

Sewerage System in Shiga



Takashima Wastewater Treatment Plant



Tohokubu Wastewater Treatment Plant



Kosei Wastewater Treatment Plant



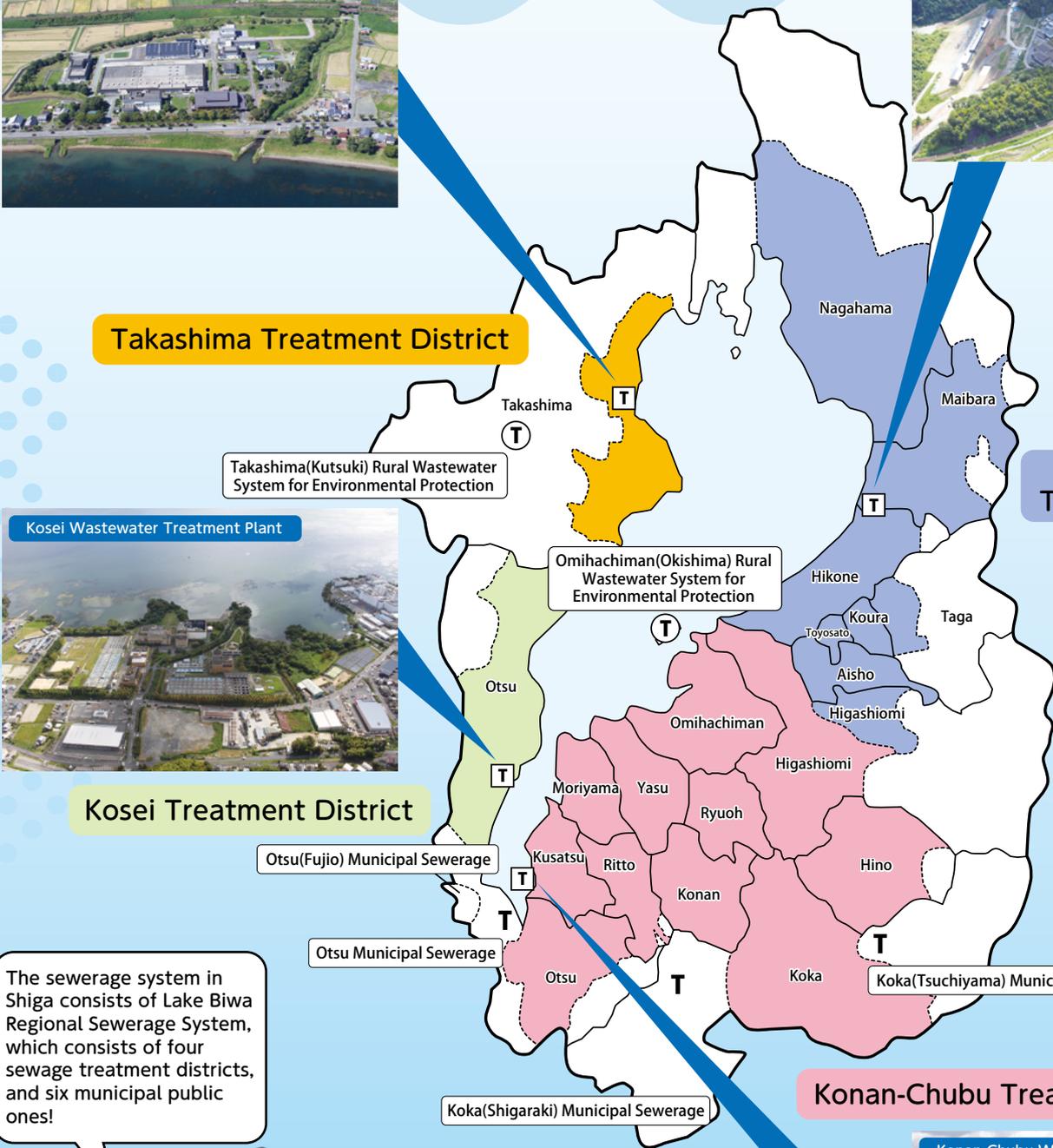
Konan-Chubu Wastewater Treatment Plant

Takashima Treatment District

Tohokubu Treatment District

Kosei Treatment District

Konan-Chubu Treatment District



Shiga Prefecture website

The sewerage system in Shiga consists of Lake Biwa Regional Sewerage System, which consists of four sewerage treatment districts, and six municipal public ones!



Sewer Fairy, "Gessui"

-  Lake Biwa Regional Sewerage Wastewater Treatment Plant
-  Municipal Sewerage Wastewater Treatment Plant
-  Rural Wastewater Treatment Plant for Environmental Protection

Plan and Outline of Lake Biwa Regional Sewerage System

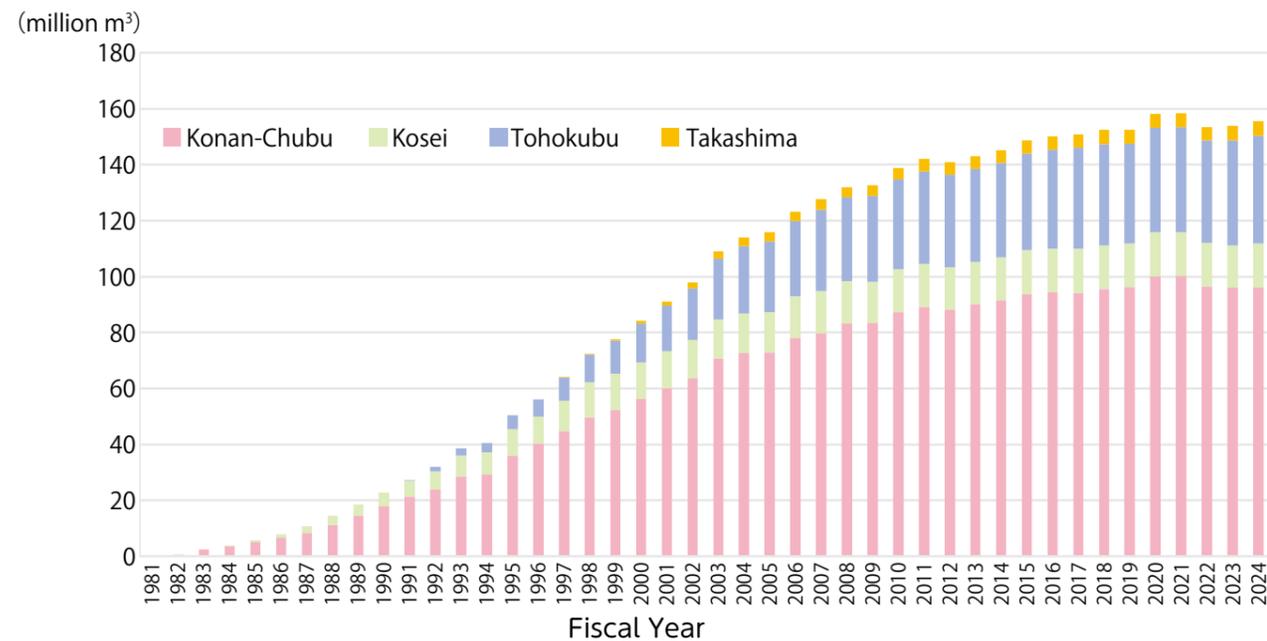
(End of FY2024)

Regional Sewerage System Name	Lake Biwa Regional Sewerage System			
Treatment District Name	Konan-Chubu	Kosei	Tohokubu	Takashima
Commencement Date	April 1, 1982	November 1, 1984	April 1, 1991	April 1, 1997
Design Treatment Area (ha)	approx. 28,652	approx. 3,398	approx. 14,423	approx. 2,658
Design Population	approx. 715,000	approx. 109,000	approx. 276,000	approx. 33,000
Design Treatment Capacity (m ³ /day)	approx. 394,300	approx. 53,700	approx. 156,800	approx. 17,100
Sewer System	Separate System (A method of treating wastewater and rainwater separately)			
Length of Sewers(km)	approx. 184	approx. 16	approx. 154	approx. 27
Number of Relay Pumping Stations	7	3	5	4
Area of Wastewater Treatment Plant (ha) [Address]	approx. 62.3 [2108, Aza Kihan, Yabase-machi, Kusatsu]	approx. 10.7 [3-chome, Nouka, and Kinooka-cho, Otsu]	approx. 46.7 [Matsubara-cho, Hikone and Iso, Maibara]	approx. 7.5 [Imazu, Imazu-cho, and sinasahi-cho, Takashima]
Release Destination	1.1km downstream from Konan-Chubu Wastewater Treatment Plant 0.3km downstream from Ohmi Ohashi Bridge	0.5km southeast from Kosei Wastewater Treatment Plant	1.4km south from Tohokubu Wastewater Treatment Plant Former Hikone Port to the west of Hikone Castle	1.4km downstream from Takashima Wastewater Treatment Plant
Related Local Governments	11 Otsu·Omihachiman·Kusatsu·Moriyama·Ritto·Koka·Yasu·Konan·Higashiomi·Hino·Ryuoh	1 Otsu	8 Hikone·Nagahama·Maibara·Aisho·Toyosato·Koura·Taga·Higashiomi	1 Takashima

Note 1) The design population does not include the tourist population.
Note 2) The length of sewers does not include the effluent outfall.

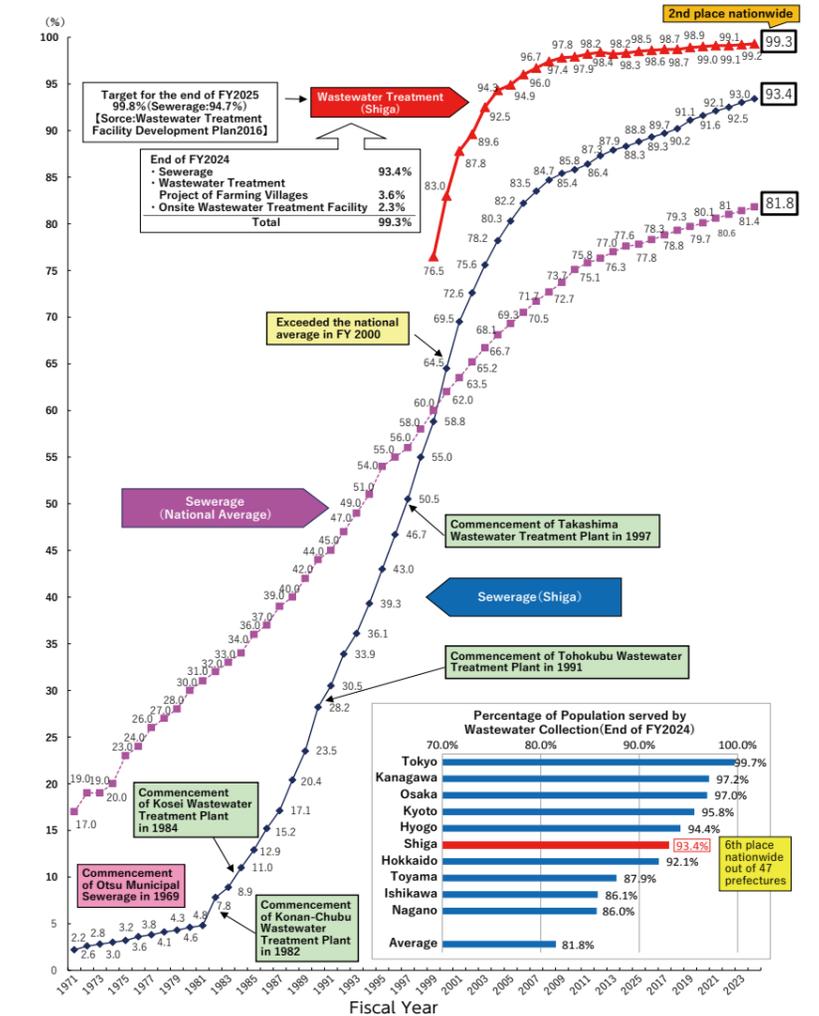
Changes in the Amount of Inflowing Wastewater

The four treatment districts of Lake Biwa Regional Sewerage System, treat a total of more than 150million m³ of wastewater annually. It is equivalent to approximately 0.5% of the water volume of Lake Biwa.

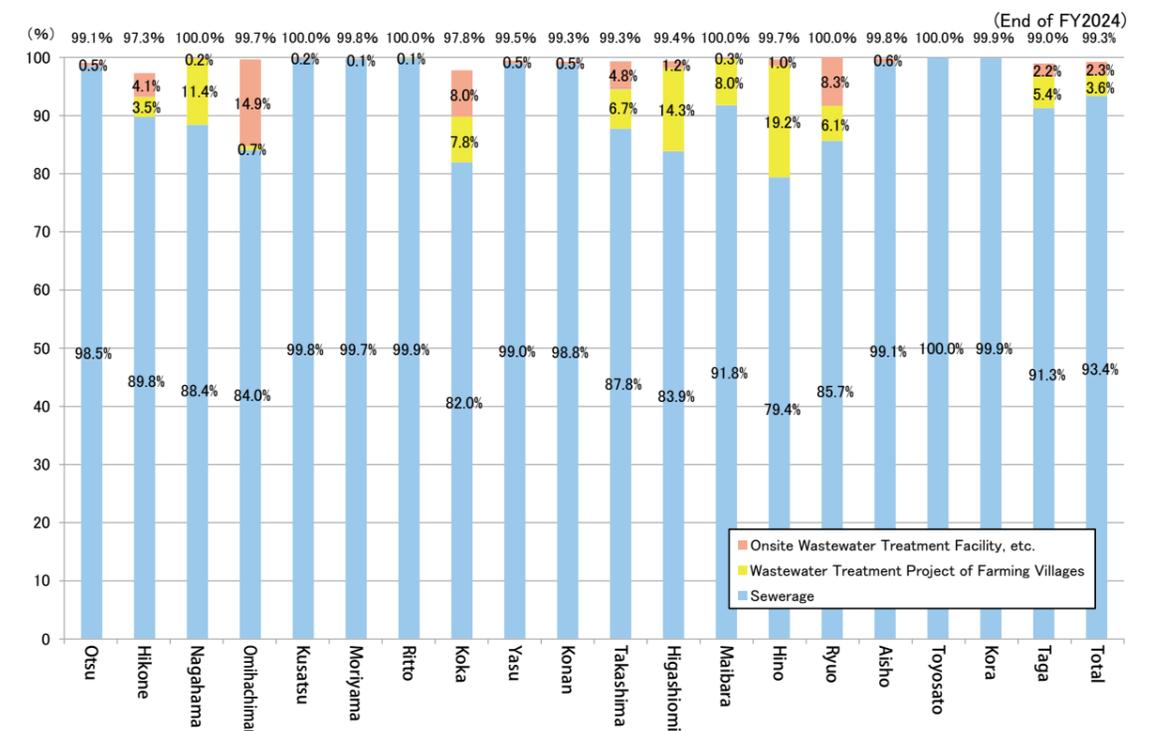


Trends of Percentage of Population Served by Wastewater Collection

Shiga Prefecture has a long history of thriving mainly on agriculture, and human waste had been used as fertilizer. As a result, the start of the wastewater service was delayed. However, thanks to the active cooperation between the cities, towns and prefecture in promoting sewerage development, the percentage of population served by wastewater collection is 93.4% in the end of FY2024, ranking sixth in Japan.



Percentage of Population Served by Wastewater Treatment for each city and town



Sewage Treatment Flow

Since the beginning of operations, the four implementing advanced treatment to remove

Wastewater Treatment Plants of Lake Biwa Regional Sewerage System have been nitrogen and phosphorus in order to prevent eutrophication of Lake Biwa.

(Konan-Chubu Wastewater Treatment Plant)

Water Treatment



① Screen/Dry Well



② Primary Sedimentation Tank



③ Biological Reaction Tank



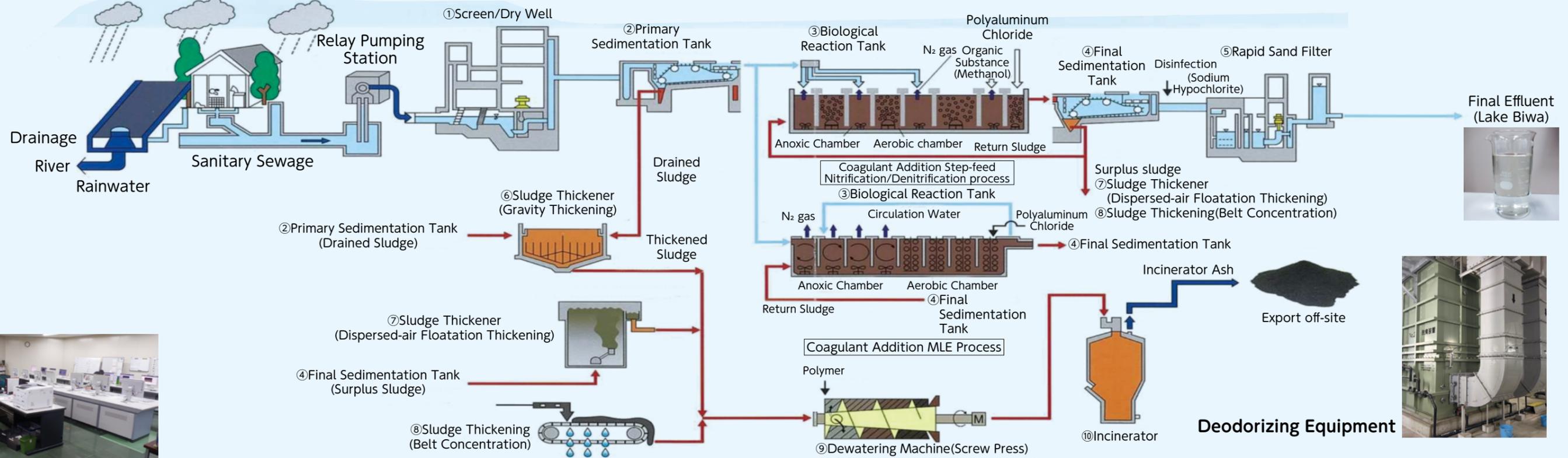
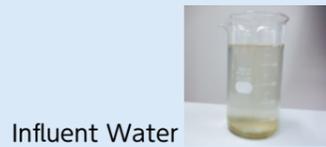
④ Final Sedimentation Tank



⑤ Rapid Sand Filter



Blower

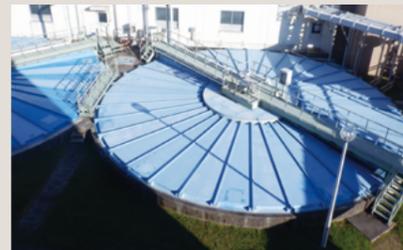


Central Monitoring Room



Water Quality Testing Laboratory

Sludge Treatment



⑥ Sludge Thickener (Gravity Thickening)



⑦ Sludge Thickener (Dispersed-air Floatation Thickening)



⑧ Sludge Thickening (Belt Concentration)



⑨ Dewatering Machine (Screw Press)



⑩ Incinerator
 ※To make effective use of sludge, it is turned into fuel through carbonization at Kosei Wastewater Treatment Plant and composted at Takashima Wastewater Treatment Plant.

Water Quality and Load Reduction at Wastewater Treatment Plants

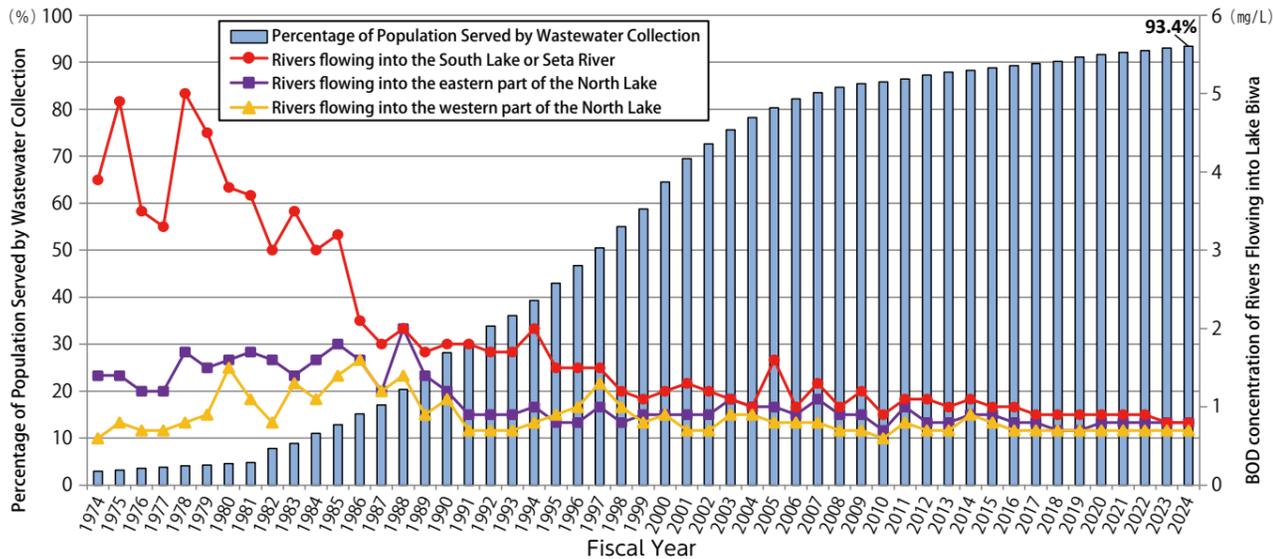
Lake Biwa Resional Sewerage System is significantly reducing the amount of pollutant load into Lake Biwa.

(FY2024 results)

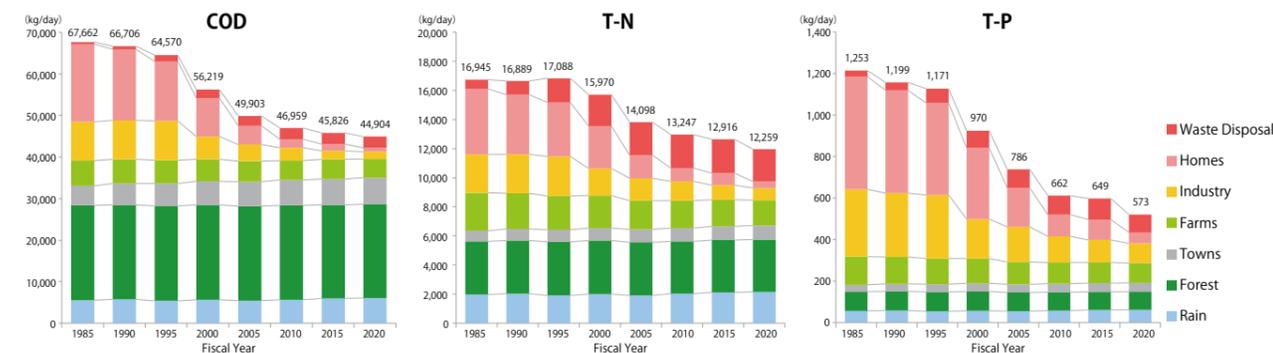
		Lake Biwa Regional Sewerage System				Total
		Konan-Chubu	Kosei	Tohokubu	Takashima	
Influent Quantity (m ³ /day)		263,158	43,121	105,631	14,086	425,996
Influent Quality (mg/L)	BOD	150	130	110	140	
	COD	91.7	82.0	67.5	83.4	
	T-N	28.6	26.7	22.2	26.2	
	T-P	3.35	2.58	2.06	2.76	
Influent Load (kg/day)	BOD	39,474	5,606	11,619	1,972	58,671
	COD	24,132	3,536	7,130	1,175	35,973
	T-N	7,526	1,151	2,345	369	11,391
	T-P	881.6	111.3	217.6	38.9	1,249.4
Effluent Quantity (m ³ /day)		263,180	43,146	105,271	13,755	425,352
Effluent Quality (mg/L)	BOD	1.2	1.2	0.9	0.9	
	COD	5.1	5.0	4.9	4.9	
	T-N	4.5	2.9	2.6	4.5	
	T-P	0.08	0.04	0.07	0.03	
Effluent Load (kg/day)	BOD	316	52	95	12	475
	COD	1,342	216	516	67	2,141
	T-N	1,184	125	274	62	1,645
	T-P	21.1	1.7	7.4	0.5	30.7
Load Reduction Amount (kg/day)	BOD	39,158	5,554	11,524	1,960	58,196
	COD	22,790	3,320	6,614	1,108	33,832
	T-N	6,342	1,026	2,071	307	9,746
	T-P	860.5	109.6	210.2	38.4	1,218.7

Note) Influent quantity and quality, and Effluent quantity and quality are annual average values.

Percentage of Population Served by Wastewater Collection and Water Quality of Rivers Flowing into Lake Biwa (BOD)



[Reference] Trends of Inflow Loads into Lake Biwa

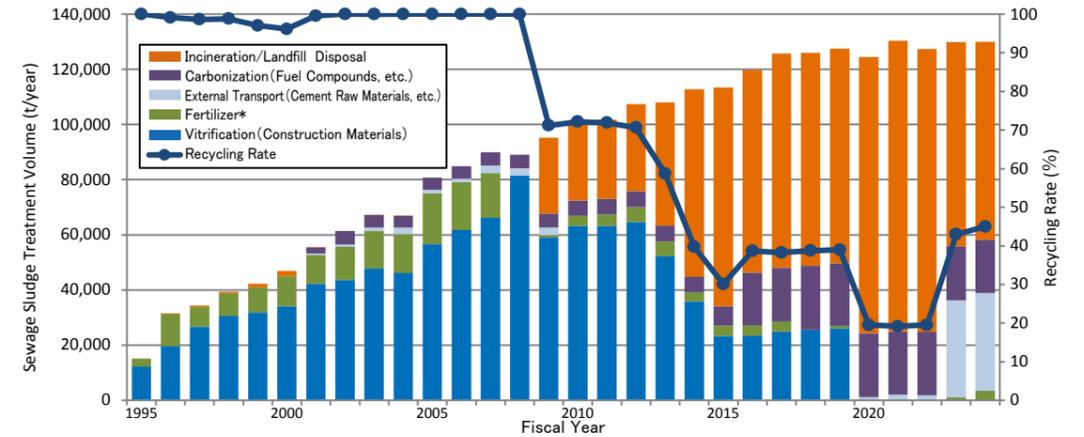


[Source: 8th Lake Water Quality Conservation Plan]

Effective Use of Sewage Sludge

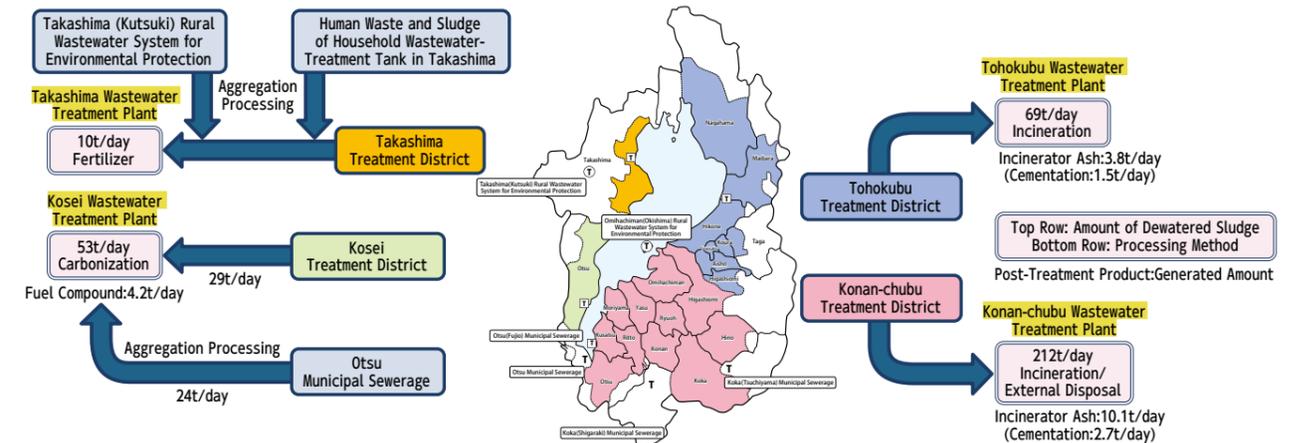
At the four Wastewater Treatment Plants of the Lake Biwa Regional Sewerage System, approximately 350 tons of sewage sludge is generated each day and is treated through incineration, conversion into solid fuel, composting, and other methods. Sewage sludge has resource and energy potential, and depending on the treatment method, it can be used as fertilizer, fuel, and construction material. The effective use of sewage sludge has been decided taking into consideration the size of each Wastewater Treatment Plant and regional characteristics. We will continue to aim for 100% effective utilization of sewage sludge.

Trends of Sludge Effective Utilization rate



*Composting at Takashima Wastewater Treatment Plant began in FY2023.

Sewage Sludge Treatment Status (FY2024 Results)



Carbonization at Kosei Wastewater Treatment Plant

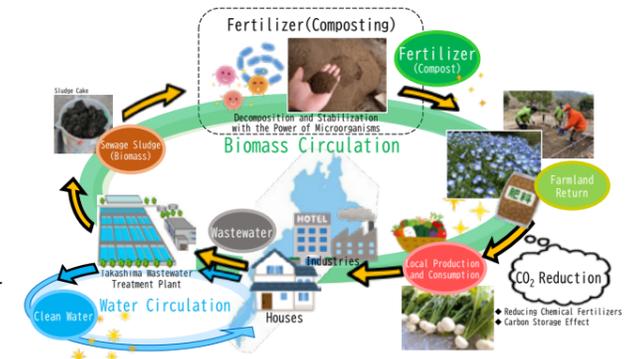
By using sludge cake as a raw material to produce fuel, we are able to turn sewage sludge into a resource. Also, we are contributing to preventing global warming by reducing greenhouse gas emissions.

Fertilizer at Takashima Wastewater Treatment Plant

The composting facility is producing fertilizer from sludge cake. By selling and using it locally, we aim to create a resource cycle through local production and consumption.



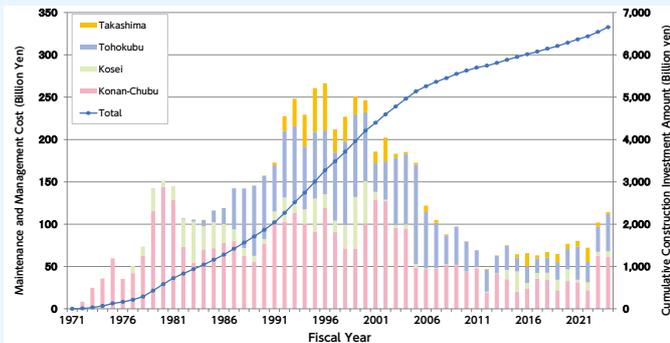
Information of Fertilizer Sales
Sales Location : Takashima Wastewater Treatment Plant
Sales Time : Everyday (13 : 00~16 : 30)
Price : 20Yen/10kg



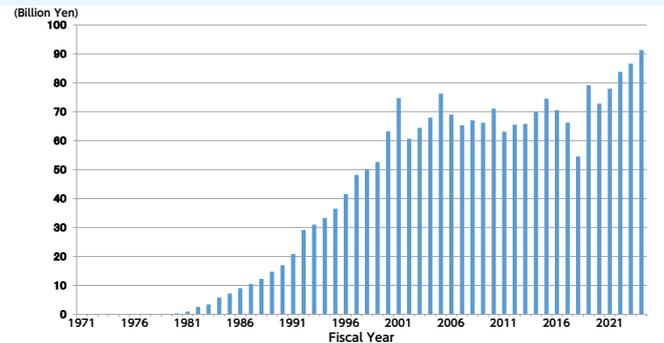
Renewal and Renovation of Sewerage Facilities

Once a sewerage is installed, it cannot be used forever. If used for a long period of time, the facilities would be deteriorated. The sewerage has been in place for a long time. Therefore, the total length of sewers in Shiga is approximately 8,450km (enough to circle Lake Biwa 36 times) by the end of FY2024. If aging sewer pipes are left unattended, not only it would become impossible to treat sewage, but also road collapses would occur frequently across the country due to damage to old sewer pipes. Approximately 1,330 cases occurred in FY2024. Updating and rebuilding sewerage facilities is extremely important in order to continue to properly treat sewage and prevent accidents such as road collapses.

Construction Investment Cost



Operation and Maintenance Cost



Ohmi Environmental Plaza

The Ohmi Environmental Plaza was opened in April 2013 on Yabase-Kihanto as a base for the inheritance and development of wastewater treatment technology, research and development, promotion, and further linking the results of this technology to the water environment business. Moreover, the exhibits are being updated to make it easier for the general public to learn about the workings of the sewerage. We also distribute Manhole Cards of Lake Biwa Regional Sewerage System.



<https://www.ohmi.or.jp/plaza/>

Parks



Yabase-Kihanto Park

Sports, camping and playground facilities are available, by effective use of Konan-Chubu Wastewater Treatment Plant.



Rose Garden at Kosei Wastewater Treatment Plant

It opens to the public in spring and fall. Approximately 700 roses of 90 varieties are in bloom.

	Address	TEL	e-mail
Sewerage Division, Department of Lake Biwa and the Environment	4-1-1 Kyomachi Otsu, Shiga 520-8577	077-528-4211	dd00@pref.shiga.lg.jp
Southern Regional Sewerage Office	2108 Aza Kihan Yabase-machi Kusatsu, Shiga 525-0066	077-564-1900	dd30@pref.shiga.lg.jp
Konan-Chubu Wastewater Treatment Plant			
Kosei Wastewater Treatment Plant	3-1-1 Noka Otsu, Shiga 520-0102	077-579-4611	dd30@pref.shiga.lg.jp
Northern Regional Sewerage Office	1550 Matsubara-machi Hikone, Shiga 522-0002	0749-26-6633	dd31@pref.shiga.lg.jp
Tohokubu Wastewater Treatment Plant			
Takashima Wastewater Treatment Plant	448-106 Imazu Imazu-machi Takashima, Shiga 520-1621	0740-22-5255	dd31@pref.shiga.lg.jp