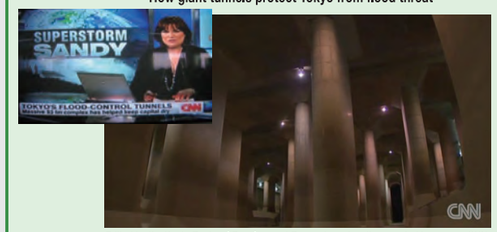
The Metropolitan Area Outer Underground Discharge Channel Attracts Attention Overseas

One of the world's largest underground discharge channels receives attention from abroad.

We accept more than 200 media interviews and photo shoots in a year for televisions, newspapers, films, travel guidebooks, school materials, websites, etc. We also receive a lot of foreign visitors for media interviews and tours.

CNN reported on the Metropolitan Area Outer Underground Discharge Channel as a flood control measure to protect the Japan's capital for its relevance to Hurricane Sandy, which hit New York (Nov. 1, 2012) .

"How giant tunnels protect Tokyo from flood threat"



Edited by the Kanto Regional Development Bureau based on the reported images on CNN

"Still, the underground marvel could inspire engineers to look for new ways to try to contain Mother Nature in the future." (Quoted from CNN report on Nov.1, 2012)

Won "2002 OCEA Award" of Japan Society of Civil Engineers!

The Metropolitan Area Outer Underground Discharge Channel project won the "2002 OCEA Award" from the Japan Society of Civil Engineers. The OCEA Award is presented to an epochal project that has achieved distinguished contribution to civil engineering development. The following points are recognized in the project:

- Employment of New Type of Segments
- Segments were used that can be dispensed the secondary lining to reduce costs. They were used effectively for construction work over a long distance and for embankments that set high standards in terms of soil resulting from excavation.
- Downsizing of drainage pump station
- As part of the efforts to create an open construction site, a celebration event was held involving approximately 5,000 people every time a new facility was constructed. In addition, an average of approximately 30,000 residents observed the actual construction sites.
- In June 2002, test conduction of water to half of the total sections was carried out, and six simulations of inflows of flood waters were observed. The flooded area of the test section for conduction of water decreased 96% compared with the 1999 flood and 98% compared with the 2000 flood. The effects were affirmed to reduce the damage.

It has been recognized that the pioneering designs of the underground river technology and the construction work used in the Metropolitan Area Outer Underground Discharge Channel project will make a great contribution to the development of future civil engineering technologies.

Flood Control Effects of The Metropolitan Area Outer Underground Discharge Channel

The Metropolitan Area Outer Underground Discharge Channel is making a significant contribution in reducing damages due to immersion in the Naka River and Ayase River basins.

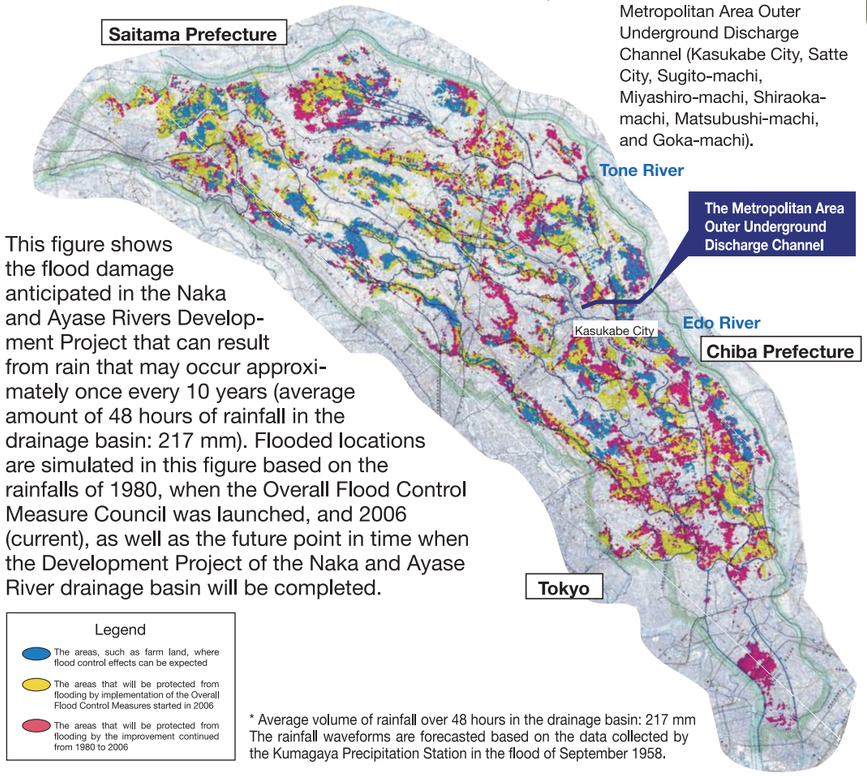
The Metropolitan Area Outer Underground Discharge Channel has the record of adjusting floods 85 times from the partial conduction of water in 2002 to February 2014. The flood control effect obtained from the test condution of water was remarkable, substantially reducing in daage due to immersion in the Naka River and Ayase River basins.

According to past flood control records, Typhoon No. 3, that hit in July 2000 and dropped 160 mm of rain, devastated the Naka River and Ayase River basins. Approximately 137 ha was flooded including 248 houses. However, with Typhoon No. 22 in October 2004, when conduction of water to the Kuramatsu River had already started, flood-related damage was substantially reduced, even though the amount of rainfall reached 199 mm. Approximately 72 ha was flooded, including 126 houses. And with the flood caused by atmospheric depression hit the area in December 2006, when conduction of water up to the Ootoshifurutone River had already been completed in June of the same year, flood related damage was still more reduced, the flooded area was approximately 33 ha and the number of flooded houses was 85,even though the amount of rainfall reached 172mm.

In addition, in August 2008 when heavy rainstorms were caused from the atmospheric depression, a time when the highest ever volume of inflow was recorded, flood control of approximately 11.72 million m^3 was available thanks to The Metropolitan Area Outer Underground Discharge Channel. Damage to the drainage basin, which had been devastated by floods over the years, was significantly reduced.

* The flooded area and the number of flooded houses are calculated based on data obtained from neighboring 7 cities and towns of The Metropolitan Area Outer Underground Discharge Channel (Kasukabe City, Satte City, Sugito-machi, Miyashiro-machi, Shiraoka-machi, Matsubushi-machi, and Goka-machi).

State of inflow during flood in August 2005 (No. 3 bank)



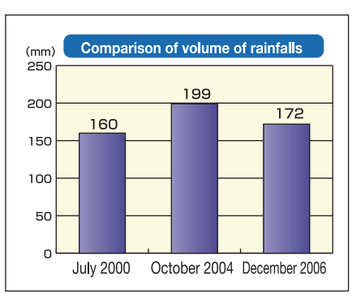
This figure shows the flood damage anticipated in the Naka and Ayase Rivers Development Project that can result from rain that may occur approximately once every 10 years (average amount of 48 hours of rainfall in the drainage basin: 217 mm). Flooded locations are simulated in this figure based on the rainfalls of 1980, when the Overall Flood Control Measure Council was launched, and 2006 (current), as well as the future point in time when the Development Project of the Naka and Ayase River drainage basin will be completed.

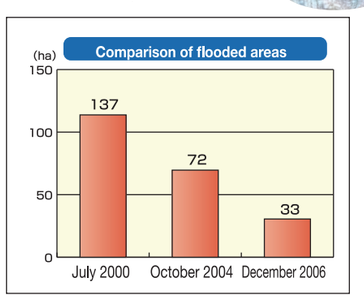
Legend
- The areas, such as farm land, where flood control effects can be expected
- The areas that will be protected from flooding by implementation of the Overall Flood Control Measures started in 2006
- The areas that will be protected from flooding by the improvement continued from 1980 to 2006

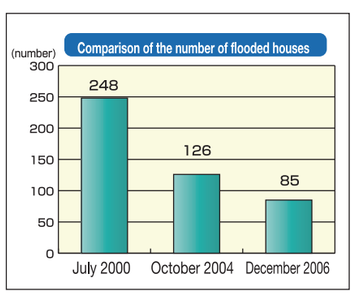
* Average volume of rainfall over 48 hours in the drainage basin: 217 mm
The rainfall waveforms are forecasted based on the data collected by the Kumagaya Precipitation Station in the flood of September 1958.

Before completion of The Metropolitan Area Outer Underground Discharge Channel (July 2000)

After completion of The Metropolitan Area Outer Underground Discharge Channel (October 2004)







River Environment Improvement in collaboration with Neighboring Areas

Mizube No Oka Consortium

The "Mizube No Oka Consortium" has started to plan and develop the area surrounding The Metropolitan Area Outer Underground Discharge Channel and the Showa Drainage Pump Station as the new asset of regional culture of Kasukabe City (formerly the Showa-machi district) to be loved by the community residents and others for many years to come.

"Mizube No Oka" will comprise many facilities including the underground space, Ryu Kyu Kan, multipurpose plaza, log houses, water park and revetment, cycling road, The consortium is exploring how to effectively operate the facility through fair and open meetings while constantly sharing information with community residents so that it becomes a new cultural asset for the community and a forum of interchange for the people. The consortium seeks how to promote the regional development utlizing Water Discharge Tunnel on The Outskirts, a rare underground complex. It is studying how to operate the facility to ensure the positive participation of community residents.

●Members of the consortium: Edo River Office of Ministry of Land, Infrastructure, Transport and Tourism, Kasukabe City and community residents (citizen groups)

"Ryukyukan" for Underground Exploration Museum of The Metropolitan Area Outer Underground Discharge Channel

"Ryukyukan" exhibits and introduces projects related to the Edo River and the natural environment surrounding it with emphasis on The Metropolitan Area Outer Underground Discharge Channel, which is working out of sight underground. This facility also functions as a place of integrated and lifelong learning in collaboration with the local community.

Underground Exploration Museum of the Metropolitan Area Outer Underground Discharge Channnel
龍Q館 RYU KYU KAN

The purpose of Ryukyukan is to communicate the role of The Metropolitan Area Outer Underground Discharge Channel to many people and to function as a base to promote lifelong learning according to the development needs of society.

"Ryukyukan" - the origin of the name
"Ryukyukan" derives its name from combination of the folklore of "Hibuse No Ryu (a dragon that protected the area from fire) that comes down in Kasukabe City (former Showa-machi) and "AQUA (water)". The facility asked the general public to submit names when it was opened in 2003 and this name was chosen.

1F

Citizen Gallery
It introduces diverse cultural activities of the community residents who have lived with the Edo River and fostered the history, culture and climate of the region.

2F

Underground Experience Hall
You can have a virtual experience of the immense power of The Metropolitan Area Outer Underground Discharge Channel! Swirling river, inflowing water, etc. Through light, sounds and images, you can experience the horror of floodinges and how The Metropolitan Area Outer Underground Discharge Channel is working to protect against it.

My Town and My River
This is a workshop station to help people rediscover their towns and rivers from a different perspective. It is also used as a place of integrated learning in coordination with neighboring elementary schools.

Technology BOX
Through miniatures and others, you can see the building process of "The Metropolitan Area Outer Underground Discharge Channel ", one of the world's largest artificial rivers, and the state-of-the-art technologies supporting its operation.

Growing Hometown Forest

June 2006
(Festivel of Complete Conduetion of The Metropolitan Area Outer Underground Discharge Channel)

July 2010
(Nature Observation)

The "Growing Hometown Forest" project is promoted at the Showa Drainage Pump Station of The Metropolitan Area Outer Underground Discharge Channel. Its purpose is to develop a "Forest of River" to provide various benefits, such as providing relaxing shade from trees, alleviating the heat-island phenomenon by providing a place where wind can breeze through, securing an evacuation area in case of disaster, and creating a beautiful landscape.

So far, trees have been planted twice in the area, in June 2006 and March 2007. Twenty five species comprising 25,000 nursery trees have been planted in the Showa Drainage Pump Station. Different species of nursery trees have been planted next to each other. Planting tall trees and shorter trees in combination (mixed planting and dense planting) prompts their competitive coexistence and helps them grow strongly. These trees grow into bountiful forests and foster a wide variety of forest inhabitants. Twenty five different species of nursery trees were selected from the groups of tree species of potential natural vegetation surrounding the Showa Drainage Pump Station.

Birth of the “Sairyu no Kawa”!
The name "Sairyu no Kawa" was selected from among names submitted by the public, a name that will remind people of the role of the "The Metropolitan Area Outer Underground Discharge Channel" and encourage people to become familiar and loved by community residents.