

12.0 UTILITIES



MIDDLETOWN PLAN OF DEVELOPMENT

12.0 UTILITIES

12.1 Introduction

Utilities in Middletown include public utilities, such as water and sewer services, and private utilities, such as electricity, natural gas, and high technology infrastructure. The location of these utilities impacts residential, commercial, and industrial decisions relating to location, expansion, and economic costs. This chapter recommends the following goals:

- *Scrutinize any proposal to expand the provision of water or sewer to areas that presently do not have these public utilities.*
- *Encourage the provision of new technological infrastructure throughout the town.*
- *Work to remove the existing treatment plant along the Connecticut River so that the riverfront may be redeveloped.*

12.2 Water Supply

The Water Department operates under the direction of the Mayor and the Water Pollution Control Authority (WPCA). The Director of the Department is primarily responsible for managing, operating, and maintaining the Department while the WPCA sets policy decisions and future service extensions. Middletown's Water Department presently provides potable water to approximately 87% of city residents (fig 12.1). The City also provides water to commercial and industrial users. Some large residential water consumers, such as Wesleyan's buildings and dormitories, multi-family housing units, and apartment buildings, are large enough to be classified as commercial/industrial users. The Department's infrastructure consists of three reservoirs, ten wells, four storage facilities, five pumping stations, and 149 miles of transmission and distribution pipes.

The public water system impacts development capacity within Middletown. Public water guarantees a potable water supply that is not dependent on drilling a well on the property. Some areas of town have limited groundwater supplies, and other areas have experienced contamination of their groundwater. The Department of Health reports that contaminated wells along Country Club Road near Preston Avenue have been detected and the water quality of wells along Saybrook Road, near the intersection with Aircraft Road, have become a concern. Public water, therefore, allows developers to build homes in areas where the local groundwater may no longer support development. Public water allows higher intensity of the underlying use. The more connections that the developer installs, the lower the individual connection charges. Extending water lines to presently undeveloped areas of the city can be an incentive to higher densities and new development.

Current water demand in Middletown has averaged 4.45 million gallons per day over the past six years. Residential demand accounts for 47% of that total (2.1 million gpd) while industrial/commercial users averaged 1.68 million gallons per day during the same period. The remaining water is considered "unaccounted for water" and is lost due to leakages and other problems. Table 12.1 shows the water consumption projections for the next decade.

Table 12.1
Water Consumption Projections by User Category

Year	Residential (mgd)	Commercial/ Industrial (mgd)	Unaccounted for Water (mgd)	Durham Projected Demand (mgd)	Cumulative Total Average Daily Production (mgd)
2004	2.08	1.66	0.49	0.08	4.23
2010	2.9	1.78	0.84	0.08	5.6

Note: mgd means millions of gallons per day
Source: Middletown Water Supply Plan Update, 1999

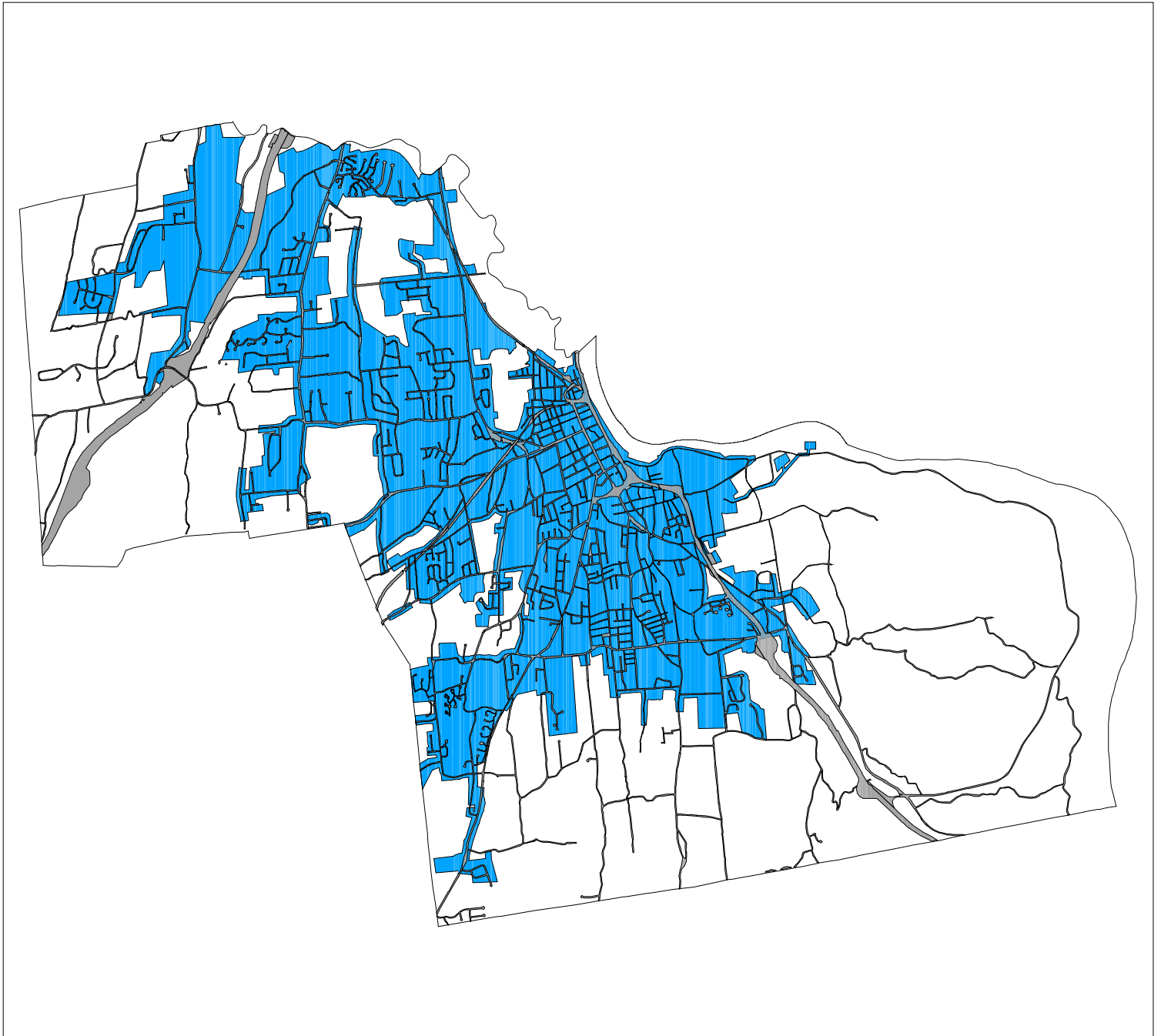
The City's wells provide seventy percent of the total demand. The wellfield is located along River Road, between Eastern Drive and Silvermine Road. The remaining thirty percent comes from the Mount Higby surface water reservoir. Both sources have filtration plants that treat the water before it enters the transmission and distribution system. Adjacent to the Mount Higby reservoir is the Adder (or Roaring Brook) Reservoir. This reservoir stores water before entering the Mount Higby reservoir. The city also owns the Laurel Brook reservoir, southwest of the city center, along the Middlefield town line. This was the City's first reservoir, constructed back in 1866. However, this reservoir currently provides water only in emergency situations due to the lack of filtration equipment. Its future use should be discontinued. The following table describes the maximum water availability from the different sources and compares it with the projected demand.

Table 12.2
Available Water and Projected Margin of Safety

Year	River Road Well Yield (mgd)	Higby Complex (mgd)	Total Available Water (mgd)	System Demand (mgd)	Projected Margin of Safety (mgd)
2004	7.83	1.09	8.92	4.23	2.11
2010	7.83	0.86	8.69	5.6	1.55

Source: Middletown Water Supply Plan Update, 1999

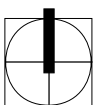
Table 12.2 shows that the City has adequate water to meet residents' and businesses' growing demands. The total available water for 2004 is 8.92 million gallons versus a system demand of 4.23 million gallons. Total available water decreases slightly to 8.69 mgd in 2010 due to maintenance of the Adder Reservoir, which explains the reduction in available water for the Higby complex. The system demand rises to 5.6 mgd in 2010, still well below the total availability. The projected margin of safety indicates that total available water exceeds the system demand by approximately 50%.



**MIDDLETOWN PLAN OF DEVELOPMENT
Middletown, CT**

**Figure 12.1
Water Service Area**

 **Water Service Areas**



0 5000 10000 15000 Feet

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Long-term future demand, 20-50 years from now, may be met by returning the Laurel Brook reservoir to active use by means of a filtration plant, and/or the drilling of two new wells within the River Road well field.

In order to safeguard the public drinking supply, the City has taken steps to prevent contamination of the area around the reservoirs and wellfield. The Middletown Water Department owns 98% of the land around the Mount Higby/Adder Reservoirs, and approximately 31% of the land surrounding the Laurel Brook Reservoir is owned by Middletown or Middlefield. Middletown rezoned its industrial land near the Laurel Brook reservoir to more restrictive industrial uses in order to proactively alleviate potential contamination sources. The City also amended Section 42 of the Zoning Code (Protection of Water Sources) to include watershed lands and aquifer protection areas. These measures will help to ensure safe drinking water in the future. The State of Connecticut has also begun the process of adopting aquifer protection area. CGS Section 22a-354i requires DEP to adopt regulations for land use controls in aquifer protection areas. (Aquifer protection areas consist of wellfields and surrounding areas.) The regulations must establish best management standards for existing regulated activities in aquifer protection areas. Such activities are those that involve the production, handling, use, storage, or disposal of materials that DEP determines, by regulation, may threaten groundwater in an aquifer protection area.

12.3 Sewer Supply

The Sewer Department, like the Water Department, operates under the direction of the Mayor and the Water Pollution Control Authority (WPCA). Middletown's Sewer Department has ten thousand customers made up of residential, commercial, and industrial users. The Department maintains approximately 130 miles of pipes, 15 pumping stations, and one treatment facility along River Road, near Walnut Street. Middletown is also a part of the Mattabasset District, a regional sewer authority. New Britain, Berlin, and Cromwell make up the other towns in the district, with the treatment facility located in Cromwell, along the Connecticut River. Middletown buildings situated roughly north of Westfield Street and west of Newfield Street send their effluent to the Mattabasset District rather than the River Road facility.

According to the Department, the River Road facility has capacity to treat additional effluent and can accommodate possible sewer extensions into the Maromas area, as well as other parts of the city. The treatment facility along River Road, however, is antiquated and may be abandoned. Due to its location along the Connecticut River near the downtown area, some development proposals have sought to redevelop the waterfront area by eliminating the present treatment facility and sending all of Middletown's wastewater to the Mattabasset District to be treated. The Mattabasset District has the capacity to accommodate the additional effluent. The City and the District have reached an agreement to send the city's sewage to the Mattabasset District treatment plant.

Figure 12.2 depicts the Sewer Department's service area. The map also shows planned service areas into the Maromas area as well as defining the maximum area to be served by public sewer. The goal of placing boundaries on the map is to limit the extension of sewer lines into the rural parts of the City. Sewer lines place development pressure on undeveloped land and allow higher densities than on-site septic systems would support. The residential land outside of the service boundary is largely zoned R45 and R60, requiring one to one and one-half acres per house, respectively. According to the information in the Land Use chapter, approximately 50% of this

land could be developed. Extending sewer lines into this area will likely speed the conversion of the land and adversely impact Middletown's rural character.

The Sewer Department has also been actively working on the combined sewer separation project. Because much of Middletown's sewer system is old, it was designed to handle both sanitary sewer and stormwater run-off. During heavy rains, the combined flow taxes the treatment facility. By separating the two, it improves the capacity of the existing treatment plant and ensures greater environmental protection during periods of heavy rains. Approximately 80% of the sewer system has now been separated.

The Health Department has received a number of complaints from residences along Virginia Drive that their septic systems are failing, and, in some cases, contaminating their wells. The Health Department has overseen the repair of a number of these systems. The long-term solution for this area may be to connect the existing homes to the public sewer system. Virginia Drive adjoins the sewer service boundary area so expansion of the district to include Virginia Drive is practical and feasible.

12.4 Other Services and Utilities

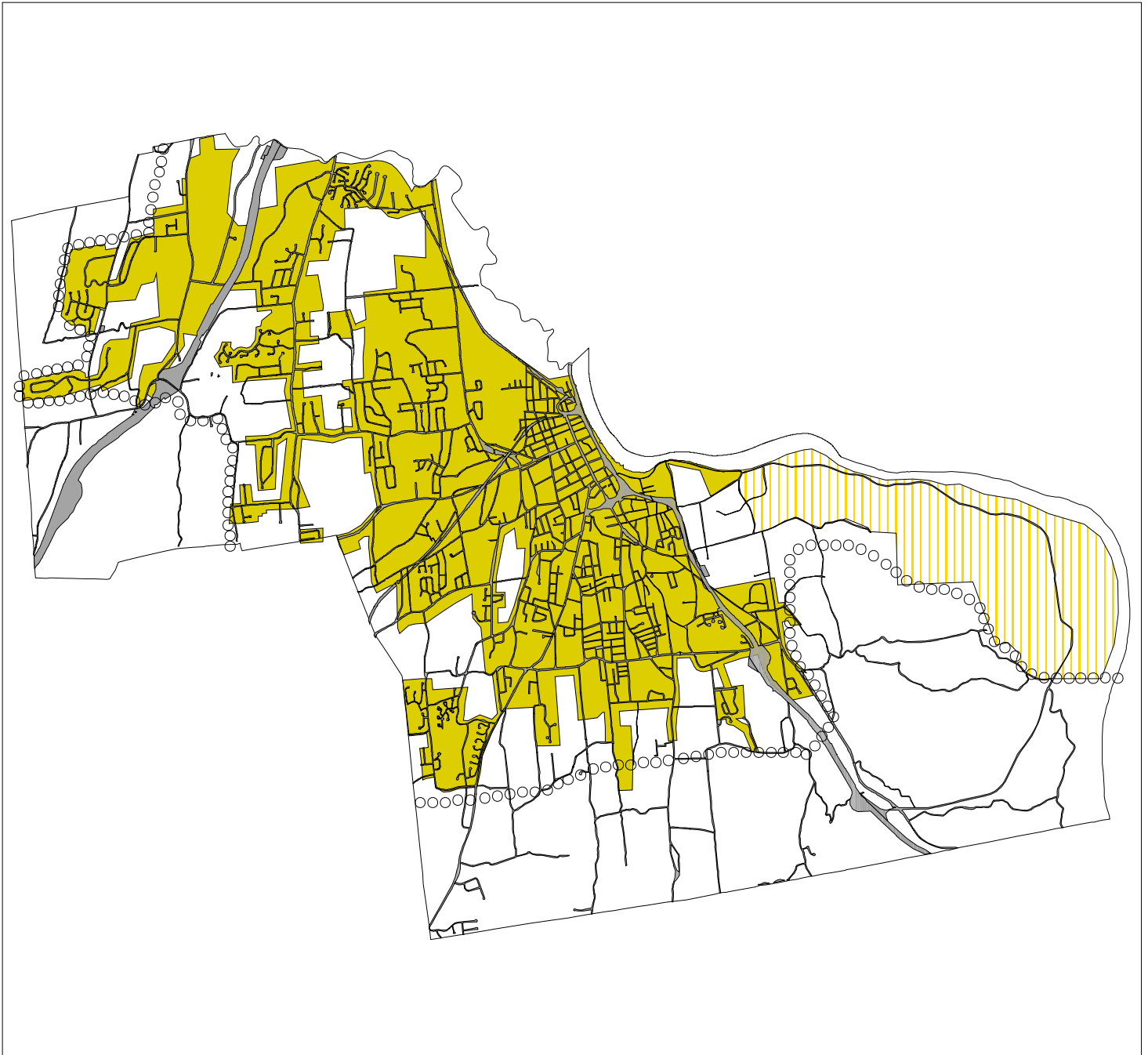
The Public Works Department provides a variety of services to city residents including sanitation and recycling collection, local street repair, maintenance of the municipal buildings, drainage systems, and street lighting. Additionally, Public Works employees carry out the planting and maintenance of street trees.

Currently Public Works only provides sanitation and recycling collection within the Sanitation District, which encompasses the older sections of town in and around the Central Business District, though plans are underway to expand that service to all one- to three-family residences throughout the city. About 12 private companies presently provide this service to most Middletown residents. The solid waste resource recovery facility is located in Lisbon, CT, and has been in operation for approximately 5 years. Bulk waste is collected once per year, free of charge.

Yankee Gas provides natural gas to Middletown residents. The existing line comes from Berlin and terminates near the Connecticut Valley Hospital. The Connecticut Light and Power (CL&P) plant along River Road switched to natural gas when a new line was installed from Portland, under the Connecticut River. Yankee Gas currently has plans to extend the line from the CL&P plant along River Road and up Silvermine Road to connect with the existing line. This 13,000-foot extension will create a loop system through Middletown and help to ensure adequate pressure throughout the city.

Middletown is one of the first localities in Connecticut to have broadband internet access. The city is leading the way for many other municipalities in the state with new, high-tech infrastructure. This investment will hopefully spur the growth of "new economy" enterprises in biotechnology, internet, and communications.

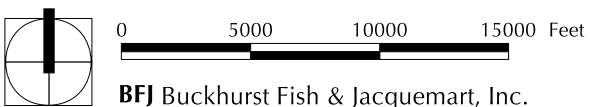
The City has also invested in new communication technology for its emergency services. Middletown and Portland share an intra-city central communications service which permits one center to respond to all police/fire/emergency calls within the city and town.



**MIDDLETOWN PLAN OF DEVELOPMENT
Middletown, CT**

**Figure 12.2
Sewer Service Area**

- Existing Service Areas
- Planned Sewer Extension
- Proposed Generalized Service Boundaries



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12.5 Summary

Middletown is well served by the existing utility networks. The water and sewer departments both have adequate capacity to serve existing and future populations for a number of years. The potential removal of the sewer treatment plant along the Connecticut River will free up a part of the waterfront for recreational activities and related development. The City is moving forward to expand city services and to make sure that the latest communication technology is available to residents.

Major Assets

- Adequate potable water capacity for anticipated growth over the next decade.
- Sufficient sewer treatment capacity to handle the increase from new developments.
- Broadband internet access.
- A street trees program.

Issues and Opportunities

- The Water Pollution Control Agency (WPCA) should carefully scrutinize any future extension of water or sewer areas.
- Extensions should be discouraged beyond these areas outside of the service boundary depicted on Figure 12.2.
- Extensions should be discouraged where zoning allows only low-density development, especially the R45 and R60 zones.
- Extensions could be promoted to developments that agree to cluster subdivisions.
- The City should work to remove the existing sewage treatment plant and to send its waste to the Mattabasset Regional Sewer Authority.
- The City should continue to invest in high technology (fiber optics, high-speed cable, cellular service) that will encourage additional investment in high-tech industries.