

Master Plan Element Section VI

Utilities Plan Element

Adopted December 15, 2021

Township of West Windsor | Mercer County, New Jersey





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Utilities Plan Element of the Master Plan

Township of West Windsor
Mercer County, New Jersey

Prepared for the Township of West Windsor
Planning Board

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Section 1: Introduction

The following section provides an introduction to the 2021 Township of West Windsor Utilities Plan Element of the Master Plan.

1.1: Introduction to the Plan

The effective management of wastewater, water supply, stormwater, energy, and communication utilities as well as solid waste disposal is essential for healthy community development. In order to address ever-evolving development patterns, changing socioeconomic trends, on-going development pressures, and various judicial, legislative, and administrative actions, the planning of utility systems must be revisited on a periodic basis.

Thus, the following 2021 Utilities Plan Element of the Master Plan has been prepared to ensure the proper management of these systems. Historically, extensions of utility systems throughout the Township have been constructed by private interests to serve various developments. The construction of these systems has been in conformance with the Township's technical standards and, to the greatest extent practicable, has also largely been in conformance with the Township's Master Plan.

Today, the ownership, operation, and maintenance of these systems are associated with a variety of different entities. Significant portions of the Township's wastewater and stormwater utility systems are the responsibility of West Windsor. However, some portions of the wastewater system within the Township remain with various private owners, while other portions of the stormwater system remain with existing homeowner's associations. Meanwhile, the ownership, operations, and maintenance of water for consumption and for fire service are the responsibility of New Jersey American Water, a private corporation under a franchise agreement governed by the State Board of Public Utilities.

A consistent theme of this 2021 Utilities Plan Element is the consideration of the visual impacts of above-ground utilities. The placement of all utilities underground has been promoted in the Township's regulations and substantially accomplished for new development. The relocation of existing above-ground utilities is also strongly encouraged when new development or redevelopment occurs in the area.

The following Utilities Plan Element of the Master Plan is divided into the following sections:

❖ [Section 1: Introduction and Overview](#)

The remainder of this introductory section discusses what a master plan is, as well as the statutory requirements for master plans and utility elements in particular.

❖ [Section 2: Goals and Policies](#)

Next, Section 2 outlines the goals and policies of the Township of West Windsor as they relate to its utilities.

❖ [Section 3: Wastewater Management](#)

Section 3 discusses the Township's management of wastewater as it relates to the Mercer County Wastewater Management Plan, wastewater conveyance, and wastewater treatment.

❖ [Section 4: Water Supply](#)

Section 4 discusses the management of the Township's water supply.

❖ [Section 5: Stormwater](#)

Section 5 provides a brief overview of stormwater collection and conveyance.

❖ [Section 6: Wireless Telecommunications](#)

Section 6 provides a brief overview of wireless telecommunications.

❖ [Section 7: Solid Waste Disposal](#)

Section 7 discusses solid waste disposal.

❖ [Section 8: Electrical, Natural Gas, and Renewable Energies](#)

Section 8 provides information on electrical, natural gas, and renewable energies.

❖ [Section 9: Recommendations](#)

Finally, Section 9 offers several recommendations regarding general utility systems, wastewater, water supply, and stormwater.

1.2: Overview of a Master Plan

The Municipal Land Use Law (MLUL), which serves as the guiding legal document for planning and zoning throughout the State of New Jersey, identifies a master plan as:

"...a composite of one or more written or graphic proposals for the development of the municipality as set forth in and adopted pursuant to section 19 of P.L. 1975, c.291 (C.40:55D-28)."

In other words, a master plan is a comprehensive, long-term strategic document which is intended to guide the growth and development of a community. It is essentially a roadmap which identifies where a municipality presently is and where it wishes to be in the future. A master plan develops the general parameters around which development is to occur and, specifically, where different types of development should occur. By doing so, a master plan ultimately links a municipality's land use vision to its existing and proposed zoning regulations.

Therefore, master plans ultimately provide municipalities with the legal basis to control development through the adoption of land use ordinances which are designed to implement its goals, policies, and recommendations.

As established by NJSA 40:55D-28 of the MLUL, the planning board is the designated entity responsible for the preparation and adoption of a master plan. A master plan must be adopted at a public hearing after proper public notice, thus ensuring that the community has an opportunity to contribute, ask questions, and offer recommendations.

The MLUL further identifies the mandatory contents of a master plan, which include:

- ❖ A statement of objectives, principles, assumptions, policies, and standards upon which the constituent proposals for the physical, economic, and social development of the municipality are based;
- ❖ A land use plan;
- ❖ A recycling plan, and;
- ❖ A housing plan.

In addition, the MLUL identifies a number of other optional plan elements which may be incorporated into a comprehensive master plan. These optional elements include the following. As shown, a utilities element is optional.

Economic development	Circulation	Open space
Recreation	Community facilities	Historic preservation
Downtown development	Farmland preservation	Utilities
Stormwater Management		

1.3: Utilities Plan Element Requirements

Furthermore, the MLUL at NJSA 40:55D-28.b(5) identifies the requirements of a utilities plan element. Specifically, the MLUL notes that a utilities element should analyze:

"...the need for and showing the future general location of water supply and distribution facilities, drainage and flood control facilities, sewerage and waste treatment, solid waste disposal, and provision for other related utilities, and including any stormwater management plan required pursuant to NJSA 40:55D-93..." (40:55D-28.B(5))

The MLUL further specifies that if a municipality prepares a utility service plan element as a condition for adopting a development transfer ordinance, the plan must address the provision of utilities in the receiving zone. Due to the breadth and depth of content required to be covered under the subject of stormwater management, the subject matter is addressed separately and in greater detail within the Stormwater Management Plan Element.

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Section 2: Goals and Policies

The following section outlines the goals and policies of the Township of West Windsor as they relate to utilities.

The following goal and associated policies are hereby established for the Township of West Windsor as they relate to utilities.

Goal A:

Ensure that the provision of existing and future utility service throughout the Township improves the quality of life for the community while also avoiding negative environmental and economic impacts.

Policy 1: Continue to encourage clustering where appropriate as a design technique to help preserve open space, protect environmentally sensitive areas, and reduce infrastructure and maintenance costs. Encourage efficiencies in the design of new development that will minimize public service costs.

Policy 2: Maintain master utility plans and ordinances, which will provide cost effective service for current and future Township needs.

Policy 3: Municipal policy has been, and continues to be, not to fund the extension of utilities. Developers or individual property owners must extend utilities at their own cost.

Policy 4: Promote utility construction and relocation to be underground including existing above-ground telephone and electric lines.

Policy 5: Coordinate utility services with other private and public agencies where beneficial.

Policy 6: Where new wireless telecommunications facilities are required, they should be co-located on existing buildings and structures such as utility transmission towers. If a new tower or monopole is necessary because of radio frequency requirements, it should be capable of accommodating additional carriers so as to limit the number of towers within West Windsor.

Policy 7: Continue to encourage the utilization of the Township's Green Development Practices Checklist (https://www.westwindsornj.org/images/Forms/Green_Development_Checklist.pdf) in order to promote sustainable and environmentally-friendly development and redevelopment.

Goal B:

Ensure the provision of adequate and appropriate wastewater treatment, water supply, and stormwater utilities systems to protect the public health, safety, welfare, and the natural environment in a cost effective manner.

Policy 1: Ensure that moderate and higher density developments are adequately served by public water, sewer, storm drainage, and other utility systems in an economical and coordinated manner, as well as in a manner consistent with the Mercer County Wastewater Management Plan.

Policy 2: Ensure that development proposed in septic service areas adhere to strict environmental performance standards and follow sound septic management techniques to assure high levels of water quality to ground and streams.

Policy 3: Utilize best management practices for: efficient conveyance of wastewater; efficient distribution of potable water; efficient and responsible collection and conveyance of stormwater runoff; and environmental protection.

Policy 4: Coordinate the construction and installation of improvements to ensure that utility services are in good condition and available when needed. Road projects should not proceed until underlying storm sewers, sanitary sewers, and other public utilities are investigated and repaired, as may be necessary.

Policy 5: Coordinate utility services with other private and public agencies where beneficial.

Policy 6: Maintain the adequacy and safety of existing and proposed culverts and bridges, dams, and other drainage structures.

Policy 7: Maintain the integrity of stream channels for their natural functions, including drainage and ecological purposes.

Policy 8: Continue to design sewer flow and sewer system expansion based on a gravity flow design wherever possible and practical.

Policy 9: The Township is not interested in taking ownership over private sanitary systems.

Policy 10: Encourage the decommissioning of all pump stations in preference of gravity flow.

Section 3: Wastewater Management

The following section discusses the Township's management of wastewater as it relates to the Mercer County Wastewater Management Plan, wastewater conveyance, and wastewater treatment.

3.1: Wastewater Management Plan

Municipal wastewater management planning is controlled by the New Jersey Department of Environmental Protection's (NJDEP) review and approval of a regional Water Quality Management Plan. Consistent with the 2012 Water Quality Planning Act, Mercer County is the entity responsible to the NJDEP for the Township's Wastewater Management Plan, which is also known as a "208 Plan" from its legislative authorization. Water quality planning consists of establishing protective measures for both surface waters and groundwaters. The conveyance, treatment, and re-entry of treated wastewater to the environment are addressed by the Water Quality Planning process. The Mercer County Wastewater Management Plan (WMP) (<https://www.mercercounty.org/departments/planning/plans-and-reports/wastewater-management-plan>), an areawide plan for all of Mercer County, was first adopted in 2013, and replaced all local plans.

The Township's chapter in the WMP identifies two (2) categories of wastewater treatment: those areas of the Township which are approved to be served by public sewers, and those areas which are to be served by on-site disposal systems (otherwise known as septic systems). The designation of these areas is intrinsically linked with environmental conditions as well as the Township's Land Use Plan and land use development regulations. These areas are identified on the accompanying Sanitary Sewer Map located in the Appendix of this document.

The process of reviewing and approving the WMP is a dynamic one. Amendments to the Plan are periodically proposed and approved to address evolving environmental, land development, and zoning issues. There are presently developed properties on septic systems within the Township which are within a designated public sewer area. Specifically, there are more than one thousand (1,000) single-family dwellings with septic systems within the northerly and easterly portions of West Windsor built within the past thirty (30) years located within an approved public sewer service area. Groundwater quality within this area, as well as surface water quality downstream, have been monitored for more than twenty (20) years. These properties remain on septic because there are not, as of yet, sufficient collection and conveyance systems in place in these areas to facilitate their connection to public sewers. Septic system rehabs and replacements do occur on a routine basis and within the expected percentages, and thus do not indicate any threat to water quality.

Recent amendment to the WMP includes several features within Mercer County Park (served by the Hamilton Township Water Pollution Control Facility). These enhancements are in recognition of the park's growth in servicing the active and passive recreation and entertainment needs of residents in the region. Similarly, the Township has begun the WMP amendment process for the Conover Road Recreation Fields, located at the corner of South Post Road and Conover Road (identified by municipal tax records as Block 24.14 Lot 24.01), after acquiring the property from Mercer County. This amendment is to allow for water and sewer extensions to the property in accordance with the anticipated future needs.

The Reserve at West Windsor property at the corner of Old Trenton Road and Dorchester Drive (identified by municipal tax records as Block 37 Lot 7) also requires a WMP amendment in order to allow for a planned age-restricted residential development in accordance with the Township's 2019 Housing Element and Fair Share Plan. The property was formerly within the Township's 208 Plan but was removed by the State following the adoption of Water Quality Planning Act due to a portion of the land having environmental constraints. The proposed WMP amendment would exclude constrained lands on the property from the developable area.

3.2: Wastewater Conveyance

The Township of West Windsor owns and maintains more than one hundred (100) miles of underground wastewater collection and conveyance pipes as well as six (6) pumping stations, all of which collect and convey waste from homes and businesses within its municipal borders. Furthermore, there are privately owned and maintained sewer mains and pumping facilities within office parks, corporate campuses, educational campuses, and larger high-density residential developments.

While the initial deployment of the Township's conveyance system began in the 1970s, it has been built predominantly by private development funds over the past thirty-five (35) years, under the jurisdiction of the Township and subject to compliance with NJDEP regulations. A master plan based on multiple drainage basins, which favored gravity flow and minimized pump stations, has been followed to the greatest extent feasible. Those pump stations which have been constructed were located and designed to be abandoned when in-fill development brought master planned gravity trunklines within close proximity to them. Easements for the master planned system have been secured as properties have been proposed for development.

The Utilities Plan Element of the Master Plan continues the intent of the long-term economy of a gravity conveyance system. Underlying original studies for the wastewater master plan of West Windsor Township are represented in the following documents. These studies have subsequently been updated.

- ❖ For the Stony Brook Drainage Basin, "May 1975 Status Report of Sewerage Facilities" by Ditmars and Carmichael 1975, amended January 1976, and associated addenda.
- ❖ For the Assunpink Drainage Basin, Assunpink Drainage Basin Study - Sewer Master Plan Revisions, Phase II Report," dated February 1, 1982, by Fellows, Read and Associates.
- ❖ Sanitary Sewer Flow Map of West Windsor Township, January 2000.

Land use development patterns throughout West Windsor over the past thirty-five (35) years, as well as evolving land use preferences, land development regulations, and environmental protection regulations, have modified the requirements for the Master Plan Wastewater Collection System. Portions of the conveyance system are reaching capacity. Moreover, portions of the master planned gravity system may not be built for an extended

period of time. Some of the “temporary” pump stations that have been in operation for thirty years may be required for additional extended periods due to the extensive cost and permitting requirements of eliminating them and extending gravity interceptors. The modification and modernization of some of these facilities have already commenced with developer funding.

Expected near-term improvements to the system as of the time of preparation of this Utilities Plan Element include:

- ❖ Permitting, bidding and construction to decommission the Duck Pond Run Pump Station - the largest of the municipal pump stations - and converting flow to gravity conveyance. Besides the long-term reduction in municipal costs of maintaining a “temporary” pump station, this improvement will increase flow into the D&R Canal Interceptor (thereby addressing low flow conditions there) and free up flow capacity in the Washington Road and Millstone Interceptors.
- ❖ A recent study of the Southfield Road Pump Station drainage area has determined that improvements to the Southfield Road Pump Station and downstream infrastructure, including gravity mains which are tributary to the Assumpink Interceptor and the South Post Road Pump Station, are required in order to service projects planned in accordance with 2019 Housing Element and Fair Share Plan, as well as non-residential properties planned for development within the drainage area. Consistent with past practice, the Township will establish a pro rata fair share reimbursement procedure for costs to implement study-recommended improvements through the adoption of an appropriate ordinance, as is consistent with Goal A, Policy 3 of this Utilities Plan Element.
- ❖ Atlantic Realty, the purchaser of the former Howard Hughes tract located near the intersection of US Route 1 and Quakerbridge Road (County Route 533), has begun preparing preliminary conceptual and engineering plans for a warehouse and distribution center consistent with the property’s recent rezoning. This development will result in the decommissioning of the on-site wastewater treatment plant and the extension of the South Branch of the Duck Pond Run Sewer Interceptor. Environmental constraints may result in deviations from the master planned alignment for the Interceptor, but the requirement to achieve sewerage of other area properties remains required. The Township would establish a pro rata fair share reimbursement procedure for costs to achieve sewerage through the adoption of an appropriate ordinance, as is consistent with Goal A, Policy 3 of this Utilities Plan Element.

3.3 Wastewater Treatment

The vast majority of wastewater generated within the Township is treated at a facility located on River Road in Princeton. This facility is operated by the Stony Brook Regional Sewerage Authority (SBRSA). West Windsor is one of seven (7) municipal members of the SBRSA. As per its charter, SBRSA must take the flows that member municipalities send.

The Township's wastewater is conveyed from its conveyance piping to a SBRSA trunkline via Meter Station #7 (located off of Alexander Road) and the Millstone Pump Station (located off Harrison Street). From those locations, it is then distributed to the SBRSA River Road treatment plant (NJPDES Permit #NJ00331119). The Township's wastewater flow, which now exceeds 2,300,000 gallons per day (GPD), is expected to increase as commercial and residential developments continue to be approved in the public sewer service area of the Township. Properties in the Township which have received preliminary and final site plan approval but have not yet been constructed hold reservations of treatment capacity that are in excess of two hundred and fifty thousand (250,000) gallons per day. Mercer County, in collaboration with Township staff, is presently working on a full buildout of West Windsor's remaining undeveloped land to determine its additional wastewater flow.

In consideration of the above, discussion with the seven-member municipalities of the SBRSA is warranted in order to evaluate the capacity and timing for facility upgrades that would be required in order to accommodate the build-out sewage flow from West Windsor. Once the available capacity is reached, SBRSA would be obligated to make improvements and expansions at their facility to accommodate additional flow.

Furthermore, the Township's chapter in the Mercer County WMP identifies several properties within West Windsor which are served or approved to be served by other wastewater treatment agencies. This includes the following:

- ❖ Hamilton Township treats the wastewater generated by the Mercer County educational facilities in the southwesterly corner of the Township. One residential property on Line Road has successfully negotiated a connection into the Robbinsville Township system, which drains to the Hamilton treatment plant. A number of additional single-family residential properties in the Old Trenton Road area, located to the west of Windsor Road, have been approved for sewer service, with eventual treatment via Hamilton. However, no formal designs or agreements with Robbinsville and Hamilton Townships have been undertaken.
- ❖ The Ewing - Lawrence Sewerage Authority (ELSA) currently receives and treats the wastewater from two commercial properties along Quakerbridge Road: a PNC Bank located at 4200 Quakerbridge Road (identified by municipal tax records as Block 7.16 Lot 1.01) and a medical office building located at 4065 Quakerbridge Road (identified by municipal tax records as Block 23 Lot 91). ELSA has expressed reluctance in accepting additional Township properties into their treatment facility's drainage area.
- ❖ The Atlantic Realty Site is approved to treat the wastewater from its own facilities at an onsite plant. However, permits have been pulled by the current owner to demolish all the buildings on the property. The plant has been inactive for a number of years and is limited in expansion potential. As previously noted, the proposed future development of the site will require connection to the public sewer system through the Duck Pond Run (south branch) Interceptor line.

Section 4: Water Supply

The following section discusses the management of the Township's water supply.

4.1: Introduction

Potable water for consumption and fire-fighting is provided in most of the developed portions of the Township by an underground piping system which is owned, operated, and maintained by New Jersey American Water (formerly the Elizabethtown Water Company). Furthermore, there are also a limited number of residential neighborhoods within the Township which have individual on-site wells.

4.2: New Jersey American Water

The New Jersey American Water system is interconnected with adjoining municipalities, which are also served by the company. The long-term availability of water is presently not an issue, as their piping network is supplied by both deep wells and surface water sources. These wells and water sources are predominantly located outside of West Windsor, except for several wells located in the northwesterly corner of the Township near Harrison Street which are utilized intermittently. The water supply system is shown on the following Water Distribution Map located in the Appendix of this document.

4.3: On-Site Wells

Properties with on-site wells are located in the older developed portions of the Township which are also served by septic systems (e.g., Cubberly Road, Joanne Street, South Post Road, South Lane, Windsor Road). In March 2001, the New Jersey Private Well Testing Act (PWTA) was signed into law, and its regulations became effective in September 2002. The PWTA is a consumer information law that requires sellers (or buyers) of property with wells in New Jersey to test their ground water for a variety of water quality parameters, and to review the test results prior to closing of title. Landlords are also required to test their well water once every five (5) years and to provide each tenant with a copy of the test results.

The extension of public water systems to these areas would serve to reduce potential hazard risks and increase public safety by providing hydrants for fire-fighting. However, developers or individual property owners would be responsible to extend the utility at their own cost. The responsibility for providing water is solely with New Jersey American Water, which maintains a master plan for their system within West Windsor Township. No separate master plan is maintained by the Township.

Section 5: Stormwater

The following section provides a brief overview of stormwater collection and conveyance. Due to the breadth and depth of content required to be covered under the subject of stormwater management by N.J.A.C. 7-14A-25 *Municipal Stormwater Regulations*, the subject matter is addressed in greater detail within the Stormwater Management Plan Element, first created and adopted in 2005.

5.1: Introduction

The Township of West Windsor is located on a drainage divide in central New Jersey. Precipitation falling in the westerly and southerly portions of the Township runs off to watercourses tributary to the Delaware River, primarily Assunpink Creek. The northerly and easterly portions of the Township drain to watercourses which flow to the Delaware and Raritan Canal and the Millstone River. These watercourses include Big Bear Brook, Little Bear Brook, and Duck Pond Run.

The relatively flat topography of the Township would provide substantial opportunities for flooding if not for the construction of onsite stormwater management facilities as development occurs. Stormwater management facilities provide flood protection, promote groundwater recharge, prevent soil erosion, and enhance the quality of groundwater and surface water. Recent regulations enacted by the Township require the use of green infrastructure best management practices (BMPs) to satisfy groundwater recharge and water quality standards. A green infrastructure BMP is one that manages stormwater close to its source by treating runoff through filtration by vegetation or soil, infiltration into subsoil, or storing runoff for reuse. Examples of green infrastructure include bioretention basins, rain gardens, permeable pavement, downspout planters, stormwater planters, street tree trenches, green roofs, and cisterns.

5.2: Flood Control

There are relatively few known impacts to buildings in the Township during storm events from flooded watercourses. The majority of these properties are located within the floodplain of the Little Bear Brook in the area of Alexander and Washington Roads. They were developed at a time before current flood hazard regulations. Per the Mercer County Office of Emergency Management and the National Flood Insurance Program (NFIP), there are a total of one hundred and thirty-eight (138) properties within the Township with NFIP policies in effect in 2021.

In 2015, the Township retained the firm SWM Consulting to study the Little Bear Brook. The resulting “Little Bear Brook Flood Hazard Assessment, Phase I – Little Bear Brook and Millstone River” study ultimately determined that flooding is not caused by any deficiency with Little Bear Brook, but rather is due to the excessive flows and flood water levels associated with the Millstone River. The study also concluded there are no relatively cost-effective means of addressing or preventing the floods from the Millstone River from occurring.

Several roads in other low-lying areas within the Township do flood with some regularity, which in turn compromises emergency services. Flooding also currently occurs on: Penn Lyle Road and North Post Road at Duck Pond Run; Washington Road, Bear Brook Road, and Alexander Road at Little Bear Brook; Clarksville Road at the Atlantic Realty Site; and Clarksville Road at Grover's Mill Pond. Some of this flooding has been found to be attributed to beaver dams constructed along these waterways, or within the County bridge structures. These dams – combined with downed trees, branches, and other debris resulting from Hurricane Irene in 2011, Superstorm Sandy in 2012, and several winter nor'easters – raise the normal water surface elevation and reduce the carrying capacity, thus resulting in flooding. The following streams are believed to be currently affected by such blockages:

- ❖ Little Bear Brook – between Alexander Road and Washington Road;
- ❖ Little Bear Brook – between Washington Road and Millstone River; and
- ❖ Bridegroom Run – between South Lane and Old Trenton Road.

One obstacle to cleaning these streams is the NJDEP permit and approval process, which is both time-consuming and expensive. Cleaning streams also requires unrestricted access to the water as well as a means of transporting and disposing all of the removed debris, which may require temporary easements on privately owned land. Efforts may also be met with vocal objections from residents with concerns regarding environmental protection and preservation. It is recommended to include these types of projects in the municipal capital budget process, beginning with assessments and surveys of the waterways. The Township should also begin to educate residents on the benefits of stream cleaning, such as the abatement of flood damage and reduction in environment conducive to mosquito breeding.

The existing major flood control facilities in the Township include Grover's Mill Pond Dam on the Big Bear Brook and the Lake Mercer Dam on the Assunpink Creek. These facilities are owned and maintained by the Township and Mercer County, respectively. Water from Grover's Mill Pond overtops Clarksville Road at Grover's Mill Dam during larger storm events. The facility was significantly improved and "hardened" by the Township as part of a 2005 capital project. As a part of that project, the outlet structure was repaired, a sluice gate added, and both the upstream and downstream embankments were armored against erosion. Regular inspections of the dam are performed in compliance with State regulations, and identified deficiencies and repairs addressed through the Township's capital budget process.

A fortunate result of the Township developing later in the 20th century has been that, as development in the Township has occurred, on-site stormwater management facilities for each development have been required by municipal, county, and state agencies. These facilities typically include vegetated swales, collection and conveyance systems, and stormwater management facilities; typically, detention (dry) or retention (wet pond) basins. Recent regulations require new facilities to utilize green infrastructure techniques. The Township is responsible for the maintenance of many of these facilities in residential neighborhoods. Funding for maintenance was provided by annuities established by developers prior to transferring ownership of open space areas to the Township. That program proved successful, with funds far outlasting their projected life span. Recently,

those funds have been expended and maintenance of facilities incorporated into the annual budget process. Recent regulations will require private facility owners to begin regularly reporting their annual inspection and maintenance of each facility to the Township.

Neither the frequency nor the magnitude of flood events in West Windsor Township has changed to a noticeable degree during the past forty (40) year-period of significant land development. Nevertheless, the use of best management practices including prohibition of construction within floodplains and the development and maintenance of stormwater management facilities must be continued.

5.3: Groundwater Recharge

Groundwater recharge is necessary to resupply the aquifers from which the Township's potable water wells draw. The characteristics and magnitude of groundwater recharge is dependent on several factors. Land development, including farming, can substantially impact groundwater recharge. Residential and commercial development thwarts recharge by covering and/or compacting soil and piping away runoff. These negative impacts can be substantially mitigated by appropriate zoning standards as well as the implementation of best management practices. Matching or exceeding a site's predevelopment groundwater recharge on major development projects has been a municipal and state requirement since 2005. Achieving this through the use of green infrastructure BMPs is a recent and important requirement.

5.4: Water Quality

Unrestricted runoff from developed sites transports contaminants into environmentally sensitive areas and watercourses. Once again, negative impacts can be mitigated by the use of green infrastructure best management practices. Bioretention basins and rain gardens, for example, can enhance water quality by slowing stormwater discharge, filtering silt and oils through vegetation, organic matter, and soil before they can enter surface water or groundwater. The Township's Stormwater Pollution Prevention Plan, Chapter 150 in the municipal Code, has enacted multiple ordinances to protect water quality by addressing the issues of litter control, pet waste control, wildlife feeding, yard waste collection, refuse containers and dumpsters, improper waste disposal, illicit connections to storm sewer system, and private storm drain retrofitting. Each of these measures reduce the amount of pollutants and litter coming into contact with stormwater and reaching our waterways.

Section 6: Wireless Telecommunications

Section 6 provides a brief overview of wireless telecommunications.

6.1: Wireless Telecommunications

If new wireless telecommunications facilities are required, they should be co-located on existing towers such as utility towers. If a new tower or monopole is necessary because of radio frequency requirements, it should be capable of accommodating additional carriers so as to limit the number of towers within West Windsor. This is supported by the Municipal Land Use Law (MLUL), which encourages co-location on existing wireless telecommunication towers.

In more recent years, the Township has received requests from wireless service providers to permit the installation of their small network nodes infrastructure on existing utility poles within the Township's municipal rights-of-way. As the demand for wireless service increases each year and with each generation of users, these small network nodes are not to extend coverage to areas of poor reception, but rather to enhance signal density in areas that receive high data usage demands. The review of these facilities includes their proximity to existing improvements and the visual impact of the proposed equipment locations to homes and businesses. Due to its location within a public right-of-way, equipment may also not block or interfere with sightlines of existing signage (i.e., road, commercial, directional and street signs) or traffic signals, or otherwise impair motorists' visibility. When an area of service with aerial infrastructure is being improved or redeveloped, efforts should be made to place infrastructure underground to the greatest extent feasible.

Section 7: Solid Waste Disposal

The following section provides a brief overview of solid waste disposal. This subject matter is addressed in greater detail within the Township's Conservation Plan Element of the Master Plan as well as within the Sustainability Plan Element of the Master Plan.

7.1: Solid Waste Disposal

The Township of West Windsor predominantly addresses its plan for solid waste disposal in its Conservation Plan Element of the Master Plan. As noted by that plan, the Township of West Windsor contracts for the removal of solid waste for all residential properties through private contractors. Businesses typically establish their own contracts for the recycling and disposal of solid waste with private companies which are separate from the Township system. The Conservation Plan Element also notes that all business developments are required to address the anticipated production of solid waste and provide a plan for the storage and disposal of these materials as part of the site plan review process at the Township Planning Board or Zoning Board of Adjustment.

The Mercer County Improvement Authority (MCIA) handles the majority of recycling in the Township. Materials that are recycled include: glass; aluminum and steel cans; decorative steel cans; plastic; paper cartons; paper, and cardboard. The MCIA also recycles and/or disposes hazardous waste.

Furthermore, the Township of West Windsor conducts a yard waste collection program. Brush, leaves, and yard debris (excluding grass) are collected by West Windsor Public Works Department staff using municipally owned equipment, and disposed of at a licensed facility out of town. This program is also part of the Municipal Stormwater Pollution Prevention Program as per Chapter 150, Article VI, of the Township Code. Residents may leave brush, leaves, and yard debris at the curb for pick up by the Department of Public Works 10 months out of the year or take materials directly to the Public Works Yard. Pursuant to the New Jersey Department of Environmental Protection (NJDEP), leaves cannot be combined with other debris.

Finally, the Township of West Windsor initially adopted its Recycling Plan in 1989, which was later amended in its entirety in 2008. This Plan can be found in Article II of Chapter 149 entitled "Solid Waste" of the Township's general legislation, and covers both Refuse Collection and Recycling (<https://ecode360.com/12404670>).

Section 8: Electrical, Natural Gas, and Renewal Energies

The following section provides information on electrical, natural gas, and renewable energies.

8.1: Electrical and Natural Gas Utilities

All of West Windsor's natural gas services are provided by Public Service Electric and Gas Company (PSE&G). The majority of the Township's electrical services are provided by PSE&G, while the southeasterly quadrant of West Windsor is served by Jersey Central Power and Light (JCP&L).

As individual sites develop and redevelop, PSE&G and JCP&L will extend their facilities to provide the required services to each site. As previously noted, the Township strongly encourages utility construction and relocation to be underground.

In addition, PSE&G recently commenced two (2) major projects within the Township:

- ❖ In 2018, the Township's Zoning Board of Adjustment granted PSE&G preliminary and final site plan approval as well as "d(3)" conditional use variance relief, "d(6)" height variance relief, and "c" variance relief to remove fifty-two (52) existing lattice towers which were originally erected in 1929 and the existing 132,000 volt transmission circuits extending through the central portion of the Township, and to replace them with twenty-nine (29) new monopoles and 230,000 volt transmission circuits.

This project is a part of the Metuchen-Trenton-Burlington Project (MTB), a \$739M investment designed to strengthen the electric transmission system between the PSE&G Metuchen Switching Station in Edison, New Jersey and the PSE&G Burlington Switching Station in Burlington, New Jersey. The goal of the project is to replace aging infrastructure in seventeen (17) municipalities.

- ❖ In 2019, the Township's Zoning Board of Adjustment granted PSE&G preliminary and final site plan approval as well as "d(3)" conditional use variance, "d(6)" height variance, and "c" variance relief to expand the Penns Neck Substation. Approved upgrades included the construction of a new one-story control building with a 55-foot-tall lightning mast, a five bay 69kV AIS with capacitor banks and switches, underground duct bank and manholes, two station service transformers, and a paved driveway providing access to the upgraded station.

8.2: Renewable Energy

The Township has several long-standing policies of encouraging the development of renewable energy resources. A Sustainable West Windsor Plan was initially prepared in 2007 by the Rutgers Center for Green Building and the New Jersey Sustainable State Institute (NJSSI) for the West Windsor Environmental Commission. In 2009, this document was incorporated into the Township's Sustainable Plan Element of the Master Plan (<https://www.westwindsornj.org/images/MasterPlan/Section%2013/Section%2013.pdf>).

Both documents support and encourage the implementation of strategies that utilize renewable energy sources and encourage the use of renewable energy technologies and green power. They also promote: the use and conversion of solar power generation on private buildings; the construction and retrofitting of gas station canopies with solar panels; the construction of shade canopies with solar panels at parking lots; reviewing vocational curricula to include courses on renewable energy technologies; establishing a policy for integrating renewable energy systems into all new facilities and assets constructed or rehabilitated by the Township; purchasing green tags/renewable energy certificates to offset municipal greenhouse emissions; and promoting an energy audit.

Overall, solar photovoltaic (PV) panels are considered permitted accessory uses throughout the community, and thus do not require rezoning. All solar installations must pass inspections and meet all current development codes. The Township's website provides a guidance document (<https://www.westwindsornj.org/images/Forms/SOLAR-Residential-Roof-Mounted-PV-Solar-System-Permit-Application-Guidance.pdf>) to assist homeowners in the permit process for residential roof-mounted photovoltaic (PV) solar systems. Most recently, the Planning Board approved several solar photovoltaic canopies at the Carnegie Center office development.

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Section 9: Recommendations

The following section provides several recommendations regarding general utility systems, wastewater, water supply, and stormwater collection and conveyance.

9.1: General Utility Systems

The following recommendations are offered regarding general utility systems:

1. Encourage cost effective extensions of utilities by developers and private property owners through fair share cost reimbursement agreements.
2. Require new development to pay its proportionate share of any off-tract improvements for utility services, to the extent permitted by law.
3. Require existing above ground utilities to be relocated underground for redevelopment projects, to the extent allowed by law.
4. Require co-location of new telecommunications facilities whenever feasible.

9.2: Wastewater

The following recommendations are offered regarding wastewater.

1. Based on the Township's 2020 Land Use Plan and development regulations, identify the required conveyance and treatment capacity in order to determine future facility requirements.
2. Identify facility requirements and potential schedule for any unsewered "fringe" neighborhoods, e.g. Conover Road, to facilitate efficient use of private funds.
3. Monitor inflow and infiltration in West Windsor Township and implement programs to reduce and to minimize illicit connections.
4. Continue to coordinate with the Division of Health on septic system maintenance and replacements. If and when necessary, the Township Sanitary Sewer Plan should be updated to deal with areas of potential septic failure.
5. Require that new development within the sewer service area be served by sewer, and all new development should be served by public water.

9.3: Water Supply

The following recommendations are offered regarding water supply.

1. Identify water supply demand at buildout and confirm capacity availability with New Jersey American Water.
2. Identify developed areas which do not have public water and encourage system extension.
3. Where possible, require public water service to new development rather than private wells.

9.4: Stormwater

The following recommendations are offered regarding stormwater collection and conveyance.

1. Identify infrastructure limitations and feasible solutions, if any, to flooding on existing roads identified in Section 5.2 of this Utilities Plan Element.
2. Amend Township ordinances to conform to the adopted Master Plan and the Residential Site Improvement Standards (RSIS), and require best management practices.
3. Stream cleaning projects should be implemented in areas with elevated normal water surface levels and flooding, and combined with public education for area residents on the benefits of stream cleaning.
4. Require new development to assess capacity of existing infrastructure and ensure repairs, replacements and upgrades to existing infrastructure occur in concert with development.

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Appendix



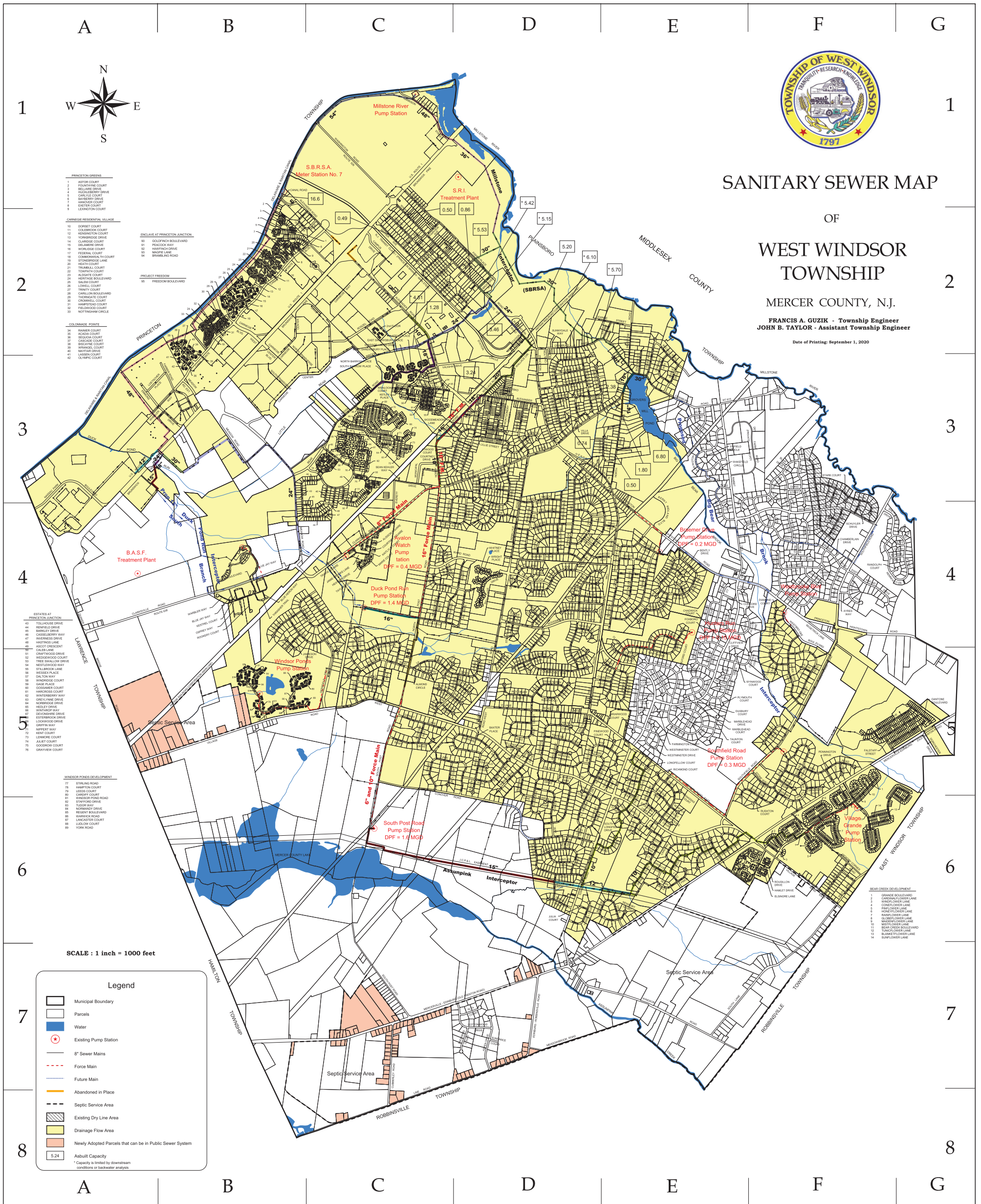
SANITARY SEWER MAP

OF WEST WINDSOR TOWNSHIP

MERCER COUNTY, N.J.

FRANCIS A. GUZIK - Township Engineer
JOHN B. TAYLOR - Assistant Township Engineer

Date of Printing: September 1, 2020



- PRINCETON GREENS
- 1 ASTOR COURT
- 2 COLONY DRIVE
- 3 BELLAIR DRIVE
- 4 COLLEGE DRIVE
- 5 CHERRY COURT
- 6 BAYVIEW DRIVE
- 7 HANCOCK COURT
- 8 EXETER COURT
- 9 LEANING COURT
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SCALE : 1 inch = 1000 feet

Legend

- Municipal Boundary
- Parcels
- Water
- Existing Pump Station
- 8" Sewer Mains
- Force Main
- Future Main
- Abandoned in Place
- Septic Service Area
- Existing Dry Line Area
- Drainage Flow Area
- Newly Adopted Parcels that can be in Public Sewer System
- Asbuilt Capacity

* Capacity is limited by downstream conditions or backwater analysis

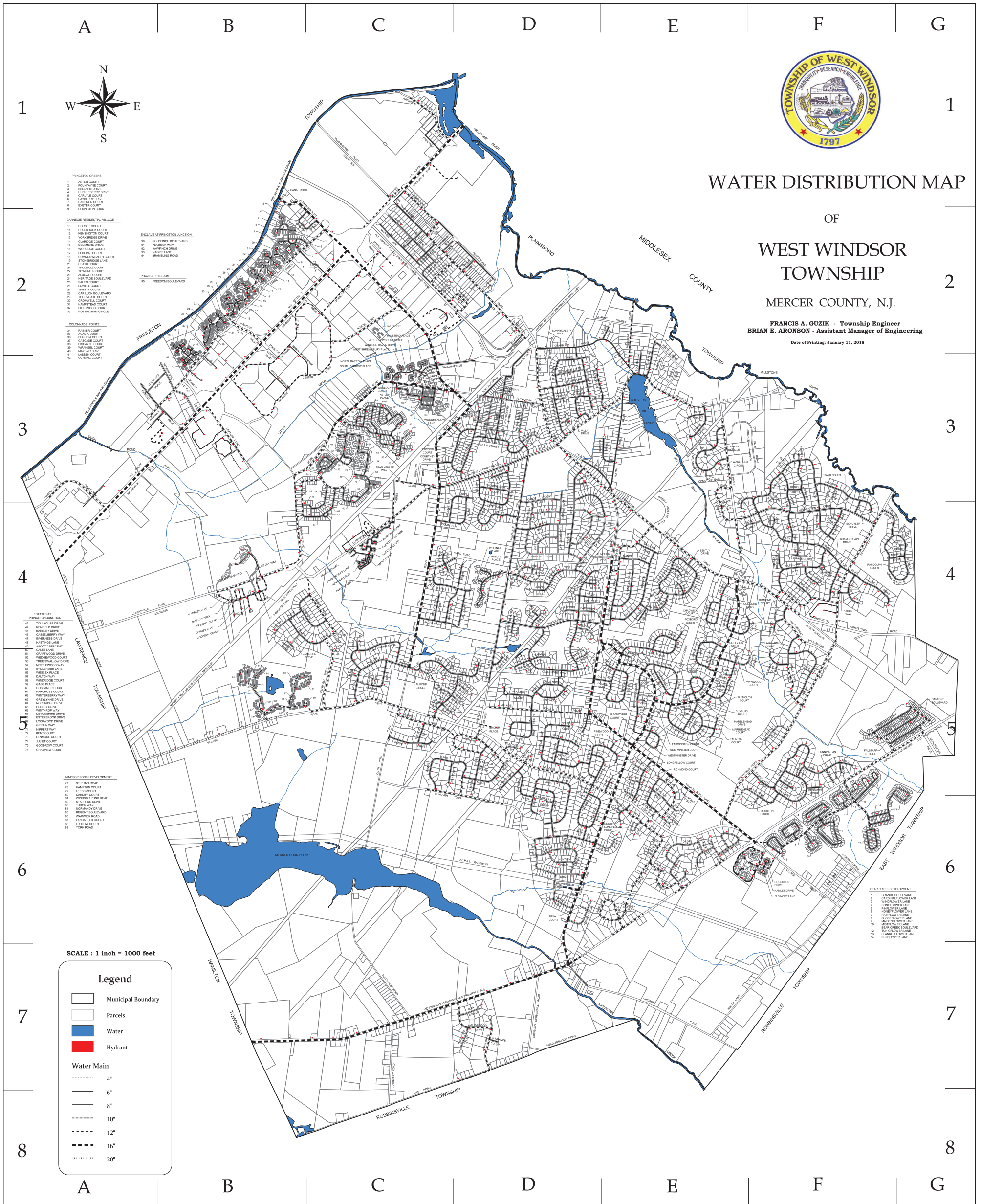


WATER DISTRIBUTION MAP

OF WEST WINDSOR TOWNSHIP MERCER COUNTY, N.J.

FRANCIS A. GUZIK - Township Engineer
BRIAN E. ARONSON - Assistant Manager of Engineering

Date of Printing: January 11, 2018



- PRINCETON GREENS
- 1 ASTOR COURT
- 2 COLONY COURT
- 3 BELLAIR DRIVE
- 4 GARDEN DRIVE
- 5 CHERRY COURT
- 6 BAYVIEW DRIVE
- 7 HANCOCK COURT
- 8 EXETER COURT
- 9 LEANING COURT
- 10 PRINCETON GREENS
- 11 DEWITT COURT
- 12 COLLEGE COURT
- 13 YORRIDGE DRIVE
- 14 CHAMBERLAIN DRIVE
- 15 DELAWARE DRIVE
- 16 WINDSOR COURT
- 17 FEDERAL COURT
- 18 COMMONWEALTH COURT
- 19 STAMFORD LANE
- 20 HEATH COURT
- 21 TABLE COURT
- 22 TOWPATH COURT
- 23 ASHLEY COURT
- 24 HERITAGE BOULEVARD
- 25 BALAN COURT
- 26 TOWNY COURT
- 27 LINDSEY COURT
- 28 CHARLES BOULEVARD
- 29 THORNHURST COURT
- 30 HAMPSHIRE COURT
- 31 FREEDOM COURT
- 32 NOTTINGHAM CIRCLE
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SCALE : 1 inch = 1000 feet

Legend

- Municipal Boundary
- Parcels
- Water
- Hydrant

Water Main

- 4"
- 6"
- 8"
- 10"
- 12"
- 16"
- 20"

- BEAR CREEK DEVELOPMENT
- 1 CHAMBERLAIN DRIVE
- 2 CHAMBERLAIN DRIVE
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