

X. THE PUBLIC UTILITIES PLAN

INTRODUCTION

The Public Utilities Plan required under Municipal Land Use Law provides information about existing and future facilities related to the infrastructure of the Borough. The components of the infrastructure directly impacting the health and general welfare of our residents and businesses in the community include:

- ◆ Water Supply
- ◆ Wastewater Treatment
- ◆ Stormwater Management
- ◆ Electric Utilities
- ◆ Wireless Telecommunications

WATER SUPPLY

Public Water

The Borough of Mendham lies within two (2) watershed areas:

- ◆ North Branch Raritan River Basin
- ◆ Whippany, Rockaway, Upper Passaic River Basin

Groundwater accounts for 99% of the water used in the Borough. The New Jersey American Water Company (NJAWC) which acquired the Borough water supply system in 1992 supplies potable water to 1819 customers in Mendham Borough.

With the acquisition in 1992, Mendham became part of the Short Hills Inter-Connect System of New Jersey American Water. This is a water piping supply system that runs from West Orange/Verona through Millburn, Long Hill, Basking Ridge, Bernardsville, and Mendham. The Inter-Connect System makes bulk purchases of water from the Morris Municipal Utilities Authority 24 hours a day, 7 days a week. The Inter-Connect System is open and flowing 365 days a year, 24 hours a day. This reliable and adequate inter-connect provides more capacity than existed prior to 1992.

Prior to the acquisition by NJAWC in 1992, all water came from four Production Wells located in Mendham Borough. They were:

| LOCATION | DEPTH | AVG YIELD PER DAY |
|---|----------|---------------------------|
| Knollwood Lane | 325 feet | 23,000 – 99,000 gallons |
| Mountain Valley | 325 feet | 23,000 – 76,000 gallons |
| Franklin Road | 500 feet | 36,000 – 96,000 gallons |
| Cherry Lane | 260 feet | Currently out of service* |
| * The Cherry Well could be used in an emergency | | |

As a result of this system, the Mendham wells only operate 120 – 150 days a year, which allows them adequate time to re-charge. When the Mendham wells are operating, they supply water only to the Mendhams. Mendham wells do not supply water to other towns in the system.

According to New Jersey American Water, all water supply is in full compliance with the Federal and State of New Jersey Safe Drinking Water Acts and with the regulations of the New Jersey Department of Environmental Protection. Water quality tests are performed regularly by NJAWC and include the following types of tests:

- ◆ **Microbiological Contaminants:** Samples are collected and tested for coli form bacteria each month from business establishments throughout the Borough. These samples are also tested for chlorine residual to ensure that proper disinfection levels are kept within the distribution system.
- ◆ **Inorganic Contaminants:** Contaminants such as salts and metals can be naturally occurring or may result from stormwater runoff, industrial or domestic wastewater discharges. The Borough’s source water is monitored for 31 of these contaminants.
- ◆ **Organic Chemical Contaminants:** These contaminants include synthetic and volatile organic chemicals, pesticides, and herbicides which can come from agriculture, runoff, industrial processes, or gas station runoff. The water company monitors 81 of these contaminants.
- ◆ **Radionuclides:** These contaminants can occur naturally or may be the result of oil and gas production or mining activities. New Jersey American Water monitors the Borough’s source well water for Beta/photon emitters, Gross Alpha particles, combined radium 226/228, and uranium.
- ◆ **Secondary Contaminants:** In addition to the above listed parameters that are tested to ensure public health, the water company tests 16 “Secondary Contaminants” that do not pose a health risk but may affect the aesthetic quality of the water such as taste, odor, or color.

The results of these tests are compiled throughout the year and made available to the public at the water company’s website: www.njawater.com.

Private Water

A few areas of the Borough are served through private wells. There are currently 15 locations in Mendham Borough that use private wells and the residences in these areas are not serviced by NJAWC.

Regional Considerations

With Mendham Township geographically surrounding Mendham Borough, we share underground water resources. The Borough should continue to work with all our neighboring communities and agencies to protect long-term water resource availability and quality.

WASTEWATER TREATMENT

The Borough's sanitary sewer collection and treatment system was constructed approximately 40 years ago. The treatment plant, owned and operated as a separate utility by the Borough, is located on a 24-acre tract on Ironia Road. The plant serves approximately 88% of the existing homes in the Borough. The costs of maintaining this facility and the underlying infrastructure are borne by the residents in the sewer service area as shown on Exhibit #15, *Sewer Service Area*.

The wastewater collection system consists of approximately 24.8 miles of gravity sewer predominantly consisting of 8-inch diameter vitreous clay pipe, 581 manholes, and 5750 feet of forcemains. The design capacity of the plant is 500,000 gallons per day. The plant operates under a New Jersey Pollutant Discharge Elimination System (NJPDES) permit and has a permit capacity of 450,000 gallons per day. The size and flow of India Brook, a Class One trout stream, is the constraining factor for the volume of effluent that may be processed by the plant. Due to NJDEP regulations, there are no further increases expected.

Borough Actions

Many years ago, the Borough recognized the constraints on the wastewater system. In 1988 a sewer ban was put in place. This ordinance, #168-47, restricted any new connections without approval from the Council and identified specific criteria that must be met for an approval to be granted.

Five million dollars has been spent in upgrading the water reclamation facility since 1999. These renovations, designed to improve effluent quality, have included:

- ◆ Upgrading the plant's ultra-violet disinfection system
- ◆ Replacement of main raw sewage pumps with piping modifications
- ◆ Construction of a concrete anoxic tank, two final clarifiers, and a return sludge pump station
- ◆ Installation of an emergency generator

With all of the treatment system (above ground) improvements close to completion, a plan is being developed to refurbish our aging sewer collection system (under ground). Many developed communities throughout the state are facing this issue. Some communities with available land have elected to install surge tanks, some have moved to septic systems as an lternative, and others have upgraded the underlying pipe system. Recent engineering studies have found that the Borough's existing collection system is plagued by serious infiltration of groundwater and inflow of surface runoff during rain events or snow melts. This infiltration and inflow (I&I) have created operational challenges and regulatory concerns due to exceeding the permitted capacity of the plant. The flow data is monitored daily and monthly; reports of daily averages are produced. The data shows that a combination of high seasonal water usage from public and private users and I&I volume result in the plant exceeding its 450,000 gallon per day average limit imposed by the state permit. The Borough faces the possibility of daily fines by the State due to this non-compliance.

The Borough has recently decided to undertake a systematic I&I analysis. Areas where infiltration is most likely are being identified and the Borough will begin a project to evaluate the best methods to reline aged and cracking sewer mains, lining of manholes, and possible replacement of laterals.

Fixing these sewer lines to decrease infiltration will not increase the capacity of the plant. The plant cannot be expanded due to the environmental sensitivity of the receiving waters, India Brook, regulated as a Category 1 Trout Production Stream.

Land Use

The Master Plan Committee does not foresee any volume decreases on the future demand of sewage flow. The demand on the wastewater sewer load in the residential zone is likely to increase because of the following: larger homes are being built on smaller lots, smaller homes are being torn down and replaced with larger homes, single-family homes are being renovated and expanded, and an increasing number of residences are being used for home offices. Land use changes are occurring and will continue to occur that inherently add to the burden on our wastewater system.

The business community has been most impacted by the sewer ban. Each time a business changes hands, the new owner must demonstrate that their sewer flow will not exceed that of the previous use. The sewer flow calculations are based on NJDEP design criteria. This prohibits any business type that increases water usage from opening in our town. The quality of life of Borough residents is impacted when new restaurants, ice cream parlors, hair salons, etc. cannot be given approvals to open their business in Mendham Borough and the land use becomes imbalanced by the proliferation of a single type of use (e.g. banks, realtors).

On-site septic disposal issues may arise for new residential uses, either sub-divisions or existing lots, due to the NJDEP limits and the Borough restrictions on sewer connections. Therefore, the Borough will need to revisit and reexamine the on-site septic disposal and sewer connection ordinances to assure groundwater protection.

The refurbishing of the collection system is one of the most serious issues facing the Borough. The methods of improvement that are being undertaken by the Borough will hopefully create a cushion against the 450,000-gallon ceiling. When the infiltration problem is fixed and if, at that time, there is latitude for reconsidering the criteria in the sewer ban ordinance, connections in the commercial business zone should be considered to allow for a greater diversity of appropriate businesses.

STORMWATER MANAGEMENT

The Municipal Stormwater Plan documents the strategy for Mendham Borough to address stormwater related impacts. The creation of this plan is required by state stormwater regulations. The plan addresses groundwater recharge, stormwater quantity, and stormwater quality impacts by incorporating stormwater design and performance standards for new major developments. This plan, required by NJAC 7:14A-24, was prepared by our Borough Engineer and adopted in March, 2005 as an addendum to the Master Plan.

Insert Exhibit #15 sewer service

ELECTRIC UTILITIES

The Borough is served by overhead electric utilities in the older areas of the community. Newer subdivisions have underground wiring. Service is provided through JCP&L.

JCP&L's substation is located at the east entrance to our community. Its appearance as a utility plant should be well disguised. The landscaping around the substation should be improved in concert with it being part of the gateway entrance to our historic community, and regular maintenance should be performed to improve the aesthetics on this site.

WIRELESS TELECOMMUNICATIONS

Wireless telecommunications have become an increasingly important element of life in the 21st century, and the residents of Mendham Borough have benefited from, and need to continue to benefit from, the convenience and flexibility provided by this technology. Mendham Borough is cognizant of its obligations under the Federal Telecommunications Act of 1996; however, the proliferation of wireless telecommunications towers has a negative impact on historic Mendham Borough.

EXISTING FACILITIES

On November 7, 1996, The Board of Adjustment of Mendham Borough approved the construction of a Wireless Communications Facility (WCF), Cell Tower, to be located on property owned by The Community of St. John Baptist. The property is designated as Lots 5 and 5.01, Block 1800 on the Tax Maps of Mendham Borough. The property totals 18.1 acres at the western boundary of Mendham Borough with Mendham Township.

Three (3) companies in partnership, Bell Atlantic Nynex Mobile, AT&T Wireless Services, and Sprint Spectrum L.P., made the application to construct a bell tower structure to house wireless antennae. Three (3) equipment shelter structures were also to be constructed at the site.

The original facility was built in 1997. The bell tower structure is now 145 feet in height and houses three (3) antenna arrays. The co-location of three (3) wireless carriers at one facility eliminates the proliferation of antenna and support systems in the Borough. The coverage pattern of the antenna transmits 360 degrees.

There have been numerous mergers and acquisitions in the telecommunications industry since the construction of this tower and its antenna. Bell Atlantic Nynex Mobile is now part of Verizon and AT&T Wireless Services is now part of Cingular. The same number of antennae is being used thereby giving the merged carriers more capacity. The carriers are all engaged in interstate commerce and are part of the National Switching Network that provides vital communications including the 911 emergency networks.

The construction of this facility eliminated two (2) lawsuits brought by the carriers, one against Mendham Borough and one against Mendham Township, for denials of previous applications for the construction of wireless communication facilities. These lawsuits were the result of the carriers trying to close gaps in the wireless coverage in the area of the two (2) municipalities. The carriers contended and the Borough agreed that the approval of this facility was in keeping with the federal mandate that wireless communications be available for all citizens in the country (S.652, Sec.704 1966 Telecommunications Act).

PROPOSED FACILITIES

The construction of these facilities anywhere along the Main Street Corridor has a negative impact on the scenic and historic nature of the Borough. Any proposals for the siting of additional wireless telecommunications facilities must demonstrate any gaps in Borough coverage. They should consider the following items that are critical to the preservation of the character of the Borough:

- ◆ Proven need for specific siting of proposed equipment/facilities.
- ◆ Any new antennae and/or towers must be designed with stealth characteristics to minimize the visual impact of the facilities.
- ◆ The wireless facilities should be designed to provide coverage within the Borough. The installation of wireless telecommunications facilities inside the Borough to provide service outside of the Borough creates a negative visual impact on the Borough and can potentially negatively impact property values without providing a benefit to the Borough or its residents.
- ◆ Wireless telecommunications antennae on existing structures or towers shall be located, designed, and screened to blend with the existing natural or built surroundings so as to minimize visual impacts. This can be accomplished through the use of color and camouflaging, architectural treatment, landscaping, and other available means. All of these need to be compatible with neighboring residences and the character of the community.
- ◆ Any potential sites for cellular facilities along the Main Street Corridor or in the Historic District should be set back a sufficient distance to minimize any visual impact.
- ◆ As technology advances and any wireless or wired structures become obsolete, the utilities should be required to remove the equipment.