

Wastewater Management Plan
for
Mercer County, New Jersey
Amending the
Mercer County Areawide Water Quality Management Plan
Watershed Management Areas 10, 11, and 20



Volume 1 – County Summary

Prepared for the
| *Mercer County Planning Board*

By
| *CDM Smith and the*
| *Mercer County Planning Division*

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COUNTY OF MERCER

WASTEWATER MANAGEMENT PLAN EXECUTIVE SUMMARY

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I. Introduction

Wastewater Management Planning is part of the continuing planning process required by the New Jersey Water Quality Planning Act (N.J.S.A. 58:11A-1 et seq.) and Section 208 of the federal Clean Water Act. The intent of the continuing planning process is to align federal, state, regional, and local land use planning to ensure that these land use plans do not conflict with each other.

The provision of infrastructure, in particular centralized sewer service, plays a significant role, along with other planning factors, on local and regional development patterns and intensity. The wastewater management planning process is intended to assign appropriate wastewater management treatment to defined geographic areas through a planning process based on the identification of existing conditions and analysis of these conditions with respect to land use planning policies, goals and objectives. The decision to extend public sewers is based on a rigorous review of existing conditions, and federal, state and local regulations, by state and local governing bodies.

Mercer County is the wastewater management planning agency for its thirteen self-governing municipalities. Of the thirteen municipalities, East Windsor, Pennington Borough, and Robbinsville Township have adopted Wastewater Management Plans. The County began the development of this Wastewater Management Plan (WMP) in October 2008 and is charged per NJAC 7:15 with on-going revisions and updates from the date of Plan adoption by the NJDEP. The planning process began with the appointment of municipal and municipal utility authority liaisons. Shortly thereafter in 2009, the county began to engage the business community, including private landowners, in the planning process. These municipal representatives and the public have been working with the County for the past two and a half years in developing the county-wide WMP.

Collaboration with government entities, the business community, and the general public was critical in developing the WMP. However, the process also required working with an enormous amount of data primarily developed by the NJDEP through models and aerial photo interpretation. As a result, this data did not always reflect field conditions. Readers are strongly encouraged to consult the metadata associated with the NJDEP digital data and maps required as part of this document. Throughout the WMP process the county has recommended that property owners field-verify this data. All metadata can be found on the NJDEP GIS Bureau of Geographic Information Systems website, <http://www.state.nj.us/dep/gis/>.

The wastewater management plan work was comprised of data collection, Geographic Information System (GIS) Analysis, Wastewater Management Plan Development, and meetings with liaisons, the public, and state agencies. In addition, Mercer County was required by NJDEP to receive public comment on the DEP draft sewer service area map. Coordination of the county's sewer service area data with that of the draft NJDEP sewer service area map was primarily completed in one year. This process led to a sewer service area boundary that was used in the build-out analysis and eventually capacity determinations.

Mercer County has limited jurisdiction on local land use decisions. The County Planning Act, in addition to the Municipal Land Use Law, limits the county's role and jurisdiction in municipal land development, especially in matters directly related to zoning. While broad policies regarding the economy, transportation, and the environment are made to be consistent among local and state agencies, primarily through the State Development and Redevelopment Plan (State Plan) planning process, in New Jersey specific land use and design decisions are carried out through site specific zoning standards at the municipal level.

The recently adopted Mercer County Master Plan is based on the premise that the interdependencies of three primary, regional systems—economy, transportation, and environment, must be balanced to approach sustainable development. Mercer County's vision for balanced growth relies on 1) an adequate level of housing choice and affordability, 2) adequate transportation and housing choice to maintain an educated workforce and a stable economy, 3) enhanced core transportation corridors through the implementation of access management, connectivity, and wise land use decisions, and 4) continued strategic investment in open space and recreational facilities. This premise, along with the fact that Mercer County has limited jurisdiction over local land use decisions, was used to guide this wastewater management planning process.

Alternative Assignment of Wastewater Management Planning Responsibility

As of the date of submittal, wastewater management planning responsibility for the entire County remains with the Mercer County Planning Board.

The Mercer County Executive identified the Mercer County Planning Division (MCPD) as the county agency charged with Wastewater Management Plan (WMP) preparation and maintenance. Any proposed revisions or amendments to this wastewater management plan shall be submitted to the Mercer County Planning Board.

Previously Approved WMPs within Mercer County

The WMP for Mercer County incorporates or replaces part or all of a variety of previously approved WMPs prepared by municipalities and wastewater authorities.

The Water Quality Management Plan (WQMP) rule provides that any local WMP previously approved by the New Jersey Department of Environmental Protection (NJDEP) is now incorporated by reference as the **applicable municipal chapter** into the County-wide WMP and shall assume the same six-year WMP update schedule as the County-wide WMP. In Mercer County, East Windsor Township, Pennington Borough, and Robbinsville Township have currently valid WMPs as listed in Table 1.

Table 1 lists previously adopted sewer service areas (SSAs) and facility tables from these local WMPs. This information from these previously adopted WMPs is incorporated by reference in

the Mercer County WMP. The remaining municipalities are represented by the municipal chapters found in Volume II of the WMP.

Table 1 - Current WMPs That Remain in Effect

WMP Planning Area	Municipality (or parts thereof)	Adoption Date	Expiration Date
East Windsor Township	East Windsor Township	March 6, 2007	March 6, 2013
Pennington Borough	Pennington Borough	October 8, 2009	October 8, 2015
Robbinsville Township	Robbinsville Township	November 19, 2008	November 19, 2014

Note: The Permit Extension Act Amendment – September 21, 2012 extends the expiration date for these current WMPs to 2015.

Modifications to Non-Expired Local WMPs

There are currently no modifications to non-expired local WMPs.

Municipal Chapters

The WMP for Mercer County – Volume II includes a chapter for each of its 13 municipalities with the exception of East Windsor and Pennington which are incorporated by reference. In the event a municipality does not participate in the development of the WMP, such municipalities will be listed in Table 2 below.

Table 2 - Municipalities Not Addressed in the WMP for Mercer County

None	
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As of the submittal date of this WMP, all municipalities have provided sufficient information as required under the WQMP regulations.

Overview of Mercer County

Mercer County, New Jersey’s capital county, is located in the central part of New Jersey, between New York and Philadelphia, and within the greater urbanized region that extends from Boston to Washington, D.C. The county is served by major transportation facilities including the New Jersey Turnpike, Interstate highways, several local and regional rail systems, and the Trenton-Mercer Airport. Key corridors along the New Jersey Turnpike are considered the most lucrative commerce centers in New Jersey. Interstates 95, 195 and 295, as well as the state highway Routes 1, 29, 31 and 130 are key to Mercer’s economic growth. By standard land travel routes, Mercer County is located 45 minutes from Philadelphia, 1 hour from New York City, 4 hours from Washington, D.C. and 6 hours from Boston.

The county is also linked, both physically and thematically, to other eastern states via regional park systems, national heritage landmarks, and natural resource systems such as the

Washington Crossing Park National Heritage Landmark, the Crossroads of the American Revolution National Heritage Area, and the Delaware River. The county is integral to New Jersey and other states within the Northeast megapolitan area through goods movement, business linkages, cultural commonality, and physical environment.

Mercer County is centrally located within the Northeast megapolitan area and is very much part of a functional trans-metropolitan geography and broad regional economy.

With a highly skilled and educated labor pool the county is home to Mercer County Community College, Princeton Theological Seminary, Princeton University, Rider University, The College of New Jersey, The Institute for Advanced Study, and Thomas Edison State College. The county holds some of New Jersey's (and the nation's) greatest cultural and historic sites with Revolutionary War battle sites in Trenton and Princeton.

Mercer County is bounded on the north by Hunterdon and Somerset Counties, to the east by Middlesex and Monmouth Counties, to the south by Burlington County, and to the west by the Delaware River and Bucks County, Pennsylvania. Mercer's development pressure is shared among these adjacent counties primarily through shared major transportation routes—New Jersey Turnpike, Interstate 95, Interstate 295, State Routes 1, 29, 31, and 130.

Diverse land types including large areas of contiguous farmland in the northern and southern portions of the county, post-war and newer suburbs, an urban and regional center, towns, villages, and hamlets characterize Mercer County. With an area of 226 square miles, it is sixteenth in land size among New Jersey's twenty-one counties. Mercer County is fully incorporated into thirteen self-governing municipalities.

The current population estimate for Mercer County is 366,513 as of the 2010 Census, a 4.5% increase from 350,761 in 2000. The rate of population growth is approximately equivalent to the State rate of 4.5%.

Overview of Current Wastewater Service

Centralized wastewater treatment systems in Mercer County serve approximately 35% of the total County area and approximately 70% of the total County population. Centralized wastewater treatment systems treat flow collected from within their designated SSA. SSAs may include industrial businesses that discharge process wastewater to the collection system for treatment by a facility not owned by that business. The wastewater collection and treatment infrastructure generally serve the more densely populated urban and suburban communities. Details of these existing systems are presented in Section II.

Rural and less densely developed areas not served by SSAs are served by septic systems, also referred to in this WMP as Individual Subsurface Sewage Disposal Systems (ISSDS).

The City of Trenton has the only combined sewer system within Mercer County.

Overview of Major Environmental, Regional and Local Considerations to Wastewater Service

The Water Quality Management Planning Rules (N.J.A.C. 7:15) generally exclude the extension of sewer service into large contiguous areas, defined as 25 acres or more of the following environmentally sensitive features:

- Wetlands;
- Riparian zones (300-feet in width) along both sides of a Category One (C1) waterway;
- Natural Heritage Priority Sites; and/or
- State and Federal threatened and endangered species habitat as depicted in NJDEP Landscape Project Area database (Rank 3, 4, 5).

A more detailed discussion of these environmental considerations is presented in Section III, Environmental and Other Land Features. Additional regional and local land use planning objectives used in delineating appropriate areas for public sewer service are discussed in the Section IV – Delineation of Service Areas and Planning Integration and in each individual municipal chapter included in this WMP.

Overview of Future Service Areas

Sewer Service Areas (SSA)

The Future SSA reflects the coordination between NJDEP, the Mercer County Planning Division, municipal and municipal utility authority representatives, business and educational landowners, and the general public. The SSA boundary map reflects areas where sewer service either exists or is planned in the future and shows the location of existing environmentally sensitive areas. The future sewer service area delineation was also based on local land development approvals, municipal master plans and redevelopment plans, individual site specific environmental habitat studies, and environmental permits.

The following facilities are seeking approval to increase their NJPDES permit effluent limits to reflect either existing or future expected wastewater flow to these facilities.

Table 3 - Facilities Seeking Expansion

Facility
- Pennington STP

It should be noted that flow is not a permit limit per se, but is the basis on which NJPDES effluent limits are calculated. Section V – Future County Wastewater Demand and Facilities presents the results of the build-out analysis for each SSA and the associated sewage treatment plants.

Septic Areas (ISSDS)

Any areas not mapped within a sewer service area are classified as either Septic Areas (planning flows of 2,000 gpd or less), or Restricted Septic Service Area (planning flows of 2,000 gpd or less AND less than 6 Residential Units).

Proposed developments in areas designated ISSDS with planning flows of more than 2,000 gpd will require a WMP Amendment and subsequent adoption by NJDEP.

Summary of Significant Actions

The Water Quality Management Planning Rules adopted on July 7, 2008 necessitated a modification to certain SSAs based on environmental sensitivity and local planning objectives as described in this document. Map 2M and 3M in each municipal chapter shows the changes in SSA as a result of this wastewater management plan.

- Hopewell Township:
 - Proposed DGW for Stony Brook Watershed Association Educational Center
 - Proposed DGW for Penningtown Redevelopment Area

- West Windsor Township
 - Proposed abandonment of existing STP NJ0005541 (BASF – Agr Research Center) and new connection to the SBRSA River Road STP. Tax block and lots affected by the change include the following: portions of Block 8, Lot 2; portions of Block 8, Lot 12; and portions of Block 15.14, Lot 18

No other significant changes are proposed as part of this WMP.

II. Existing Infrastructure

This section addresses wastewater and water supply infrastructure and facilities within the County.

Wastewater Collection System Infrastructure

Major interceptors, trunk lines and pumping stations within the various SSAs for public wastewater treatment facilities are shown on a county-wide basis on Map 2 and on a municipal basis on Map 2M found in each individual municipal chapter.

Major Wastewater Treatment Facilities

Table 4 below lists the major domestic wastewater treatment facilities and the municipality or municipalities they serve. There are 18 major facilities serving Mercer County. For the purpose of this WMP, major facilities are generally considered to fall into one the following categories:

- Non-industrial facilities that provide treatment to an entire municipality or
- A regionalized treatment plant serving two or more municipalities in one or more counties or;
- Residential or multi-use facilities serving distinct areas within municipalities where the potential for additional wastewater generation could occur.

Existing SSAs served by these wastewater facilities are shown on a county-wide basis on Map 2 and on a municipal basis on Map 2M found in each individual municipal chapter. Future SSAs proposed for each wastewater facility are shown on a county-wide basis on Map 3 and on a municipal basis on Map 3M found in each individual municipal chapter. Tables in Appendix D provide detailed information on each facility.

Existing wastewater infrastructure within the County was delineated with the use of collaborating information from municipalities, previous wastewater management plans, existing infrastructure documentation, and input from local wastewater entities.

SSAs may include industrial businesses that discharge process wastewater to the collection system for treatment by a facility not owned by that business.

Table 4 - Wastewater Facilities and Municipalities Served

Wastewater Utility	Municipalities Served
Trenton Sewer Utility	City of Trenton
Ewing-Lawrence Sewerage Authority	Township of Ewing Lawrence Township Hopewell Township
SBRSA – River Road STP	Princeton West Windsor Township South Brunswick (Middlesex County) Plainsboro Township (Middlesex County) Franklin Township (Somerset County)
SRBSA – Pennington STP*	Pennington Borough Hopewell Township
SBRSA – Hopewell STP	Hopewell Borough
	Hopewell Township
Hamilton WPCF	Hamilton Township
	West Windsor Township
	Robbinsville Township
Hightstown AWWTP	Hightstown Borough
East Windsor MUA*	East Windsor Township Hightstown Borough Robbinsville Township

*Note: Community has a currently adopted WMP. Robbinsville also has an adopted WMP.

Minor Wastewater Treatment Facilities

All facilities that are not classified as major facilities described above were categorized as a minor facility.

Table 5 - Wastewater Facilities and Municipalities Served

Wastewater Utility	Municipalities Served
USPS Trenton Process and Distribution Center	Hamilton Township
Robert Frost WTF	Hamilton Township
Pennytown Shopping Village	Hopewell Township
Bristol Myers Squibb Co	Hopewell Township
Pennington Quarry	Hopewell Township
Pennington Point West Commercial	Hopewell Township
Mercer County Correction	Hopewell Township

Wastewater Utility	Municipalities Served
Center STP	
Bristol Myers-Squibb (this site discharges to ELSA sewer system but BMS has a NJPDES permit to monitor effluent to the sewer)	Lawrence Township
Hopewell Business Campus	Lawrence Township
Princeton Land LLC	West Windsor Township

On-site, Non-industrial Wastewater Facilities

These minor facilities serve single developments, sites or other properties under single ownership, but do not treat industrial flows. These facilities typically provide wastewater treatment for apartment complexes, commercial properties and businesses where regional sewerage is not available. Tables 1a (DGW) and 1b (DSW), found in each municipal chapter, list all existing on-site, non-industrial treatment facilities that discharge more than 2,000 gpd of domestic wastewater and are regulated under a NJPDES permit. Details of these facilities can be found within the municipal chapters.

Industrial Treatment Works for Process Wastes and Sanitary Sewage

These minor facilities serve industrial land uses with independent wastewater treatment facilities that treat and discharge manufacturing process waste or sanitary sewage, rather than other types of effluent such as non-contact cooling water. They may be discharged to ground water or to surface water. Tables 1a (DGW) and 1b (DSW), found in the municipal chapters, list all existing industrial treatment works that discharge more than 2,000 gpd of process and wastewater and are regulated under a NJPDES permit. Details of these facilities can be found within the municipal chapters.

III. Environmental and Other Land Features

This section includes a description of environmental and other land features used as constraints in preparation of this WMP as specified by NJDEP and the Water Quality Management Planning regulations at NJAC 7:15. These features are significant to wastewater management planning for three reasons: they may influence the delineation of SSAs, they may reduce the potential future wastewater generation due to existing regulatory programs, or they may be subject to federal grant limitations that prohibit the extension of sewer service into these areas. These features have been used in the development of maps of environmentally sensitive areas of 25 acres or more (ESA 25) where the extension of SSAs is restricted (see Section IV - Delineation of Service Areas, below) unless it is determined through habitat studies, wetlands investigations, and/or stream studies that the environmental features as presented by the NJDEP data are incorrect. Environmentally Sensitive Areas are defined as any contiguous area of 25 acres or larger consisting of any of the following features alone or in combination:

- State and Federal Threatened and Endangered Species Habitat as shown on the NJDEP's Landscape Project Areas (Ranks 3, 4, 5) database.
- Natural Heritage Priority Sites excluding urban lands as identified by NJDEP using 2002 Land Use/Land Cover geographical information systems database as amended and updated.
- Category One waters and their tributaries. Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B.
- Wetlands as mapped pursuant to 2002 Land Use/Land Cover shapefile available from NJDEP.

Map 5A shows hydrologic features and related areas. Map 5B shows other natural resources and land features. These features are summarized below. Most of these features are based on mapped data provided by the NJDEP, and the County has not verified the mapping of these areas. The location of these NJDEP mapped areas should be considered only in the context of this WMP. Site specific investigations and delineations may be necessary in connection with other projects and have been submitted to the County and NJDEP by property owners to verify presence or absence of these features.

The County strongly suggests that users of this document consult the NJDEP metadata associated with the digital data and mapping required to be used in this document. There are limitations to the NJDEP data and the mapping. Throughout the WMP process the county has recommended that property owners field-verify this data. All metadata can be found on the NJDEP GIS Bureau of Geographic Information Systems website, <http://www.state.nj.us/dep/gis/>.

A listing of all data sets used in the development of the county WMP can be found in Volume 1 – Environmental Analysis and Assessment found at the end of this Volume 1 - County Summary.

Environmental Features

Surface Waters and Classifications

Map 5A shows the surface waters as mapped by NJDEP.

Riparian Zones

The riparian zones were determined through an analysis of NJDEP data in accordance with the regulations. It is not intended to be used for regulatory purposes and is only intended to serve as a representation of the approximate riparian zone buffers.

Map 5A shows riparian zones or buffers. Pursuant to N.J.A.C. 7:15, Riparian zones are: 300 feet for Category One waters; 150 feet for waters designated as Trout Production, Trout Maintenance, waters flowing through acid-producing soils and water flowing through documented habitat for a threatened or endangered species of plant or animal; and; 50 feet for all other waters. Tributaries of each category above are included as described in N.J.A.C. 7:15-5.25 (g) et seq.

Surface waters designated as Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" GIS data layer was utilized to determine these waters.

Compliance with the riparian zone standards have been demonstrated by the adoption of Ordinances for Riparian Zone Protection by municipalities shown in Appendix J, which have been updated to be in compliance with the Flood Hazard Control Act Rules (N.J.A.C. 7:13) and Water Quality Management Rules (N.J.A.C. 7:15).

Freshwater Wetlands

Freshwater wetlands as mapped by the NJDEP based on 2002 LULC are shown on Map 5A. Freshwater Wetlands are regulated under the Freshwater Wetlands Protection Act Rules, which place stringent limits on development within these areas. The largest wetland complex is located in the southern portion of Mercer County along the Delaware River and Crosswicks Creek. This area is known as the Trenton-Hamilton-Bordentown Marsh and contains the precious archaeological resource known as the Abbott Farm National Historic Landmark. The Marsh is the subject of environmental and archaeological scholarly research and is the home to species unique to the Marsh. This area spans two counties and two municipalities in Mercer County and is adjacent to one of the densest populations in the county. Almost all of the open land within the Marsh is publicly owned and preserved. There are roughly 23,590 acres of wetlands representing more than 16% of the land in Mercer County as per NJDEP Freshwater Wetlands mapping data.

Suitable Habitat for Threatened and Endangered Species

For purposes of this WMP, areas identified by the NJDEP as being suitable habitat for threatened and endangered species are shown on Map 5B. This area includes Landscape

Project Areas (Ranks 3, 4 and 5) through the Landscape Project Version V.2.1 (Statewide), as described below. Four of the five available habitat types were used – forests, forested wetlands, emergent wetlands and grasslands. The coastal beaches and dunes habitat type is not applicable to the County.

Within Mercer County, Bald Eagle, Wood Turtle, and Barred Owl habitat are noted.

Approximately 30,500 acres or 21% of the land in Mercer County falls within NJDEP's Landscape Project Areas Rank 3, 4, or 5 coverage.

Natural Heritage Priority Sites

Natural Heritage Priority Sites coverage identifies rare plant species and rare ecological communities. Map 5B shows the Natural Heritage Priority Sites mapped by NJDEP. There are approximately 2,400 acres or almost 2% of the land in Mercer County are designated as Natural Heritage Priority Sites.

Other Features

Mercer County Open Space

Open Space generally refers to parks, recreation areas, wildlife management areas, farmland, and other properties known to the County to be restricted from development.

Individual municipal maps (Maps 2M and 3M) show areas currently protected from development as preserved lands. Generally, preserved lands were not evaluated under build-out, unless planning level information was specifically provided to the County. These areas are not expected to generate significant amounts of additional wastewater. However, the County did consider the need for facilities to serve public visitors to these areas where applicable.

Mapping of Environmentally Sensitive Areas

Mapping of Environmentally Sensitive Areas (ESAs) is shown on Maps 5A and 5B.

Map 5A shows Hydrologic Features in Mercer County including:

- Freshwater Wetlands
- Hydrology
- C-1 waters
- Wild and Scenic Rivers
- Riparian Buffers
- Municipal Boundaries

Map 5B shows Environmental Features in Mercer County including:

- Landscape Project Data (v 2.1)
- Natural Heritage Priority Sites
- Steep Slopes
- Hydrology
- Municipal Boundaries

This data was taken largely from datasets available through the NJDEP's Bureau of Geographic Information Systems (<http://www.state.nj.us/dep/gis/download.htm>).

Mapping of Other Features

Mapping of Mercer County Open Space is shown on Map 5B. The areas are shown as a single composite layer and preserved farmland is not distinguished from preserved open space lands.

IV. Delineation of Service Areas and Planning Integration

This chapter provides the methodology used to delineate SSAs based on gathered data, mapping of environmentally sensitive areas, and consistency with other regional plans.

Sewer Service Area Delineation

The SSA designation is for areas from which wastewater is designated to flow to a permitted wastewater treatment facility.

In assigning the SSA designations shown, several data sources were considered:

- Cross-Acceptance proceedings (2004)
- NJDEP's adopted SSA map for Mercer County (2006)
- NJDEP's draft SSA map for Mercer County (2008) including revised editions based on public comments received from December 2008 through March 2011; editions of the original 2008 map were reviewed periodically during this period once in June 2009, once in February 2010, and once in November 2010 prior to the NJDEP Public Meeting in December 2010.
- Data (such as collection system extent) obtained from municipalities or private entities.
- Existing TWA permits
- Sewer service areas provided by existing sewerage authorities and wastewater treatment facilities

Parcels that were within previous draft or adopted sewer service areas, or existing sewer service areas provided by sewerage authorities or wastewater facilities, were given the SSA designation, unless specific guidance was provided to remove them. In early 2010, the NJDEP issued Administrative Consent Order 2010-03. Subsequent to adoption of the ACO, all mapping followed the protocol established in the ACO.

Proximity to existing collection systems was considered if service for a given parcel was indeterminate based on other criteria.

Parcels with valid NJDEP Treatment Works Approvals (TWA) were automatically given an SSA designation.

Septic Areas (ISSDS)

The ISSDS designation represents those areas served by septic systems. For the purpose of mapping, the ISSDS designation also represents those areas that are not designated as any of the other categories (SSA or Open/Utility as described below).

Open & Utility (Open Space, Open with Facilities, Utility)

The Open & Utility designation identifies the following:

- Open Space – Mercer County Planning Division maintains an open space layer. The county boundary is the layer's geographic extent. The open space layer is developed from several sources including a county-owned land inventory, Green Acres ROSI, preserved farmland inventory, municipal open space inventories, and state and non-profit open space inventories. The open space layer served as the basis for identifying undevelopable land designated through the Plan as Municipal, County, or State Land, Deed Restricted properties, Conservation Easements, and certain lands overseen by non-profit entities.
- Open with Facilities - This category was created in response to comments received from municipalities to include recreational lands in the Future SSA. These open space properties currently have support facilities or may have them in the future. This category gives municipalities flexibility in planning for essential facilities that support existing and future recreational programming at the local level.
- Utility - tax assessment data was used to identify lands owned by public utilities.

This designation indicates that these parcels are undevelopable, except for instances where public programs require the construction of public facilities.

Environmentally Sensitive Areas

The Environmentally Sensitive Areas (ESAs) designation applies to those areas that have been mapped as such by NJDEP. They consist of the following:

- Wetlands – areas based on NJDEP's Land Use/Land Cover feature class (2002)
- Stream corridors – areas which incorporate the appropriate buffer along surface waters based on NJDEP's stream classification (2008)
- Natural Heritage Priority Sites – areas of critical importance due to the presence of rare plant species and ecological communities (2007)
- Landscape Project Areas (Rank 3, 4, and 5) – areas representing wildlife habitat mapping for community planning and endangered species conservation. Rank 3 is associated with NJ State threatened species. Rank 4 is associated with NJ State endangered species. Rank 5 is associated with Federal threatened or endangered species (2007)

Methodology

The following methodology was employed to designate all parcels within Mercer County as either SSA or ISSDS, except for parcels designated as Open/Open with Facilities/Utility as described above. The following is the general methodology used for preparing the Draft SSA Map.

1. Parcels were evaluated to determine if:
 - a. Designated under the Mercer County's open space inventory.
 - b. Owned by a public utility.Any parcels falling within the above categories were designated as Open/Utility.
2. The remaining parcels were evaluated to determine if they were part of a previously approved SSA. If so, these parcels were designated SSA, unless directed otherwise by NJDEP, Mercer County, or the Municipality.
3. The remaining parcels not designated as previously part of a SSA were also evaluated to determine if any existing wastewater generating structures were present onsite using Mercer County's building footprint (January 2009) layer and aerial photography (2007). County staff further reviewed these parcels with more current aerial photography (2009). COAH and local approvals were also considered in this evaluation. If sewage generating potential was identified, the parcel was further evaluated to determine if it was readily sewerable by an existing collection system without extending it. If this was the case, the parcel was designated as SSA unless:
 - a. A significant portion of the parcel is undeveloped and falls within the constrained boundary AND
 - b. Comments were received from NJDEP indicating the constrained portion of the parcel was to be excluded from the SSA.In cases where a) and b) above apply, the parcel was split along the constrained (ESA) boundary. In this case, the portion of the parcel within the constrained (ESA) boundary was designated ISSDS and the remaining unconstrained portion was designated SSA.
4. For parcels not addressed under 1, 2, or 3 above, any vacant lands were evaluated to determine if they were readily sewerable by an existing collection system without extension of the system. If this was the case, the parcel was designated as SSA unless:
 - a. Comments were received from NJDEP, Mercer County, or the Municipality indicating the subject parcel should be excluded from SSA category. If such was the case, the parcel was designated ISSDS.
 - b. The parcel was constrained in whole or in part by Environmentally Sensitive Areas (ESA). If this was the case, the portion of the parcel within the constrained boundary was designated as ISSDS and the remaining unconstrained portion was designated as SSA.
5. Parcels that were not designated under 1, 2, 3, or 4 above were designated as ISSDS.

Planning Integration

Delaware River Basin Commission

The Delaware River Basin Commission (DRBC) regulates the discharge of pollutants into, and the withdrawal of water from, the Delaware River Basin; therefore, wastewater and water supply decisions affecting the Delaware River Basin must be coordinated with the Commission. The

Delaware River Basin covers nearly half of Mercer County. It does not cover any areas in Hopewell Borough, Princeton, East Windsor Township, or Hightstown Borough.

The following shows the Delaware River Basin Boundary within Mercer County.



Figure 1 - Delaware River Basin Boundary

Once the Plan goes to Public Notice then, the DRBC will have the ability to provide input, if they choose not to do so sooner.

Mercer County Stormwater Management Plan

Mercer County implemented a County Stormwater Pollution Prevention Plan and adopted all the appropriate ordinances in August 2005. Design and performance standards were adopted on August 15, 2006.

V. Future County Wastewater Demand and Facilities

This chapter describes the build-out methodology used to project future wastewater treatment demand for future SSAs and septic areas within the WMP for Mercer County.

There are two methods used for projecting future wastewater management needs: a 20-year projection for urban municipalities and a build out based on existing zoning for non-urban municipalities described below.

Future Wastewater Generation in Sewer Service Areas

Wastewater Projections in Urban Municipalities

The Water Quality Management Planning rules define urban municipalities as those municipalities where 90 percent or more of the total land is considered urban. Mercer County performed further analysis on municipalities within the County performing technical corrections to the urban land classification. This approach consisting of the following:

- Removed all lands classified as water from the calculations.

Table 6 - Urban Municipalities

Pennington Borough	Hightstown Borough
City of Trenton	

Future wastewater flows for the listed urban municipalities were calculated based on 20-year incremental growth projections. Table 7 below shows the future wastewater flow projections and method used for each urban municipality.

Table 7 - Wastewater Flow Projections for Urban Municipalities

Urban Municipality	Buildout Incremental Residential Flow (mgd)	Buildout Incremental Non-Residential Flow (mgd)	Total Projected Incremental Flow (mgd)
Pennington Borough*	0.074	0.035	0.109
City of Trenton	0.347	0.049	0.396
Hightstown Borough	0.010	0.001	0.011

*Values taken from adopted WMP for Pennington Borough

Wastewater Generation Projections in Non-urban Municipalities

In the remaining municipalities it is anticipated that undeveloped and underdeveloped land will be the predominant factor in determining future wastewater treatment needs.

In designated SSAs the environmentally sensitive areas were delineated as discussed in Section III and Section IV. These environmentally sensitive areas were removed from land area evaluated under build-out for the SSAs. The existing zoning was then applied to the remaining developable land area within the SSA to project a build-out condition for use in estimating the future wastewater generation for each SSA. The build-out data was then converted to a projected future wastewater flow by applying the planning flow criteria from N.J.A.C. 7:14A based on the type of development projected.

For example, single-family residential development was assumed to consist of houses having three or more bedrooms per house, and each projected new house was multiplied by 300 gallons per day to predict the future wastewater generated. For non-residential land uses the anticipated floor area was multiplied by 0.1 gallon per day to predict future wastewater generation. The projected wastewater data is shown by wastewater treatment plant in Table 7 in the following section for comparison to the existing permitted capacity of each facility. Build-out results are also found in Table 2a located in each individual municipal chapter.

The County used CommunityViz, a land use planning software package offered through Placeways, LLC. CommunityViz is an extension for ESRI's ArcGIS platform that uses existing zoning information to estimate future development. CommunityViz uses zoning data such as minimum lot size and set back requirements to evaluate potential number of future residential units or square feet of commercial space on individual parcels or within the municipality.

The County has identified a category of service indicated as "open with facilities". This category was created in response to a number of comments received from municipalities to include recreational lands, many purchased through public funding, in the Future SSA. The requests pertain to open space properties that currently have support facilities or may have them in the future. The intent of this service type category is to account for up to 8,000 gpd of wastewater generation from these parcels, while recognizing they will continue to function as municipal open space and recreational facilities. The estimated flow has been included in the capacity analysis for the facility serving the closest sewer service area. This category gives municipalities flexibility in planning for essential facilities that support existing and future recreational programming at the local level.

It is noted that Treatment Works Approvals (TWA) are generally required for projects with projected flows of 8,000 gallons per day or more of flow to a treatment works. Accordingly, it is anticipated that development of the support facilities will fall below this threshold and will not require a TWA permit or NJDEP review as per the requirements of N.J.A.C 7-14A-22.3.

Open with Facilities parcels are identified in the mapping included as part of the Environmental Analysis and Assessment included as a supplement to this WMP.

Septic System Development within Sewer Service Areas

Septic systems, or individual subsurface sewage disposal systems (ISSDS), for individual residences can only be constructed within depicted SSAs if legally enforceable guarantees are provided to ensure that the use of such systems will be discontinued when the depicted sewer service becomes available. This applies to ISSDS that require certification from the NJDEP under the Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under N.J.A.C. 7:14A). It also applies to ISSDS which require only local approvals if the WMP acknowledges adequate arrangements for enforcement of the requirement (such as through a municipal or sewerage authority ordinance).

For purposes of this WMP, all septic systems within an SSA are assumed to eventually be connected to its appropriate facility. Future flows attributed to these existing septic systems are accounted for in each municipal chapter, as well as the appropriate Facility Table found in Appendix D. Flow at each facility has been reserved for these existing septic systems and can be found in Table 2a in each municipal chapter.

Future Wastewater Generation in Septic Areas

Wastewater Generation Projections in Urban Municipalities

For the purpose of this WMP, septic areas have not been evaluated for urban municipalities.

Wastewater Generation Projections in Non-urban Municipalities

In designated septic areas, wetlands, riparian buffers, and steep slopes greater than 20%, as discussed in Section III and Section IV, were removed from land area evaluated under build-out. The existing zoning was then applied to the remaining developable land area within the septic area to project a build-out condition for use in estimating the future wastewater demand for each septic area. The build-out data was then converted to a projected future wastewater flow by applying the planning flow criteria from N.J.A.C. 7:9A-7.4 based on the type of development projected.

For example, single-family residential development was assumed to consist of houses having three or more bedrooms per house, and each projected new house was multiplied by 500 gallons per day to predict the future wastewater generated. For non-residential land uses the anticipated floor area was multiplied by 0.125 gallon per day per square foot to predict future wastewater generation. The projected wastewater data, expressed as equivalent dwelling units, is shown by HUC11 on Table 3 of the applicable municipal chapter. Equivalent dwelling units reflects the estimated total wastewater generation for both residential and non-residential property divided by 500.

Nitrate Dilution Analysis

In areas that are not designated as SSAs, the default wastewater management alternative to support development is ISSDS, and is defined as discharge to groundwater of 2,000 gpd or

less. The nitrate dilution analysis for septic systems was performed for septic systems county-wide in similar fashion to that conducted for SSAs. While certain areas may be unbuildable, such as riparian zones or steep slopes, they still contribute to the overall available dilution of nitrate in groundwater. So, these areas were used when analyzing the available dilution on a HUC 11 basis used to establish the maximum number of units that can be built in a watershed and continue to meet the 2 ppm nitrate target. Thus while some areas may contribute less overall groundwater recharge, due to factors such as soils or topography, these limitations have already been taken into consideration when calculating the maximum average density allowable.

This analysis used NJDEP's nitrate (NO_3^-) target of 2 mg/L, with the assumption that all ammonium and other nitrogen compounds are converted to nitrate within the property, and that the nitrate concentrations dilute evenly across the HUC11. These assumptions are implicit in the nitrate dilution model developed by NJDEP.

VI. Wastewater Capacity Analysis

The next step in the wastewater management planning process is to assess whether there is sufficient wastewater treatment capacity to meet the needs of the County based on the projections described above. For SSAs this requires the aggregation of municipal wastewater generation projections by sewage treatment plant to the existing permitted capacity of each facility. In ISSDSs, the default wastewater management alternative is discharge to groundwater of 2,000 gpd or less, commonly referred to as septic systems. The assessment of water quality impacts from development on septic systems relies on nitrate concentration as determined by the nitrate dilution analysis.

Sewer Service Area Wastewater Capacity Analysis

For the Sewer Service Areas, this analysis required the aggregation of municipal wastewater projections by sewage treatment plant and a comparison of the projected future demand to the existing permitted capacity of the sewage treatment plant. This was done by delineating SSA and determining build-out in each SSA as described in the previous sections of this WMP.

Existing SSAs served by these wastewater facilities are shown on a county-wide basis on Map 2 and on a municipal basis on Map 2M found in each individual municipal chapter. Future SSAs proposed for each wastewater facility are shown on a county-wide basis on Map 3 and on a municipal basis on Map 3M found in each individual municipal chapter.

Table 8 – Sewer Service Area Evaluation by Facility and Municipality is a summary of committed, anticipated future flows, and permitted or allocated wastewater flows by sewage treatment facility, with a subsequent breakdown by municipality. Additional details are included within the municipal chapters that are presented in Volume II and in the facility tables located in Appendix D.

Table 8 - Sewer Service Area Evaluation by Facility and Municipality

Facility	NJPDES Permit	Facility Type (DSW/D GW)	Municipality	Committed Flow (mgd)(1)	Build-out Flow (mgd)	NJPDES Permitted Flow (mgd)	Contract Flows (mgd)(2)
Trenton Sewer Utility	NJ0020923	DSW	Facility Totals	12.484	12.880	20.000	
			City of Trenton	12.484	12.880		N/A
ELSA	NJ0024759	DSW	Facility Totals	13.064	18.276	16.000	
			Township of Ewing	7.468	11.095		N/A
			Lawrence Township	5.137	5.990		N/A
			Hopewell Township	0.459	1.191		0.887
SBRSA – River Road STP	NJ0031119	DSW	Facility Totals	11.710	18.294	13.060	
			West Windsor Township	2.925	4.745		FCFS
			Princeton	4.395	5.304		FCFS
			South Brunswick (Middlesex County)	4.390	8.245		FCFS
SBRSA – Pennington STP	NJ0035319	DSW	Facility Totals	0.300	0.445	0.445	
			Pennington Borough	0.244	0.353		FCFS
			Hopewell Township	0.056	0.092		FCFS/Mbr
SBRSA – Hopewell STP	NJ 0035301	DSW	Facility Totals	0.324	0.366	0.300	
			Hopewell Township	0.109	0.113		FCFS/Mbr
			Hopewell Borough	0.215	0.253		FCFS
Hamilton Township WPCF	NJ0026301	DSW	Facility Totals	10.515	12.735	16.000	
			Hamilton Township	8.736	10.079		No limit
			West Windsor Township	0.078	0.156		No limit
			Robbinsville Township	1.701	2.500		2.500
Hightstown AWWTP	NJ0029475	DSW	Facility Totals	0.876	0.888	1.000	
			Hightstown Borough	0.876	0.888		1.000

(1) Committed flow data based on 2012 DMR data

(2) The contractual amounts identified in this document are neither NJDEP-determined nor NJDEP-enforced. They are used entirely by the facilities identified in Table 7, where applicable, and their customers for internal allocation and billing purposes. FCFS = First Come First Served; Mbr = SBRSA Member

Discussion of Sewer Service Area Wastewater Capacity Analysis

Sewer Service Area Evaluation

Table 9 shows the following facilities have a calculated deficiency in wastewater treatment capacity based on build-out estimates and their NJDPES permit flow value. All facilities listed are publically owned treatment works (POTWs).

Table 9 - Facilities and Municipalities Subject to Further Review

Facility	NJPDES Permit	Existing Permitted Flow/ Allocation (mgd)	Build-out Projection (mgd)	Calculated Difference (mgd)
ELSA	NJ0024759	16.000	18.276	2.276
SBRSA-River Road STP	NJ0031119	13.060	18.294	5.234
SBRSA-Hopewell STP	NJ0035301	0.300	0.366	0.066

POTWs measure wastewater flows and report results to NJDEP under the requirements of the National Pollutant Discharge Elimination System (NPDES) and the New Jersey NJPDES permitting program. Flow data is collected daily and typically reported to the NJDEP on a monthly schedule. For wastewater management planning purposes, the monthly average flow for a twelve consecutive month period is used with other factors to determine future planning flows originating from within a designated future sewer service area.

For the purposes of long-range planning, the use of flow data from a fixed 12-month period results in build-out flow projections with a degree of uncertainty. This uncertainty becomes apparent as build-out flow projections change as actual flow data is updated within the 6-year cycle for County WMPs. Likewise, collection and conveyance systems serving older municipal sewerage systems experience inflow and infiltration (I/I). The I/I evident in these systems will vary with changes in annual precipitation and regional groundwater levels.

The use of flow data for a fixed period of time may not be representative of actual conditions where wastewater flows change from year to year due to variations in I/I as indicated above. For the purposes of this WMP, I/I is recognized as a component of wastewater flow, and documented through this planning process. Therefore, it should be further recognized that any minor differences between build-out flows and permitted capacity for individual facilities may fall within the uncertainty associated with I/I. So any future policies and procedures implemented to improve old infrastructure in need of repair or replacement should consider the uncertainty indicated above.

The imbalance between the projected flows and permitted flows for ELSA and SBRSA Hopewell STP is partially the result of I/I within the collection system. The NJPDES permit for the SBRSA River Road facility requires the annual submittal of a compliance report indicating the actions that have been taken to reduce I/I. The 2012 report was submitted to the NJDEP February 1, 2013. Each municipality served by SBRSA owns and maintains their respective sewer systems. SBRSA owns and maintains three pumping stations and associated interceptors and force mains within the sewer service area. The January 2012 report indicates that Princeton will spend up to \$3,000,000 on I/I work during the 2013 and 2014 calendar year. To date, it is estimated that approximately 575,000 gpd has been removed from the Princeton sewer system. In addition, the report indicates that with the successful removal of I/I, the reduction in flow will not address the increase in projected future wastewater flow. Upon preparation and completion of the WMP, SBRSA will evaluate the need for additional capacity at the River Road facility, in cooperation with the municipalities and the Mercer and Middlesex County Planning Boards.

The SBRSA is a wastewater treatment facility located in Mercer County that primarily treats wastewater flows originating from portions of Mercer and Middlesex counties, with a very small flow from Somerset County (via South Brunswick). Middlesex County accounts for a little over a third of the existing daily flow to the facility. It is estimated that approximately 50 percent of the projected future flow to the River Road STP will come from outside Mercer County. SBRSA has indicated the Build-out Flow Projection is a long-standing target around which they have been planning since the original construction of the facility, and one with which NJDEP has historically been involved. The projected future flows to SBRSA are in compliance with the facility's original conceptual design capacity of 20 MGD.

The 1997 Capacity Assurance Plan demonstrates that the SBRSA flow projections at that time are consistent with those in the facility table located in Appendix D – Wastewater Facility Tables of the County Summary. The facility has continued to operate and expand in accordance with growth plans and federal funding for the original planning and design of the facility. The SBRSA treatment facility was constructed in the late 1970s with a treatment capacity of 10 MGD, in keeping with the wastewater flows at that time. However, the design of the facility included a “mirror image” facility which was intended to treat up to 10 MGD of additional flow, bringing the total treatment capacity to 20 MGD. Since the 1970s, some components of the “mirror image” facilities were constructed to meet the growing demand for treatment. This increased the treatment capacity to the current 13.06 MGD. The SBRSA has expressed a commitment to improve the facility in accordance with this previous design when necessary.

The SBRSA maintains and monitors flow data, has a good working knowledge of the existing facility, and continues to monitor when and what improvements will be needed in the future to meet future demand. The SBRSA has participated in regional nutrient models within the Raritan River Basin for the phosphorus TMDL. Accordingly, this WMP considers the SBRSA-River Road facility to be an expanded domestic treatment works with discharge to surface water. It is anticipated that SBRSA will perform the required antidegradation analysis, and shall evaluate the proposed level of treatment required to comply with state and federal relevant water quality standards.

Septic Service Area Evaluation

Septic Service Areas were evaluated using a GIS-based nitrate dilution analysis consistent with NJAC 7:15-5.25 (e)(1)(i)(1), and the methodology used in “A Recharge-Based Nitrate-Dilution Model for New Jersey v5.1” developed by the New Jersey Geological Survey, as amended and supplemented.

For the purpose of the nitrate dilution analysis, Septic Areas and certain lands designated as Open Space under Mercer County’s Recreational and Open Space Inventory were analyzed.

The Soil Survey Geographic Database (SSURGO), which compiles soil data collected by the National Cooperative Soil Survey over the past century, was used to estimate applicable groundwater recharge input parameters.

The nitrate loading from an equivalent dwelling unit was estimated using the following model input parameters:

- Population Density: 4 people per home
- Human Nitrate Loading Rate: 10 pounds per person per year
- Nitrate (NO₃) Target in Groundwater: 2 mg/L

The results of the nitrate dilution analysis were used to estimate the number of potential equivalent dwelling units and acres required per equivalent dwelling unit for each HUC11 and municipality using the above model input data.

For comparison purposes, the number of potential equivalent dwelling units using existing zoning was also calculated for the same study areas.

Tables 10, 11, and 12 compare the estimates of potential new equivalent dwelling units based on the nitrate dilution analysis and existing zoning analysis within each HUC 11 and municipality. NJDEPs septic density taken from http://www.nj.gov/dep/wqmp/docs/huc11_septic_densities.xls is also provided for comparison.

For the purposes of this analysis it is inconsequential if one municipality’s zoning exceeds its allocation provided that the HUC 11 does not exceed the total sustainable development. Where a municipal chapter does not exist, the WMP for Mercer County removes that municipality’s land area from the analysis. NJDEP will use its regulatory authority under NJAC 7:15 and other laws to ensure compliance with the 2 ppm nitrate dilution standard, whichever is more stringent, for any development regulated by NJDEP. Developments in such municipalities that do not require any NJDEP approval will not be affected.

Existing ISSDSs are shown on a county-wide basis on Map 2 and on a municipal basis on Map 2M found in each individual municipal chapter. Future ISSDSs are shown on a county-wide

basis on Map 3 and on a municipal basis on Map 3M found in each individual municipal chapter. The delineation of ISSDSs include any area that are not specified as a SSA.

Table 10 - Results of Septic Service Area Evaluation – Nitrate Dilution

HUC11	Municipality	Area Analyzed (acres)	Nitrate Dilution Model				NJDEP Criteria
			Equivalent Dwelling Units (homes)	Equivalent Dwelling Units (homes)	Septic Density (Acres per EDU)	Septic Density (Acres per EDU)	Septic Density (average acres/ISSDS)
2030105090	Hopewell Township	13,651	1,679.1	2,320.7	8.1	8.2	6.2
	Lawrence Township	1,702	202.1		8.4		
	Princeton	2,557	374.6		6.8		
	West Windsor Township	1,015	64.9		15.6		
2030105100	West Windsor Township	1,608	170.6	170.6	9.4	9.4	6.3
2030105110	Hopewell Borough	60	5	671.4	12.0	8.1	6.5
	Hopewell Township	4,228	543.3		7.8		
	Princeton	1,181	123		9.6		
2040105210	Ewing Township	439	45.9	1,664.7	9.6	7.6	6.0
	Hopewell Township	12,257	1,618.80		7.6		
2040105230	Hamilton Township	799	37.2	607.4	21.5	11.9	6.0
	Hopewell Township	71	7.3		9.7		
	Lawrence Township	3,453	266.2		13.0		
	Princeton	0	0		-		
	West Windsor Township	2,929	296.7		9.9		
2040105240	Ewing Township	325	37.1	324.1	8.8	11.3	8.2
	Hamilton Township	1,561	121.5		12.8		
	Hopewell Township	547	53.9		10.1		
	Lawrence Township	882	67.2		13.1		
	West Windsor Township	358	44.5		8.0		
2040201030	Hamilton Township	524	0	0.0	-	-	NA
2040201050	Hamilton Township	1,459	184.3	184.3	7.9	7.9	5.3
2040201060	Hamilton Township	2,092	239.7	239.7	8.7	8.7	5.7
2040201070	Hamilton Township	2,554	135.7	135.7	18.8	18.8	8.1

Table 11 - Results of Septic Service Area Evaluation – Existing Zoning

HUC11	Municipality	Zoning - Non-residential		Zoning - Residential		Zoning - Composite	
		Equivalent Dwelling Units (homes)	Total Equivalent Dwelling Units (homes)	Total Equivalent Dwelling Units (homes)			
2030105090	Hopewell Township	66	66	219	255	285	321
	Lawrence Township	0		29		29	
	Princeton	0		5		5	
	West Windsor Township	0		2		2	
2030105100	West Windsor Township	0	0	21	21	21	21
2030105110	Hopewell Borough	0	0	0	56	0	56
	Hopewell Township	0		56		56	
	Princeton	0		0		0	
2040105210	Ewing Township	0	275	0	400	0	675
	Hopewell Township	275		400		675	
2040105230	Hamilton Township	46	63	0	78	46	141
	Hopewell Township	0		0		0	
	Lawrence Township	17		65		82	
	Princeton	0		0		0	
	West Windsor Township	0		13		13	
2040105240	Ewing Township	9	55	0	56	9	111
	Hamilton Township	46		7		53	
	Hopewell Township	0		46		46	
	Lawrence Township	0		3		3	
	West Windsor Township	0		0		0	
2040201030	Hamilton Township	138	138	0	0	138	138
2040201050	Hamilton Township	0	0	39	39	39	39
2040201060	Hamilton Township	0	0	105	105	105	105
2040201070	Hamilton Township	45	45	33	33	78	78

Table 12 - Comparison of Septic Service Area Evaluation Results

HUC11	Municipality	Nitrate Dilution Model		Zoning - Composite		Deficit/Surplus	
		Equivalent Dwelling Units (homes)	Equivalent Dwelling Units (homes)	Total Equivalent Dwelling Units (homes)	Total Equivalent Dwelling Units (homes)	Equivalent Dwelling Units (homes)	Total Equivalent Dwelling Units (homes)
2030105090	Hopewell Township	1,679.1	2,320.7	285	321	1,394	1,999
	Lawrence Township	202.1		29		173	
	Princeton	374.6		5		370	
	West Windsor Township	64.9		2		63	
2030105100	West Windsor Township	170.6	170.6	21	21	150	150
2030105110	Hopewell Borough	5.0	671.4	0	56	5	615
	Hopewell Township	543.3		56		487	
	Princeton	123.0		0		123	
2040105210	Ewing Township	45.9	1,664.7	0	675	46	990
	Hopewell Township	1,618.8		675		944	
2040105230	Hamilton Township	37.2	607.4	46	141	-9	466
	Hopewell Township	7.3		0		7	
	Lawrence Township	266.2		82		184	
	Princeton	0.0		0		0	
	West Windsor Township	296.7		13		284	
2040105240	Ewing Township	37.1	324.1	9	111	28	168
	Hamilton Township	121.5		53		68	
	Hopewell Township	53.9		46		8	
	Lawrence Township	67.2		3		64	
	West Windsor Township	44.5		0		45	
2040201030	Hamilton Township	0.0	0.0	138	138	-138	-138
2040201050	Hamilton Township	184.3	184.3	39	39	145	145
2040201060	Hamilton Township	239.7	239.7	105	105	135	135
2040201070	Hamilton Township	135.7	135.7	78	78	58	58

Discussion of Septic Service Area Results

Table 12 shows the HUC11s that have a calculated deficiency in nitrate dilution capacity versus municipal zoning.

Table 13 - HUC11s Subject to Further Review

HUC11	Calculated Deficit
02040201030	-138

The area of the subject HUC11 indicated in Table 13 is located in the City of Trenton and Hamilton Township and is adjacent to the tidal portion of the Delaware River. The Landscape Data 3.1 indicates that the land within the HUC is comprised of freshwater tidal marshes, deciduous wooded wetlands, and deciduous forest. The portion of the HUC in Trenton is comprised of parcels that are currently connected to sewer and the wastewater is treated at the Trenton WTP. The Hamilton Township portion of the HUC (approximately 700 acres) is primarily comprised of publicly (state and county) owned land (70%) with industrial and vacant land comprising the remainder. The publicly owned land is either preserved open space or deed restricted. The developed properties are serviced by septic systems. PSE&G is the predominant industrial land owner. The PSE&G Mercer Generating Station, a coal-fired power plant, is located here. Due to the amount of preserved or deed-restricted land in public ownership, and the existing environmental constraints, full buildout based on current zoning is likely to be limited. Any land development within this portion of the HUC in Hamilton Township will be required to meet all applicable DEP regulations for septic (ISSDS) design, construction, operation and maintenance.

Compliance with Environmental Protection Standards

One important purpose of the WMP is to help ensure that proposed service areas are properly located to minimize primary and secondary environmental impacts. The WQMP rules require that development densities and aggregated demands or impacts remain within thresholds. Where the thresholds are exceeded, either the size or development density of a SSA or the development density of a ISSDS must be reduced, or the impact must be mitigated. This plan has demonstrated compliance with these capacity constraints.

However, there are other environmental considerations regarding pollutant loadings, water supply and other factors. In some cases (e.g., riparian zones and steep slopes) the WQMP rules require that municipal ordinance ensure protection of these areas regardless of their service area. Further, the WQMP rules establish that development within these areas is inconsistent with the Statewide Water Quality management plans and the Department cannot issue any permits or approvals for development of these areas.

Environmental Protection Ordinances

Table 13 addresses the current status of municipal ordinances regarding the protection of steep slopes, riparian zones and the maintenance of septic systems as addressed in the municipal chapters, with applicable ordinances provided in Appendices H through K.

Table 14 – Current Status of Municipal Master Plan and Municipal Ordinances

Municipality	Master Plan	Zoning Ordinance	Stormwater Ordinance	Riparian Zone Ordinance	Steep Slope Ordinance	Septic System Maintenance*	Dry Conveyances in Sewer Service Areas*	Septic Systems in Sewer Service Areas*
East Windsor Township (1101)	Not applicable							
Ewing Township (1102)	✓	✓	✓	✓	✓	*	*	✓
Hamilton Township (1103)	✓	✓	✓	✓	✓	✓	*	✓
Hightstown Borough (1104)	✓	✓	✓	✓	✓			
Hopewell Borough (1105)	✓	✓	✓	✓	✓			
Hopewell Township (1106)	✓	✓	✓	✓	✓	*	*	*
Lawrence Township (1107) (1)	✓	✓	✓	✓	✓	*	*	*
Pennington Borough (1108)	Not applicable							
Princeton Borough (1109)	✓	✓	✓	✓	✓			
Princeton Township (1110)	✓	✓	✓	✓	✓	*	*	*
City of Trenton (1111)	✓	✓	✓	✓	✓			
Robbinsville Township (1112)	Not applicable							
West Windsor Township (1113)	✓	✓	✓	✓	✓	*	*	*

(1) Lawrence Township ordinances meet the current NJDEP model ordinance requirements for riparian zones and steep slopes.

*Mercer County is in the process of developing a preliminary inventory of septic systems in each municipality. The inventory will become part of a central database accessible through a GIS-based web portal. Mercer County, with the municipalities will continue to refine this inventory as the database and web portal are developed and implemented, so the development of the septic management plans and relevant ordinances can proceed.

✓ – The County will continue to work with these municipalities to incorporate riparian zone and steep slope protection requirements that are fully compliant with the WQM Planning rules to be adopted as an amendment to this County-wide WMP.

 Indicates Urban Municipality

Appendices

Appendix D – Wastewater Facility Tables

The wastewater facility tables for all sanitary and/or process wastewater discharge to surface water facilities and those sanitary and/or process wastewater discharge to groundwater facilities discharging greater than 2000 gallons per day (i.e., requiring NJPDES permits) are listed below, based on whether they are domestic or industrial wastewater treatment facilities, and whether they have service areas that affect more than one municipality.

Domestic Wastewater Facilities with SSAs in Multiple Municipalities – These facilities are listed on tables D-2 through D-6.

Domestic Wastewater Facilities With SSA in One Municipality – These facilities are listed on Table D-1 and D-7.

Industrial Wastewater Facilities – Mercer County does not have any known Industrial Wastewater Facilities

**Infiltration/Inflow (I/I): Existing I/I should be identified. However, additional future I/I may not be projected. (The NJPDES Treatment Works Approval regulations make numerical allowances for I/I). The existing I/I can be carried-over and accounted for in the total future wastewater flow.*

Table D-1 - DOMESTIC TREATMENT FACILITIES SERVING ONE MUNICIPALITY		
1. Existing facility:	Trenton Sewer Utility	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0020923	
3. Discharge to ground water (DGW) or surface water (DSW):	DSW	
4. Receiving water or aquifer:	Delaware River Zone 2	
5. Classification of receiving water or aquifer:		
6. Owner of facility:	City of Trenton	
7. Operator of facility:	City of Trenton	
8. Co-Permittee of facility (where applicable):		
9. Location of facility:		
a. Municipality & County	City of Trenton, Mercer County	
b. Street address	1502 Lambertson Rd, Trenton, NJ 08611	
c. Block(s) and Lot(s)		
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 45' 23.6"	
	b. Latitude: 40° 11' 31.9"	
	c. State Plane Coordinates X: 420452.08472 Y: 495029.0723	
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	20.0 MGD	
12. Summary of population served/to be served including major seasonal fluctuations:	Current (2010) Population	20-Year Future (2030) Population
	Municipality: City of Trenton	84,913
Total	84,913	89,539
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow (in MGD)	20-Year Future (2030) Flow (in MGD)
	Municipality: City of Trenton	
Residential flow	0.000	
Commercial flow	0.000	
Industrial flow	0.000	
Infiltration/Inflow	0.000	
Municipal Total - Actual	12.484	
Municipal Total - Actual with 20 Year Future Flow		12.880
Approved TWA's	0.000	
Municipal Total - Committed Flow	12.484	
Septics in the SSA		
Municipal Total - Projected Flow		12.880
Facility Total - Actual Flow	12.484	
Facility Total - Committed Flow	12.484	
Facility Total - Projected Flow		12.880

Notes: Municipal total - Projected Flow is calculated based on residential increase of 4,626 and employment increase of 1,961 as stated in the CDM Smith Municipal Chapters for Mercer County, Trenton, page 7.

Table D-2 DOMESTIC TREATMENT FACILITY SERVICING MULTIPLE MUNICIPALITIES		
1. Existing facility:	Ewing-Lawrence SA	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0024759	
3. Discharge to ground water (DGW) or surface water (DSW):	DSW	
4. Receiving water or aquifer:	Assumpink Creek	
5. Classification of receiving water or aquifer:		
6. Owner of facility:	Ewing- Lawrence	
7. Operator of facility:	Ewing- Lawrence	
8. Co-Permittee of facility (<i>where applicable</i>):	N/A	
9. Location of facility:		
a. Municipality & County	Lawrence Township, Mercer County	
b. Street address	600 Whitehead Rd., Lawrenceville, NJ 08648	
c. Block(s) and Lot(s)		
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 23' 53.1" W	
	b. Latitude 40° 43' 04.3" N	
	c. State Plane Coordinates X: 520374 Y: 686603	
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	16.0 MGD	
12. Summary of population served/to be served including major seasonal fluctuations:	Current (2010) Population	Build-out Population
Municipality: Township of Ewing	35,059	39,159
Municipality: Lawrence Township	31,070	34,018
Municipality: Hopewell Township	2,703	8,327
Total	68,832	81,504
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow (in MGD)	Build-out Flow (in MGD)
Municipality: Township of Ewing		
Residential flow	4.037	4.460
Commercial flow	0.917	4.121
Industrial flow	0.917	0.917
Infiltration/Inflow	1.468	1.468
Municipal Total - Actual	7.340	
Municipal Total - Actual with Build-out		10.966
Approved TWA's	0.129	0.129
Municipal Total - Committed Flow	7.468	
Septics in the SSA		0.000
Municipal Total - Projected Flow		11.095

Table D-2 DOMESTIC TREATMENT FACILITY SERVICING MULTIPLE MUNICIPALITIES		
1. Existing facility:	Ewing-Lawrence SA	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0024759	
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow (in MGD)	Build-out Flow (in MGD)
Municipality: Lawrence Township		
Residential flow	2.308	2.612
Commercial flow	0.897	1.446
Industrial flow	0.897	0.897
Infiltration/Inflow	1.026	1.026
Municipal Total - Actual	5.128	
Municipal Total - Actual with Build-out		5.981
Approved TWA's	0.009	0.009
Municipal Total - Committed Flow	5.137	
Septics in the SSA		0.000
Municipal Total - Projected Flow		5.990
Municipality: Hopewell Township		
Residential flow	0.293	0.374
Commercial flow	0.110	0.646
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	0.402	
Municipal Total - Actual with Build-out		1.020
Approved TWA's	0.057	0.057
Municipal Total - Committed Flow	0.459	
Septics in the SSA		0.114
Municipal Total - Projected Flow		1.191
Facility Total - Actual Flow	12.870	
Facility Total - Committed Flow	13.064	
Facility Total - Projected Flow		18.276

Table D-3 DOMESTIC TREATMENT FACILITY SERVING MULTIPLE MUNICIPALITIES		
1. Existing facility:	SBRSA River Road STP	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0031119	
3. Discharge to ground water (DGW) or surface water (DSW):	DSW	
4. Receiving water or aquifer:	Millstone River (Raritan River)	
5. Classification of receiving water or aquifer:	FW2-NT	
6. Owner of facility:	SBRSA	
7. Operator of facility:	SBRSA	
8. Co-Permittee of facility (<i>where applicable</i>):		
9. Location of facility:		
a. Municipality & County	Princeton Township, Mercer County	
b. Street address	290 River Road, Princeton, NJ 08540	
c. Block(s) and Lot(s)	B 1503 L 6	
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 37' 20.5"	
	b. Latitude 40° 23' 02.5"	
	c. State Plane Coordinates X: 458034.90133 Y: 564827.69565	
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	13.060 MGD	
12. Summary of population served/to be served including major seasonal fluctuations:	Current (2010) Population	Build-out Population
	Municipality: West Windsor Township	25,024
Municipality: Princeton	28,602	34,659
Middlesex County: Plainsboro Township	unknown	unknown
Middlesex County: South Brunswick Township	unknown	unknown
Somerset County: Franklin Township	unknown	unknown
Total	unknown	unknown

Table D-3 DOMESTIC TREATMENT FACILITY SERVING MULTIPLE MUNICIPALITIES

1. Existing facility:	SBRSA River Road STP	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0031119	
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow	Build-out Flow
Municipality: West Windsor Township		
Residential flow	0.000	0.566
Commercial flow	0.000	1.254
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	2.553	2.553
Municipal Total - Actual with Build-out		4.372
Approved TWA's	0.372	0.372
Municipal Total - Committed Flow	2.925	
Septics in the SSA		0.000
Municipal Total - Projected Flow		4.745
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow	Build-out Flow
Municipality: Princeton		
Residential flow	0.000	0.591
Commercial flow	0.000	0.318
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	4.280	4.280
Municipal Total - Actual with Build out		5.190
Approved TWA's	0.115	0.115
Municipal Total - Committed Flow	4.395	
Septics in the SSA		0.000
Municipal Total - Projected Flow		5.304
Middlesex County: South Brunswick Township*	2.862	6.249
Middlesex County: Plainsboro Township*	1.488	1.956
Somerset County: Franklin Township*	0.040	0.040
Facility Total - Actual Flow	11.223	
Facility Total - Committed Flow	11.710	
Facility Total - Projected Flow		18.294

*Flow from outside Mercer County are estimated based on data provided by SBRSA.

Table D-4 DOMESTIC TREATMENT FACILITY SERVING MULTIPLE MUNICIPALITIES			
1. Existing facility:	SBRSA Pennington STP		
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0035319		
3. Discharge to ground water (DGW) or surface water (DSW):	DSW		
4. Receiving water or aquifer:	Stony Brook (Pennington)		
5. Classification of receiving water or aquifer:			
6. Owner of facility:	Stony Brook Regional Sewerage Authority		
7. Operator of facility:	SBRSA		
8. Co-Permittee of facility (where applicable):			
9. Location of facility:	363 Pennington-Rocky Hill Road		
a. Municipality & County	Pennington, NJ 08534; Mercer County		
b. Street address	363 Pennington-Rocky Hill Road		
c. Block(s) and Lot(s)	B 46 L 19.01		
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 46' 49.5"		
	b. Latitude 40° 20' 09.2"		
	c. State Plane Coordinates X: 413957.34375 Y: 547386.625		
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	0.445 MGD		
12. Summary of population served/to be served including major seasonal fluctuations:	Current (2010) Population ³	Build-out or 20-Year Future (2030) Population ³	
	Municipality: Hopewell Township ¹	78	205
	Municipality: Pennington Borough ²	2,696	3,436
	Total	2,774	3,641
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow ³ (in MGD)	Build-out Flow ³ (in MGD)	
	Municipality: Hopewell Township		
	Residential flow	0.004	0.018
	Commercial flow	0.027	0.049
	Industrial flow	0.025	0.025
	Infiltration/Inflow	0.000	0.000
	Municipal Total - Actual	0.056	
	Municipal Total - Actual with Build-out		0.092
	Approved TWA's	0.000	0.000
	Municipal Total - Committed Flow	0.056	
	Septics in the SSA		0.000
	Municipal Total - Projected Flow		0.092

Table D-4 DOMESTIC TREATMENT FACILITY SERVING MULTIPLE MUNICIPALITIES		
1. Existing facility:	SBRSA Pennington STP	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0035319	
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow ³ (in MGD)	20-Year Future (2030) Flow ³ (in MGD)
Municipality: Pennington Borough		
Residential flow	0.135	
Commercial flow	0.047	
Industrial flow	0.000	
Infiltration/Inflow	0.062	
Municipal Total - Actual	0.244	
Municipal Total - Actual with 20-Year Future		0.353
Approved TWA's	0.000	
Municipal Total - Committed Flow	0.244	
Septics in the SSA		0.000
Municipal Total - Projected Flow		0.353
Facility Total - Actual Flow	0.300	
Facility Total - Committed Flow	0.300	
Facility Total - Projected Flow		0.445

¹ Build-out Population

² 20 Year Future (2030) Population

³ From the WMP for the Borough of Pennington, submitted by SBRSA; last revised March 6, 2009.

Notes: Municipal Total - Projected Flow is calculated based on residential flow increase of 0.074 mgd and commercial and institutional flow increase of 0.035 mgd as stated in the adopted Omni Environmental WMP Borough of Pennington submitted June 21, 2006; revised March 6, 2009

Table D-5 DOMESTIC TREATMENT FACILITY SERVING MULTIPLE MUNICIPALITIES		
1. Existing facility:	SBRSA Hopewell STP	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0035301	
3. Discharge to ground water (DGW) or surface water (DSW):	DSW	
4. Receiving water or aquifer:	Bedens Brook	
5. Classification of receiving water or aquifer:	FW2-NT	
6. Owner of facility:	Stony Brook Regional Sewerage Authority	
7. Operator of facility:	SBRSA	
8. Co-Permittee of facility (where applicable):		
9. Location of facility:	Aunt Molly Road	
a. Municipality & County	Hopewell Township, Mercer County	
b. Street address	Aunt Molly Road	
c. Block(s) and Lot(s)	B 15 L 14.02	
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 44' 21.7" b. Latitude 40° 23' 04.4" c. State Plane Coordinates X: 425447.30509 Y: 565091.42236	
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	0.300 MGD	
12. Summary of population served/to be served including major seasonal fluctuations:	Current (2010) Population	Build-out Population
Municipality: Hopewell Borough	1,839	2,066
Municipality: Hopewell Township	571	610
Total	2,410	2,676
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2012) Flow (in MGD)	Build-out Flow (in MGD)
Municipality: Hopewell Borough		
Residential flow	0.215	0.228
Commercial flow	0.000	0.025
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	0.215	
Municipal Total - Actual with Build-out		0.253
Approved TWA's	0.000	0.000
Municipal Total - Committed Flow	0.215	
Septics in the SSA		0.000
Municipal Total - Projected Flow		0.253
Municipality: Hopewell Township		
Residential flow	0.109	0.113
Commercial flow	0.000	0.000
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	0.109	
Municipal Total - Actual with Build-out		0.113
Approved TWA's	0.000	0.000
Municipal Total - Committed Flow	0.109	
Septics in the SSA		0.000
Municipal Total - Projected Flow		0.113
Facility Total - Actual Flow	0.324	
Facility Total - Committed Flow	0.324	
Facility Total - Projected Flow		0.366

Table D-6 DOMESTIC TREATMENT FACILITIES SERVING MULTIPLE MUNICIPALITIES		
1. Existing facility:	Hamilton Township WPCF	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0026301	
3. Discharge to ground water (DGW) or surface water (DSW):	DSW	
4. Receiving water or aquifer:	Crosswicks Creek	
5. Classification of receiving water or aquifer:	FW2-NT (C2)	
6. Owner of facility:	Hamilton Township Municipal Building	
7. Operator of facility:	Hamilton Township WPCF	
8. Co-Permittee of facility (<i>where applicable</i>):		
9. Location of facility:		
a. Municipality & County	Hamilton Township, Mercer County	
b. Street address	300 Hobson Avenue, Hamilton, NJ 08610	
c. Block(s) and Lot(s)		
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 42' 37"	
	b. Latitude 40° 11' 01"	
	c. State Plane Coordinates X: Y:	
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	16.0 MGD	
12. Summary of population served/to be served including major seasonal fluctuations:	Current (Year 2010) Population	Build-out Population
Municipality: Hamilton Township	83,153	87,174
Municipality: West Windsor Township	78	141
Municipality: Robbinsville Township	10,976	14,054
Total	94,207	101,369
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (Year 2010) Flow (in MGD)	Build-out Flow (in MGD)
Municipality: Hamilton Township		
Residential flow	0.000	0.473
Commercial flow	0.000	0.870
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	8.366	8.366
Municipal Total - Actual with Build-out		9.709
Approved TWA's	0.370	0.370
Municipal Total - Committed Flow	8.736	
Septics in the SSA		0.000
Municipal Total - Projected Flow		10.079
Municipality: West Windsor Township		
Residential flow	0.000	0.007
Commercial flow	0.000	0.071
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	0.078	0.078
Municipal Total - Actual with Build-out		0.156
Approved TWA's	0.000	0.000
Municipal Total - Committed Flow	0.078	
Septics in the SSA		0.000
Municipal Total - Projected Flow		0.156

Table D-6 DOMESTIC TREATMENT FACILITIES SERVING MULTIPLE MUNICIPALITIES		
1. Existing facility:	Hamilton Township WPCF	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0026301	
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (Year 2010) Flow (in MGD)	Build-out Flow (in MGD)
Municipality: Robbinsville Township		
Residential flow	0.970	1.221
Commercial flow	0.290	0.728
Industrial flow	0.000	0.000
Infiltration/Inflow	0.000	0.000
Municipal Total - Actual	1.260	
Municipal Total - Actual with Build-out		1.949
Approved TWA's	0.442	0.442
Municipal Total - Committed Flow	1.701	
Septics in the SSA		0.110
Municipal Total - Projected Flow		2.500
Facility Total - Actual Flow	9.704	
Facility Total - Committed Flow	10.515	
Facility Total - Projected Flow		12.735

Table D-7 DOMESTIC TREATMENT FACILITIES SERVING ONE MUNICIPALITY		
1. Existing:	Hightstown AWWTP	
2. New Jersey Pollutant Discharge Elimination System Permit Number:	NJ0029475	
3. Discharge to ground water (DGW) or surface water (DSW):	DSW	
4. Receiving water or aquifer:	Rocky Brook	
5. Classification of receiving water or aquifer:	FW2-NT	
6. Owner of facility:	Hightstown Borough	
7. Operator of facility:	Hightstown Borough	
8. Co-Permittee of facility (<i>where applicable</i>):		
9. Location of facility:	167 Oak Lane, Hightstown, NJ	
a. Municipality & County	Hightstown Borough, Mercer County	
b. Street address	167 Oak Lane, Hightstown, NJ 08520	
c. Block(s) and Lot(s)		
10. Location of discharge (i.e. degrees, minutes, seconds):	a. Longitude 74° 31' 58.3"	
	b. Latitude 40° 16' 35.0"	
	c. State Plane Coordinates X: 482950.57052 Y: 525601.19283	
11. Present permitted flow or permit condition (DSW) or daily maximum (DGW):	1.0 MGD	
12. Summary of population served/to be served including major seasonal fluctuations: Municipality: Hightstown Borough	Current (2010) Population	20-Year Future (2030) Population
	5,494	5,628
Total	5,494	5,628
13. Summary of wastewater flow received/to be received as a 30-day average flow for DSW or a daily maximum flow for DGW:	Current (2010) Flow (in MGD)	20-Year Future (2030) Flow (in MGD)
	Municipality: Hightstown Borough	
Residential flow	0.000	
Commercial flow	0.000	
Industrial flow	0.000	
Infiltration/Inflow	0.000	
Municipal Total - Actual	0.866	
Municipal Total - Actual with 20 Year Future		0.878
Approved TWA's	0.010	0.010
Municipal Total - Committed Flow	0.876	
Septics in the SSA		
Municipal Total - Projected Flow		0.888
Facility Total - Actual Flow	0.866	
Facility Total - Committed Flow	0.876	
Facility Total - Projected Flow		0.888

Notes: Municipal total - Projected Flow is calculated based on residential population increase of 134 people and employment increase of 42 people

Appendix F – Ordinances for Septic System Development in Sewer Service Areas

Municipal ordinances regarding this topic are included in this Appendix. The status of such ordinances is as follows:

Table F1 - Ordinances for Septic System Development in Sewer Service Areas		
Municipality	Ordinance Name/Number	Adoption Date
Ewing Township	Sewer Rates and Charges #98-13; Article I. Sewer Connections	11/24/1998
Hamilton Township	Septic System Maintenance Ordinance #94-050; #05-004 Article III. Connection to Sanitary Sewer Required Sec. 160-123 – Sanitary Sewers and Septic Systems	4/5/2005
Hightstown Borough		
Hopewell Borough		
Hopewell Township	Chapter XIX. Sewer and Water Matters	2/21/1995
Lawrence Township	Land Use Ordinance Article V. Perf and Design Standards. RSIS.	1/1996
Princeton	Ord #521; Chapter 18. Sewers and Sewage Disposal Chapter 34. Water and Sewers	7/2012 12/2011
City of Trenton		
West Windsor Township	Article II. Sewer Use	12/1982
<div style="display: flex; align-items: center;"> <div style="width: 20px; height: 15px; background-color: #cccccc; margin-right: 5px;"></div> <p>These municipalities are at full buildout, all lots are served by sewer, and do not contain septic systems.</p> </div>		

Appendix G – Ordinances for Dry Conveyances in Sewer Service Areas

Municipal ordinances regarding this topic are included in this Appendix. The status of such ordinances is as follows:

Table G1 - Ordinances for Dry Conveyances in Sewer Service Areas		
Municipality	Ordinance Name/Number	Adoption Date
Ewing Township	Article I. Sewer Connections	11/24/1998
Hamilton Township	Article III. Connection to Sanitary Sewer Required Sec. 160-123. Sanitary Sewers and Septic Systems	4/5/2005 1/20/1993
Hightstown Borough	Chapter 19. Water and Sewer	1997
Hopewell Borough	Chapter XI. Land Subdivision	12/1994
Hopewell Township	Article VI. Design Standards Chapter XIX. Sewer and Water Matters	2/21/1995
Lawrence Township	Land Use Ordinance, Section 532	1/1996
Princeton	Chapter 18. Sewers and Sewage Disposal Article IX. Subdivisions Chapter 34. Water and Sewers	7/2012 12/2011
City of Trenton	Article IV. General Sewer Regulations	9/1967
West Windsor Township	Ord #86-19 Article XII. Design Standards for Subdivisions	8/4/86

Appendix H – Ordinances for Septic System Maintenance

Municipal ordinances regarding this topic are included in this Appendix. The status of such ordinances is as follows:

Table H1 - Ordinances for Septic System Maintenance		
Municipality	Ordinance Name/Number	Adoption Date
Ewing Township		
Hamilton Township	Septic System Maintenance Ordinance #94-050; #05-004	4/5/2005*
Hightstown Borough		
Hopewell Borough		
Hopewell Township	Ord #16-17	2003*
Lawrence Township		
Princeton	Chapter 28. Sewers and Sewage Disposal	7/1978*
City of Trenton		
West Windsor Township	Chapter 131. Sewage Disposal Systems	4/1999*
<div style="display: flex; align-items: flex-start;"> <div style="width: 20px; height: 15px; background-color: #cccccc; margin-right: 5px;"></div> <div> <p>These municipalities are at full buildout, all lots are served by sewer, and do not contain septic systems.</p> <p>* See attached ordinances</p> <p>** Mercer County is in the process of developing a preliminary inventory of septic systems in each municipality. The inventory will become part of a central database accessible through a GIS-based web portal. Mercer County, with the municipalities will continue to refine this inventory as the database and web portal are developed and implemented, so the development of the septic management plans and relevant ordinances can proceed</p> </div> </div>		

Appendix I – County Certification of Municipal Stormwater Ordinances

County certification letters for municipal stormwater management ordinances are included in this Appendix. The current status of such ordinances is as follows:

Table I1 - Ordinances for Municipal Stormwater Management		
Municipality	Ordinance Name/Number	Adoption Date
Ewing Township	Stormwater Control Ord. #06-08 Article XIV. Stormwater Control	2/28/2006
Hamilton Township	Ord 05-037 Chapter 158. Stormwater Control	1/5/2006
Hightstown Borough	Chapter 25. Stormwater Control	6/6/2005
Hopewell Borough	Ord #659 Chapter XIX. Stormwater Management	2006
Hopewell Township	Ord 05-1352 Article VI. Design Standards	2/22/2005; Re-examined 12/15/11
Lawrence Township	1873-06 2081-11	2/7/2006 2/15/2011
Princeton	Article X. Site Plans – Sec. 10B Article X. Site Plans – Sec. 17A	2006 2010 2007
City of Trenton	Chapter 254. Stormwater Management	2006
West Windsor Township	Ord. 2006-01, 2006-06, 2008-53, 2009-23 Article XXI. Stormwater Control	2006

Appendix J – Ordinances for Riparian Zone Protection

The current status of such ordinances in accordance with NJAC 7:15-5.25(g) is as follows:

Table J1 - Ordinances for Riparian Zone Protection		
Municipality	Ordinance Name/Number	Adoption Date
Ewing Township		
Hamilton Township		
Hightstown Borough		
Hopewell Borough		
Hopewell Township		
Lawrence Township	2032-09	10/6/2009
Princeton		
City of Trenton		
West Windsor Township		
<div style="display: flex; align-items: flex-start;"> <div style="width: 20px; height: 15px; background-color: #cccccc; margin-right: 5px;"></div> <p>The County will continue to work with these municipalities to incorporate riparian zone and steep slope protection requirements that are fully compliant with the WQM Planning rules to be adopted as an amendment to this County-wide WMP.</p> </div>		

Appendix K – Ordinances for Steep Slope Protection

The current status of such ordinances in accordance with NJAC 7:15-5.25(g) is as follows:

Table K1 - Ordinances for Steep Slope Protection		
Municipality	Ordinance Name/Number	Adoption Date
Ewing Township		
Hamilton Township		
Hightstown Borough		
Hopewell Borough		
Hopewell Township		
Lawrence Township	2032-09	10/6/2009
Princeton Township		
City of Trenton		
West Windsor Township		
<div style="display: flex; align-items: flex-start;"> <div style="width: 20px; height: 15px; background-color: #cccccc; margin-right: 10px;"></div> <p>The County will continue to work with these municipalities to incorporate riparian zone and steep slope protection requirements that are fully compliant with the WQM Planning rules to be adopted as an amendment to this County-wide WMP.</p> </div>		

Appendix L – Zoning Ordinance and Municipal Master Plan Status

Municipal ordinances regarding this topic are included in this Appendix. The status of such ordinances is as follows:

Table L1 - Zoning Ordinance and Municipal Master Plan Status		
Municipality	Master Plan Date	Zoning Ordinance Date
Ewing Township	03/2006	4/27/1987
Hamilton Township	6/16/2011	11/23/1994
Hightstown Borough	5/19/1993; Reexamination Report 2005	2/10/2012
Hopewell Borough	2007	1975 (Chapter XII); amended 12/2007
Hopewell Township	Reexamination Report 12/15/2011	95-1022, adopted 8/21/1995
Lawrence Township	10/12/1995	12/16/1997
Princeton Borough (Regional Planning Board of Princeton)	Adopted 12/12/1996, amended 11/10/2011	Revised 5/8/2012
Princeton Township (Regional Planning Board of Princeton)	Adopted 12/12/1996, amended 11/10/2011	Revised 8/2007
City of Trenton	1999, reexamination report 2005	No date found
West Windsor Township	8/10/2010	11/23/2009

Appendix M – Summary and Response to Public Comments

Comments were received from the following public interests through the public hearing (transcript attached by reference) and written comments:

Table M1 - Public Comments Received		
Name	Affiliation	Date
Timothy F. McGough, P.E.	Director of Community & Economic Development, Robbinsville Township	4/10/2013
Tony DiLodovico, P.E.	Tony D Environmental Permitting, LLC, on behalf of Pennwell Holdings, LLC, and the Gadbey Organization, property owners, Hopewell Township	4/10/2013
Tony DiLodovico, P.E.	Tony D Environmental Permitting, LLC, on behalf of Hamilton Commons, also known as Kuser 130 LLC, Hamilton Township	4/10/2013
Robert Buda, P.E., and John Simone, Esq.	on behalf of Capital Health Systems (CHS)	4/10/2013
Kurt Heuring	Vice President of Administration, The College of New Jersey (TCNJ)	4/10/2013
Robert Freud, P.E., P.P.	Insite Engineering, LLC, on behalf of Buy Rite Liquor store, property owner, Hopewell Township	4/10/2013
Jim Waltman	Jim Waltman, Stony Brook Millstone Watershed Association (SBMWA)	4/10/2013
Anthony Bordieri	Facilities Manager, Institute for Advanced Study (IAS)	4/10/2013
Michael Magee, Esq.	on behalf of Kuser Road LLC, property owner, Hamilton Township	4/10/2013
Donald Fetzer, P.E.	Van Note Harvey Associates, P.C., on behalf of Princeton University, West Windsor Township	4/10/2013
Larry DiSanto	Executive Vice President, CHS	4/10/2013
Steven J. Picco, Esq.	Saul Ewing, LLP, on behalf of Carter Road CE, LLC, Hopewell Township	4/10/2013
Francis A. Guzik	Township Engineer, West Windsor Township	4/10/2013
Mark Solomon, Esq.	Pepper Hamilton, LLP, on behalf of The Lawrenceville School, Lawrence Township	4/10/2013
John Kantorek	Executive Director, SBRSA	4/10/2013
Dennis O'Neal, P.E.	Ferriero Engineering, on behalf of Hopewell Borough	4/10/2013
S. Robert Filler	Executive Director, Ewing Lawrence Sewerage Authority (ELSA)	4/10/2013

Elizabeth George-Cheniara, Esq.	Vice President of Regulatory Affairs, New Jersey Builders Association (NJBA), and on behalf of the Shore Builders Association of Central New Jersey	4/10/2013
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Glossary and Definitions

- 20-year projected flows – are the projected wastewater flows in an urban municipality based on the 20-year estimated population growth or the maximum additional residential units expected in the municipality, whatever is larger. This is the maximum flow that the sewer service area is expected to produce without expanding in size.
- Actual flow – is the volume of sewage and other wastes currently being conveyed to and treated by a centralized treatment facility in a given amount of time.
- Aggregate - is a collection of information or values that are combined together to form a total quantity.
- Allocated flow – is the agreed upon wastewater flow between two parties, typically between a treatment facility and a municipality. The allocated flow is only a portion of the overall permitted flow for the centralized wastewater treatment facility.
- Available land – includes both undeveloped and underdeveloped parcels as defined below.
- Build-out – is the estimated fully developed condition when all undeveloped and underdeveloped lots have been developed to their full potential based on existing zoning.
- Build-out flows – are the projected wastewater flows based on the sewer service area being fully developed or in build-out conditions. This is the maximum flow that a sewer service area is expected to produce without expanding in size.
- Category one waters - are defined as waters protected from any measurable changes in water quality because of their exceptional ecological significance, exceptional recreational significance, exceptional water supply significance, or exceptional fisheries resources as defined in the existing Surface Water Quality Standards rules at N.J.A.C. 7:9B-1.4.
- Centralized sewer service – is also know as a sewer service area or SSA and represents the area to be served by a centralized wastewater treatment facility.
- Combined sewer system – is a sewer system that is designed to carry sanitary sewage at all times and that also is designed to collect and transport stormwater from streets and other sources, thus serving a combined purpose.
- Committed flow – is the sum of the actual flow plus the sum of all flows which are anticipated from connections which have been approved but are not yet in operation.

- Contiguous – is a continuous mass, or a series of things in contact or proximity with each other.
- Constraint – is a limitation or restriction.
- Development – is the division of a parcel of land into two or more parcels, the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any building or other structure, or of any mining, landfill, excavation, roads, sewers and other infrastructure and any use or change in the use of any building or other structure, or land or extension of use of land.
- DGW – Discharge to Groundwater
- DMR – Discharge Monitoring Report
- DSW – Discharge to Surface Water
- EDUs – Equivalent Dwelling Units - a measure where one unit is equivalent to wastewater effluent from one dwelling unit. NJDEP defines a dwelling unit to mean any building or portion of a building, permanent or temporary, used or proposed to be used as a residence either seasonally or throughout the year. Most often, EDU is used in reference to a single family home.
- Facility table – is a table summarizing all wastewater flows for of a centralized wastewater treatment facility and its associated sewer service area. This table includes the aggregation of all municipal flows segregated by each treatment facility.
- Future SSA –
- gpd – gallons per day, a unit of flow measurement.
- GW – groundwater
- HUC11 - Hydrologic Unit Code consisting of 11 digits – a United States Geological Survey (USGS) standard designation for subwatersheds delineated based on topography.
- HUC14 – Hydrologic Unit Code consisting of 14 digits – a USGS standard designation for subwatersheds delineated based on topography.
- Individual Subsurface Disposal System (ISSDS) – means a system for the disposal of sanitary sewage into the ground, which is designed and constructed to treat sanitary sewage in a manner that will retain most of the settleable solids in a septic tank and discharge the liquid effluent to a disposal field.
- mgd – million gallons per day, a unit of flow measurement.

- Natural Heritage Priority Sites Coverage – was created to identify critically important areas to conserve New Jersey's biological diversity, with particular emphasis on rare plant species and ecological communities.
- NDM - Nitrate Dilution Model –The NDM is required by NJDEP and follows the calculations methodology developed by the New Jersey Geological Service. The NDM uses the soils type to estimate the minimum lot size needed to provide enough recharge to dilute nitrate to a specified target. This method is intended to be a guide for estimating the impact of nitrate from septic tanks on groundwater quality. The NDM uses the minimum lot size to calculate the number of EDUs possible for a given area.
- NJAC – New Jersey Administrative Code
- NJGS - New Jersey Geological Service
- NJDEP – New Jersey Department of Environmental Protection
- NJPDES – New Jersey Discharge Elimination System
- Non-discharge areas - areas where additional wastewater generation and/or discharge are prohibited.
- Non-Urban Municipality - any municipality that is not classified as urban. Build-out has been generated for these municipalities.
- Permitted flow – is the maximum allowable flow for a specific treatment works as stated in the facility's NJPDES permit or TWA, whichever is less.
- PPM – Parts per Million
- POTW – Publically Owned Treatment Works
- Riparian zone – is the land and vegetation within and directly adjacent to all surface waters including, but not limited to, lakes, ponds, reservoirs, perennial and intermittent streams.
- RMP – Regional Master Plan
- Septic Area – means an area to be served by systems for the disposal of sanitary sewage into the ground, which is designed and constructed to treat sanitary sewage in a manner that will retain most of the settleable solids in a septic tank and discharge the liquid effluent to a disposal field. Planning flows for septic areas are 2,000 gpd or less.
- Service Areas – Areas designated as wastewater discharge to permitted surface water facilities, groundwater facilities, ISSDS, or septic.

- SSA – Sewer Service Area – represents the area to be served by a centralized treatment facility.
- STP – Sewage Treatment Plant; see also WPCF, WPCP, and WWTP.
- SW – surface water
- Threatened and Endangered Species Habitat – areas depict by NJDEP’s Landscape Project Area Maps v 2.1 & v 3.0 Rank 3, 4, 5 delineating areas used by or necessary for endangered and threatened species and other priority wildlife to sustain themselves successfully.
- Treatment Works Approval (TWA) – means an approval issued pursuant to N.J.S.A. 58:10A-6b and N.J.A.C. 7:14A.
- Undeveloped parcels - are those parcels where no development exists and the land has not been restricted from development through dedicated open space or agricultural preservation programs.
- Underdeveloped parcels – are those parcels where some level of development exists, but at a density less than allowed by zoning and where deed restrictions do not prevent further development.
- Urban Municipality – those municipalities where 90 percent of the developable land area appears as “Urban Lands” as designated in the New Jersey Department of Environmental Protection’s 1995/97 and 2002 Land Use/Land Cover geographical information systems database as amended and updated, available as a digital data download from the Department at www.state.nj.us/dep/gis , based on Level I of the Anderson Classification System (Anderson et al, 1976, modified by the New Jersey Department of Environmental Protection, 1999).
- Vacant Land – is a parcel of land without any building, structure or improvement, including impervious surfaces, but does not include recreation, green or open space created during development.
- Wastewater deficit – is when the projected build-out flow for a SSA or ISSDS would produce more wastewater than allowed by the allocation or nitrate dilution model.
- Wastewater surplus – is when the allocation or nitrate dilution model flow is greater than the projected build-out flows allowing the SSA or ISSDS to fully develop with excess capacity.
- WQMP – Wastewater Quality Management Plan
- WMP – Wastewater Management Plan
- WPCF – Water Pollution Control Facility

- WPCP – Water Pollution Control Plant
- WWTP or WTP – Wastewater Treatment Plant