



Urban Facilities

Roads

Roads are not only used for human and vehicle traffic, but also to house public utilities (water, sewerage, etc.), for disaster prevention, and to create communities.

They provide a valuable multipurpose space in our cities. Roads are the most basic and fundamental facility in urban infrastructure. Cities therefore include especially important roads that form the urban framework within the city plan as urban facilities and carry out planned development.

Sendai planned its first city planning roads in June 1927, beginning with 38 roads that ran 104.6 km. The network of city planning roads has evolved and expanded as the city itself grew. The current modern road network in Sendai was, after the large-scale road network review due to post-war reconstruction, built in March 1966 in line with the major revision of the new industry city construction plan. Under said plan, it was decided that, as a base for the road network, two ring roads and 11 radial roads would be constructed. Under numerous projects since then and as a result of the incorporation of nearby municipalities into Sendai, the number of city planning roads had increased to 156 with a total length of 504.45km by the end of FY2009.

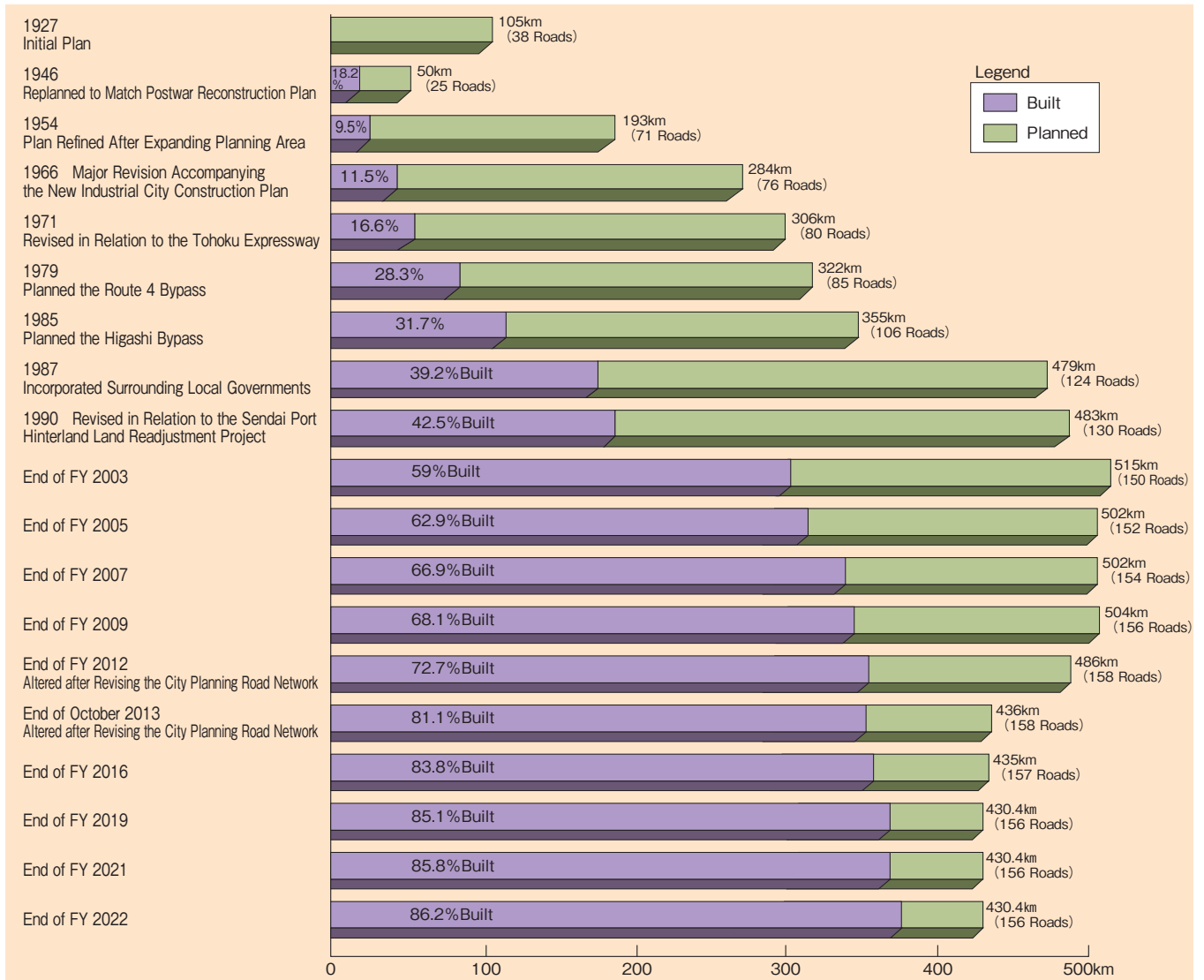
Meanwhile, the city planning road network was reviewed in January 2011 due to Sendai's need to become a functionally integrated city that can address such social changes as the declining population and aging society as well as to solve various issues including prolonged building restrictions. In December 2016, the alteration or abolishment of 33 road construction plans was completed.

As of the end of March 2023, the number of city planning roads was 156, spanning a total length of 430.40 km, of which approximately 370.83 km (86.2%) have been constructed. The city will continue to work to complete all the planned roads.

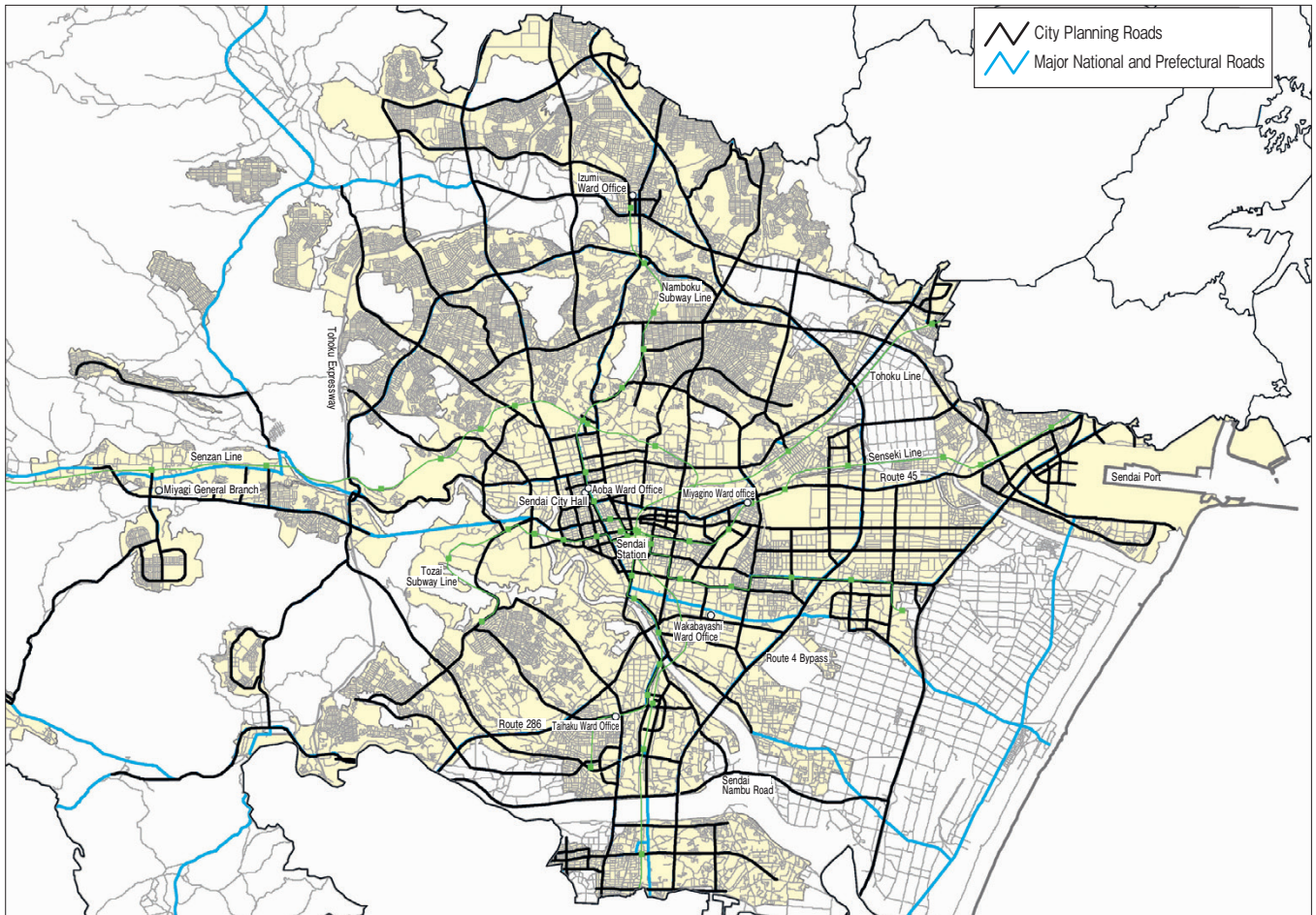
Determined City Plan for City Planning Roads and Their Development Status (as of end of March 2023)

Type of Road	Determined city plan		Already developed (km)
	No. of routes	Extension (km)	
Highway	3	23.0	23.0
Trunk road	143	401.99	343.39
District road	1	0.32	0.32
Special road	9	5.09	4.12
Total	156	430.40	370.83

Development of City Planning Roads



■ Trunk Road Network (As of December 31, 2021)



Miyazawa-Nenoshiroishi Road (Minamikajimachi construction area)



Miyazawa-Nenoshiroishi Road (Funacho construction area)

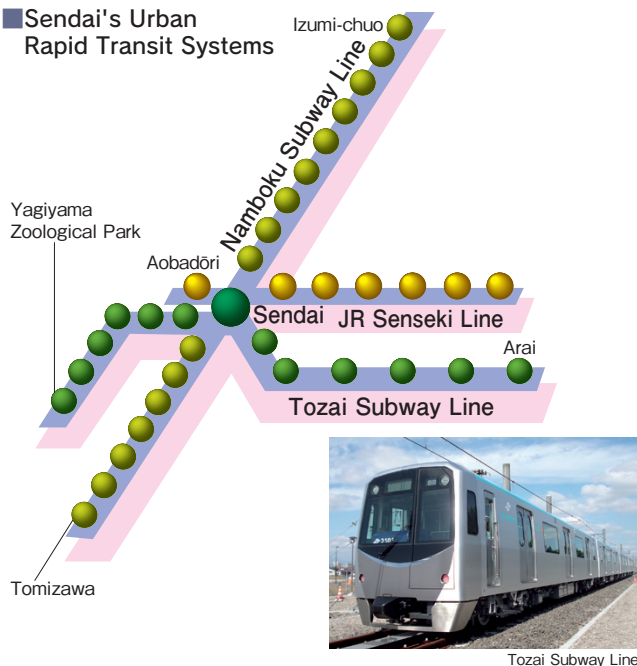
Urban Rapid Transit

The City of Sendai is trying to establish a comprehensive transportation network where the city planning road network and subway/JR line railroads are linked to create an organic structure. Four railroad lines are included in the city plan as urban rapid transit lines.

◆ Line 1: Sendai City Namboku Subway Line

In order to deal with traffic problems that were emerging with rapidly increasing car traffic, the city planned a subway that would run from Yaotome Station to Tomizawa Station (16 stations, 13.59 km) in March of 1981. This subway successfully began operation on July 15th, 1987. In March of 1989, the plan was modified and the subway was extended 1.2 km to the city's northern sub-center, Izumi-chuo. The line became operational on July 15, 1992. The subway serves approximately 174 thousand passengers a day (as of FY 2022).

■ Sendai's Urban Rapid Transit Systems



◆ Line 2: East Japan Railway Company Senseki Line (JR Senseki Line)

The JR Senseki Line Multiple Overpass Project (a project to move the line underground) was carried out to develop city center functions in the area east of JR Sendai Station. The project was carried out with a land readjustment project, and removed railway crossings to create a continuous district, making it more convenient to change trains. The project was included in the city plan in July 1984, went through three revisions in May 1988, June 1995, and July 1998. The train service finally began operation on the new line on March 11th, 2000.

◆ Line 3: East Japan Railway Company Senseki Line (JR Senseki Line)

Tagajo City, which is located next to Sendai, has planned to elevate the JR Senseki Line Tagajo Station with the aim of removing railway crossings to create a continuous district and strengthen transportation hub functions, and included the 3.78 km project in the city plan in March 1999 along with a land readjustment project.

◆ Line 4: Sendai City Tozai Subway Line

The Tozai Subway Line has been developed to provide the city with a cross-shaped major transportation axis which runs through all four cardinal directions, along with the Namboku Subway Line, and to improve the current unbalanced transportation environment in the city. It also aims to contribute to the construction of Functionally Integrated City that has various city functions, including railways and other public transportation systems.

The Tozai Subway Line runs from Yagiyama Zoological Park Station to Arai Station (approximately 13.9 km with double track; 13 stations). The project was included in the city plan in 2005, and the subway started its operation on December 6, 2015.

It serves approximately 75,000 passengers per day. (As of FY 2022)

Parking

◆ Car Parking

Street parking and lines of cars waiting to park can cause traffic jams, lead to accidents, and obstruct firefighting and emergency vehicles. This is a major issue that prevents smooth urban transportation. In order to solve the issue of parking in urban zones, the City of Sendai has designated areas such as car park development districts in other commercial districts and neighboring commercial districts, as well as obligated newly built and extended buildings over a certain size to include parking spaces. Furthermore, under the city plan, the City approved the Zoological Park Station Car Park as a city planning car park and combined the use of it with designated areas. (Approximately 520 parking spaces). Efforts are also being made to fully utilize existing car parks, including one at the Izumi Ward Office, which is open as a paid parking on weekends and holidays.

◆ Bike Parking

Bicycles and motorcycles are widely used for daily transportation. However, abandoned bicycles have become a major problem for pedestrians and residents around train stations and commercial areas. Sendai established three ordinances in 1987: the Bicycle Etc. Abandonment Prevention Ordinance, the Bicycle Etc. Parking Ordinance, and the Bicycle Etc. Parking Installation and Construction Promotion Ordinance. The city has been aggressively implementing measures to deal with abandoned bicycles ever since, and is committed to protect pedestrians and road functions, remove factors that obstruct emergency activities, and maintain pleasant urban landscapes. As of the end of October 2023, there were 70 parking areas with spaces for about 30,900 bicycles, of which the city plan decided on three located in the city center (underground areas at Higashi-Nibancho-dori, Sendai Station east exit, and Motokajicho Park), as well as two along the Tozai Subway Line (Yagiyama Zoological Park Station and

■ Map of Car Park Development Districts and City Planning Bicycle Parking Area

□ Parking Lot Development District: Approximately 330 ha



Yakushido Station Parking for Bicycles

Station Plazas

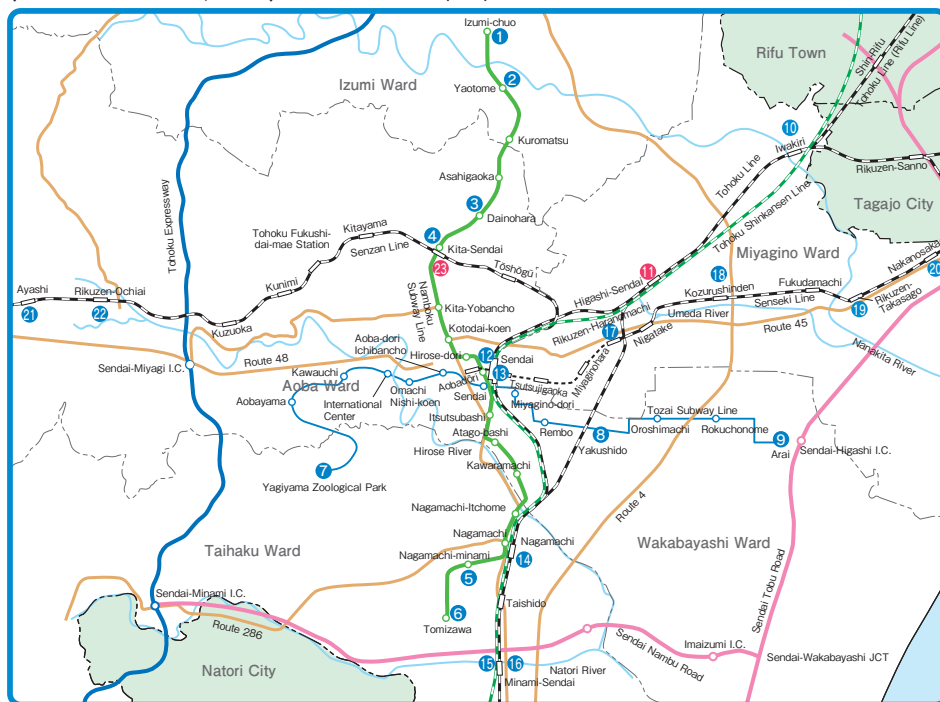
Station plazas not only provide connections between rail transport, cars, and pedestrians, but also provide a valuable shared space in our increasingly crowding cities. It is therefore necessary to recognize that plazas function as gateways to communities, and pay consideration to their landscaping in addition to their essential functions- the ability to ensure smooth transfers and handle large amounts of traffic. In Sendai, 23 station plazas for JR and subway stations were included in the city plan as of the end of December 2021, of which 21 plazas are already in use.

Motor Vehicle Terminals

Motor vehicle terminals gather departing and arriving trucks in one location, making it possible to smoothly move goods within and between cities, creating efficient freight transportation. In Sendai, one truck terminal (80 berths) has been constructed under the city plan and is currently in use.

Station Plazas Included in the City Plan (As of December 31, 2021) ● indicates developed plazas

Name of Railway	No.	Station (Plaza) Name	Area (m ²)	
Sendai City Rapid Transit	Namboku Line	1	Izumi-chuo Station	10,900
		2	Yaotome Station	3,900
		3	Dainohara Station	2,700
		4	Kita-Sendai Station	3,400
		5	Nagamachi-minami Station	5,000
		6	Tomizawa Station	4,000
	Tozai Line	7	Yagiya Zoological Park Station	8,500
		8	Yakushido Station	5,200
		9	Arai Station	4,800
JR Tohoku Line	10	Iwakiri Station	2,300	
	11	Higashi-Sendai Station (West)	3,000	
	12	Sendai Station (West)	26,100	
	13	Sendai Station (East)	15,000	
	14	Nagamachi Station	6,100	
	15	Minami-Sendai Station (West)	3,000	
JR SENSEKI LINE	17	Rikuzen-Haranomachi Station	3,600	
	18	Kozurushinden Station	3,600	
	19	Rikuzen-Takasago Station	4,000	
	20	Nakanosakae Station	2,600	
JR Senzan Line	21	Ayashi Station	3,000	
	22	Rikuzen-Ochiai Station	3,000	
	23	Kita-Sendai Station	2,300	



Parks and Greenery

When Sendai's war reconstruction land readjustment project was decided in 1946, 12 parks and 1 greenery area were included as Sendai's first city-planned park and greenery areas.

Afterwards, as a result of repeated additions and alterations, both the number and size of urban planning parks and green areas increased to 410 parks (1,231.11 ha in total) and 29 areas (385.71 ha in total) respectively as of the end of March 2023. Currently, the City of Sendai is redeveloping Nishi Park, which is one of Sendai's first urban planning parks, based on changes in circumstances surrounding the park; redevelopment of other parks is also proceeding, including the Kaigan Park, Aobayama Park and Takasago-chuo Park, according to their characteristics.

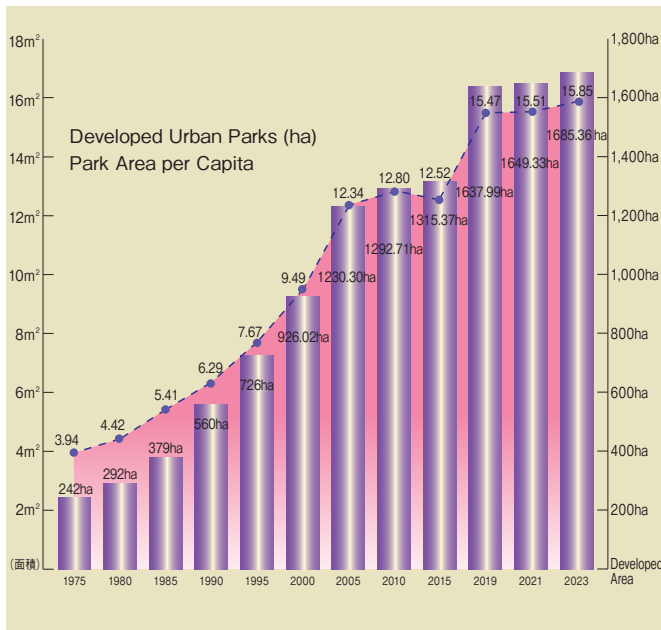


Aobayama Park

Outline of City Planning Parks (As of December 31, 2023)

Classifications	Number	Area (ha)
Urban Area Parks	328	94.25
Neighborhood Parks	52	99.40
District Parks	8	59.40
General Parks	5	110.10
Sports Parks	1	32.90
Special Parks	15	282.86
Regional Parks	1	552.10
Total	410	1231.01
Greenery Areas	29	385.71

Changes of Urban Park Development (As of March 31, 2023)



Sendai City Basic Green Plan 2021-2030

One of the city's unique individualities is its environment, in which greenery in the city, such as parks and street trees in the city, is linked to rich nature spreading from the mountains to the coastal areas and harmonized with city functions. Greenery has various functions, such as contributing to the formation of a good landscape, mitigating the heat island effect, and reducing the risk of flooding.

Sendai City Basic Green Plan 2021-2030 (formulated in June 2021) sets forth as its basic vision the New City of Trees realized through the creation of an enduring city in harmony with its' forests –Nurturing people and the city with greenery. The City of Sendai will continue this initiative promoted with the cooperation of citizens to conserve and create good greenery. At the same time, the City of Sendai aims to realize a new City of Trees by promoting green infrastructure that proactively utilizes the diverse functions of the greenery that has been cultivated for community development.

Specifically, the City of Sendai will promote disaster prevention and mitigation measures using greenery, such as reducing flood damage in urban areas by developing rain gardens, creating high-quality greenery for buildings in urban areas, creating parks that will serve as the bases for greening initiatives, and utilizing greenery spaces such as street trees with the aim of refining greenery in urban areas, which is the city's urban brand. In addition, in order for the greenery to continue to fulfill its various functions, the City of Sendai will work to build a sustainable greenery management system by promoting involvement by various entities using various methods.

Green infrastructure of the City of Trees

Sendai is a rare city in the world where having various links with nature, such as forests, rural areas and mountains, urban greenery, farmland in the eastern part of the city, and rivers, from headwater to mouth. Diverse forms of greenery that comprise the backbone of these areas play various roles, such as mitigating flood damage, recharging water sources and groundwater, water purification and utilization, and reducing the impact of the microclimate. In order to be the choice by many, as the city of trees, the City will further promote the conservation and creation of greenery, which is the basis of a safe and secure city in which to live.

Mountain recesses, Satoyama (natural woodland near populated areas)

Preserving and managing forests properly will create various functions, such as conserving biodiversity, absorbing CO₂, purifying water, and recharging water sources.

Urban area (Suburban area)

Greenery in urban areas provides functions such as landscape improvement, recreation, and community-building. Enhancing rainwater permeation and storage functions will contribute toward reducing flood damage, recharging groundwater, and water purification.

River

In addition to the basic functions of rivers, such as flood control and water utilization, properly managed forests also perform environmental functions such as securing biodiversity, mitigating the impact of the microclimate, and preserving the landscape. They also contribute to recreation and community-building through the utilization of riverbeds.

Urban area (City Center)

By promoting greening by arranging greenery according to the plan and the promotion of green building development, the area will display such functions as heat alleviation, landscape improvement, and recreation. In addition, enhancing rainwater infiltration and storage functions will contribute to the mitigation of flood damage, groundwater recharging, and water purification.

Rural area & Coastal area

Cold sea breezes in the summer reach inland through the flat terrain in the eastern part of the city, controlling temperature rises in urban areas. Disaster prevention forests in coastal areas ensure tide and windbreak functions, and strengthening the multi-defense front to reduce Tsunami damage with a coastal levee and an elevated road. Moreover, the preservation of farmland, wetlands, Woodlot surrounded residence and woodlands will contribute to biodiversity and preservation of the region's unique landscape.

Utility Facilities

◆ Sewerage

Sendai's sewerage facilities began in 1892, which made Sendai the third city in Japan to build sewerage facilities, after Tokyo and Osaka. However, since these pre-war sewerage facilities directly dumped sewerage in to rivers without any treatment, river pollution progressed after World War II, because of changes in lifestyles and rapid urbanization.

The city therefore decided to include the Sendai City Public Sewerage (Minami Gamo treatment district covering approximately 3,900 ha) in its city plan in 1958, and began to develop new treatment facilities. The city plan now includes seven treatment districts that treat 18,660 ha, after incorporating surrounding local governments and going through many plan revisions.

Sendai's public sewerage development project was almost completed in 2009, reaching 98.7% of the population of the city (as of March 31, 2020). When including other wastewater treatment facility development projects, such as the rural community sewerage development project, this figure reaches 99.7% of the population of the city.

The Great East Japan Earthquake in March 2011 caused tremendous damage to sewerage facilities in the city, including the Minami-Gamo Wastewater Treatment Plant, which had been processing approximately 70% of the sewage generated in the city. New water treatment facilities began operating at the Minami Gamo Wastewater Treatment Plant in April 2016, and by the end of FY 2021, restoration of sewerage facilities was completed, including areas affected by the tsunami.

In the future, the City of Sendai will implement comprehensive flood mitigation projects that combine the development of rainwater drainage facilities, securing the functions of existing drainage facilities, and self-help and mutual-help initiatives based on the damage caused by flooding related to typhoon Hagibis that hit eastern Japan in 2019. The city will also take measures against earthquakes to secure urban functions and public health in the event of an earthquake. Moreover, the City of Sendai will also work on reconstruction projects with a new and long-term perspective. For instance, as for facilities facing complex issues such as the aging of buildings and equipment, the City enhances their functions in consideration of their characteristics and location, social needs, life cycle costs, and other factors.

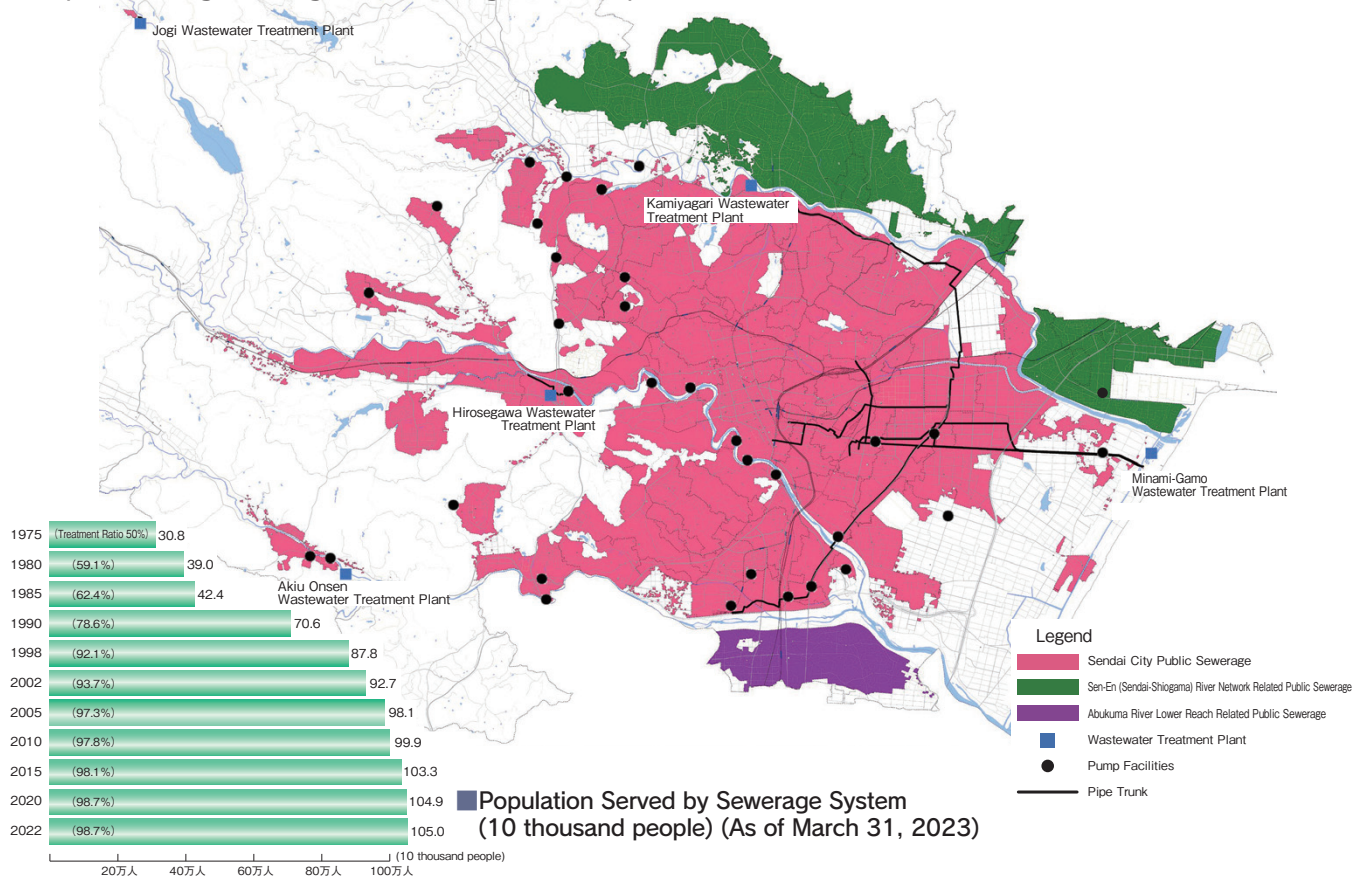


Minami Gamo Wastewater Treatment Plant, where disaster recovery work has been completed



Jizomae rainwater trunk line for flood control

■ Map of Sewerage Drainage Areas (Sewage) (As of April, 2023)



Other Facilities

◆Waste Incineration Plants

Our daily lives and industrial activities always produce waste. Safe and efficient waste treatment is necessary to obtain a functional and pleasant living environment, especially in cities with a dense population.

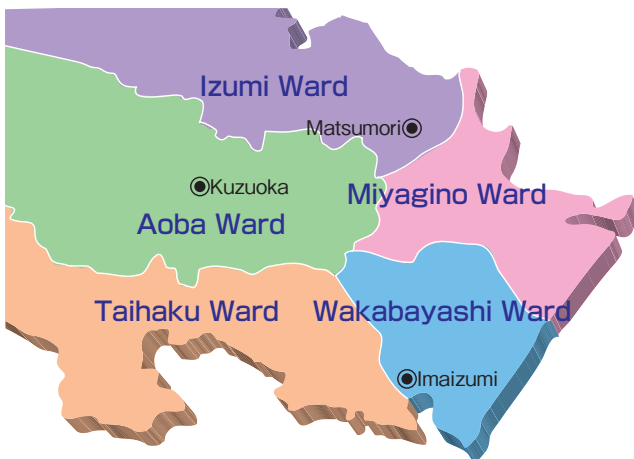
In Sendai, recycling is currently implemented at two recycling centers, and non-recyclable waste is incinerated at three waste incineration plants constructed under the city plan and sent to the Ishizumori landfill site for final stage of disposal.

The City promotes further reduction and recycling of waste with cooperation from individuals and companies. As for non-recyclable waste, the City promotes proper treatment through the improvement and replacement of its waste incineration plants.

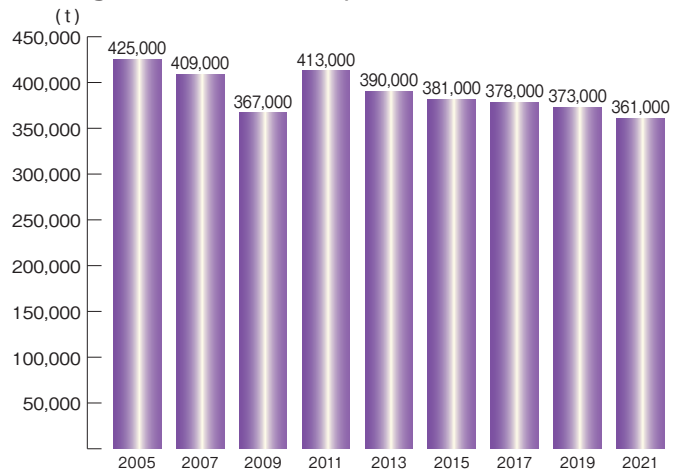


Matsumori Waste Incineration Plant

■Location of Waste Incineration Plants



■Changes in Total Waste Disposal



◆Cemeteries

Kitayama Cemetery, the first city planning cemetery in Sendai, was planned during the war reconstruction land readjustment project. The plan was to move and rearrange cemeteries in the project area, which were owned by three temples and the Miyagi Prefecture Shinto Priest Association. The cemetery (5.2 ha) was written into the city plan on November 20th, 1951, and developed in the Kitayama hilly areas.

The second city planning cemetery, the Kuzuoka Cemetery, was planned because Kitayama Cemetery became full, and also because it was necessary to move cemeteries in the Shinterakoji and Sendai Station East land readjustment project areas. The cemetery (99.3 ha) was written into the city plan in 1963, completed in 1982, and ceased to offer new lots in 2000.

Afterwards, with the Kuzuoka Cemetery reaching its full capacity, the third city planning cemetery, the Izumi Cemetery, was included in the city plan on December 13, 1996, and scheduled to provide its lots for approximately 60 years starting from FY 2001.

◆Education and Culture Facilities

Sendai promotes health and welfare in its residents by developing education and culture facilities to popularize sports and recreation. Two gymnasiums have been developed under the city plan and they are currently used for citizens' sports activities and various events.

◆Markets and Slaughterhouses

Sendai's Central Wholesale Market opened in 1960 as the first central market in the Tohoku region, and moved to its current location in 1973. The flower and plants marketplace was separated into a different location in 1988. The Central Wholesale Market functions as a center of distribution for fresh foods, and its three divisions—fisheries, flower and plants, and fruits and vegetables—handled products worth 119.7 billion yen in 2022.

The meat division opened in 1975 as a meat marketplace, handling products worth 22 billion yen in 2022 and supplying meat throughout the Tohoku and Kanto regions.

◆Other

Sendai also operates a crematorium, which was added to the city plan in 1968 as a facility necessary to support daily lives.