

OCEAN COUNTY WASTEWATER MANAGEMENT PLAN

Replacing All Previously Adopted Wastewater Management Plans

VOLUME 1 of 2

**OCEAN COUNTY WASTEWATER MANAGEMENT PLAN
ENVIRONMENTAL ANALYSIS**

Submitted By

The Ocean County Board of Chosen Freeholders | January 8, 2015

Approved By

The New Jersey Department of Environmental Protection | December 30, 2015

Prepared By

The Ocean County Department of Planning

129 Hooper Avenue, P.O. Box 2191

Toms River, NJ 08754-2191

(732) 929-2054



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Acknowledgments

This report was prepared in-house by Michael D. Georgalas, GIS Specialist I, and Steven J. Simone, Senior Planner, with oversight from Pieter Waldenmaier, Principal Planner.



Approvals

New Jersey Department of Environmental Protection Approvals		
Chapter	Component	NJDEP Approval
I	Introduction	December 30, 2015
II	Summary of Significant Actions	December 30, 2015
III	Discussion of Existing and Future Wastewater and Water Supply Facilities	December 30, 2015
IV	Summary of Environmental Assessments and Analyses	December 30, 2015
V	Discussion of Justification of Sewer Service Area Delineations	December 30, 2015
VI	Future County Wastewater Demand and Facilities	December 30, 2015
VII	Analysis of Capacity to Meet Future Wastewater Needs	December 30, 2015
VIII	Future Water Supply	December 30, 2015
IX	Mapping Requirements	December 30, 2015
X	Municipal Chapters	December 30, 2015*

*See Table 27.

Ocean County Municipalities Included in the Wastewater Management Plan			
Municipality	Status	Municipality	Status
Barnegat Light Borough	Included	Manchester Township	Included
Barnegat Township	Included	Mantoloking Borough	Included
Bay Head Borough	Included	Ocean Gate Borough	Included
Beach Haven Borough	Included	Ocean Township	Included
Beachwood Borough	Included	Pine Beach Borough	Included
Berkeley Township	Included	Plumsted Township	Included
Brick Township	Included	Point Pleasant Beach Borough	Included
Eagleswood Township	Included	Point Pleasant Borough	Included
Harvey Cedars Borough	Included	Seaside Heights Borough	Included
Island Heights Borough	Included	Seaside Park Borough	Included
Jackson Township	Included	Ship Bottom Borough	Included
Lacey Township	Included	South Toms River Borough	Included
Lakehurst Borough	Included	Stafford Township	Included
Lakewood Township	Included	Surf City Borough	Included
Lavallette Borough	Included	Toms River Township	Included
Little Egg Harbor Township	Included	Tuckerton Borough	Included
Long Beach Township	Included		



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Summary and Important Considerations

Adoption of Sewer Service Area Boundaries

On February 7, 2013, Ocean County's new Sewer Service Area boundaries were adopted by the New Jersey Department of Environmental Protection (NJDEP) under P.L. 2011, C. 203. These Sewer Service Area boundaries are now effective for Ocean County's Northern, Central, and Southern Planning Areas. The purpose of this document is to provide a comprehensive Wastewater Management Plan (WMP) for the three Planning Areas. This WMP has been submitted to the NJDEP for approval so that it may be incorporated into the Ocean County Water Quality Management Plan via the plan amendment procedure at N.J.A.C. 7:15.

The adopted Sewer Service Area map is attached at the end of this WMP.

Overview of the WMP

This WMP is comprised of thirty-five separate documents. This principal section, hereafter referred to as the County Document, begins in Chapter I with an overview of the current state of Ocean County's wastewater and water supply infrastructure, responsible parties, and regional and local wastewater management planning goals. Chapter II discusses the significant changes to the sewer service area which have taken place since the adoption of Ocean County's previous WMP, as well as the status of the County's planning area boundaries and wastewater treatment facilities. Chapter III summarizes the capabilities of existing wastewater treatment facilities and public water purveyors, and their capacity to accommodate projected growth. Chapter IV reviews the County's environmental features which are most sensitive to increased development. Chapter V describes the County's legal authority to delineate the boundaries of the sewer service area, as well as the entities and plans consulted during the delineation process. Chapter VI details the process by which municipal projections of future wastewater treatment demand were determined according to their designation as either an "urban" or "non-urban" municipality. Chapter VII compares the projections of wastewater generation produced for Chapter VI to the capacity of the County's infrastructure and the natural environment to handle these additional flows. It concludes by documenting the status of adoption of municipal ordinances relevant to wastewater management planning. Chapter VIII is a brief discussion of potable water available for public consumption and the ability of public water purveyors to meet future demands. Chapter IX describes the series of maps produced by the County of Ocean in the process of developing this WMP. Included in these maps are the boundaries of the three planning areas, OCUA facilities, critical environmental and hydrological features, and the extents of the previous and adopted sewer service areas, among others.

Chapter X summarizes the content of the thirty-three Municipal Chapters which also comprise this WMP—one for each municipality in Ocean County. Each contains a summary overview of the municipality's current development patterns, environmental features, and wastewater treatment demand. They go on to assess the capacity of current infrastructure to accommodate projected growth. Not included in this WMP are chapters for the five municipalities of Monmouth County served by the Northern Water Pollution Control Facility in Brick Township; they will be addressed in Monmouth County's Wastewater Management Plan.

Appended to this WMP is the Environmental Analysis Document. This portion of the WMP details the calculations and mapping used to produce the build out projection, nitrate dilution, and water availability analyses. Also included are records of official correspondence regarding habitat suitability determination, wetlands letters of interpretation, and USEPA Section 201 map revisions or grant waivers.

Municipal Zoning and Development Potential

As described later in this WMP, N.J.A.C. 7:15 requires that projections of future wastewater flow in towns considered "non-urban" should be based on future land development according to existing zoning regulations in these municipalities. Eleven Ocean County municipalities are considered non-urban based on the extent of their current development. The projections of future development and wastewater flow produced for these municipalities represent levels of residential and commercial development at total build out. While it is conceivable that these projections may come to fruition, they are merely upward bounds of potential development allowed by current zoning regulations—not anticipated future scenarios. As seen in Ocean County's "urban" municipalities, total build out does not always occur in the presence of sewers and other



public utilities and services. In the absence of sewers, development at maximum density allowed by zoning is usually much less likely.

NJTPA Population Projections

In accordance with N.J.A.C. 7:15, the projections of future wastewater flow in the remaining “urban” municipalities (those in which less than ten percent of the developable land is presently vacant) have been based on projections of future population. To establish baseline municipal populations, the County of Ocean used data from the 2010 U.S. Census. Projections of future population for the year 2035 were supplied by the North Jersey Transportation Planning Authority (NJTPA).

According to the data provided by the NJTPA, Ocean County’s population is expected to grow to 712,176 by 2035. This projection is a composite of the expected population growth in all of Ocean County’s individual municipalities, and is the most accurate and comprehensive set of data presently available. The NJDEP has found the use of the NJTPA’s 2035 population projections to be acceptable and appropriate for use in this WMP’s projections.

Hurricane Sandy and Population

On October 29, 2012, Hurricane Sandy made landfall in New Jersey, dramatically altering the landscape of Ocean County’s coastal areas. Thousands of Ocean County residents were displaced from their homes, and hundreds of homes were destroyed outright. Most of the areas impacted by Sandy are being rebuilt, and within a few years development conditions are expected to return to pre-storm levels. Therefore, the 2010 U.S. Census was used for the baseline conditions analysis in storm damaged communities.





I. Introduction

Assignment of Wastewater Management Planning Responsibility

The Ocean County Board of Chosen Freeholders is the designated Water Quality Management Planning Agency for Ocean County and those portions of Monmouth County which lie within the Metedeconk River Basin. Pursuant to this designation, the Ocean County Water Quality Management Plan (WQMP) was approved and adopted by the Governor and the U.S. Environmental Protection Agency. The WQMP provides a management program for water resources for all of Ocean County and a small portion of southern Monmouth County. As of the date of submittal, wastewater management planning responsibility for the described area remains with the Ocean County Board of Chosen Freeholders, and no alternative assignments have occurred pursuant to N.J.A.C. 7:15-5.13. The Ocean County Board of Chosen Freeholders has identified the Ocean County Department of Planning as the county agency charged with Wastewater Management Plan preparation and maintenance. Any proposed revisions or amendments to this wastewater management plan shall be submitted to:

*The Ocean County Department of Planning
129 Hooper Avenue
P.O. Box 2191
Toms River, NJ 08754-2191*

Status of Previous Approved Local and Regional WMPs Affected by This WMP

This Ocean County WMP replaces all previously approved WMPs prepared by municipalities, wastewater authorities, and the County itself. The WQMP rule provides that any WMP previously approved by the NJDEP may remain in force and effect until six (6) years from that approval date. In Ocean County, no previously approved WMPs will be considered current.

In addition to the overarching WQMP, this WMP includes chapters for each municipality in Ocean County. As provided by the WQMP rules at N.J.A.C. 7:15-8.1, any area not currently connected to a wastewater treatment collection system, or fully permitted to do so, has been excluded from the County's Sewer Service Area. Development that relies on discharges to groundwater of 2,000 GPD or less is allowed, but will be required to comply with relevant NJDEP rules including nitrate dilution analysis where the proposed development exceeds an aggregate greater than 2,000 GPD in projected flow or requires a NJDEP permit or approval subject to N.J.A.C. 7:15-4.

Overview of the County of Ocean

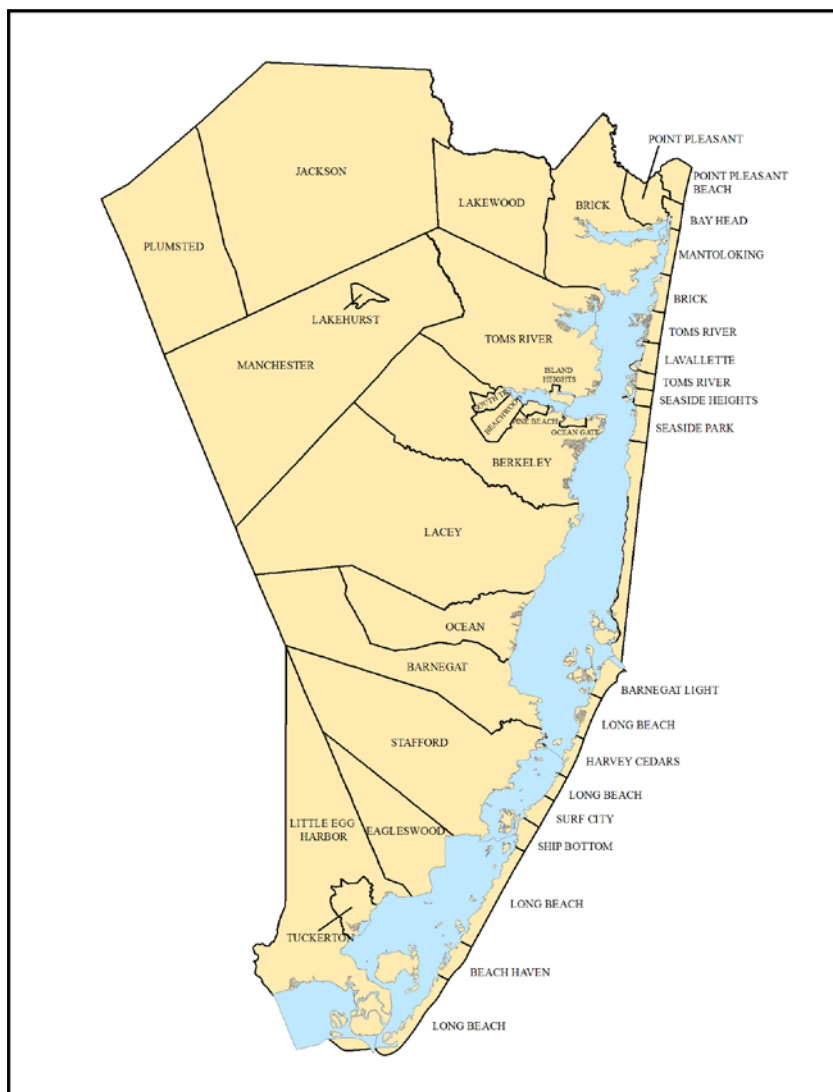
The County of Ocean is located in eastern central New Jersey, within the Atlantic Coastal Plain. It is bordered by Monmouth County to the north, Burlington County to the west, Atlantic County to the south, and the Atlantic Ocean to the east. The New York metropolitan area is approximately sixty miles to the County's north, and the Philadelphia metropolitan area is approximately fifty miles to the west.

Ocean County was formed out of Monmouth County in 1850. It is comprised of thirty-three separate municipalities, and the Township of Toms River serves as the seat of Ocean County's government. At 638.10 square miles (408,384 acres), Ocean County is the second largest of New Jersey's twenty-one counties. Nearly all of the County's land area lies within one of two protected regions: 292.63 square miles (45.9% of the County) is within the Pinelands, and 269.15 square miles (42.2% of the County) is within the Coastal Area Facility Review Act (CAFR) region. Due to limitations on development in these two areas, vast amounts of the County are preserved as open space.

As of the 2010 U.S. Census, Ocean County had a total population of 576,567. Much of the development that has occurred over recent decades has been concentrated in the coastal areas and in Brick, Lakewood, and Toms River Townships. Presently, these three municipalities constitute approximately forty-five percent of the County's total population.

According to data provided by the North Jersey Transportation Planning Authority (NJTPA), Ocean County's population is expected to grow to 712,176 by the year 2035. This projection is a composite of the expected population growth in all of Ocean County's individual municipalities, and is the most accurate and comprehensive set of data of its kind that is presently available. The NJDEP has found the use of the NJTPA's 2035 population projections to be acceptable and appropriate for use in this WMP's projections. According to the NJTPA projections, the majority of future population growth (about sixty-three percent) is expected to occur in Brick, Jackson, Lakewood, Manchester, and Toms River Townships.

Projections of future population and development are critical components of this WMP's analyses of future wastewater treatment needs. Typically, as population and development increase, so too, does the demand for wastewater treatment. For smaller built out municipalities, the NJTPA projections alone were



used for all analyses which factored expected population growth. For municipalities with considerable amounts of developable land, municipal zoning and development approvals were factored into GIS-based models provided by the NJDEP to determine future demand for wastewater treatment.

Overview of Current Wastewater Services and Wastewater Responsibilities

Ocean County includes community wastewater systems that serve 30.16% of the County's total area and approximately 96.49% of the total County population. The sewer service area may include industrial businesses that discharge process wastewater to the collection system for treatment by a facility not owned by that business. There are no combined stormwater sewers within the County.

Ocean County divides its WQMP into three regions, or planning areas: the Northern Planning Area, the Central Planning Area, and the Southern Planning Area. Each of these three planning areas is served by a centralized wastewater treatment facility, and these facilities are owned and operated by the Ocean County Utilities Authority (OCUA), which is the designated management agency for wastewater treatment under the WQMP. The boundaries of the three planning areas can be seen in Map 1. In addition to the treatment facilities, OCUA infrastructure within the three planning areas consists of forty lift/pump stations and approximately 160 miles of interceptor and force main lines and outfalls.

Cumulatively, the three OCUA Water Pollution Control Facilities (WPCFs) have the capacity to treat eighty-four million gallons of wastewater each day (MGD). The current system of three centralized treatment plants, which has been in place since the 1970s, replaced approximately forty package sewerage treatment plants that in some cases provided significantly lower levels of treatment and discharged effluent into inland streams, bays, and outfalls short distances from shore.

Overview of Current Water Services and Water Supply Responsibilities

Ocean County includes community water supply systems that serve 23.39% of the County's total area and approximately 80.79% of the total County population. These systems are operated either by individual municipalities or private companies contracted by the municipalities. A list of these responsible entities and the municipalities they serve can be found in Table 7. Assessments of their current capabilities and ability to handle projected changes in population can be found in the Municipal Chapters appended to this WMP.

The extents of the areas served by the County's public water purveyors generally coincide with the boundary of the County's existing sewer service area. Noteworthy areas which are within the sewer service area boundary but are not served by public water utilities include sections of southeastern and northwestern Jackson Township, southern Berkeley Township, the Whiting area of Manchester Township, and some parts of Stafford Township.

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

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 environmental infrastructure, in particular centralized sewer service, has a profound influence on development patterns and land use intensity. The wastewater management planning process is intended to assign an appropriate wastewater management treatment alternative to geographic areas based on environmental sensitivity and other land use planning objectives, such as regional center-based development or farmland preservation. The extension of public sewers into areas designated for protection by federal, state, regional, or local land use plans would be inconsistent with those protection objectives.

The adopted Water Quality Management Planning Rules (N.J.A.C. 7:15) generally exclude the extension of sewer service into large contiguous areas—defined as twenty-five acres or more—of wetlands, category one water buffers, Natural Heritage Priority Sites, and/or endangered and threatened species habitat. The extension of sewer service into these areas would encourage their development and thus conflict with the NJDEP's statutory mandate to protect these resources.

It should be noted that under limited circumstances environmentally sensitive areas that are smaller than twenty-five acres may be included in the sewer service area as necessary to preserve the investment in projects having already received certain local and state approvals, to relate sewer service areas to recognizable geographic features, or to accomplish center-based development proposed by the local land use planning authority and approved by the NJDEP through the plan endorsement process.

Additional regional and local land use planning objectives used in delineating appropriate areas for public sewer service are discussed in Chapter V of this WMP.

Overview of Major Water Resource Management Issues

While there are some concerns regarding water quality, base flow, and water supply in Ocean County, they are currently not a limiting factor for wastewater treatment. At the direction of the NJDEP, the information contained in the 1996 NJ Statewide Water Supply Plan was used for all calculations which considered current water availability by municipality. Data from this report is presented in Chapter VIII of this WMP. Recent impacts to public water supply and wastewater conveyance and treatment infrastructure from Hurricane Sandy have been temporary and relatively isolated. Environmental regulatory constraints continue to be the most significant factor when excluding land from the delineated sewer service area.

Overview of Future Wastewater Services and Responsibilities

Based on the regional and local land use and environmental planning objectives previously discussed, and the identified areas that are currently built but do not currently have adequate wastewater treatment, Map 2 identifies areas presently served by public sewers, and Maps 6 and 7 identify the appropriate areas to be served by public sewers in the future. Each planning area's portion of the sewer service area is keyed to a specific sewage treatment plant which is the facility authorized under this plan to accept and treat wastewater from that planning area. Each sewage treatment plant identified in this plan has an accompanying facility table that provides information concerning that facility's owner, operator, permitted flow, existing flow, remaining permitted flow, and projected build out flow summarized by municipality.



Based on the build out analysis of each planning area and the existing permitted capacity of the sewage treatment plants identified in this plan, future expansion of the Central Water Pollution Control Facility (CWPCF) and Southern Water Pollution Control Facility (SWPCF) are not required to meet the future wastewater generation needs of the Central Planning Area and Southern Planning Area, respectively. In the case of the Northern Planning Area, an expansion of the Northern Water Pollution Control Facility (NWPCF) is likely needed to accommodate projected growth. OCUA has been independently monitoring growth and flow numbers, and if an expansion is warranted, will prepare an anti-degradation analysis to address future increased flow, including non-binding estimated water quality based effluent limits, which are to be formally established through the NJPDES permit process.



II. Summary of Significant Actions

Urban and Non-Urban Municipalities

New Jersey's Water Quality Management Planning Rules (N.J.A.C. 7:15) establish a means to classify individual municipalities as either "urban" or "non-urban." A municipality is deemed urban if less than ten percent of the total buildable land area of the municipality is "available land for development." The amount of buildable land is calculated by subtracting the area of preserved open space, environmentally sensitive land, and other constrained areas from the municipality's total area. A non-urban municipality is one in which more than ten percent of the remaining area is not presently developed.

Sewer Service Area Changes

Since the submission of the previous Ocean County WMP, there has been an overall contraction in the sewer service area boundary, though more established municipalities have remained relatively unchanged. In fact, twenty-two of the County's thirty-three municipalities are considered urban and are unlikely to see any major deviations from current development patterns. The most significant changes to the County's sewer service area have occurred in those municipalities which are not yet built out. Noteworthy additions to the sewer service area have occurred in southern central Manchester Township, and in western and northwestern Lakewood Township. Noteworthy subtractions from the sewer service area have taken place in northern central Manchester Township, and throughout Jackson Township. All expansions of the sewer service area within the Pinelands area are consistent with the Memorandum of Understanding of April 9, 2012 between the Pinelands Commission and the NJDEP (see Chapter V).

Amendments to the WQMP Rules necessitated a modification of the sewer service area based on environmental sensitivity and local planning objectives as described in this document. In accordance with regulatory requirements, 37,246.53 acres were removed from the previously approved sewer service area. Also, 11,471.19 acres that were not part of the previously approved sewer service area have been added based on local planning objectives, Pinelands requirements, and an environmental sensitivity assessment. These changes resulted in a net reduction of 25,775.34 acres from the sewer service area. Chapter V includes a discussion of the delineation of the adopted sewer service area.

The boundaries of the three planning areas will not be altered with the adoption of this WMP. A discussion of the environmental impact assessments and analyses of this WMP can be found in Chapter IV. Chapters VI and VII discuss the present capacity of OCUA infrastructure and assess the capability of this infrastructure to accommodate projected future wastewater flows.

New or Expanded Wastewater Facilities

Based on the development and population growth projections for municipalities in the Northern Planning Area, the NWPCF will need to be expanded to accommodate the resulting additional wastewater flows. The total projected wastewater flow to be directed to the NWPCF by the year 2035 is 30.169 million gallons per day (MGD). While this does not exceed the facility's current capacity of 32.000 MGD, it is well above 80% of the current total capacity. According to current regulations, an analysis of alternatives to handle additional capacity must be completed when a plant reaches this 80% threshold. OCUA is aware of these projections, has made similar projections independent of this WMP, and is presently considering means to ensure that the NWPCF's capacity remains above peak daily flows. This matter is discussed further in Chapter VII.

At the time of this WMP's writing, Plumsted Township is seeking approval from the NJDEP and the Delaware Valley Basin Commission for the construction of a new wastewater treatment facility which would serve the New Egypt Town Center (NETC). The location of this proposed facility is Block 40, Lot 4, which is situated at the intersection of Route 537 and New Egypt Allentown Road. Should this facility be built as designed, it would discharge approximately 0.6 MGD of effluent into the adjacent Crosswicks Creek. The Township and the Plumsted Municipal Utilities Authority are pursuing socio-economic justification for noncompliance with non-degradation standards associated with discharges to surface water. The "Socio-Economic Analysis for the Plumsted Township Wastewater Treatment Plant" prepared by the Plumsted Municipal Utilities Authority, Van Cleef Engineering, and HDR Hydroqual on May 30, 2014 has concluded that a surface water discharge to Crosswicks Creek is "the only viable solution to address the critical need for



wastewater facilities for the NETC.” The study finds that while the proposed facility would cause degradation of water quality in Crosswicks Creek, the concentrations of key pollutants would comply with changes to the monthly allowable limits requested in the Township’s January 13, 2014 letter to the NJDEP. See Table 5 for additional information.

Initial Nitrate Dilution Analysis Results

Chapter VII of this WMP details the County’s nitrate dilution analysis, which was utilized to project the capacity of the natural environment to accommodate additional non-sewered development if built out as presently zoned. This analysis was performed on a sub-watershed, or “HUC11” basis. Only non-urban municipalities were considered, as future septic development in urban municipalities is expected to be negligible. The initial results indicated that two of these HUC11s, 02040301020 and 02040301030, are zoned for future development that would exceed the assimilative capacity of these sub-watersheds. Until such time that appropriate measures can be taken to limit future septic development in these HUC11s, the NJDEP has advised the County not to include the initial results of the nitrate dilution analysis for the non-urban municipalities which comprise these HUC11s—Jackson Township and Lakewood Township. Please see Chapter VII of this WMP and the applicable Municipal Chapters for more information.

Island Beach State Park

Island Beach State Park is an approximately ten mile strip of natural beaches and coastal dunes located at the southernmost end of Barnegat Peninsula in Berkeley Township. At the time of this WMP’s adoption, the NJDEP Division of Parks and Forestry had proposed to extend sanitary sewer connections to the existing structures which accommodate the park’s visitors. These select portions of the park have accordingly been added to the County’s sewer service area. Additional flow to the CWPCF is projected to be 0.024 MGD—not a significant increase—and less than the 0.049 MGD of wastewater currently permitted to be discharged to groundwater. Once sewer connections have been constructed, the NJPDES-permitted onsite treatment plant will continue operating on a more limited basis.



III. Discussion of Existing and Future Wastewater and Water Supply Facilities

This section addresses existing wastewater treatment and water supply facilities, public water purveyors utilized by development within Ocean County, and their capacity to accommodate projected growth.

Existing Areas Served by Wastewater Facilities

Of the thirty-three municipalities in Ocean County, twenty-nine lie entirely within one of the three planning areas. Jackson Township is bifurcated by the boundary between the Northern Planning Area and the Central Planning Area. The northeastern portion of Jackson Township—which is within the Metedeconk River Basin—is served by the NWPCF, while the southwestern section—which lies within the Toms River Basin—flows to the CWPCF. All of mainland Brick Township lies within the Northern Planning Area, while the island portion of the Township—located to the south of Mantoloking Borough—lies within the Central Planning Area. All of Barnegat Township is within the Central Planning Area, with the exception of a portion of the Pinelands Regional Growth Area located west of the Garden State Parkway, which flows to the SWPCF. Additionally, five Monmouth County municipalities lie either partly or entirely within the Northern Planning Area.

The only municipality in Ocean County not served by OCUA is Plumsted Township, which is largely rural and is served by several small-scale septic systems and localized sewers. Ocean County is currently working with Plumsted regarding a proposed wastewater treatment plant for the New Egypt area of the Township.

Table 1 lists the municipalities which comprise each planning area:

Table 1: Municipalities by WQMP Planning Area		
Northern Planning Area	Central Planning Area	Southern Planning Area
Bay Head Borough	Barnegat Township	Barnegat Township
Brick Township*	Beachwood Borough	Barnegat Light Borough
Farmingdale Borough**	Berkeley Township*	Beach Haven Borough
Freehold Borough**	Brick Township	Eagleswood Township
Freehold Township**	Island Heights Borough	Harvey Cedars Borough
Howell Township**	Jackson Township	Little Egg Harbor Township
Jackson Township	Lacey Township	Long Beach Township
Lakewood Township	Lakehurst Borough	Ship Bottom Borough
Point Pleasant Beach Borough	Lavallette Borough	Stafford Township*
Point Pleasant Borough	Manchester Township	Surf City Borough
Wall Township**	Mantoloking Borough	Tuckerton Borough
	Ocean Gate Borough	
	Ocean Township	
	Pine Beach Borough	
	Seaside Heights Borough	
	Seaside Park Borough	
	South Toms River Borough	
	Toms River Township	
*Location of Water Pollution Control Facility		
**Monmouth County		

OCUA Facilities

The NWPCF, which serves the Northern Planning Area, is located in Brick Township. This facility opened in 1976, and is designed to treat domestic sewage and some light industrial waste. At present, the NWPCF has the capacity to treat 32.0 million gallons of wastewater per day. As of September 2011, the NWPCF was treating approximately 22.7 million gallons of wastewater per day, or seventy-one percent of its total capacity. After receiving treatment, the plant's effluent is disinfected and discharged to the Atlantic Ocean sixty feet below the ocean surface, approximately one mile offshore. Of OCUA's forty lift/pump stations, eight are located along the interceptors and force mains which flow to the NWPCF. The NWPCF provides sewer service to six Ocean County municipalities, as well as the municipalities of southern Monmouth County which



lie within the Metedeconk River Basin (Farmingdale Borough, Freehold Borough, Freehold Township, Howell Township, and portions of Wall Township). Population growth and flow projections for these five Monmouth County municipalities were provided by the Monmouth County Planning Board in consultation with the Manasquan River Regional Sewerage Authority (MRRSA) and OCUA, and were used to calculate future wastewater treatment capacity needs in the Northern Planning Area. Municipal Chapters for these five municipalities are not included in this WMP, as they will be addressed in Monmouth County's Wastewater Management Plan.

The CWPCF, which serves the Central Planning Area, is located in Berkeley Township. The CWPCF also houses OCUA's administrative offices. This facility opened in 1979, and is designed to treat a combination of domestic, light industrial, and commercial wastewaters, as well as septage hauled in from the Northern, Central, and Southern Planning Areas. Like the NWPCF, the CWPCF is presently able to treat 32.0 million gallons of wastewater per day. As of September 2011, the CWPCF was treating approximately 20.4 million gallons of wastewater per day, or sixty-four percent of its total capacity. After disinfection, the treated effluent is discharged by gravity flow or by pumping through a fifty-four inch outfall into the Atlantic Ocean fifty feet below the ocean surface, approximately one mile offshore. Of OCUA's forty lift/pump stations, nineteen are located along the interceptors and force mains which flow to the CWPCF. In total, The CWPCF provides sewer service to eighteen Ocean County municipalities, as well as the Lakehurst side of Joint Base McGuire-Dix-Lakehurst.

The SWPCF, which serves the Southern Planning Area, is located in the Cedar Run section of Stafford Township. The facility first went online in 1977, and treats domestic and light industrial waste. Though the SWPCF is capable of treating up to 20.0 million gallons of wastewater per day, the plant regularly operates well below its total capacity. As of September 2011, the SWPCF was treating approximately 7.1 million gallons of wastewater per day, or thirty-six percent of its total capacity. After receiving treatment, the plant's effluent is disinfected and discharged to the Atlantic Ocean via an outfall pipe forty feet below the ocean surface, and approximately one mile offshore. Of OCUA's forty lift/pump stations, thirteen are located along the interceptors and force mains which flow to the SWPCF. In total, the SWPCF provides sewer service to eleven Ocean County municipalities.

Table 2: OCUA Northern Water Pollution Control Facility (NWPCF)

1. Existing or Proposed facility:	Existing	
2. NJPDES Permit Number:	NJ0028142	
3. Discharge Type:	Discharge to surface water	
4. Receiving Water or Aquifer:	Atlantic Ocean	
5. Classification of Receiving Water:	SC	
6. Owner of Facility:	Ocean County Utilities Authority	
7. Operator of Facility:	Ocean County Utilities Authority	
8. Co-Permittee of Facility:	N/A	
9. Location of Facility:		
a. Municipality & County:	Brick Township, Ocean County	
b. Street Address:	255 Mantoloking Road	
c. Block(s) and Lot(s):	Block 84, Lot 14.04	
10. Location of discharge:		
a. Longitude:	74 deg. 1 min. 58.46 sec. west	
b. Latitude:	40 deg. 1 min. 51.61 sec. north	
11. Present Permitted Flow:	32.000 MGD	
12. Summary of Population Served:	Present (2010) Population Served	Build Out (2035) Population Served
Bay Head Borough	968	1,146
Brick Township	74,355	87,142
Farmingdale Borough*	1,591	1,604
Freehold Borough*	10,914	10,963
Freehold Township*	24,416	28,856
Howell Township*	37,428	46,540
Jackson Township	46,849	67,039
Lakewood Township	92,843	108,282
Point Pleasant Beach Borough	4,665	5,182
Point Pleasant Borough	18,392	20,296
Wall Township*	1,195	1,844
Total	313,616	378,894



13. Summary of Wastewater Flows:		Present (2010) Wastewater Flow (MGD)	Build-Out (2035) Wastewater Flow (MGD)
Bay Head Borough	Residential	0.329	0.342
	Commercial	0.014	0.014
	Industrial	0.000	0.000
	Inflow/Infiltration	0.010	0.010
Brick Township	Residential	5.125	6.084
	Commercial	0.262	0.354
	Industrial	0.000	0.000
	Inflow/Infiltration	0.254	0.254
Farmingdale Borough*	Residential	0.133	0.110
	Commercial	0.031	0.026
	Industrial	0.000	0.000
	Inflow/Infiltration	0.013	0.011
Freehold Borough*	Residential	0.891	0.911
	Commercial	0.235	0.240
	Industrial	0.228	0.233
	Inflow/Infiltration	0.212	0.216
Freehold Township*	Residential	1.485	1.801
	Commercial	0.632	0.766
	Industrial	0.227	0.275
	Inflow/Infiltration	0.406	0.493
Howell Township*	Residential	2.870	2.410
	Commercial	0.164	0.766
	Industrial	0.000	0.000
	Inflow/Infiltration	0.160	0.231
Jackson Township	Residential	1.746	2.773
	Commercial	0.194	1.476
	Industrial	0.000	0.000
	Inflow/Infiltration	0.102	0.102
Lakewood Township	Residential	4.253	5.480
	Commercial	0.254	1.360
	Industrial	0.191	0.191
	Inflow/Infiltration	0.387	0.387
Point Pleasant Beach Borough	Residential	0.720	0.759
	Commercial	0.062	0.062
	Industrial	0.000	0.000
	Inflow/Infiltration	0.087	0.087
Point Pleasant Borough	Residential	1.351	1.494
	Commercial	0.150	0.150
	Industrial	0.000	0.000
	Inflow/Infiltration	0.079	0.079
Wall Township*	Residential	0.093	0.117
	Commercial	0.014	0.068
	Industrial	0.000	0.029
	Inflow/Infiltration	0.006	0.009
Total		23.370	30.169

*Monmouth County municipalities; data supplied by OCUA

**Table 3: OCUA Central Water Pollution Control Facility (CWPCF)**

1. Existing or Proposed facility:	Existing	
2. NJPDES Permit Number:	NJ0029408	
3. Discharge Type:	Discharge to surface water	
4. Receiving Water or Aquifer:	Atlantic Ocean	
5. Classification of Receiving Water:	SC	
6. Owner of Facility:	Ocean County Utilities Authority	
7. Operator of Facility:	Ocean County Utilities Authority	
8. Co-Permittee of Facility:	N/A	
9. Location of Facility:		
a. Municipality & County:	Berkeley Township, Ocean County	
b. Street Address:	501 Hickory Lane	
c. Block(s) and Lot(s):	Block 620, Lot 1	
10. Location of discharge:		
a. Longitude:	74 deg. 3 min. 36.23 sec. west	
b. Latitude:	39 deg. 54 min. 15.47 sec. north	
11. Present Permitted Flow:	32,000 MGD	
12. Summary of Population Served:	Present (2010) Population Served	Build Out (2035) Population Served
Barnegat Township	20,526	26,526
Beachwood Borough	11,045	12,440
Berkeley Township	41,255	48,755
Brick Township	717	717
Island Heights Borough	1,673	1,767
Jackson Township	8,007	10,252
Lacey Township	27,644	33,234
Lakehurst Borough	2,654	3,237
Lavallette Borough	1,875	1,906
Manchester Township	43,070	53,678
Mantoloking Borough	296	333
Ocean Gate Borough	2,011	2,107
Ocean Township	8,332	10,661
Pine Beach Borough	2,127	2,288
Seaside Heights Borough	2,887	3,036
Seaside Park Borough	1,579	1,601
South Toms River Borough	3,684	4,597
Toms River Township	91,239	107,176
Total	270,621	324,311



13. Summary of Wastewater Flows:		Present (2010) Wastewater Flow (MGD)	Build Out (2035) Wastewater Flow (MGD)
Barnegat Township	Residential	1.138	2.234
	Commercial	0.016	0.039
	Industrial	0.000	0.000
	Inflow/Infiltration	0.076	0.076
Beachwood Borough	Residential	0.690	0.795
	Commercial	0.015	0.015
	Industrial	0.007	0.007
	Inflow/Infiltration	0.051	0.051
Berkeley Township	Residential	2.540	3.173
	Commercial	0.050	0.466
	Industrial	0.000	0.000
	Inflow/Infiltration	0.128	0.128
Brick Township	Residential	0.139	0.139
	Commercial	0.003	0.003
	Industrial	0.000	0.000
	Inflow/Infiltration	0.017	0.017
Island Heights Borough	Residential	0.125	0.132
	Commercial	0.005	0.005
	Industrial	0.000	0.000
	Inflow/Infiltration	0.004	0.004
Jackson Township	Residential	0.277	0.487
	Commercial	0.000	0.737
	Industrial	0.015	0.015
	Inflow/Infiltration	0.008	0.008
Lacey Township	Residential	1.888	2.507
	Commercial	0.045	0.246
	Industrial	0.002	0.002
	Inflow/Infiltration	0.126	0.126
Lakehurst Borough	Residential	0.189	0.233
	Commercial	0.016	0.016
	Industrial	0.000	0.000
	Inflow/Infiltration	0.008	0.008
Lavallette Borough	Residential	0.469	0.471
	Commercial	0.034	0.034
	Industrial	0.000	0.000
	Inflow/Infiltration	0.026	0.026
Manchester Township	Residential	1.631	2.754
	Commercial	0.159	0.487
	Industrial	0.057	0.057
	Inflow/Infiltration	0.101	0.101
Mantoloking Borough	Residential	0.096	0.099
	Commercial	0.001	0.001
	Industrial	0.000	0.000
	Inflow/Infiltration	0.005	0.005
Ocean Gate Borough	Residential	0.170	0.177
	Commercial	0.006	0.006
	Industrial	0.000	0.000
	Inflow/Infiltration	0.022	0.022
Ocean Township	Residential	0.653	0.750
	Commercial	0.028	0.273
	Industrial	0.000	0.000
	Inflow/Infiltration	0.021	0.021
Pine Beach Borough	Residential	0.118	0.130
	Commercial	0.001	0.001
	Industrial	0.000	0.000
	Inflow/Infiltration	0.000	0.000
Seaside Heights Borough	Residential	0.650	0.661
	Commercial	0.116	0.116
	Industrial	0.000	0.000
	Inflow/Infiltration	0.020	0.020
Seaside Park Borough	Residential	0.664	0.666
	Commercial	0.050	0.050
	Industrial	0.000	0.000
	Inflow/Infiltration	0.016	0.016
South Toms River Borough	Residential	0.188	0.200
	Commercial	0.008	0.009
	Industrial	0.000	0.000
	Inflow/Infiltration	0.010	0.010
Toms River Township	Residential	7.714	8.909
	Commercial	0.502	0.760
	Industrial	0.000	0.000
	Inflow/Infiltration	0.432	0.432
Total		21.546	29.284

**Table 4: OCUA Southern Water Pollution Control Facility (SWPCF)**

1. Existing or Proposed facility:	Existing	
2. NJPDES Permit Number:	NJ0026018	
3. Discharge Type:	Discharge to surface water	
4. Receiving Water or Aquifer:	Atlantic Ocean	
5. Classification of Receiving Water:	SC	
6. Owner of Facility:	Ocean County Utilities Authority	
7. Operator of Facility:	Ocean County Utilities Authority	
8. Co-Permittee of Facility:	N/A	
9. Location of Facility:		
a. Municipality & County:	Stafford Township, Ocean County	
b. Street Address:	150 Cedar Run Dock Road	
c. Block(s) and Lot(s):	Block 147, Lot 14	
10. Location of discharge:		
a. Longitude:	74 deg. 9 min. 21.68 sec. west	
b. Latitude:	39 deg. 38 min. 38.71 sec. north	
11. Present Permitted Flow:	20.000 MGD	
12. Summary of Population Served:	Present (2010) Population Served	Build Out (2035) Population Served
Barnegat Township	410	410
Barnegat Light Borough	574	707
Beach Haven Borough	1,170	1,342
Eagleswood Township	1,603	3,217
Harvey Cedars Borough	337	382
Little Egg Harbor Township	20,065	26,554
Long Beach Township	3,051	3,502
Ship Bottom Borough	1,156	1,265
Stafford Township	26,535	32,364
Surf City Borough	1,205	1,272
Tuckerton Borough	3,347	4,160
Total	59,453	75,176



13. Summary of Wastewater Flows:		Present (2010) Wastewater Flow (MGD)	Build Out (2035) Wastewater Flow (MGD)
Barnegat Township	Residential	0.023	0.111
	Commercial	0.000	0.000
	Industrial	0.000	0.000
	Inflow/Infiltration	0.001	0.001
Barnegat Light Borough	Residential	0.198	0.208
	Commercial	0.012	0.012
	Industrial	0.000	0.000
	Inflow/Infiltration	0.001	0.001
Beach Haven Borough	Residential	0.778	0.791
	Commercial	0.000	0.000
	Industrial	0.000	0.000
	Inflow/Infiltration	0.022	0.022
Eagleswood Township	Residential	0.031	0.032
	Commercial	0.001	0.005
	Industrial	0.000	0.000
	Inflow/Infiltration	0.000	0.000
Harvey Cedars Borough	Residential	0.276	0.279
	Commercial	0.009	0.009
	Industrial	0.000	0.000
	Inflow/Infiltration	0.003	0.003
Little Egg Harbor Township	Residential	1.184	1.671
	Commercial	0.028	0.049
	Industrial	0.000	0.000
	Inflow/Infiltration	0.044	0.044
Long Beach Township	Residential	2.744	2.778
	Commercial	0.030	0.030
	Industrial	0.000	0.000
	Inflow/Infiltration	0.086	0.086
Ship Bottom Borough	Residential	0.417	0.425
	Commercial	0.040	0.040
	Industrial	0.000	0.000
	Inflow/Infiltration	0.005	0.005
Stafford Township	Residential	1.669	2.386
	Commercial	0.056	0.187
	Industrial	0.000	0.000
	Inflow/Infiltration	0.074	0.074
Surf City Borough	Residential	0.488	0.493
	Commercial	0.022	0.022
	Industrial	0.000	0.000
	Inflow/Infiltration	0.001	0.001
Tuckerton Borough	Residential	0.357	0.418
	Commercial	0.029	0.029
	Industrial	0.000	0.000
	Inflow/Infiltration	0.016	0.016
Total		8.645	10.229



Proposed Plumsted Township Wastewater Treatment Plant

The new treatment plant proposed by the Plumsted Township MUA would serve the portions of the New Egypt Town Center which are within the boundaries of the adopted sewer service area. Its purpose would be to support center-based development to reverse the economic decline of the downtown area, as well as to address public health and welfare issues. If constructed, the plant would be a New Jersey Pollutant Discharge Elimination System (NJPDES) permitted facility:

Table 5: Plumsted Township Wastewater Treatment Plant			
1. Existing or Proposed facility:		Proposed	
2. NJPDES Permit Number:		NJ0226271	
3. Discharge Type:		Discharge to surface water	
4. Receiving Water or Aquifer:		Crosswicks Creek	
5. Classification of Receiving Water:		FW2	
6. Owner of Facility:		Plumsted Municipal Utilities Authority	
7. Operator of Facility:		Plumsted Municipal Utilities Authority	
8. Co-Permittee of Facility:		N/A	
9. Location of Facility:			
a. Municipality & County:		Plumsted Township, Ocean County	
b. Street Address:		933 Monmouth Road	
c. Block(s) and Lot(s):		Block 40, Lot 4	
10. Location of discharge:			
a. Longitude:		74 deg. 32 min. 26.73 sec. west	
b. Latitude:		40 deg. 5 min. 2.99 sec. north	
11. Present Permitted Flow:		00.600 MGD	
12. Summary of Population Served:		Present (2010) Population Served	Build-Out (2035) Population Served
Plumsted Township		0	10,782
Total		0	10,782
13. Summary of Wastewater Flows:		Present (2010) Wastewater Flow (MGD)	Build-Out (2035) Wastewater Flow (MGD)
Plumsted Township	Residential	0.000	0.600*
	Commercial	0.000	0.000
	Industrial	0.000	0.000
	Inflow/Infiltration	0.000	0.000
Total		0.000	0.600
*Data supplied by Plumsted MUA			

On-Site, Non-Industrial Wastewater Facilities

In addition to the three OCUA Water Pollution Control Facilities, there are numerous non-centralized wastewater treatment facilities throughout Ocean County. These 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. Table 6 lists all existing on-site, non-industrial treatment facilities that discharge to surface water or that discharge more than 2,000 gallons per day to groundwater or domestic wastewater, and are regulated under a NJPDES permit at the date of the adoption of this WMP.

**Table 6: On-Site, Non-Industrial Wastewater Facilities**

Facility	Municipality	NJPDES Permit #	DSW/DGW
Brighton at Barnegat	Barnegat	NJG0084361	DGW
Long Beach RV Resort	Barnegat	NJG0132560	DGW
Pinewood Estates	Barnegat	NJG0064823	DGW
Double Trouble State Park	Berkeley	NJG0133183	DGW
Island Beach State Park	Berkeley	NJG0133175	DGW
Sea Pirate Campground	Eagleswood	NJG0085448	DGW
Butterfly Campground	Jackson	NJG0085138	DGW
Doves Mills Apartments	Jackson	NJG0136719	DGW
Forest Resource Education Center (FREC)	Jackson	NJG0133205	DGW
Harmony Hideaway Campground	Jackson	NJG0089010	DGW
Indian Rock Campground	Jackson	NJG0084794	DGW
Jackson Acres	Jackson	NJ0090158	DGW
Jackson Colonial Arms Apartments	Jackson	NJG0136913	DGW
Jackson Premium Outlets	Jackson	NJ0108963	DGW
Land O'Pines Mobile Home Park	Jackson	NJG0083186	DGW
Luxury Mobile Home Park	Jackson	NJG0084697	DGW
Maple Glen Mobile Home Park	Jackson	NJ0062090	DGW
Maple Lakes Campgrounds	Jackson	NJG0088951	DGW
Meadowbrook Village	Jackson	NJG0140368	DGW
Metedeconk National Golf Club	Jackson	NJ0109193	DGW
Ocean County Vo-Tech School	Jackson	NJG0108545	DGW
Pine Barrens Golf Club	Jackson	NJ0132225	DGW
Pleasant Garden Apartments	Jackson	NJG0100404	DGW
Shady Lake Park	Jackson	NJG0086860	DGW
Shady Oak Trailer Park	Jackson	NJG0112658	DGW
South Wind Village / United MHP	Jackson	NJ0090344	DGW
Tip Tam Camping Resort	Jackson	NJG0085278	DGW
Lakewood Rest Home	Lakewood	NJG0089788	DGW
Baker's Acres Campground	Little Egg Harbor	NJG0085286	DGW
Cedar Glen Homes	Manchester	NJG0136492	DGW
Cedar Glen West	Manchester	NJG0136387	DGW
Manchester Village Apartments	Manchester	NJG0141933	DGW
Ridgeway Industrial Park	Manchester	NJG0168181	DGW
Ridgeway Manufactured Housing Community	Manchester	NJG0085014	DGW
Joseph A. Citta Scout Reservation	Ocean	NJG0101621	DGW
Ocean County Vo-Tech School--Waretown	Ocean	NJG0134813	DGW
Colliers Mills Mobile Home Park	Plumsted	NJG0084387	DGW
Jensen's Mobile Home Park	Plumsted	NJ0080055	DGW
New Egypt Middle School	Plumsted	NJ0104264	DGW
New Egypt Speedway	Plumsted	NJG0154105	DGW
New Egypt Trailer Park	Plumsted	NJG0084212	DGW
Oak Grove Mobile Home Park	Plumsted	NJG0157309	DGW
Albocondo Campground	Toms River	NJG0085324	DGW
Bayview Park	Tuckerton	NJG0084492	DGW

Remaining areas of Ocean County not otherwise designated as service areas for treatment facilities requiring a NJPDES permit are included within a general wastewater management area for septic systems and other small treatment works that treat 2,000 GPD or less of wastewater and discharge to groundwater.

Individual Subsurface Sewage Disposal Systems (ISSDS)

Individual subsurface sewage disposal systems (ISSDS) for individual residences can only be constructed in the sewer service area if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when sewer service becomes available. This applies to any ISSDS that requires certification from the Department under the Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23) or individual Treatment Works Approval or NJPDES permits (under N.J.A.C. 7:14A). It also applies to any ISSDS which requires only local approvals if the WMP acknowledges adequate arrangements for enforcement of the requirement (such as through a municipal or sewerage authority ordinance).

Existing Water Supply Infrastructure

Water supply is inherently linked to wastewater generation, and demand for potable water is a key determinant of wastewater treatment capacity needs. Table 7 lists all entities currently permitted by the NJDEP Division of Water Supply and Geoscience to both draw and distribute water from the County's aquifers. The Brick Township MUA is also permitted to draw and distribute surface water. The 860 million gallon Brick



Reservoir, completed in 2005, provides potable water to portions of Brick, Lakewood, Point Pleasant, and Point Pleasant Beach, as well as portions of Howell Township in Monmouth County.

Table 7: Water Supply Districts and Municipalities Served	
Water Supply Utility	Municipalities Served
Aqua New Jersey Eastern Division	Berkeley
Barneget Light Water Department	Barneget Light, Long Beach
Barneget Township Water and Sewer Utilities	Barneget
Beach Haven Water Department	Beach Haven
Beachwood Borough	Beachwood
Berkeley Township MUA	Berkeley
Brick Township MUA	Brick
Cedar Glen Homes Inc.	Manchester
Cedar Glen Lakes Water Company	Manchester
Cedar Glen West Water Company	Manchester
Cedar Run Senior Citizen Apartments	Stafford
Collier Mills Mobile Estates	Plumsted
Crystal Lake Health Care	Berkeley
Eaglewood Village Mobile Home Park	Eagleswood
Fountainhead Parks Inc.	Jackson
Great Adventure	Jackson
Harvey Cedars Borough Water Department	Harvey Cedars, Long Beach
Island Heights Water Department	Island Heights
Jackson Estates Mobile Home Park	Jackson
Jackson Township MUA	Jackson
Jensens Deep Run Adult Village	Plumsted
Lacey Township MUA	Berkeley, Lacey
Lakehurst Water Department	Lakehurst, Manchester
Lakewood Township MUA	Lakewood
Land O Pines Mobile Home Park	Jackson
Lavallette Water Department	Lavallette
Little Egg Harbor MUA	Little Egg Harbor
Long Beach Township - Brant Beach	Long Beach
Long Beach Township - High Bar Harbor	Long Beach
Long Beach Township - Holgate	Long Beach
Long Beach Township - Love Ladies North	Long Beach
Long Beach Township - Love Ladies South	Long Beach
Long Beach Township - North Beach	Long Beach
Luxury Mobile Terrace	Jackson
Manchester Manor Nursing	Manchester
Manchester Township Water Utilities - Western	Manchester
Manchester Township Water Utility	Manchester
Manchester Township Water Utility - Lacey Road	Manchester
Manchester Village	Manchester
Maple Glen Mobile Home Park	Jackson
Meadowbrook Co-op Inc.	Jackson
Naval Air Eng Station - Lakehurst	Jackson, Lakehurst, Manchester
NJ American Water Company	Bay Head, Brick, Lavallette, Mantoloking, Toms River
NJ American Water Company - Coastal Northern	Jackson, Lakewood
NJ American Water Company - Lakewood	Lakewood
NJ American Water Company - New Egypt	Plumsted
NJ American Water Company - Ortleigh Beach System	Toms River
NJ American Water Company - Pelican Island	Seaside Heights, Toms River
Oak Grove Mobile Home Park	Plumsted
Oak Tree Mobile Home Park	Jackson
Ocean Gate Water Department	Ocean Gate
Ocean Township MUA - Pebble Beach	Barneget, Ocean
Pine Beach Water Department	Pine Beach
Pinewood Estates - Brighton	Barneget
Point Pleasant Beach Borough	Point Pleasant Beach
Point Pleasant Water Department	Point Pleasant
Seaside Heights Water Department	Seaside Heights, Toms River
Seaside Park Water Department	Seaside Park
Shady Oak Trailer Court	Jackson
Ship Bottom Water Department	Ship Bottom
Shore Water Company	Berkeley
South Wind Mobile Home Village	Jackson
Stafford Township MUA - Beach	Stafford
Stafford Township MUA - Cedar B	Stafford
Stafford Township MUA - Fawn	Stafford
Surf City Water Department	Surf City
Tuckerton Water and Sewer Department	Little Egg Harbor
United Water Toms River	Berkeley, Toms River, South Toms River

IV. Summary of Environmental Assessments and Analyses

This section includes a description of environmental features and public open space in Ocean County. These features are significant to wastewater management planning for three reasons: They may influence the delineation of sewer service areas, 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. This information has been used in the development of a map of environmentally sensitive areas (Map 7) where the extension of sewer service is restricted.

Environmental Constraints

Development in areas mapped as wetlands, designated river areas, or other environmentally sensitive areas may be subject to special regulation under Federal or State statutes or rules. Interested persons should check with the New Jersey Department of Environmental Protection for the latest information. Depiction of environmental features is for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules.

Proposed developments tying into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.28), Endangered or Threatened Wildlife or Vegetation Species Habitat (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-6.3), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Groundwater Use (N.J.A.C. 7:7E-8.6) and the policies under General Land Areas rules, Subchapters 5, 5A, and 5B.

For facilities which are located in the Pinelands Area (including but not limited to sewer connections, sewer extensions, and on-site treatment plants), as defined at N.J.S.A. 13:18A-11, the approval of the Pinelands Commission pursuant to the requirements of the Pinelands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP. In general, sewers are only permitted in Pinelands Regional Growth Areas, Villages, and Towns.

Table 8: Environmental Features		
Environmental Feature	Acreage	Percent of County
Wetlands	97,291.66	20.06%
Public Open Space/Recreational Areas	164,735.34	33.96%
Habitat T&E	273,562.41	56.40%
Natural Heritage Priority Sites	69,619.02	14.35%
Riparian Zones	21,962.48	4.53%
Preserved Agriculture	3,331.00	0.69%
Surface Water	81,380.84	16.78%

Build Out

Map 3 shows the projected build out of Ocean County. This projection was produced using two types of analysis: For urban municipalities, population projections were provided by the NJTPA. For non-urban municipalities, municipal zoning was used to project future growth. These analyses are discussed further in the Environmental Analysis document.

Suitable Habitat for Threatened and Endangered Species

Map 4 shows the areas identified by the NJDEP as being suitable habitat for threatened and endangered species—Ranks 3, 4, and 5—through the Landscape Project Version 2.1. Three of the five available habitat types were used: coastal beaches and dunes, forests, and emergent wetlands. In addition, the bald eagle foraging grounds and wood turtle habitat maps were used as species-specific mapped products under Rank 5 and Rank 3, respectively. At the guidance of the NJDEP, urban peregrine falcon habitat mapping was not used. Ocean County has used these layers—which were produced by the NJDEP—in sewer service area delineation as described in Chapter V.



According to the NJDEP's Landscape Project Version 2.1, Ocean County is comprised of two landscape project areas: the Atlantic Coast Landscape and the Pinelands Landscape. The eastern portion of Ocean County lies in the Atlantic Coast Landscape, which also encompasses parts of Monmouth, Cape May, and Atlantic counties. New Jersey's Atlantic Coast beaches and marshes are among the most productive coastal habitats in the country. Despite heavy development, they support important portions of Atlantic Coast populations of colonial nesting birds, such as the common tern, little blue heron, and great egret, and endangered beach-nesting birds such as the least tern and piping plover. The coastal habitats also support most of the state's ospreys, peregrine falcons, northern harriers, and northern diamondback terrapins, as well as large concentrations of migrating birds and wintering waterfowl.

The western portion of Ocean County lies in the Pinelands Landscape, which also encompasses all or parts of Atlantic, Burlington, Camden, and Gloucester counties. An internationally recognized ecosystem, the Pinelands supports extremely diverse reptile, amphibian, and invertebrate populations, including the northern pine snake, corn snake, Pine Barrens Treefrog, and Pine Barrens Bluet. Extensive cedar swamps and wetland systems contain numerous insect species, as well as sustainable populations of many neotropical birds. Its waterways support aquatic communities that are unique among Mid-Atlantic States.

Natural Heritage Priority Sites

Map 4 shows the Natural Heritage Priority Sites mapped by the NJDEP as of the date of the adoption of this WMP. Natural Heritage Priority Sites are delineated based on an analysis of information in the New Jersey Natural Heritage Database, an inventory created by the NJDEP to identify critically important areas of biological diversity, with particular emphasis on rare plant species and ecological communities. This mapping was primarily used in the delineation of the sewer service area as described in Chapter V. Ocean County has a total of thirty-one Natural Heritage Priority Sites, totaling 69,619.02 acres. These sites are largely concentrated within the Pinelands—in Lacey, Ocean, Barnegat, Stafford, Eagleswood, and Little Egg Harbor Townships—as well as Berkeley Township's Island Beach State Park and other coastal areas.

Surface Water

Map 5 shows surface water as mapped by the NJDEP. Ocean County has approximately 1,797.78 miles of streams, along with approximately 81,380.84 acres of ponds, lakes, reservoirs, and bays.

Riparian Zones

Map 5 shows riparian zones or buffers that are established along all streams under the following of regulations: Flood Hazard Area Control Act Regulations, the Stormwater Management Rules, and the Water Quality Management Planning Rules and through municipal ordinances. FW1 waters are nondegradation waters in which no change from natural quality shall be allowed. Category One (C-1) waters and their tributaries are afforded a 300 foot buffer. The riparian zone adjacent to all other streams is fifty feet. Most development within these riparian zones is limited by these regulatory programs.

Surface waters that are designated C-1 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. The applicable 300 foot buffer has been applied to these waterways and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots.

Wetlands

Map 5 shows Ocean County's wetlands as mapped by the NJDEP. Freshwater Wetlands are regulated under the Freshwater Wetlands Protection Act Rules, which place stringent limits on development within these areas. Coastal Wetlands are regulated under both the Wetlands Act of 1970 and the Rules on Coastal Zone Management. Ocean County has a total of 97,291.66 acres of wetlands, which are largely concentrated east of Route 9, and along inland streams and rivers. The greatest concentration of freshwater wetlands is located in the northwestern corner of Ocean County—in Jackson, Manchester, and Plumsted Townships. The County's coastal wetlands are located in the vicinity of the Barnegat Bay, Manahawkin Bay, and Little Egg Harbor estuaries.



Preserved Agricultural Areas and Other Conservation Easements on Private Lands

Map 4 shows agricultural lands currently protected from development. Ocean County preserves agricultural lands through the Farmland Preservation Program. As of September 2015, fifty-two farms covering approximately 3,331 acres have been permanently preserved. The vast majority of these farms are located within Plumsted Township, while others are located in Jackson, Lakewood, Manchester, Toms River, and Ocean Townships.

Map 6 shows all land areas from which the development rights have been retired by purchase, donation, lot size averaging, open space or conservation development, non-contiguous transfer of development credits, or Transfer of Development Rights, to the extent that data are available. These areas are not anticipated to support significant additional wastewater generating development.

Public Open Space and Recreation Areas

Maps 2 and 6 show the land area currently protected from development as public open space, and Map 6 also shows other recreational areas that are owned and operated by land trusts, non-profit associations, and for-profit recreational businesses. These areas are not expected to support additional development. Where future facilities may be developed on open space, they are noted in the appropriate Municipal Chapters.

Over half of Ocean County is classified as public open space and recreational areas. Large state and federal acquisitions have been supplemented by the County's Natural Lands Trust Fund, which has acquired a total of 15,345 acres as of September 2015. The majority of these lands lie within the Pinelands National Reserve, while a considerable amount of public land is also situated on the barrier islands' beaches and parks, and along the mainland's coastal marshes.

Municipalities which lie within the Pinelands tend to have far more open space than those municipalities situated outside of the Pinelands: With 27,008.95 acres, Lacey Township has more public open space and recreational area than any other municipality in Ocean County. Manchester and Jackson Townships each have more than 20,000 acres of public land, while Little Egg Harbor, Stafford, Plumsted, Barnegat, and Berkeley Townships each have more than 10,000 acres of public land. In Plumsted and Eagleswood Townships, more than half of these municipalities' total area is designated for public open space and recreation.

V. Discussion of Justification of Sewer Service Area Delineations

The WQMP rules (N.J.A.C. 7:15-5.22) require coordination with and solicitation of comments or consent from certain agencies, entities, and plans, and consistency with other plans. This chapter addresses those requirements. This chapter also provides the method used to delineate the adopted sewer service area based on the mapping of significant environmentally sensitive areas, and consistency with other regional plans.

Methodology for Sewer Service Area Delineation

The Ocean County Department of Planning has mapped the adopted sewer service area adopted by the NJDEP on February 7, 2013 as shown in Map 6. To determine the extents of sewer service needs as mapped, a number of land attribute criteria were used. These included existing development, undeveloped land not deemed environmentally sensitive, and municipal zoning which allows for types of land use and density of development which necessitate the implementation of sewers. All lands which meet these three criteria have been included in the adopted sewer service area.

Those parts of Ocean County which have been added to the sewer service area since the previous WMP now adhere to all relevant regulations which permit connection to public sewers. Conversely, lands which have been removed from the sewer service area are no longer intended to be serviced by public sewers. Recent advances in mapping precision have also removed several areas that had been previously included erroneously or unnecessarily.

Environmentally Sensitive Areas

Under the Water Quality Management Planning Rules, large contiguous environmentally sensitive areas generally defined as twenty-five acres or greater in size should be excluded from sewer service areas except under certain circumstances, such as providing service to development that has already secured prior approvals or center-based development approved by the NJDEP through the Plan Endorsement process. Map 7 shows the final results for the mapping of environmentally sensitive areas—and the sewer service area mapping adopted by the NJDEP on February 7, 2013—based on the information described above and the WQMP rules. This map was created using the following process:

- Identify areas (to the extent that GIS interpretations are available) where pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) provide for restriction of sewer service to environmentally sensitive areas, and then delete areas (if any) where a map revision or grant waiver has been approved by USEPA (see Chapter III). It should be noted that pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas are unaffected by adoption of this WMP and compliance is required.
- Merge the GIS layers for wetlands, C-1 riparian zones, Natural Heritage Priority Sites, and Threatened and Endangered Species habitats, preserved farmland, and Natural Lands Trust Fund properties into a single composite GIS coverage.
- Correct the composite areas by eliminating areas designated as urban in the most recent land use/land cover layer to address land use/land cover modifications that have occurred since the environmental feature layers were prepared.
- Identify and delete any composite areas less than twenty-five acres in size from the map of environmentally constrained areas. The resulting map shows the final environmentally sensitive areas, which is used to eliminate the potential for sewer service areas except where sewer service already exists, or exceptions are allowed for infill development or approved endorsed plans. It is noted for public information purposes that the excluded areas will be protected through other NJDEP regulatory programs such as the Flood Hazard Area Control Act and Freshwater Wetlands Act rules, and may be protected by municipal ordinances as well.

Sewer Service in Environmentally Sensitive Areas

The WQMP rules allow for inclusion of environmentally sensitive areas under limited conditions. The following modifications were considered for this Ocean County WMP:



- Where a development has secured approval under the Municipal Land Use Law and possesses a valid wastewater approval, the site may be included in the sewer service area if consistent with that valid wastewater approval. This information was gathered in consultation with municipalities.
- Where a project has an approved site-specific water quality management plan and wastewater management plan amendment from the NJDEP, the project may be included in the WMP consistent with that approved site-specific amendment for a period of six years from the date the amendment was adopted.
- Where environmentally sensitive areas are bordered on multiple sides by areas with existing sewer service, and where the infill development would generate 2,000 GPD or less of sewage based on existing zoning, and where the area to be included does not include habitat critical to the recovery potential or the survival of a local population of an endangered or threatened species.
- Where sewer service is necessary to support center-based development under an “endorsed plan” (through the State Planning Commission relative to the State Development and Redevelopment Plan) and would not remove habitat critical to endangered or threatened species.
- Where necessary to create a linear boundary that is related to recognizable geographic features and would not remove habitat critical to the recovery potential or the survival of a local population of an endangered or threatened species.

Pinelands Comprehensive Management Plan

The Pinelands Area is established by the Pinelands Protection Act (N.J.S.A. 13:18A-1 et seq.) and the Pinelands National Reserve was created under the National Parks and Recreation Act of 1979, 16 U.S.C. § 471i. Those statutes are implemented through the Pinelands Comprehensive Management Plan (CMP) (N.J.A.C. 7:50). The Pinelands Protection Act requires that Water Quality Management Plan amendments, including Wastewater Management Plans, be consistent with the Pinelands CMP (N.J.S.A. 13:18A-27). The CMP requires that municipal zoning must be consistent with the minimum standards set forth in the CMP, and any new zoning ordinances must be certified by the Pinelands Commission as meeting these minimum standards. The Pinelands Commission entered into a Memorandum of Agreement with the State Planning Commission that certification of a municipality’s land use plan as consistent with the Pinelands CMP by the Pinelands Commission shall be considered as endorsed plans under the State Plan.

For facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Pinelands area, as defined at N.J.S.A. 13:18A-11, the approval of the Pinelands Commission pursuant to the requirements of the CMP is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP.

Coordination with the Pinelands Commission

The Ocean County Department of Planning sent draft sewer service area boundary maps to the Commission for comment, and held two public open house events on the delineated sewer service area for both Pinelands and non-Pinelands municipalities. The commentary received from the Pinelands Commission was consistent with the Memorandum of Understanding (MOU) of April 9, 2012 between the Pinelands Commission and the NJDEP.

The April 9, 2012 MOU established a framework pursuant to which the NJDEP’s Water Quality Management Planning regulations (N.J.A.C. 7:15) will be administered in the Pinelands Area, as defined at N.J.S.A. 13:18A-11. Among the agreements of the MOU is the understanding that all Regional Growth Areas, Pinelands Villages, Pinelands Towns, substantially developed portions of the Joint Base, and any area designated by the Pinelands Commission to be served by centralized wastewater collection and treatment facilities must be included in sewer service areas. Additionally, the MOU establishes that the NJDEP shall not require the Pinelands Commission to remove environmentally sensitive areas from Regional Growth Areas, Pinelands Villages, Pinelands Towns, substantially developed portions of the Joint Base, and any area designated by the Pinelands Commission to be served by centralized wastewater collection and treatment facilities. Furthermore, all applications for site specific or project specific amendments to sewer service areas which are wholly or partially within the Pinelands Area will require comment from the Pinelands Commission prior to NJDEP approval. Sewer service is not to be permitted in Rural Development Areas.

The NJDEP had advised the County of Ocean to obtain any build out calculations produced by the Pinelands Commission as they become available in lieu of analyses performed by the County. However, no

calculations making use of more accurate or more recent spatial data were produced by the Pinelands Commission prior to the writing of this WMP. Thus, the County's build out analyses alone were incorporated into this WMP. All analyses in this WMP used to project future wastewater demand make no distinction on the basis of situation within or outside of the Pinelands CMP area.

Coastal Zone Management

New Jersey's coastal zone has been established pursuant to the federal Coastal Zone Management Act of 1972 and was federally approved in 1978. The Rules on Coastal Zone Management (N.J.A.C. 7:7E) establish the substantive rules of the NJDEP regarding the use and development of coastal resources. These rules provide the basic policy direction for planning actions undertaken by the NJDEP in the Coastal Zone as per Section 306 of the federal Coastal Zone Management Act. Planning decisions affecting New Jersey's coastal zone under the New Jersey Water Quality Planning Act and Section 208 of the federal Clean Water Act must be consistent with New Jersey's coastal zone management program.

The Rules on Coastal Zone Management include identification of forty-eight Special Areas requiring special management consideration. In addition to the environmental features previously identified, the Rules on Coastal Zone Management generally prohibit development on beaches, dunes and in coastal high hazard areas. These areas have also been excluded from sewer service under this WMP, as providing centralized sewer service would encourage a development pattern inconsistent with the environmental sensitivity and recreational importance of these areas, and pose an undue risk to life and property.

The Rules on Coastal Zone Management further define planning areas within the coastal zone designed to shape future development patterns along the coast. Among the five coastal planning areas, the Coastal Fringe, Coastal Rural, and Coastal Environmentally Sensitive Planning Areas are identified as areas to encourage growth in compact centers and to maintain low density and low intensity development outside of those centers. The extension of centralized sewer service in these planning areas is inconsistent with the growth and protection objectives of New Jersey's Coastal Zone Management program, and therefore, these coastal planning areas have been excluded from the proposed sewer service area.

Proposed developments tying into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-6.3), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Groundwater Use (N.J.A.C. 7:7E-8.6), and the policies under General Land Areas rules, Subchapters 5, 5A, and 5B.

Coordination with the Coastal Zone Management Program

New Jersey's Coastal Zone Management Plan was consulted during the preparation of this WMP, namely, in the course of delineating sewer service area boundaries relative to environmentally sensitive areas.

Relationship to Other Regional and State Plans

The State Planning Act of 1985 (N.J.S.A. 52:18A-196 et seq.) established the New Jersey State Planning Commission, which adopted the State Development and Redevelopment Plan (SDRP) in 2001 by way of cross-acceptance. The sewer service area established by this WMP and the process by which it was developed are in conformance with the SDRP's stated objectives to foster greater coordination of planning activities related to, among others, land use, natural resource conservation, urban and suburban redevelopment, public facilities and services, and intergovernmental coordination (N.J.S.A. 52:18A-200(f)). This WMP also complies with all applicable requirements of the State Planning Rules (N.J.A.C. 17:32 et seq), which also established the plan endorsement process.

To date, one Ocean County municipality—Stafford Township—has adopted its own wastewater management plan pursuant to plan endorsement with the New Jersey State Planning Commission. Additional information on this plan can be found in the Stafford Township Municipal Chapter of this WMP.

Coordination with Municipalities, Sewer Authorities, and Water Utilities

The OCUA and all thirty-three Ocean County municipalities were contacted during the preparation of this WMP. The public water purveyors listed in Table 7 were also consulted during this process. These water purveyors were included in meetings with the municipalities which were convened for the purpose of sewer



service area delineation. Representatives from all of these entities had the opportunity to express concerns to the County about treatment capacities, possible future expansions, enforcement of the sewer service area, and costs.

Sewer Service Area

All areas not mapped as the sewer service area default to the general service area with discharge to groundwater of less than 2,000 GPD.

All existing, new, or expanded industrial pretreatment facilities requiring Significant Indirect User (SIU) permits and/or Treatment Works Approvals, and which are located within the specified sewer service area, are deemed to be consistent.

Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas are unaffected by adoption of this WMP, and compliance is required. Please see the Municipal Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service.

The 300 foot riparian buffer has been applied to C-1 waterways and removed from the proposed sewer service area during GIS mapping (See Map 5.). Fifty foot buffers have not been graphically removed from the sewer service area, but are not proposed for sewer service. Jurisdictional determinations by the NJDEP will be utilized to determine the extent of the sewer service area on individual lots.

VI. Future County Wastewater Demand and Facilities

This chapter describes the build out methodology used to project future wastewater treatment demand for the adopted sewer service area, and for the general wastewater management service areas within Ocean County. In general, municipal zoning was applied to the developable area within the sewer service area after removing those areas where development is not expected to occur: linear polygons, small irregular polygons, open space, wetlands, and riparian zones. The build out in the septic service area was calculated by applying municipal zoning over all undeveloped land except polygons too small to support additional development. The number of residential units and non-residential floor area in square feet were then multiplied by the wastewater planning flow estimates in either N.J.A.C. 7:14A or 7:9A as appropriate. The results of the analysis are presented in both the Municipal Chapters and in OCUA facility tables found in Chapter III of this WMP.

Conformance and Nonconformance with Zoning and Prior Land Use Approvals

If the WMP build out deviated from either current zoning or prior land use approvals, such deviation and the reasons for the deviation would be explained in the affected Municipal Chapters. Deviation from current zoning can be justified through reference to an adopted municipal master plan or the formal introduction of a new or revised zoning ordinance that would implement the master plan. Deviation from prior land use approvals can be justified through expectations of land preservation, a court decision or negotiated settlement, or sunset provisions applying to the approvals.

Calculating Future Wastewater and Water Supply Needs and Capacity

Using the countywide information provided above regarding existing wastewater and water supply facilities, sewer service area delineation, environmentally sensitive areas, and projections of future needs, an analysis of wastewater and water supply demands was performed to determine whether existing infrastructure capacity or zoning is the constraining factor. Where zoning is more restrictive than wastewater and water supply capacity and does not conflict with the environmentally sensitive areas, no change in zoning is needed. Where the demand projections exceed available wastewater treatment or water supply capacity, either the projections must be reduced or capacity increased.

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

Municipal Demand Projections in Urban Municipalities

Table 9 lists the municipalities that meet NJDEP's definition of an urban municipality. As previously discussed, the Water Quality Management Planning rules define urban municipalities as those municipalities where less than ten percent of the total land area of the municipality is "available land for development" after subtracting out constrained areas such as permanently preserved open space. In these municipalities it is assumed that redevelopment of previously developed portions of the municipality will comprise the majority of additional future wastewater management needs. Therefore, an application of zoning to the undeveloped land area of the municipality in these municipalities may underestimate their future wastewater management needs. Instead, a twenty year population projection provided by the NJTPA has been used to project future wastewater generation in these municipalities.

**Table 9: Urban Municipalities**

Municipality	Urban	Not Developable	Developable
Barneget Light Borough	74.24%	23.52%	2.24%
Bay Head Borough	87.35%	10.70%	1.95%
Beach Haven Borough	91.31%	7.30%	1.39%
Beachwood Borough	69.22%	28.63%	2.15%
Brick Township	86.37%	11.42%	2.21%
Harvey Cedars Borough	86.36%	12.68%	0.96%
Island Heights Borough	92.24%	3.58%	4.17%
Lakehurst Borough*	61.15%	28.05%	10.80%
Lavallette Borough	80.15%	18.61%	1.24%
Little Egg Harbor Township	13.63%	79.01%	7.36%
Long Beach Township	35.44%	63.35%	1.21%
Mantoloking Borough	81.52%	16.06%	2.43%
Ocean Gate Borough	91.67%	7.28%	1.05%
Pine Beach Borough	95.55%	2.97%	1.48%
Point Pleasant Borough	97.25%	1.69%	1.06%
Point Pleasant Beach Borough	81.75%	16.28%	1.96%
Seaside Heights Borough	39.82%	55.69%	4.49%
Seaside Park Borough	81.52%	17.48%	1.01%
Ship Bottom Borough	87.51%	9.02%	3.47%
Surf City Borough	92.28%	6.99%	0.73%
Toms River Township*	65.55%	22.73%	11.71%
Tuckerton Borough	55.93%	40.70%	3.37%
*The NJDEP has advised the County of Ocean to designate these municipalities as urban.			

The data on current daily municipal wastewater flow was provided to the County of Ocean by OCUA. These figures were calculated by averaging daily flow data from the calendar year of 2010. For most of the County's municipalities, the entire calendar year was used to establish an average of current daily flow. For those municipalities which experience dramatic changes in population—and wastewater generation—over the course of a year, the sampling period was shortened to the summer months of 2010. In this way, this WMP accounts for peak flows of the summer tourism season in both municipal and countywide projections. The twelve coastal municipalities for which the summer months were used to establish current daily wastewater flow are noted in Table 10.

As directed by the NJDEP, future wastewater flow is calculated from the population projections by multiplying the projected increase in population by seventy-five gallons per person per day. Table 10 shows population projections for the twenty-two urban municipalities through the years 2035:

**Table 10: Urban Municipal Population and Wastewater Flow Projections**

Municipality	2010 U.S. Census	2035 NJTPA Projection	Population Change	2010 Flow (MGD)	2035 Flow (MGD)	Flow Change
Barnegat Light Borough*	574	707	23.25%	0.211	0.221	4.74%
Bay Head Borough*	968	1,146	18.38%	0.353	0.366	3.78%
Beach Haven Borough*	1,170	1,342	14.69%	0.800	0.813	1.61%
Beachwood Borough	11,045	12,440	12.63%	0.763	0.868	13.72%
Brick Township	75,072	87,859	17.03%	5.800	6.851	18.13%
Harvey Cedars Borough*	337	382	13.48%	0.288	0.291	1.18%
Island Heights Borough	1,673	1,767	5.61%	0.134	0.141	5.26%
Lakehurst Borough	2,654	3,237	21.98%	0.213	0.257	20.54%
Lavallette Borough*	1,875	1,906	1.68%	0.529	0.531	0.45%
Long Beach Township*	3,051	3,502	14.80%	2.860	2.894	1.18%
Mantoloking Borough*	296	333	12.50%	0.102	0.105	2.72%
Ocean Gate Borough	2,011	2,107	4.75%	0.198	0.205	3.62%
Pine Beach Borough	2,127	2,288	7.55%	0.119	0.131	10.12%
Point Pleasant Borough	18,392	20,296	10.35%	1.580	1.723	9.04%
Point Pleasant Beach Borough*	4,665	5,182	11.08%	0.869	0.908	4.46%
Seaside Heights Borough*	2,887	3,036	5.17%	0.786	0.797	1.42%
Seaside Park Borough*	1,579	1,601	1.42%	0.730	0.732	0.23%
Ship Bottom Borough*	1,156	1,265	9.46%	0.462	0.470	1.78%
Surf City Borough*	1,205	1,272	5.53%	0.511	0.516	0.98%
Toms River Township	91,239	107,176	17.47%	8.648	10.101	16.80%
Tuckerton Borough	3,347	4,160	24.30%	0.402	0.463	15.17%

*Daily flow is measured during seasonal peaks.

Municipal Demand Projections in Non-Urban Municipalities

In the eleven non-urban municipalities, it is anticipated that development of vacant land will be the predominant factor in determining additional future wastewater treatment needs. Further, because external market and economic forces—such as interest rates—are a dominant factor in determining the rate of construction, this analysis assesses the ability to provide wastewater treatment while protecting surface and groundwater quality for the entire projected build out allowable by zoning. Table 11 lists the municipalities that do not meet the NJDEP’s definition of an “urban” municipality:

Table 11: Non-Urban Municipalities

Barnegat Township	Manchester Township
Berkeley Township	Ocean Township
Eagleswood Township	Plumsted Township
Jackson Township	South Toms River Borough
Lacey Township	Stafford Township
Lakewood Township	

The County utilized the Wastewater Estimation model builder provided by the NJDEP to project the future wastewater demands of these non-urban municipalities. This GIS application produces estimates of new wastewater flows within the delineated sewer service area and compares those estimated flows to treatment works capacity. It also compares new development potential, based on local zoning, to regional septic density standards for those areas outside of the sewer service area. As previously indicated, Pinelands areas were excluded from these calculations.

In the designated sewer service area, the following features were removed prior to the application of zoning to the undeveloped land area because they are unlikely to generate wastewater in the future: wetlands, riparian zones, permanently preserved farmland, permanently preserved open space, cemeteries, etc. The existing zoning is then applied to the remaining developable land area within the sewer service area to project a build out condition for use in estimating the future wastewater management needs of the sewer service area. The build out data are 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 that is projected. Build out data for each of these non-urban municipalities are presented in the Municipal Chapters.



For example, single-family residential development is assumed to consist of houses having three or more bedrooms per house, and each projected new house is multiplied by 300 gallons per day to predict the future wastewater generated. For non-residential land uses, the anticipated floor area is multiplied by 0.1 gallons per day to predict future wastewater generation (See below.). The projected wastewater data are also aggregated by wastewater treatment plant and presented as the future flow in facility tables in Chapter III for comparison to the existing permitted capacity of each OCUA treatment facility.

Formula: Calculating New Residential Flow

$$\text{New Residential Flow} = (\text{Developable Land}) \times (\text{Zone Density}) \times (300 \text{ Gallons/Unit/Day})$$

Formula: Calculating New Non-Residential Flow

$$\text{New Non-Residential Flow} = (\text{Developable Land}) \times (\text{Building Lot Coverage}) \times (0.1 \text{ Gallons/Sq. Ft./Day})$$

The Municipal Chapters provide breakdowns of the acreage of land available for development (i.e., either undeveloped or underdeveloped, and not constrained due to environmentally sensitive areas) within each zoning district of the municipality, based on the build out analysis. A summary of these data is shown in the following table:

Table 12: Developable Land by Land Use Type in Non-Urban Municipalities				
Municipality	Total Area (ac)*	Total Developable (ac)	Developable Residential (ac)	Developable Commercial (ac)
Barnegat	22,336.03	4,218.25	3,734.96	483.29
Berkeley	26,816.00	2,387.96	2,188.56	199.40
Eagleswood	10,560.00	994.04	870.41	123.63
Jackson	64,155.89	9,040.68	7,228.40	1,812.28
Lacey	54,144.00	10,457.75	9,652.03	805.72
Lakewood	16,320.00	2,074.04	1,290.31	783.73
Manchester	52,800.00	5,781.94	5,231.10	550.84
Ocean	26,048.00	2,988.07	2,850.48	137.59
Plumsted	24,782.97	2,570.23	2,128.81	441.42
South Toms River	766.12	15.95	13.70	2.25
Stafford**	30,122.00	1,167.07	1,156.40	10.67
*Total land area, including preserved land				
**Stafford Township calculations only include developable land in septic areas.				

Collection System Construction within the Sewer Service Areas

Where an area is designated for sewer service but the required trunk line or collection main has not yet been constructed, municipal regulations regarding dry conveyance requirements will determine whether dry sewer lines are to be constructed within each new development. Information on the status of each municipality's dry conveyance requirements, if adopted, can be found in Table 2 of each Municipal Chapter.

Future Wastewater Outside of Sewer Service Areas

The default wastewater management alternative to support development in areas that are not designated for sewer service is discharge to groundwater of 2,000 gallons per day or less. The nitrate dilution analysis for septic systems was performed countywide in similar fashion to that conducted for the sewer service area, except that open space areas were not removed prior to performing the build out analysis. This is due to the fact that while certain areas may be unbuildable, such as preserved land, they still contribute to the overall available dilution of nitrate in groundwater. These areas were also not removed when analyzing the available dilution on a HUC11 basis, which was used to establish the maximum number of units that can be built in a watershed and continue to meet the two parts per million 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-nitrogen 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. Ocean County performed the analysis using annual average recharge (provided in the GSR-32 model):

Formula: HUC11 Nitrate Dilution and New Units

Remaining Areas = (Total Area) - (Wetlands + Surface Water + Developed Lands)

HUC11 estimated New Units = (Remaining Areas) / (HUC11 Densities)

Formula: Existing Zoning and New Units

Remaining Areas = (Total Area) - (Wetlands + Surface Water + Developed Lands)

Zoning estimated New Units = (Remaining Areas within Residential Zone) x (Zone Density)

Zoning estimated New Non-Residential =

$$\frac{(\text{Building Lot Coverage in Non-Residential Zone}) \times (0.125 \text{ gallons/Sq. Ft./Day})}{(500 \text{ gallons/Unit/Day})}$$

Total estimated Zoning Units = (New Units) + (New Non-Residential)

Septic System Development within the Sewer Service Area

Individual Subsurface Sewage Disposal Systems (ISSDSs) for individual residences can only be constructed in depicted sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when sewer service becomes available. This applies to ISSDSs that require certification from 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 ISSDSs which require only local approvals. Compliance with the connection requirement has been demonstrated through the adoption of municipal ordinances where applicable.

VII. Analysis of Capacity to Meet Future Wastewater Needs

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 the sewer service area, this requires 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. Where a plant does not have sufficient remaining capacity to meet the future wastewater needs of its planning area, three possible solutions exist: 1. Reduce the extent of the proposed sewer service area, 2. Reduce the intensity of development within the sewer service area, or 3. Demonstrate that the sewage treatment plant can be expanded without violating water quality standards.

As previously stated, in areas outside of the sewer service area the default wastewater management alternative is discharge to groundwater of 2,000 gallons per day or less, commonly referred to as septic systems. The assessment of water quality impacts from development on septic systems relies on nitrate concentration. In this analysis, nitrate acts as a conservative surrogate for any of a number of constituents that could be discharged from a septic system (e.g., cleaners, solvents, pharmaceuticals, etc.). Nitrate was chosen because it is highly soluble in water, and because it is a stable compound that by itself could render water unsuitable for human consumption. The capacity to support septic systems without violating groundwater quality standards is determined by the amount of dilution available. The Water Quality Management Planning Rules advocate a watershed approach to assessing the adequacy of available dilution to meet future development on septic systems. Using this approach, available dilution (essentially groundwater recharge), is calculated within a HUC11 watershed and translated into a finite amount of wastewater that can be discharged, which in turn can be translated into a finite number of housing units that can be supported while maintaining a target concentration of nitrate in groundwater. Zoning is then applied to the available land in that same watershed, outside of the sewer service area, to calculate the number of units that could be developed on septic systems. The results of these two analyses are then compared, and if the number of units based on zoning does not exceed the maximum units that can be supported, adequate capacity has been demonstrated. If the number of units allowed by zoning exceeds that which can be supported in a particular watershed, some adjustment to zoning within that watershed is required.

Table 13 provides a breakdown of future wastewater demands by Water Pollution Control Facility and by general development category, based on the development projections provided above. The final column determines whether facility capacity is or is not adequate for the projected flows. Table 14 displays projected wastewater flow by planning area and municipality.

Domestic Wastewater Treatment Facility	Facility Permitted Flow (MGD)	Existing Flows (MGD)	Total Projected Residential Flow (MGD)	Total Projected Non-Residential Flow (MGD)	Total Future Planning Flows (MGD)	Excess (or Deficit) Facility Capacity (MGD)
NWPCF	32.000	23.438	22.280	7.889	30.169	1.831
CWPCF	32.000	21.546	24.517	4.767	29.284	2.716
SWPCF	20.000	8.645	9.592	0.637	10.229	9.771



Adequacy of Sewage Treatment Plant Capacity

Table 14: Wastewater Generation by Sewage Treatment Facility and Municipality						
Facility	NJPDES Permit	Facility Type (DGW/DSW)	Municipality	Current Flow (MGD)	Projected Flow (MGD)	Total Projected Flow (MGD)
Northern Water Pollution Control Facility (NWPCF)	NJ0028142	DSW	Bay Head	0.353	0.366	30.169
			Brick	5.641	6.692	
			Farmingdale*	0.177	0.146	
			Freehold Borough*	1.566	1.601	
			Freehold Township*	2.750	3.334	
			Howell*	3.194	3.407	
			Jackson	2.042	4.351	
			Lakewood	5.085	7.418	
			Point Pleasant	1.580	1.723	
			Point Pleasant Beach	0.869	0.908	
			Wall*	0.113	0.223	
Central Water Pollution Control Facility (CWPCF)	NJ0029408	DSW	Barnegat	1.230	2.700	29.284
			Beachwood	0.763	0.868	
			Berkeley	2.718	3.767	
			Brick	0.159	0.159	
			Island Heights	0.134	0.141	
			Jackson	0.300	1.247	
			Lacey	2.061	2.881	
			Lakehurst	0.213	0.257	
			Lavallette	0.529	0.531	
			Manchester	1.948	3.399	
			Mantoloking	0.102	0.105	
			Ocean Gate	0.198	0.205	
			Ocean	0.702	1.044	
			Pine Beach	0.119	0.131	
			Seaside Heights	0.786	0.797	
			Seaside Park	0.730	0.732	
			South Toms River	0.206	0.219	
			Toms River	8.648	10.101	
Southern Water Pollution Control Facility (SWPCF)	NJ0026018	DSW	Barnegat	0.024	0.112	10.229
			Barnegat Light	0.211	0.221	
			Beach Haven	0.800	0.813	
			Eagleswood	0.032	0.037	
			Harvey Cedars	0.288	0.291	
			Little Egg Harbor	1.256	1.764	
			Long Beach	2.860	2.894	
			Ship Bottom	0.462	0.470	
			Stafford	1.799	2.647	
			Surf City	0.511	0.516	
Tuckerton	0.402	0.463				
*Monmouth County						

All three OCUA treatment plants are capable of treating their respective planning area's present flows. The wastewater treatment capacity of the SWPCF will continue to prove sufficient for the Southern Planning Area for the foreseeable future. The present capacity of the CWPCF should also remain sufficient through the year 2035. However, population and flow projections indicate that by 2035 wastewater influent directed to the NWPCF will exceed 94% of its present capacity, as shown in Table 15. The capacity of the NWPCF will need to be expanded in order to accommodate future wastewater influent levels. Additional details of these projections are included in the facility tables found in Chapter III.

**Table 15: New and Expanded Treatment Facilities**

Facility	Domestic (D) or Industrial (I)	DGW/ DSW	Existing Permitted Flow (MGD)	Future Flow Projection (MGD)
NWPCF	D	DSW	32.000	30.169

NWPCF

At the time of this WMP's writing, the Ocean County Utilities Authority is monitoring the NWPCF's current committed flows against the plant's design capacity. OCUA has finalized the planning study phase for expansion of the NWPCF's capacity from 32.0 MGD to 36.0 MGD. OCUA does not anticipate moving forward with the design engineering phase of the expansion immediately, but will continue to evaluate the incoming flow and begin design when conditions warrant. OCUA will continue pursuing a possible plant expansion when conditions dictate.

OCUA has also completed a comprehensive feasibility study for the beneficial reuse of treated secondary effluent within the service area for the NWPCF, as well as for the CWPCF and SWPCF. The study concluded that there are few economically feasible projects due to the availability of potable water at relatively low prices. Additional economic, legal, institutional, and public perception obstacles were identified which precluded further development of reuse projects. Other alternatives to expansion, including increased discharges to groundwater, were also deemed infeasible.

Should the NWPCF be expanded as this WMP proposes, new flow capacity will be designated to the municipalities of the Northern Planning Area on a "first come, first served" basis. No municipality of the Northern Planning Area shall reserve future flow capacity for their own projected growth.

CWPCF

The CWPCF may need to be expanded at a later date, pending additional review. The County conducted its own analysis of projected sewer flows based on current conditions and in lieu of projection data from the Pinelands Commission. According to this analysis, sewage influent from the Central Planning Area's more urbanized areas is expected to increase only marginally during the foreseeable future. Instead, the overall increase in projected sewage flows to the CWPCF is primarily reflective of current zoned development and plans to connect existing septic development to sewers throughout portions of the Pinelands CMP area. This is most notable in Barnegat, Berkeley, and Manchester Townships, although it is unlikely that many of these areas in these Pinelands municipalities will be connected to the OCUA conveyance network by 2035. OCUA is monitoring flows at the CWPCF and has planned a capacity assessment. OCUA will take steps to upgrade the plant and expand capacity if warranted.

Should the CWPCF be expanded, new flow capacity will be designated to the municipalities of the Central Planning Area on a "first come, first served" basis. No municipality of the Central Planning Area shall reserve future flow capacity for their own projected growth.

SWPCF

This WMP projects that the SWPCF will be operating at just over 51% of capacity at build out. This facility will continue to provide adequate treatment capacity for the Southern Planning Area for the foreseeable future.

Relationship to Water Quality Classification

New and expanded discharges will not be permitted in FW1 surface waters or Class I-A ground waters. New and expanded discharges that would degrade current water quality will not be permitted in FW2-Category 1 surface waters. New and expanded discharges to FW2-Category 2 surface waters and Class II-A ground waters may be permitted subject to an analysis of their potential to degrade water quality, the justification for doing so, opportunities for avoiding such degradation, and an overriding requirement that any degradation may not be allowed to violate or increase the violation of standards.

Additional requirements for new or expanded treatment works or increased pollutant loads will be applied through the NJDEP regulatory permit process, including but not limited to compliance with antidegradation requirements of the Surface Water Quality Standards, N.J.A.C. 7:9B, and the Groundwater Quality Standards, N.J.A.C. 7:9C. Most stringent of these are the nondegradation requirements.

Nondegradation water areas shall be maintained in their natural state (set aside for posterity) and are subject to restrictions including, but not limited to, the following: 1. The NJDEP will not approve any pollutant discharges to an FW1 stream, with the exception of upgrades to or continued operation of existing facilities serving existing development, 2. The NJDEP will not approve any pollutant discharge to groundwater nor approve any human activity which results in a degradation of natural quality except for the upgrade or continued operation of existing facilities serving existing development.

For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Groundwater Quality Standards at N.J.A.C. 7:9C.

Discharges to Groundwater

Every watershed in the United States has been delineated by the United States Geological Survey (USGS) and assigned a unique Hydrologic Unit Code (HUC) consisting of two to fourteen digits. The classification system of HUCs is hierarchical; each unit of a given watershed is assigned a HUC with a number of digits corresponding to its place in the hierarchy. The largest class of HUC is the two-digit region (HUC2), and the smallest is the fourteen-digit sub-watershed (HUC14). At the advisement of the NJDEP, the County of Ocean has used the second smallest HUC class—the eleven-digit HUC11—for the analysis of discharges to groundwater.

The landmass of Ocean County lies within the bounds of twenty-five different HUC11 watersheds. All of these HUC11s are comprised of all or part of multiple municipalities, and more than half are divided by the overland boundary between Ocean County and one or more of its neighboring counties. Because all but eleven of Ocean County's thirty-three municipalities are designated as urban, relatively little new development is expected throughout the County, of which only a very small portion can be expected to discharge wastewater to groundwater through localized septic systems. However, an analysis is required to determine if the local zoning exceeds a HUC11's capacity for optimal nitrate dilution. If the local zoning is adequate to control further growth, no further action is necessary. If it is not, several additional factors can be considered—including zoning changes—to ensure that the assimilative capacity of the HUC11 will not be exceeded.

At the time of this WMP's writing, two municipalities are weighing significant changes to their zoning regulations. Lakewood Township is seeking "Plan Endorsement" from the NJ State Planning Commission. This process will ultimately result in the rezoning of targeted areas throughout the municipality, including several large undeveloped and underdeveloped plots of land. Berkeley Township recently adopted a Transfer of Development Rights (TDR) program which would deter future growth outside of the sewer service area. Both of these municipalities' programs, if implemented, would impact nitrate generation within the affected HUC11s. For the purposes of projecting municipal septic development, this WMP considered only existing municipal zoning regulations.

Adequacy of Dilution to Meet Future Non-Sewer Service Area Demand

In order to determine the amount of growth which can be accommodated in septic areas, the NJDEP has established a nitrate standard of 2 mg/L for each HUC11 sub-watershed. This is the same standard that has been applied for many years in the Pinelands Comprehensive Management Plan area. A formula is employed for each HUC11 which calculates the number of additional septic systems that could be accommodated, given the amount of developable land remaining and the local zoning.

Table 16 shows the septic system densities for each HUC11 and the total number of units permitted in each HUC11 distributed among the municipalities based on an area-weighted analysis of the non-sewered area. Only non-urban municipalities were considered in this analysis; additional septic development throughout the County's urban municipalities is expected to be negligible. The NJDEP will use its regulatory authority under N.J.A.C. 7:15 and other laws to ensure compliance with this nitrate dilution analysis for any development regulated by the NJDEP. Developments that do not require any NJDEP approval will not be affected.

**Table 16: Septic System Densities and Allocations by HUC11 and Municipality**

Map Key	HUC11	Septic Density (acres/home)	Average Recharge (inches/year)	Municipality	Nitrate Units	Total Nitrate Units
a	02030104100	5.4	12.3			*
b	02040201040	7.1	9.3	Chesterfield	18.00	1,470.98
				Jackson	1.06	
				New Hanover	656.00	
				North Hanover	486.00	
				Plumsted	206.92	
				Springfield	92.00	
				Wrightstown	11.00	
c	02040201050	5.3	12.5	Chesterfield	609.00	3,458.88
				Jackson	187.80	
				Millstone	183.51	
				North Hanover	318.00	
				Plumsted	309.56	
				Upper Freehold	1,851.01	
d	02040202020	5.2	12.7	Manchester	33.53	2,395.83
				New Hanover	670.00	
				Pemberton	857.00	
				Plumsted	835.30	
e	02040202030	4.4	15.0	Lacey	258.53	6,850.30
				Manchester	2,440.82	
				Pemberton	3,253.00	
				Woodland	897.95	
f	02040301020	5.1	13.1	Freehold	111.90	591.31
				Howell	377.72	
				Jackson	41.59	
				Lakewood	54.65	
				Millstone	5.45	
g	02040301030	4.9	13.5	Freehold	146.88	944.70
				Jackson	741.96	
				Lakewood	55.86	
h	02040301040	6.4	10.3	Lakewood	7.33	7.33
i	02040301050	6.5	10.2	Lakewood	35.46	35.46
j	02040301060	4.6	14.6	Freehold	47.62	1,896.84
				Jackson	1689.46	
				Lakewood	0.00	
				Manchester	32.58	
				Millstone	127.18	
k	02040301070	4.6	14.5	Jackson	1468.52	2,877.82
				Manchester	1,230.88	
				Plumsted	178.43	
l	02040301080	4.9	13.6	Berkeley	1,487.40	2,581.21
				Lacey	194.61	
				Manchester	897.95	
				South Toms River	1.25	
m	02040301090	4.5	14.6	Berkeley	320.76	5,183.58
				Lacey	4,644.28	
				Manchester	218.54	
n	02040301100	6.6	10.1	Berkeley	17.96	104.29
				Lacey	49.73	
				Ocean	36.60	
o	02040301110	4.6	14.6	Barnegat	93.38	3,323.58
				Lacey	1,969.78	
				Ocean	1,260.42	



Map Key	HUC11	Septic Density (acres/home)	Average Recharge (inches/year)	Municipality	Nitrate Units	Total Nitrate Units
p	02040301120	5.8	11.4	Barnegat	72.27	198.90
				Ocean	122.74	
				Stafford	3.90	
q	02040301130	5.0	13.2	Barnegat	119.41	2,502.95
				Bass River	67.00	
				Eagleswood	694.13	
				Stafford	1,622.40	
r	02040301140	5.6	11.9	Bass River	224.00	224.00
				Eagleswood	0.00	
s	02040301180	4.5	14.9	Barnegat	1,799.28	6,473.27
				Bass River	3,410.00	
				Lacey	659.64	
				Ocean	94.37	
				Stafford	509.98	
				Washington	1,667.00	
				Woodland	1,030.00	
t	02040301190	4.5	14.8	Bass River	5,288.00	11,055.38
				Lacey	45.38	
				Shamong	37.00	
				Tabernacle	1,415.00	
				Washington	4,270.00	
u	02040301200	5.3	12.4	Woodland	6,103.00	6,103.00
v	02040301210	7.6	8.7	Bass River	75.00	75.00
w	02040301910	17.9	3.7			*
x	02040301920	48.9	1.4			*
y	02040302910	19.5	3.4			*
*No additional septic development is anticipated in these areas. No non-urban municipalities are situated in these sub-watersheds and/or no data is available from neighboring counties. <i>Burlington, Monmouth County municipalities in italics</i>						

According to the nitrate dilution analysis, all of Ocean County's non-urban municipalities are capable of supporting additional development outside of the sewer service area boundary. The growth which can be accommodated ranges from minimal (as in HUC11 02040301040) to moderately extensive development (02040301060 and 02040301080).

The results for each HUC11 are aggregated in tables presented in the following section of this WMP for comparison to the allowable development density calculated by the nitrate dilution analysis. Discussion of the adequacy of current municipal zoning as a means to control growth in non-sewered areas also follows. Additional data are presented in the applicable Municipal Chapters.

Septic System Densities in the Non-Sewer Service Area

Tables 17(a) through 17(y) compare the allowable units within each HUC11 on a municipal basis to the number of units that could be built under the existing zoning within that watershed. This analysis is required for all HUC11s in Ocean County. For the purposes of this analysis it is inconsequential if one municipality's zoning exceeds its allocation, provided that the larger HUC11 does not exceed the total sustainable development. NJDEP will use its regulatory authority under N.J.A.C. 7:15 and other laws to ensure compliance with the 2 mg/L nitrate dilution standard for any development regulated by NJDEP. Developments that do not require any NJDEP approval will not be affected. The zoning within the septic area for discharges to groundwater equal to or less than 2,000 gallons per day (i.e., septic systems or ISSDSs) was compared to the allowable densities as determined through nitrate dilution analysis.

For the reader's reference, the labeling of Tables 17(a) through 17(y) corresponds to the labeling of the HUC11 map found at the end of the Environmental Analysis Document. Please note that Table 17(f) (HUC11 02040301020) and Table 17(g) (HUC11 02040301030) were deliberately not included in this WMP. A discussion of these two sub-watersheds begins on page 39. Also note that Tables 17(a), 17(w), 17(x), and 17(y) do not contain any data, as no additional septic development in Ocean County is expected in these areas.

**Table 17(a): Septic System Densities and Allocations for Municipalities**

HUC11 - 02030104100					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
-	-	-	-	-	-
total		0.00	0.00	0.00	0.00
total wastewater projected (MGD)				0.00	0.00

Table 17(b): Septic System Densities and Allocations for Municipalities

HUC11 - 02040201040					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Jackson	0.00	0.00%	0.00	1.06
	Plumsted	483.39	1.83%	116.53	206.92
Burlington	Chesterfield			0.00	18.00
	New Hanover			110.00	656.00
	North Hanover			1,034.00	486.00
	Springfield			5.00	92.00
	Wrightstown			0.00	11.00
total		483.39	0.02	1,265.53	1,470.98
total wastewater projected (MGD)				0.63	0.74

Table 17(c): Septic System Densities and Allocations for Municipalities

HUC11 - 02040201050					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Jackson	205.58	0.56%	312.46	187.80
	Plumsted	809.38	2.22%	679.35	309.56
Burlington	Chesterfield			253.00	609.00
	North Hanover			202.00	318.00
Monmouth	Millstone	556.96	1.53%	607.23	183.51
	Upper Freehold	2,964.83	8.12%	848.26	1,851.01
total		4,536.75	0.12	2,902.30	3,458.88
total wastewater projected (MGD)				1.45	1.73

Table 17(d): Septic System Densities and Allocations for Municipalities

HUC11 - 02040202020					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Jackson	0.00	0.00%	0.00	0.00
	Manchester	73.42	0.36%	22.94	33.53
	Plumsted	0.00	0.00%	0.00	835.30
Burlington	New Hanover			0.00	670.00
	Pemberton			63.00	857.00
total		73.42	0.00	85.94	2,395.83
total wastewater projected (MGD)				0.04	1.20

Table 17(e): Septic System Densities and Allocations for Municipalities

HUC11 - 02040202030					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Lacey	0.00	0.00%	0.00	258.53
	Manchester	838.77	1.68%	59.00	2,440.82
	Plumsted	0.00	0.00%	0.00	3.70
Burlington	Pemberton			0.00	3,253.00
	Woodland			0.00	897.95
total		838.77	0.02	59.00	6,850.30
total wastewater projected (MGD)				0.03	3.43

**Table 17(h): Septic System Densities and Allocations for Municipalities**

HUC11 - 02040301040					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Lakewood	0.00	0.00%	0.00	7.33
total		0.00	0.00	0.00	7.33
total wastewater projected (MGD)				0.00	0.00

Table 17(i): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301050					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Lakewood	14.82	0.05%	23.19	35.46
total		14.82	0.00	23.19	35.46
total wastewater projected (MGD)				0.01	0.02

Table 17(j): Septic System Densities and Allocations for Municipalities

HUC11 - 02040201060					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Jackson	2,242.11	5.81%	1,294.51	1689.46
	Lakewood	0.00	0.00%	0.00	0.00
	Manchester	87.82	0.23%	9.76	32.58
Monmouth	Freehold	31.37	0.08%	3.14	47.62
	Millstone	322.80	0.84%	188.67	127.18
total		2,684.10	0.07	1,496.08	1,896.84
total wastewater projected (MGD)				0.75	0.95

Table 17(k): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301070					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Jackson	1,242.03	3.07%	411.10	1468.52
	Manchester	982.28	2.43%	389.67	1,230.88
	Plumsted	288.25	0.71%	164.13	178.43
total		2,512.56	0.06	964.90	2,877.82
total wastewater projected (MGD)				0.48	1.44

Table 17(l): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301080					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Berkeley	1,432.21	3.27%	903.23	1,487.40
	Lacey	3.92	0.01%	3.92	194.61
	Manchester	495.96	1.13%	438.33	897.95
	South Toms River	7.47	0.02%	30.00	1.25
total		1,939.56	0.04	1,375.48	2,581.21
total wastewater projected (MGD)				0.69	1.29

Table 17(m): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301090					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Berkeley	137.25	0.39%	282.82	320.76
	Lacey	5,028.98	14.28%	1,135.23	4,644.28
	Manchester	169.74	0.48%	40.93	218.54
total		5,335.97	0.15	1,458.98	5,183.58
total wastewater projected (MGD)				0.73	2.59

**Table 17(n): Septic System Densities and Allocations for Municipalities**

HUC11 - 02040301100					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Berkeley	5.26	0.02%	21.57	17.96
	Lacey	17.86	0.06%	80.15	49.73
	Ocean	0.00	0.00%	0.00	36.60
total		23.12	0.00	101.72	104.29
total wastewater projected (MGD)				0.05	0.05

Table 17(o): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301110					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Barnegat	507.40	2.04%	601.30	93.38
	Lacey	4,556.24	18.28%	3,367.21	1,969.78
	Ocean	1,870.78	7.50%	107.24	1,260.42
total		6,934.42	0.28	4,075.75	3,323.58
total wastewater projected (MGD)				2.04	1.66

Table 17(p): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301120					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Barnegat	49.60	0.16%	167.79	72.27
	Ocean	331.63	1.10%	53.74	122.74
	Stafford	0.00	0.00%	0.00	3.90
total		381.23	0.01	221.53	198.90
total wastewater projected (MGD)				0.11	0.10

Table 17(q): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301130					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Barnegat	584.18	1.04%	940.79	119.41
	Eagleswood	983.60	1.75%	729.99	694.13
	Stafford	757.98	1.35%	136.04	1,622.40
Burlington	Bass River			0.00	67.00
total		2,325.76	0.04	1,806.82	2,502.95
total wastewater projected (MGD)				0.90	1.25

Table 17(r): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301140					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Eagleswood	0.00	0.00%	0.00	0.00
Burlington	Bass River			0.00	224.00
total		0.00	0.00	0.00	224.00
total wastewater projected (MGD)				0.00	0.11

Table 17(s): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301180					
County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Barnegat	995.29	2.14%	1,006.74	1,799.28
	Lacey	120.54	0.26%	23.44	659.64
	Ocean	352.37	0.76%	18.49	94.37
	Stafford	409.1	0.88%	31.6	509.98
Burlington	Bass River			0.00	3,410.00
	Washington			0.00	1,667.00
	Woodland			0.00	1,030.00
total		1,877.29	0.04	1,080.27	9,170.27
total wastewater projected (MGD)				0.54	4.59

**Table 17(t): Septic System Densities and Allocations for Municipalities**

HUC11 - 02040301190

County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Ocean	Lacey	80.73	0.14%	14.63	45.38
Burlington	Shamong			0.00	37.00
	Tabernacle			0.00	1,415.00
	Washington			0.00	4,270.00
	Woodland			13.00	6,103.00
total		3,835.31	0.08	27.63	11,870.38
total wastewater projected (MGD)				0.01	5.94

Table 17(u): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301200

County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Burlington	Bass River			131.00	5,288.00
total		5,793.33	0.12	131.00	5,288.00
total wastewater projected (MGD)				0.07	2.64

Table 17(v): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301210

County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
Burlington	Bass River			0.00	75.00
total		5,793.33	0.12	0.00	75.00
total wastewater projected (MGD)				0.00	0.04

Table 17(w): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301910

County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
-	-	-	-	-	-
total		0.00	0.00	0.00	0.00
total wastewater projected (MGD)				0.00	0.00

Table 17(x): Septic System Densities and Allocations for Municipalities

HUC11 - 02040301920

County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
-	-	-	-	-	-
total		0.00	0.00	0.00	0.00
total wastewater projected (MGD)				0.00	0.00

Table 17(y): Septic System Densities and Allocations for Municipalities

HUC11 - 02040302910

County	Municipality	Zoning Acres	% of HUC11	Zoning Units	Allowed Units
-	-	-	-	-	-
total		0.00	0.00	0.00	0.00
total wastewater projected (MGD)				0.00	0.00



Current Zoning versus Optimal Nitrate Dilution

The nitrate dilution analysis indicates that current municipal zoning is sufficient to regulate future septic development in twenty-two of Ocean County's twenty-five HUC11s, as required by N.J.A.C. 7:15-5.25(e). In a total of seven HUC11s (02030104100, 02040301040, 02040301140, 02040301200, 02040301210, 02040301920, 02040302910), no additional development has been zoned in Ocean County municipalities outside of the sewer service area, and therefore no additional discharge to groundwater is projected in these areas. In another fifteen HUC11s (02040201040, 02040201050, 02040202020, 02040202030, 02040301050, 02040301060, 02040301070, 02040301080, 02040301090, 02040301100, 02040301120, 02040301130, 02040301180, 02040301190, 02040301910), the expected groundwater discharge based on current municipal zoning is within each sub-watershed's capacity for nitrate dilution.

02040301110

The initial results of this nitrate dilution analysis indicate that one HUC11 which covers portions of Barnegat, Lacey, and Ocean Townships, 02040301110 (Table 17(o)), would exceed the nitrate-nitrogen target if built out under current zoning regulations. The NJDEP model used to produce these results—and all nitrate dilution projections in this WMP—incorporates an Equivalent Dwelling Unit (EDU) formula for all non-residential parcels which, lacking specific development parameters such as type of non-residential development, square footage of floor space, number of floors, etc., may project nitrate discharges from non-residential zones that are greater than those from similar areas of residential zones—especially when applied to exceedingly large tracts of land. According to the EDU formula, several industrial and commercially zoned parcels in the vicinity of Lacey Township's Oyster Creek Nuclear Generating Station are projected to discharge more than their proportional share of this HUC11's total assimilative capacity if developed as zoned. At the time of this writing, however, Oyster Creek Nuclear Generating Station is still operational and will start decommissioning in 2019—a process that is expected to take several years. No development is expected to occur in this area until the decommissioning is complete, and any future development in this area is almost certainly to be either NJPDES permitted or added to the sewer service area through amendment. Furthermore, it is also anticipated that a significant percentage of the remaining area in question will be designated for preservation in the course of decommissioning. The NJDEP has acknowledged that the ultimate nitrate discharges from the Oyster Creek area will most likely be less than what is currently projected and has, therefore, determined that as long as this HUC11 is identified as "of Special Concern" in this WMP—such that all proposed projects or activities within be considered on a case-by-case and cumulative basis moving forward—that this WMP may be approved with that preceding acknowledgement.

02040301020 and 02040301030

According to the nitrate dilution analysis, portions of Lakewood Township in HUC11 02040301020 are zoned for a greater intensity of septic development than can be accommodated through dilution (The section of Jackson Township which is within this HUC11 is zoned at a density that meets the nitrate target.). Although 72.26% of this HUC11 is outside the political boundaries of Ocean County, and municipal zoning and or restricted land in these remaining areas could offset the land deficiency on the Ocean County side, local zoning in several parts of Monmouth County also exceed their proportional shares of the assimilative capacity. These localized zoning imbalances in Monmouth County and Lakewood Township contribute to this HUC11 exceeding its cumulative nitrate target.

In HUC11 02040301030, the nitrate dilution model has shown that current zoning regulations in Jackson Township exceed the cumulative capacity for septic development by more than ten percent. As previously mentioned, this may be, in part, due to the projection of greater amounts of septic discharges from large tracts of commercially zoned areas.

At the time of this writing, Ocean County, Monmouth County, and the NJDEP are engaged in discussions regarding 02040301020 and 02040301030, and to propose appropriate remedial actions for specific locations in these HUC11s which are projected to discharge in excess of the assimilative capacity. While this process continues, the NJDEP has advised the County to not include septic dilution projections for those municipalities which are situated in HUC11s initially projected to exceed their cumulative nitrate targets. This applies to Jackson Township and Lakewood Township. The septic analysis for these two municipalities will be submitted separately in the future and according to those mechanisms the County may choose to incorporate.



Compliance with Environmental Protection Standards

The Ocean County WMP must ensure that the sewer service area is properly located and will minimize or eliminate primary and secondary environmental impacts. The identification of appropriate sewer service area boundaries begins with the analysis of environmentally sensitive areas as heretofore discussed. Added to this is the build out analysis. The result is a determination of what areas are both zoned for and appropriate for community sewer service, and which areas are not appropriate for sewers due to zoning, environmentally sensitive areas, or both. The WQMP rules require that development densities and aggregated demands or impacts remain within predetermined thresholds. Where these thresholds are exceeded, either the size or development density of the sewer service area or the development density of a non-sewered area must be reduced, or the impact must be mitigated. This WMP seeks 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) the WQMP rules require that municipal ordinances ensure protection of these areas regardless of their sewer service designation. Further, the WQMP rules establish that avoidable development within these areas is inconsistent with the Statewide Water Quality Management Plan and the NJDEP cannot issue any permits or approvals for development of these areas. This chapter of the WMP and the Municipal Chapters provide the status of adoption of these relevant municipal ordinances.

TMDLs and Watershed Restoration/Regional Stormwater Management Plans

Each Ocean County municipality has adopted a stormwater management plan (SMP), which has received NJDEP approval in accordance with the NJDEP Municipal Stormwater Management Rules. As the region's designated wastewater management planning agency, the County provides assistance to the municipalities in the form of plan review, funding, and professional guidance. The County has also enacted a number of initiatives pursuant to watershed restoration, including stormwater facility identification, culvert maintenance, street sweeping, stormwater basin retrofitting, inlet screening, and the use of environmentally sustainable vehicle wash pads. This WMP is intended to complement these initiatives' objective of sustainable watershed management.

Municipal Ordinances and Master Plans

Each Ocean County municipality has adopted ordinances pursuant to environmental protection in compliance with applicable state regulations, and with relevance to wastewater management and water supply. The following tables list the status of municipal zoning ordinances, master plan adoption, stormwater management ordinances, riparian zone protection ordinances, septic system maintenance ordinances, dry conveyance ordinances, and septic development and mandatory connection ordinances in sewer service areas. Any municipality not listed in Tables 18-24 has not, as of the date of this WMP, adopted that respective ordinance.



Zoning

The status of municipal ordinances regarding zoning is seen in Table 18:

Table 18: Zoning Ordinances		
Municipality	Code	Date Adopted
Barnegat	Article II, Chapter 55-6	7/5/2005
Barnegat Light	Chapter 215	11/10/1983
Bay Head	Chapter 147	9/16/2003
Beach Haven	Chapter 212	7/9/1979
Beachwood	Chapter XVII, Article IV, 17-23	1978
Berkeley	Chapter 35, Article XI	7/24/2001
Brick	Chapter 245, Part 2	1/4/1974
Eagleswood	Chapter 103	12/28/2011
Harvey Cedars	Chapter 13	9/20/2011
Island Heights	Chapter XXXII	6/28/2009
Jackson	Chapter 244, Article VI-VII	5/8/2012
Lacey	Chapter 335	12/1/1978
Lakehurst	Chapter 25	1982
Lakewood	Unified Development Ordinance, Chapter 18-901	2005
Lavallette	Chapter 90	3/2/1979
Little Egg Harbor	Chapter 212	N/A
Long Beach	Chapter 205	10/5/1979
Manchester	Chapter 245, Article IV	5/22/1997
Mantoloking	Chapter 30-6	8/20/2007
Ocean	Chapter 410	1994
Ocean Gate	(Ordinance No. 66)	7/27/1946
Pine Beach	Chapter 175, Article X	4/14/2010
Plumsted	Chapter 15	10/26/1992
Point Pleasant	Chapter 19, Article I	3/4/1986
Point Pleasant Beach	Chapter 19	5/3/2005
Seaside Heights	Chapter 246, Article V	12/16/2009
Seaside Park	Chapter 200, Article VII	9/1/2009
Ship Bottom	Chapter 16.12	1999
South Toms River	Chapter 26, Article VI	1975
Stafford	Chapter 211	6/25/1988
Surf City	Chapter 30-4	1972
Toms River	Chapter 348, Article X	4/11/1978
Tuckerton	Chapter 255	1/22/1979

**Master Plan**

The status of municipal master plan adoption is seen in Table 19:

Table 19: Master Plan Adoption	
Municipality	Date Adopted
Barnegat	4/26/2011
Barnegat Light	2007
Bay Head	8/25/2006
Beach Haven	2009
Beachwood	2000
Berkeley	3/2010
Brick	6/6/2007
Eagleswood	2008
Harvey Cedars	4/14/2008
Island Heights	3/14/2007
Jackson	5/8/2012
Lacey	12/10/2012
Lakehurst	6/2008
Lakewood	3/13/2007
Lavallette	12/13/2006
Little Egg Harbor	8/2/2007
Long Beach	11/26/2007
Manchester	2010
Mantoloking	12/6/2007
Ocean	11/21/2005
Ocean Gate	3/10/2006
Pine Beach	2011
Plumsted	8/24/2007
Point Pleasant	9/25/2007
Point Pleasant Beach	9/6/2007
Seaside Heights	2005
Seaside Park	12/12/2006
Ship Bottom	2008
South Toms River	2012
Stafford	11/5/2007
Surf City	2/2009
Toms River	10/25/2006
Tuckerton	2008

Stormwater

The status of municipal ordinances regarding stormwater management is seen in Table 20. Dates in brackets indicate the date on which the County of Ocean approved the Municipal Stormwater Management Plan (MSWMP) of that respective municipality:

Table 20: Stormwater Ordinances		
Municipality	Code	Date Adopted*
Barnegat	Article XXI, Chapter 55-320	2/20/1990 [3/18/2008]
Barnegat Light	Chapter 167	8/16/2006 [2/1/2007]
Bay Head	Chapter 207	3/21/2006 [2/27/2007]
Beach Haven	Chapter 177	7/11/2005 [2/1/2007]
Beachwood	Chapter XVII, Article VII	2007 [11/30/2007]
Berkeley	Chapter 35, Article X, Section 72	1999 [9/8/2006]
Brick	Chapter 396	11/29/2005 [4/30/2007]
Eagleswood	Chapter 103	12/18/2006 [6/7/2007]
Harvey Cedars	Chapter 9	2/3/2006 [2/1/2007]
Island Heights	Chapter XXIX	3/11/2008 [2/8/2008]
Jackson	Chapter 244-209	4/10/2006 [6/5/2007]
Lacey	Chapter 353, Article II	5/2/2005 [3/7/2008]
Lakehurst	(Ordinance 2006-01)	3/16/2006 [2/15/2008]
Lakewood	Unified Development Ordinance, Chapter 32	1/2012 [12/14/2006]
Lavallette	Chapter 55B	8/21/2006 [11/3/2008]
Little Egg Harbor	Chapter 296	N/A [6/7/2007]
Long Beach	Chapter 178	9/1/2006 [2/1/2007]
Manchester	Chapter 365	6/13/2011 [3/31/2008]
Mantoloking	Chapter 18	8/20/2007 [6/7/2007]
Ocean	Chapter 322	9/11/2008 [3/12/2008]
Ocean Gate	(Ordinance No. 534-09)	2/11/2009 [12/17/2008]
Pine Beach	Chapter 175, Article XIII	12/28/2006 [6/7/2007]
Plumsted	Chapter 14-7	11/2006 [6/7/2007]
Point Pleasant	Chapter 18	2006 [5/31/2006]
Point Pleasant Beach	N/A	N/A [11/20/2008]
Seaside Heights	Chapter 199	5/21/2008 [11/25/2008]
Seaside Park	Chapter 399	7/28/2011 [3/1/2007]
Ship Bottom	Chapter 16.92	2006 [4/19/2007]
South Toms River	Chapter 24	9/19/2011 [10/20/2006]
Stafford	Chapter 130, Article VIII	4/19/2010 [9/8/2006]
Surf City	Chapter 24	11/2006 [2/1/2007]
Toms River	Chapter 348, Article X, Section 28	12/18/2007 [12/17/2008]
Tuckerton	Chapter 231, Article VII, Section 34	3/20/2006 [3/18/2009]

*Bracketed dates indicate date of County approval

Riparian Zone

The status of municipal ordinances regarding riparian zone protection is seen in Table 21:

Table 21: Riparian Zone Ordinances		
Municipality	Code	Date Adopted
Barnegat	Article II, Chapter 55-28*	10/4/2010
Brick	Chapter 245, Part 5, 245-415*	7/10/2007
Jackson	Chapter 244-45	11/9/2010
Long Beach	Chapter 205-16	12/18/1992
Seaside Heights	Chapter 246, Article V, 246-43	4/16/1997
Stafford	Chapter 211-13*	7/1/2008

*complies with N.J.A.C. 7:15

Septic System Maintenance

The Ocean County Health Department issues permits for ISSDSs, reviews engineering plans for new and altered ISSDSs, responds to citizen complaints regarding malfunctioning septic systems, and enforces all



applicable state and county regulations. The status of ordinances regarding septic system maintenance is seen in Table 22:

Table 22: Septic System Maintenance Ordinances		
Municipality	Code	Date Adopted
Berkeley	Chapter 32, Section 4	1974
Jackson	Chapter 336	8/27/2001
Lakewood	Board of Health Ordinances, Chapter XI	N/A

Dry Conveyance

Municipal ordinances regarding mandatory construction of dry conveyances in Sewer Service Areas are included. Adoption of such an ordinance is optional but encouraged for municipalities where sewer service areas have been expanded. The status of such ordinances is seen in Table 23:

Table 23: Dry Conveyance Ordinances		
Municipality	Code	Date Adopted
Jackson	Chapter 336-1	8/27/2001
Long Beach	Chapter 197-2	8/2/1974
Stafford	Chapter 47, Article I	11/20/2007

Septic Connections

The status of municipal ordinances regarding septic development and mandatory connection in Sewer Service Areas is seen in Table 24:

Table 24: Septic Connections Ordinances		
Municipality	Code	Date Adopted
Barnegat	Article V, Chapter 55-126.15	9/1/2001
Barnegat Light	Chapter 153, Article III	6/13/1977
Bay Head	Chapter 195-1	12/18/1984
Beach Haven	Chapter 163	9/13/2010
Berkeley	Chapter 32, Section 5	1974
Brick	Chapter 352, Article I	12/15/1970
Eagleswood	Chapter 105	9/22/1987
Harvey Cedars	Chapter 7-6.6	5/1981
Jackson	Chapter 336	8/27/2001
Lacey	Chapter 404	7/3/1974
Little Egg Harbor	Chapter 282	N/A
Long Beach	Chapter 197-1	8/2/1974
Manchester	Chapter 430, Article II	1996
Plumsted	2009 National Standard Plumbing Code	2009
Point Pleasant	Chapter 10-6	8/9/1976
Point Pleasant Beach	Chapter 11	2009
Seaside Heights	Chapter 219, Article IV	3/15/2006
Seaside Park	Chapter 450, Article II	12/20/2001
Ship Bottom	Chapter 13.08	10/26/2010
South Toms River	Chapter 18.4	1975
Stafford	Chapter 47, Article III	2/15/2011
Toms River	Chapter 572	7/15/1974
Tuckerton	Chapter 249, Article II, Section 6	6/21/1993



VIII. Future Water Supply

NJ Statewide Water Supply Plan

At the time of the development of this WMP, the most recent adopted NJ Statewide Water Supply Plan is dated August 1996. The plan includes Recommended Initiatives for Planning Areas Anticipated to be in Deficit. WMPs must not conflict with these regional water supply recommendations, and where specific actions are recommended, WMPs should support their implementation. The forthcoming update to the State Water Supply Plan is expected to provide an updated basis for potential water supply availability. However, no timeframe has been identified for adoption of an updated State Water Supply Plan.

Sufficiency of Water Supply by Purveyor

Table 25 presents projected potable water demand in Ocean County by purveyor. Current water allocation and demand were derived from the NJDEP Public Water System Deficit/Surplus database. Future water supply demand was calculated by applying the Daily Residential Water Demand for a three-bedroom house (N.J.A.C. 5:21-5.2, Table 5.1) and Daily Non- Residential Water Demand for the applicable use (N.J.A.C. 7:10-12.6(b)2, Table 1) to the build out analysis results. The results were then converted to millions of gallons per month (MGM):

Formula: Converting Residential Water Demand to MGM

$$\text{Residential Water Demand (MGM)} = ((\text{New Units} \times 320) \times 365) / 12$$

Formula: Converting Non-Residential Water Demand to MGM

$$\text{Non-Residential Water Demand (MGM)} = ((\text{New Square Feet} \times 0.125) \times 365) / 12$$

To determine if a purveyor will have a deficit in future water supply, Current Water Allocation was subtracted from the sum of Current Water Demand and Future Water Demand.

ID	Purveyor Name	Municipality	Current Water Allocation (MGM)	Current Water Demand (MGM)	Future Water Demand (MGD)	Future Water Demand (MGM)	Excess/Deficit (MGM)
1319002	NJ American Water Co. (Howell)	Jackson	N/A	N/A	0.000	0.000	N/A
1319007	Parkway Water Co.	Lakewood	63.800	34.614	0.001	0.030	29.156
1504001	Beachwood Water Dept.	Berkeley	52.000	47.808	0.000	0.000	4.192
		South Toms River			0.000	0.000	
1505002	Aqua NJ Eastern Division	Berkeley	48.000	39.265	0.000	0.000	8.735
1505003	Shore Water Co.	Berkeley	13.500	11.135	0.008	0.243	2.122
1505004	Berkeley Township MUA	Berkeley	65.000	35.000	0.364	11.072	18.928
1506001	Brick Township MUA	Lakewood	650.000	392.493	0.000	0.000	257.507
1507005	United Water Toms River	Berkeley	734.350	592.833	0.055	1.673	138.232
		Lakewood			0.006	0.183	
		Manchester			0.000	0.000	
		South Toms River			0.047	1.430	
1508001	Eagleswood Village Mobile Home Park	Eagleswood	3.100	0.546	0.013	0.395	2.159
1511001	Jackson Township MUA	Jackson	312.350	209.340	0.059	1.795	101.215
		Lakewood			0.000	0.000	
1511002	Jackson Estates Mobile Home Park	Jackson	3.100	1.490	0.000	0.000	1.610
1511003	Land of Pines Mobile Home Park	Jackson	N/A	N/A	0.000	0.000	N/A
1511004	Maple Glen Mobile Home Park	Jackson	N/A	N/A	0.001	0.030	N/A
1511005	Oak Tree Mobile Home Park	Jackson	3.100	0.845	0.000	0.000	2.255
1511006	Shady Lake Trailer Park	Jackson	N/A	N/A	0.000	0.000	N/A
1511007	Shady Oak Trailer Court	Jackson	N/A	N/A	0.000	0.000	N/A
1511008	South Wind Mobile Home Village	Jackson	3.100	2.325	0.000	0.000	0.775
1511009	Pleasant Gardens Water	Jackson	N/A	N/A	0.000	0.000	N/A
1511010	Naval Air Engineering Station Lakehurst	Jackson	21.000	8.982	0.000	0.000	11.896
		Manchester			0.004	0.122	

ID	Purveyor Name	Municipality	Current Water Allocation (MGM)	Current Water Demand (MGM)	Future Water Demand (MGD)	Future Water Demand (MGM)	Excess/Deficit (MGM)
1511011	Luxury Mobile Terrace	Jackson	N/A	N/A	0.000	0.000	N/A
1511012	Jackson Township Water Dept. (Legler)	Jackson	N/A	N/A	0.008	0.243	N/A
1511013	Fountainhead Parks, Inc.	Jackson	3.100	0.482	0.000	0.000	2.618
1511014	Concord Village Assn.	Jackson	N/A	N/A	0.000	0.000	N/A
1511015	Lexington Commons Assn.	Jackson	N/A	N/A	0.000	0.000	N/A
1511016	Meadowbrook Co-Op, Inc.	Jackson	3.100	0.335	0.000	0.000	2.765
1511017	Jackson Colonial Arms Apts.	Jackson	N/A	N/A	0.000	0.000	N/A
1511019	Doves Mills Apts.	Jackson	N/A	N/A	1.000	30.417	N/A
1512001	Lacey Township MUA	Lacey	112.700	89.510	1.608	48.910	-25.720
1513001	Lakehurst Water Dept.	Manchester	15.000	9.400	0.000	0.000	5.600
1345001	NJ American Water Co. (Coastal Northern)	Jackson	2,539.580	2,116.800	0.000	0.000	402.918
		Lakewood			0.653	19.862	
1514002	Lakewood Township MUA	Lakewood	198.140	161.829	0.319	9.703	26.608
1518001	Cedar Glen Homes, Inc.	Manchester	3.100	1.943	0.003	0.091	1.066
1518002	Cedar Glen Lakes Water Co.	Manchester	9.000	6.864	0.029	0.882	1.254
1518003	Cedar Glen West Water Co.	Jackson	5.000	4.227	0.000	0.000	0.712
		Manchester			0.002	0.061	
1518004	Manchester Township Water Utility - Western	Berkeley	100.000	55.215	0.000	0.000	15.555
		Lacey			0.000	0.000	
		Manchester			0.961	29.230	
1518005	Manchester Township Water Utility	Manchester	145.000	122.408	0.819	24.911	-2.319
1518007	Ridgeway Mobile Home Court (System 1)	Manchester	N/A	N/A	0.000	0.000	N/A
1518009	Ridgeway Mobile Home Court (System 2)	Manchester	N/A	N/A	1.000	30.417	N/A
1520001	Ocean Township MUA	Barnegat	71.000	54.617	0.029	0.882	8.748
		Lacey			0.000	0.000	
		Ocean			0.222	6.753	
1521001	Ocean Gate Water Dept.	Berkeley	12.000	10.253	0.000	0.000	1.747
1522001	Pine Beach Water Dept.	Berkeley	14.000	13.959	0.000	0.000	0.041
1523001	Colliers Mills Mobile Estates	Plumsted	N/A	N/A	0.000	0.000	N/A
1523002	Jensen's Deep Run Adult Village	Plumsted	3.100	3.119	0.000	0.000	-0.019
1523003	NJ American Water Co. - New Egypt	Plumsted	7.000	5.178	0.471	14.326	-12.504
1523004	Oak Grove Mobile Home Park	Plumsted	N/A	N/A	0.000	0.000	N/A
1526001	Seaside Heights Water Dept.	Berkeley	72.000	52.357	0.000	0.000	19.643
1527001	Seaside Park Water Dept.	Berkeley	34.000	23.602	0.000	0.000	10.398
1530004	Stafford Township MUA	Stafford	175.000	81.989	0.001	0.030	92.981
1533001	Barnegat Township Water & Sewer Utilities	Barnegat	154.000	107.621	0.590		28.433
		Ocean			0.000		
1533002	Pinewood Estates - Brighton	Barnegat	8.467	4.495	0.079	2.403	1.569

Sources: NJDEP Public Water System Deficit/Surplus database, <http://www.nj.gov/dep/watersupply/pws.html>. NJDEP Wastewater Estimation Model Builder.

The results of the water supply demand calculations indicate that forty-six of the fifty public water purveyors which serve the County's non-urban municipalities will have sufficient capacity at build out. Three of the four remaining purveyors—Lacey Township MUA, Manchester Township Water Utility, and New Jersey American Water Company-New Egypt—are projected to be in deficit of future water supply demand. The final purveyor, Jensen's Deep Run Adult Village, is currently in deficit, and this deficit is projected to continue. While the affected municipalities will not be required to rezone, specific projects in these areas will be addressed on an individual basis when a permit is requested from the NJDEP. Other strategies for addressing purveyors in deficit are listed in N.J.A.C. 7:15-5.25(f)2. These include:

- Obtaining additional water supply through reuse as identified in accordance with the NJDEP's "Technical Manual for Reclaimed Water for Beneficial Reuse" as amended to supplemented;
- Obtaining water from a source with available capacity consistent with the most current version of the New Jersey State Water Supply Plan and consistent with the findings of any applicable regional water supply plan or an applicable Total Maximum Daily Load where one has been adopted;
- Adopting water conservation ordinances to reduce demand to match available supply; or



- Reducing the amount of water demand by reducing the amount or altering the type of planned future development.

Sufficiency of Water Supply by RWRPA

For developable land outside of purveyor areas, a comparison was made between Available Water and Future Water Demand by Regional Water Resources Planning Areas (RWRPA). A number of resources were needed to complete this comparison. The 1996 NJ Statewide Water Supply Plan was used to find water availability by RWRPA. Water Demand Average 2005-2009 was derived from a report created by the NJDEP entitled, “NJGWS DGS13-1 Computer Workbook Summarizing New Jersey Withdrawals and Discharges on a HUC11 Basis, December 2014.” Finally, Future Water Demand was calculated—by HUC11—using the results of the build out and applying the same calculations that were used in purveyor areas.

In order to make the comparison between water availability and future water demand, HUC11 watersheds were grouped into RWRPAs. To determine if a purveyor will have a deficit in future water supply, Water Available was subtracted from the sum on Water Demand Average 2005-2009 and Future Water Demand. The NJDEP has advised that the three RWRPAs that are shown to be in deficit in Table 26 are not likely to be an issue in the future, as the data is antiquated and does not capture expansions in water purveyor service into these areas.

Table 26: Domestic Wells						
Regional Water Resources Planning Area (RWRPA)	Water Available (MGM)	HUC11	Water Demand Average 2005 - 2009 (MGM)	Water Demand Build Out (MGD)	Future Water Demand (MGM)	Excess/ Deficit (MGM)
Manasquan River (13)	1,189.292	02030104100	970.292	0.000	0.000	219.000
Rancocas River (14)	4,100.167	02040201040	73.000	0.180	5.475	3,694.287
		02040201050	82.125	4.149	126.199	
		02040202020	112.542	0.007	0.213	
		02040202030	197.708	0.208	6.327	
Metedeconk River (15)	340.667	02040301020	85.167	0.297	9.034	-617.854
		02040301030	139.917	2.998	91.189	
		02040301040	349.792	1.810	55.054	
		02040301050	206.833	0.708	21.535	
Toms River(16)	608.333	02040301060	209.875	5.688	173.010	-612.233
		02040301070	179.458	1.763	53.631	
		02040301080	556.625	1.577	47.967	
Mullica River (18)	2,214.333	02040301180	322.417	0.575	17.490	2,196.753
		02040301190	377.167	0.003	0.091	
		02040301200	109.500	0.000	0.000	
		02040301210	51.708	0.000	0.000	
Atlantic Coastal (19)	760.417	02040301090	185.542	0.553	16.820	-305.779
		02040301100	69.958	0.629	19.132	
		02040301110	69.958	4.740	144.175	
		02040301120	76.042	0.863	26.250	
		02040301130	292.000	2.668	81.152	
		02040301140	85.167	0.000	0.000	
Sources: NJ Statewide Water Supply Plan, August 1996. DGS13-1 Computer Workbook Summarizing New Jersey Withdrawals and Discharges on a HUC11 Basis. December 2014. NJDEP Wastewater Estimation Model Builder.						



IX. Mapping Requirements

Please see pages 50-59 for all county mapping requirements:

- Map 1 displays the boundaries of the three planning areas, as well as the locations of OCUA administered Water Pollution Control Facilities which service them. The locations of existing OCUA lift stations and pump stations are also shown.
- Map 2 displays the existing sewer service area, OCUA Water Pollution Control Facilities, and the main trunk lines (interceptors and force mains) of OCUA wastewater conveyance system. Public open space and recreation areas are also superimposed over the existing sewered areas.
- Map 3 presents the projected build out of Ocean County, showing both anticipated development within the adopted sewer service area, and land classified as “urban” in the NJDEP’s 2007 Land Use and Land Cover survey. Public open space and recreation areas show where future development is restricted.
- Map 4 shows a composite of environmental features. These include the three Landscape Project 2.1 threatened and endangered species habitats utilized in environmental analysis: coastal beaches and dunes, forests, and emergent wetlands. All other wetlands are shown, as are the critical wood turtle habitat and bald eagle foraging grounds. Surface water, permanently preserved agricultural land, and Natural Heritage Priority Sites are also displayed.
- Map 5 portrays additional hydrological features, including riparian zones, Category One streams, and the boundaries of each HUC11 sub-watershed.
- Map 6 is a presentation of the adopted sewer service area and existing OCUA infrastructure. Non-discharge areas and public open space and recreation areas are also included.
- Map 7 is the product of the environmentally sensitive areas mapping procedure described in Chapter V of this WMP. Here, the environmentally sensitive areas layer and the adopted sewer service area layer are superimposed to show areas of overlap. These areas of overlap indicate environmentally sensitive areas included in the adopted sewer service area following the GIS analysis and consultation with state and local officials.
- The Delta Map superimposes the previously approved sewer service area and the adopted sewer service area, portraying the regions of Ocean County which will and will not see a change in their sewer service designation.

Additional localized mapping of the aforementioned features, as well as municipal zoning, public water purveyors, and regional planning area boundaries, can be found in the Municipal Chapters.



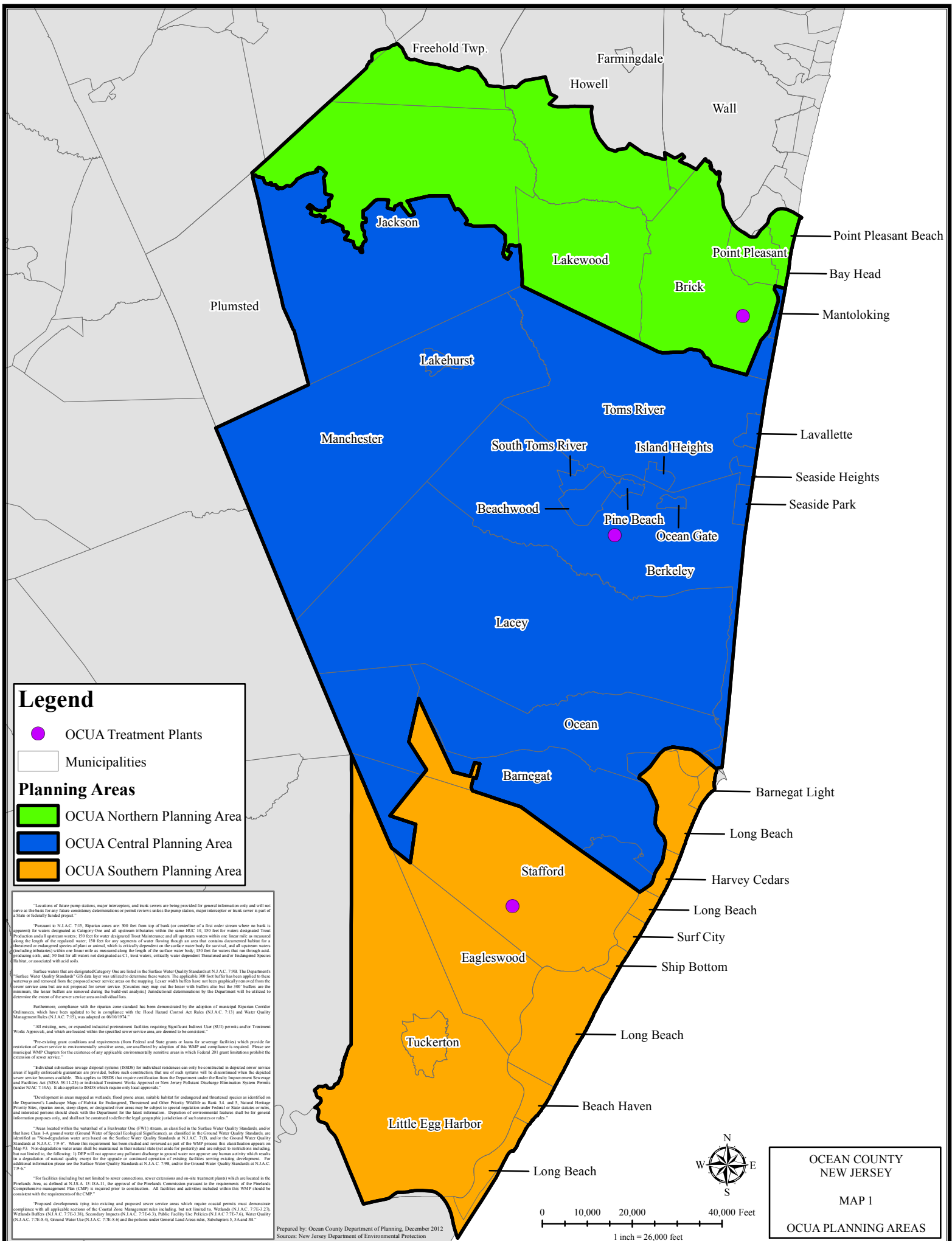
X. Municipal Chapters

The Municipal Chapters provide information on each of Ocean County's thirty-three municipalities' wastewater infrastructure. Included for each municipality is a discussion of existing connections to the countywide OCUA treatment system, a description of environmental features, a list of ordinances relevant to wastewater management planning, and projections of future needs for sewer service and water supply. The extents of the existing and proposed sewer service areas are described, as well as the areas designated for the use of ISSDSs. Where applicable, facility tables have been included for NJPDES permitted sites which discharge more than 2,000 gallons of wastewater to groundwater per day.






The Municipal Chapters can be found in Volume 2 of 2.

Table 27: Municipal Chapters




#	Municipality	Designation	NJDEP Approval
1	Barnegat Township	Non-Urban	December 30, 2015
2	Barnegat Light Borough	Urban	December 30, 2015
3	Bay Head Borough	Urban	December 30, 2015
4	Beach Haven Borough	Urban	December 30, 2015
5	Beachwood Borough	Urban	December 30, 2015
6	Berkeley Township	Non-Urban	December 30, 2015
7	Brick Township	Urban	December 30, 2015
8	Eagleswood Township	Non-Urban	December 30, 2015
9	Harvey Cedars Borough	Urban	December 30, 2015
10	Island Heights Borough	Urban	December 30, 2015
11	Jackson Township	Non-Urban	December 30, 2015*
12	Lacey Township	Non-Urban	December 30, 2015
13	Lakehurst Borough	Urban	December 30, 2015
14	Lakewood Township	Non-Urban	December 30, 2015*
15	Lavallette Borough	Urban	December 30, 2015
16	Little Egg Harbor Township	Urban	December 30, 2015
17	Long Beach Township	Urban	December 30, 2015
18	Manchester Township	Non-Urban	December 30, 2015
19	Mantoloking Borough	Urban	December 30, 2015
20	Ocean Township	Non-Urban	December 30, 2015
21	Ocean Gate Borough	Urban	December 30, 2015
22	Pine Beach Borough	Urban	December 30, 2015
23	Plumsted Township	Non-Urban	December 30, 2015
24	Point Pleasant Borough	Urban	December 30, 2015
25	Point Pleasant Beach Borough	Urban	December 30, 2015
26	Seaside Heights Borough	Urban	December 30, 2015
27	Seaside Park Borough	Urban	December 30, 2015
28	Ship Bottom Borough	Urban	December 30, 2015
29	South Toms River Borough	Non-Urban	December 30, 2015
30	Stafford Township	Non-Urban	December 30, 2015
31	Surf City Borough	Urban	December 30, 2015
32	Toms River Township	Urban	December 30, 2015
33	Tuckerton Borough	Urban	December 30, 2015
*Approval does not include septic dilution projections			



Legend

-  OCUA Treatment Plants
-  Interceptor
-  ForceMain
-  Public Open Space & Recreation Areas
-  Surface Water

Sewered Areas

-  OCUA Central DSW (NJ0029408)
-  OCUA Northern DSW (NJ0028142)
-  OCUA Southern DSW (NJ0026018)

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or Federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC. 14, 150 feet for waters designated Trust Production and all upstream waters, 150 feet for water designated Trout Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segment of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, rose waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site data layer was utilized to determine these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. (Creative may map out the lesser width buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis.) Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been determined by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/1974."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Indirect User (SIU) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be connected to designated sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the designated sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improvement Sewerage and Facilities Act (NJSA 9:11-21) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISDS which require only local approvals."

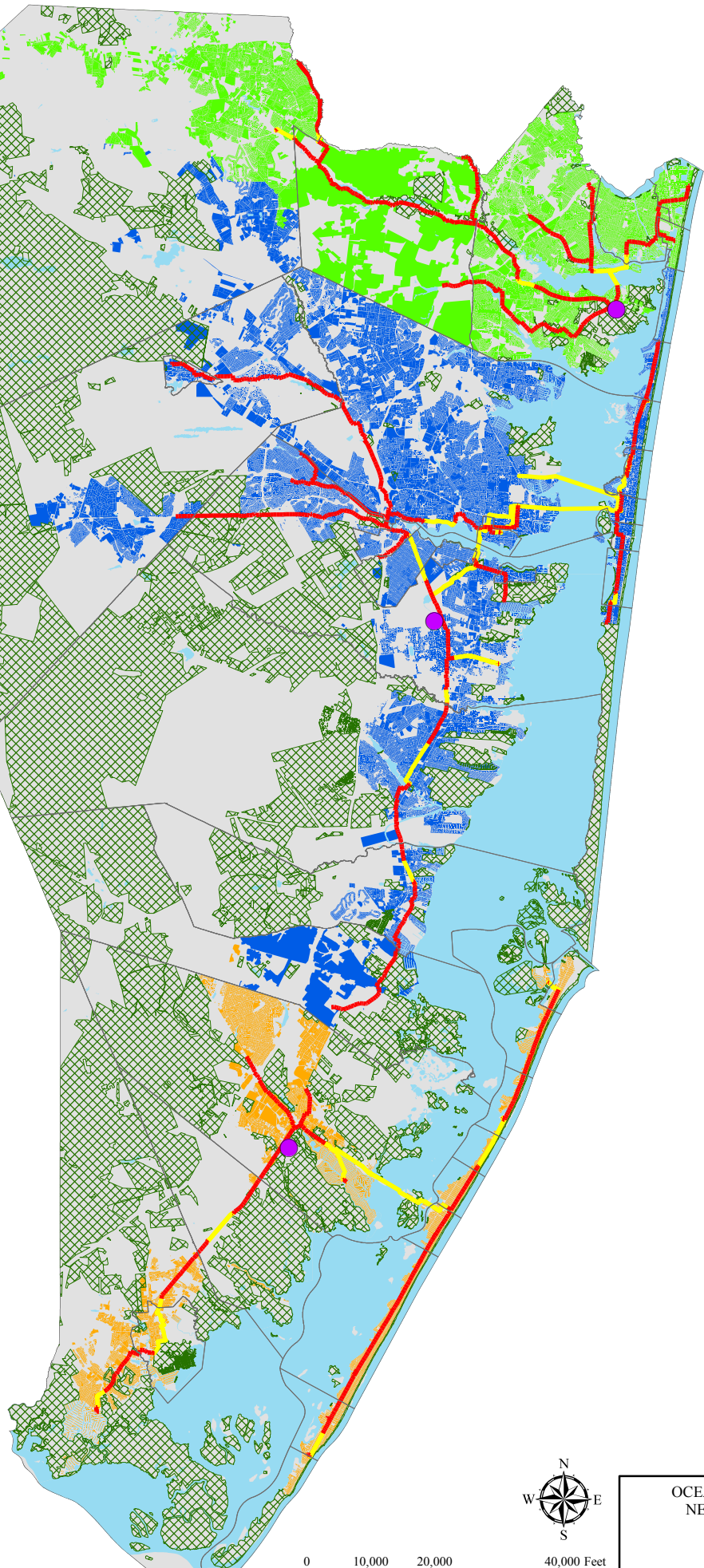
"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife in Rule 14, and 9, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulations under Federal or State statutes or rules, and interested parties should work with the Department for the latest information. Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules."

"Areas located within the watershed of a Freshwater One (FWO) stream, as classified in the Surface Water Quality Standards, and/or the base Class I-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. When this requirement has been studied and reviewed as part of the WMP process this classification appears on Map 23. Non-degradation water shall be maintained in their natural state (not under for protection) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the organic or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6."

"The facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the PUCADA Area, as defined at N.J.S.A. 13:18A-1, the approval of the PUCADA Commissioner pursuant to the requirements of the PUCADA Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable portions of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-3.43), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Ground Water Use (N.J.A.C. 7:7E-8.4) and the policies under General Land Use rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection



0 10,000 20,000 40,000 Feet
1 inch = 24,000 feet

OCEAN COUNTY
NEW JERSEY

MAP 2

EXISTING SEWERED AREA

Legend

- Public Open Space & Recreation Areas
- Existing Development
- Projected Non-Urban Development
- Surface Water

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or centerline of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC 14, 150 feet for waters designated Trust Protection and all upstream waters, 150 feet for water designated Trust Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segment of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, row waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site data layer was utilized to determine these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. Creation may map out the sewer with buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis. Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been determined by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/14."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Industrial User (SUI) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISSDS) for individual residences can only be constructed in designated sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the designated sewer service becomes available. This applies to ISSDS that require certification from the Department under the Ready Improve Sewerage and Facilities Act (NJSA 9:11.21) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISSDS which require only local approvals."

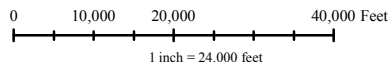
"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife in Rule 14, and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should check with the Department for the latest information. Depletion of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such violators or rules."

"Areas located within the watershed of a Freshwater One (FW1) stream, as classified in the Surface Water Quality Standards, and/or the base Class I-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. Where this requirement has been studied and reviewed as part of the WMP process this classification appears on Map 3. Non-degradation water areas shall be maintained in their natural state (not used for poultry) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the organic or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6."

"The facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Pierlands Area, as defined at N.J.S.A. 13:18A-1, the approval of the Pierlands Commission pursuant to the requirements of the Pierlands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3, 7:7E-3.2, Wetlands Buffers (N.J.A.C. 7:7E-3.3), Secondary Impacts (N.J.A.C. 7:7E-3.4), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Ground Water Use (N.J.A.C. 7:7E-8.4-6) and the policies under General Land Area rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection

















OCEAN COUNTY
NEW JERSEY

MAP 3

PROJECTED DEVELOPMENT

Legend

-  Natural Heritage Priority Sites
-  Bald Eagle Foraging
-  Wood Turtle Habitat
-  Beach (Rank 4)
-  Beach (Rank 5)
-  Emergent Wetlands (Rank 3)
-  Emergent Wetlands (Rank 4)
-  Emergent Wetlands (Rank 5)
-  Wetlands
-  Preserved Agriculture
-  Forest (Rank 3)
-  Forest (Rank 4)
-  Forest (Rank 5)
-  Surface Water

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or Federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC 14, 150 feet for waters designated Trust Protection and all upstream waters, 150 feet for water designated Trust Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segments of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, row waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site data layer was utilized to determine these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service area on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. [Closures may map out the lesser width buffers also but the 100' buffer are the minimum, the lesser buffers are removed during the build-out analysis.] Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been demonstrated by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/1974."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Industrial User (SUI) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see associated WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be constructed in designated sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the designated sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improvement Sewerage and Facilities Act (NJSA 9:11.23) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISDS which require only local approvals."

"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landcover Map of Habitat for Endangered, Threatened and Other Priority Wildlife in Rank 1A, and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated cover areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should consult with the Department for the latest information. Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such regulators or rules."

"Areas located within the watershed of a Freshwater One (FWO) stream, as classified in the Surface Water Quality Standards, and/or that have Class 1-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:15, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-B. Where this requirement has been studied and reviewed as part of the WMP process this classification appears on May-23. Non-degradation water shall be maintained in their natural state (not used for power) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the organic or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-A."

"The facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Pierlands Area, as defined at N.J.S.A. 13:18A(1), the approval of the Pierlands Commission pursuant to the requirements of the Pierlands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable portions of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-4.3), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.6), Ground Water Use (N.J.A.C. 7:7E-8.6) and the policies under General Land-Use rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection



0 10,000 20,000 40,000 Feet
1 inch = 24,000 feet

OCEAN COUNTY
NEW JERSEY

MAP 4

ENVIRONMENTAL FEATURES

Legend

- HUC 11
- Category One (C-1) Streams
- 300 Foot Riparian Buffer
- 50 Foot Riparian Buffer
- Surface Water
- Wetlands

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC. 14, 150 feet for waters designated Trout Production and all upstream waters, 150 feet for water designated Trout Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segments of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C-1, row waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site data layer was utilized to determine these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. [Cautions may map out the lesser width buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis.] Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been determined by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/04."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Indirect User (SIU) permits and/or Treatment Works Agreements, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be constructed in designated sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the designated sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improvement Sewerage and Facilities Act (NJSA 9:11-21) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISDS which require only local approvals."

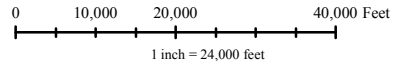
"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife in Rule 14, and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should check with the Department for the latest information. Depletion of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such violators or rules."

"Areas located within the watershed of a Freshwater One (FWO) stream, as classified in the Surface Water Quality Standards, and/or the base Class I-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. When this requirement has been studied and reviewed as part of the WMP process this classification appears on Map 5. Non-degradation water areas shall be maintained in their natural state (not under for protection) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the separate or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6."

"The facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Plands Area, as defined at N.J.S.A. 13:18A-1, the approval of the Plands Commission pursuant to the requirements of the Plands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-3.43), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Ground Water Use (N.J.A.C. 7:7E-8.4) and the policies under General Land Areas rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection



OCEAN COUNTY
NEW JERSEY

MAP 5

HYDROLOGY

Legend

- OCUA Treatment Plants
- Interceptor
- ForceMain
- OCUA Northern DSW (NJ0028142)
- OCUA Central DSW (NJ0029408)
- OCUA Southern DSW (NJ0026018)
- Proposed to Plumsted MUA
- Non Discharge Areas
- Public Open Space & Recreation Areas
- Surface Water

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or Federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC 14, 150 feet for waters designated Trust Protection and all upstream waters, 150 feet for water designated Trust Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segment of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, row waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site data for water withdrawn from these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service area on the map. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. [Citation may map out the buffer with buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis.] Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been demonstrated by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/1974."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Industrial User (SUI) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be connected to depicted sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the depicted sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improve Sewerage and Facilities Act (NJSA 9B:1-2) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISDS which require only local approvals."

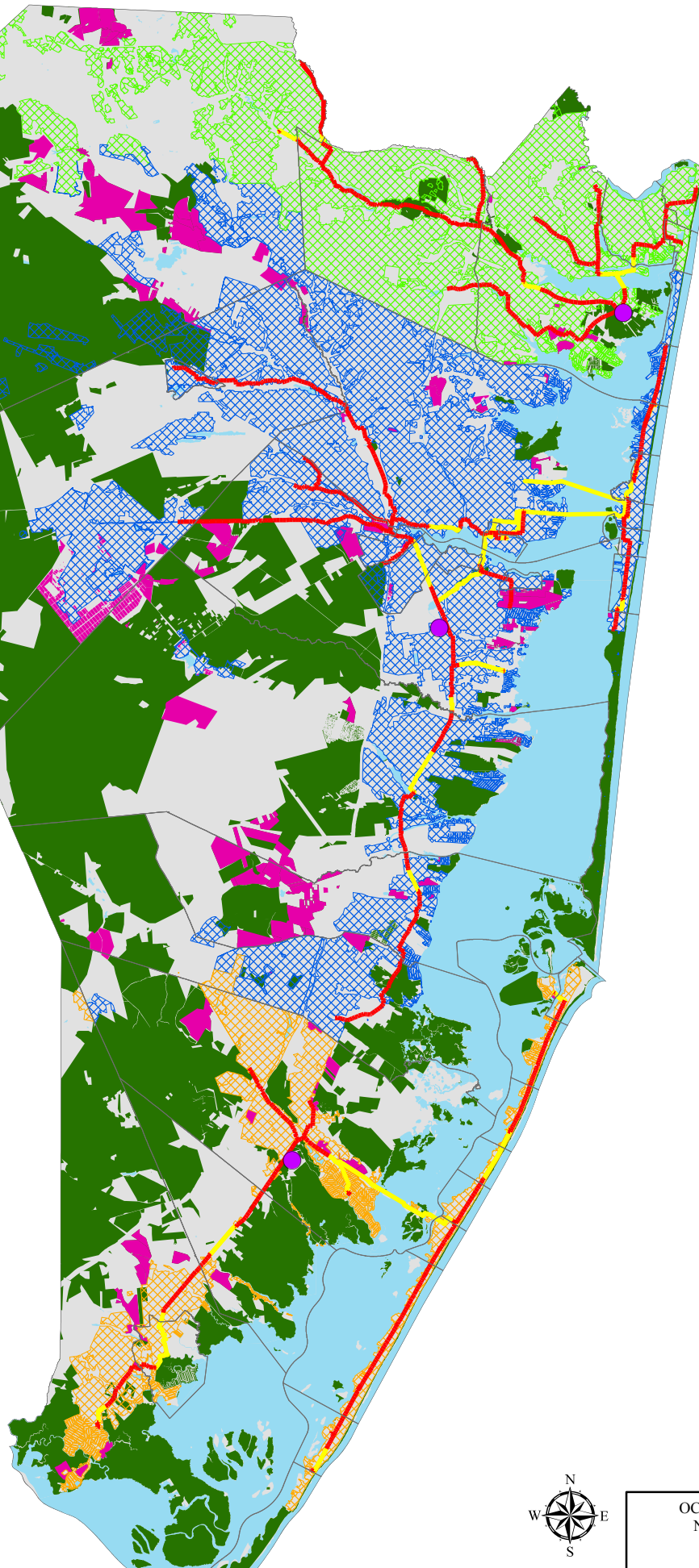
"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Map of Habitat for Endangered, Threatened and Other Priority Wildlife on Bank 14, and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should check with the Department for the latest information. Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such regulators or rules."

"Areas located within the watershed of a Freshwater One (FWO) stream, as classified in the Surface Water Quality Standards, and/or the base Class 1-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. When this requirement has been studied and reviewed as part of the WMP process this classification appears on Map 6. Non-degradation water areas shall be maintained in their natural state (not used for poultry) and are subject to restrictions including, but not limited to, the following: (1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the organic or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6."

"For facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Plumsted Area, as defined at N.J.S.A. 13:18A-1, the approval of the Plumsted Commission pursuant to the requirements of the Plumsted Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:76-3.27), Wetlands Buffers (N.J.A.C. 7:76-3.38), Secondary Impacts (N.J.A.C. 7:76-3.4), Public Facility Use Policies (N.J.A.C. 7:76-7.6), Water Quality (N.J.A.C. 7:76-8.4), Ground Water Use (N.J.A.C. 7:76-8.4) and the policies under General Land Areas rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection



0 10,000 20,000 40,000 Feet
1 inch = 24,000 feet

OCEAN COUNTY
NEW JERSEY

MAP 6

ADOPTED SEWER SERVICE AREA

Legend

- Environmentally Sensitive Areas
- Adopted Sewer Service Area
- Area of Overlap
- Surface Water

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC. 14, 150 feet for waters designated Trout Production and all upstream waters, 150 feet for water designated Trout Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segments of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, trout waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site data layer was utilized to determine these waters. The applicable 100 foot buffer has been applied to these watersheds and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. [Cautions may map out the sewer with buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis.] Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been determined by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/1974."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Indirect User (SIU) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be constructed in designated sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the designated sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improve Sewerage and Facilities Act (NJSA 9:11.21) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISDS which require only local approvals."

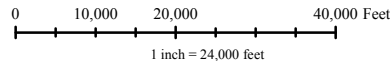
"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife in Rule 14, and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should check with the Department for the latest information. Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules."

"Areas located within the watershed of a Freshwater One (FW1) stream, as classified in the Surface Water Quality Standards, and/or that have Class I-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. When this requirement has been studied and reviewed as part of the WMP process this classification appears on Map 15. Non-degradation water shall be maintained in their natural state (not under for priority) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality, except for the organic or controlled operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6."

"The facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Pierlands Area, as defined at N.J.S.A. 13:18A-1, the approval of the Pierlands Commission pursuant to the requirements of the Pierlands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:76-2.27), Wetlands Buffers (N.J.A.C. 7:76-1.38), Secondary Impacts (N.J.A.C. 7:76-6.3), Public Facility Use Policies (N.J.A.C. 7:76-7.6), Water Quality (N.J.A.C. 7:76-8.4), Ground Water Use (N.J.A.C. 7:76-8.4) and the policies under General Land Area rules, Subchapters 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection









OCEAN COUNTY
NEW JERSEY

MAP 7

ENVIRONMENTALLY SENSITIVE AREAS

Legend

-  CAFRA
-  Pinelands
-  OCUA Northern DSW (NJ0028142)
-  OCUA Central DSW (NJ0029408)
-  OCUA Southern DSW (NJ0026018)
-  Surface Water

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC 14, 150 feet for waters designated as Category Two and all upstream tributaries, 150 feet for water designated as Category Three and all upstream tributaries within one linear mile as measured along the length of the regulated water, 150 feet for any segment of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, wet waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site buffer has been determined for these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service area on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. [Cautions may map out the lesser width buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis.] Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been determined by the adoption of municipal Riparian Corridor Ordinances, 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), was adopted on 06/10/1974."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Industrial User (SIIU) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be constructed in designated sewer service areas if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the designated sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improvement Sewerage and Facilities Act (NJSA 9:11.23) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under NJAC 7:14A). It also applies to ISDS which require only local approvals."

"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife in Rule 14 and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should seek with the Department for the latest information. Depletion of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules."

"Areas located within the watershed of a Freshwater One (FWO) stream, as classified in the Surface Water Quality Standards, and/or the base Class I-A ground water (Ground Water of Special Biological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation water areas based on the Surface Water Quality Standards at N.J.A.C. 7:15, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-B." Where this requirement has been studied and reviewed as part of the WMP process this classification appears on Map #3. Non-degradation water areas shall be maintained in their natural state (not under for protection) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the organic or controlled operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-A."

"The facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Pinelands Area, as defined at N.J.S.A. 13:18A(1), the approval of the Pinelands Commission pursuant to the requirements of the Pinelands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.30), Secondary Impacts (N.J.A.C. 7:7E-3.3), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Ground Water Use (N.J.A.C. 7:7E-8.4) and the policies under General Land-Use rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection



0 10,000 20,000 40,000 Feet
1 inch = 24,000 feet

OCEAN COUNTY
NEW JERSEY

MAP 8

REGIONAL PLANNING AREA

Legend

- Previously Approved Sewer Service Area
- Adopted Sewer Service Area
- Area of Overlap

"Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or Federally funded project."

"Pursuant to N.J.A.C. 7:15, Riparian zones are 300 feet from top of bank (or confluence of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC. 14, 150 feet for waters designated Trust Protection and all upstream waters, 150 feet for water designated Trust Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water, 150 feet for any segment of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body, 150 feet for waters that run through acid-producing soils, and, 50 feet for all waters not designated as C, row waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils."

"Surface waters that are designated Category One are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Department's "Surface Water Quality Standards" Off-site Use was utilized to determine these waters. The applicable 100 foot buffer has been applied to these waters and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. (Creative may map out the lesser width buffers also but the 100' buffers are the minimum, the lesser buffers are removed during the build-out analysis.) Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots."

"Furthermore, compliance with the riparian zone standard has been demonstrated by the adoption of municipal Riparian Corridor Ordinances, which have been updated to be in compliance with the Flood Hazard Control Act (N.J.A.C. 7:13) and Water Quality Management Rules (N.J.A.C. 7:15), was adopted on 06/10/1974."

"All existing, new, or expanded industrial pretreatment facilities requiring Significant Industrial User (SIU) permits and/or Treatment Works Approval, and which are located within the specified sewer service area, are deemed to be consistent."

"Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by adoption of this WMP and compliance is required. Please see municipal WMP Chapters for the existence of any applicable environmentally sensitive areas in which Federal 201 grant limitations prohibit the extension of sewer service."

"Individual subsurface sewage disposal systems (ISDS) for individual residences can only be connected to a depicted sewer service area if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the depicted sewer service becomes available. This applies to ISDS that require certification from the Department under the Ready Improve Sewerage and Facilities Act (N.J.S.A. 9:11-21) or individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under N.J.A.C. 7:14A). It also applies to ISDS which require only local approvals."

"Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife in Rule 14, and 5, Natural Heritage Priority Sites, riparian areas, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested parties should check with the Department for the latest information. Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules."

"Areas located within the watershed of a Freshwater One (FW1) stream, as classified in the Surface Water Quality Standards, and/or the base Class I-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation" water areas based on the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. When this requirement has been studied and reviewed as part of the WMP process this classification appears on Map 13. Non-degradation water areas shall be maintained in their natural state (not under for priority) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the organic or continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6."

"For facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Wetlands Area, as defined at N.J.S.A. 13:18A-1, the approval of the Pinelands Commission pursuant to the requirements of the Pinelands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP."

"Proposed developments taking into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-4.3), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Ground Water Use (N.J.A.C. 7:7E-8.4-6) and the policies under General Land Areas rules, Subchapter 5, 5A and 5B."

Prepared by: Ocean County Department of Planning, December 2012
Sources: New Jersey Department of Environmental Protection

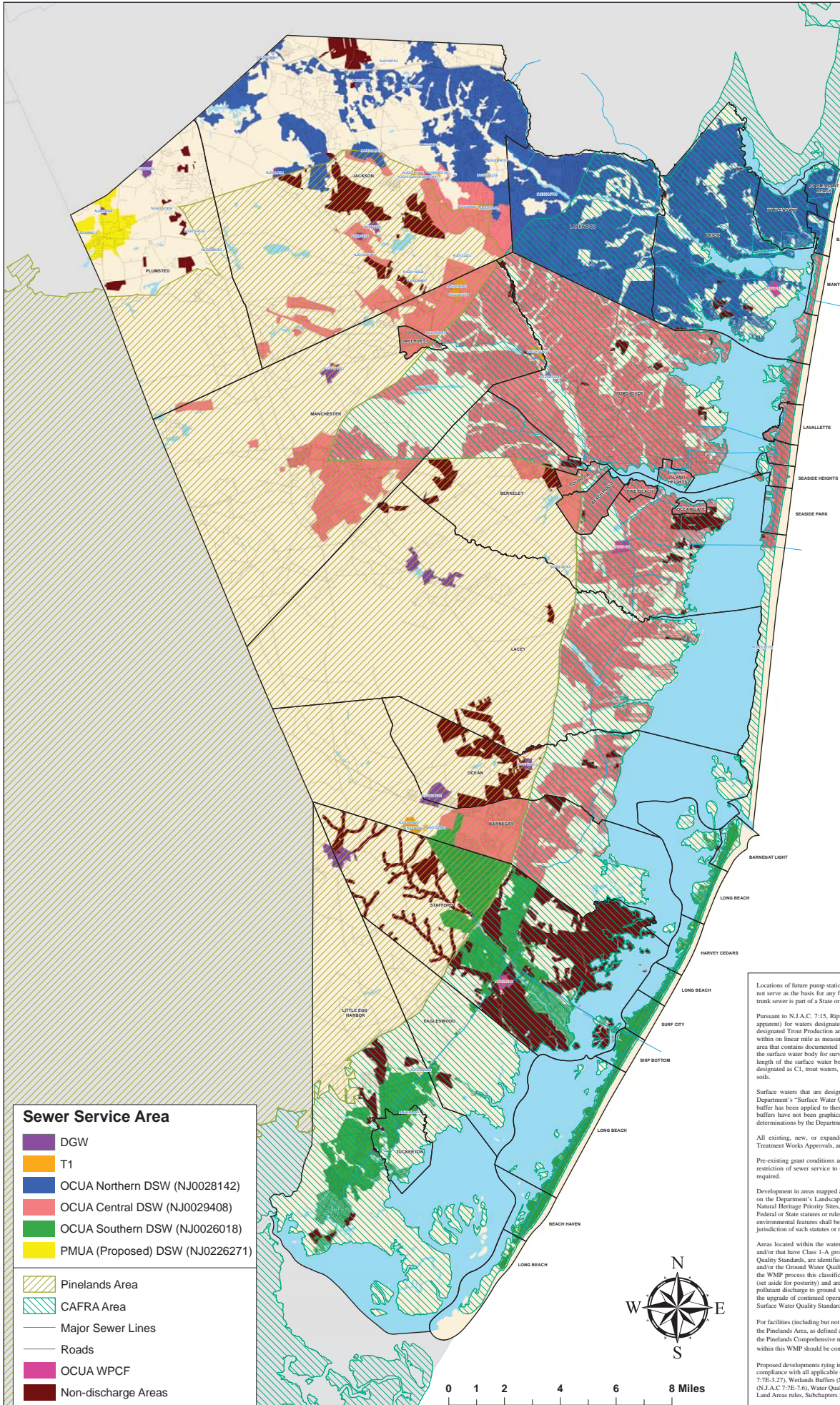


0 10,000 20,000 40,000 Feet
1 inch = 24,000 feet

OCEAN COUNTY
NEW JERSEY

DELTA MAP

SIGNIFICANT CHANGES



DISCHARGE TO GROUNDWATER (DGW)	NJPDES
Indian Rock Campground	NJ0084794
Jackson Acres	NJ0090158
Jackson Factory Outlet	NJ0108963
Jensens Mobile Home Park	NJ0080055
Land O' Pines	NJ0083186
Maple Glen	NJ0062090
Metedeconk National Golf Club	NJ0109193
New Egypt Middle School	NJ0104264
Ocean County Vo-Tech School	NJ00134813
Pine Barrens Golf Course	NJ0132225
South Wind Village / United MHP	NJ0090344

SANITARY SUBSURFACE DISPOSAL (T1)	NJPDES
Albocondo Campground	NJG0085324
Baker's Acres Campground Inc	NJG0085286
Bayview Park Ltd	NJG0084492
Brighton at Barnegat	NJG0084361
Butterfly Campground	NJG0085138
Cedar Glen Homes Inc	NJG0136492
Cedar Glen West Inc	NJG0136387
Citta Boy Scout Camp	NJG0101621
Colliers Mills Mobile Home Park Inc.	NJG0084387
Double Trouble State Park	NJG0133183
Doves Mills Apartments	NJG0136719
Forest Resource Education Center - State Nursery	NJG0133205
Harmony Hideaway Campground	NJG0089010
Island Beach State Park	NJG0133175
Jackson Colonial Arms Apartments	NJG0136913
Lakewood Rest Home	NJG0089788
Long Beach RV Resort	NJG0132560
Luxury Mobile Home Park	NJG0084697
Manchester Village	NJG0141933
Maple Lakes Campground	NJG0088951
Meadowbrook Village	NJG0140368
New Egypt Speedway	NJG0154105
New Egypt Trailer Park	NJG0084212
Oak Grove Mobile Home Park	NJG0157309
Ocean County Vo Tech School	NJG0108545
Pinewood Estates	NJG0064823
Pleasant Garden Apartments	NJG0100404
Ridgeway Industrial Park	NJG0168181
Ridgeway Manufactured Housing Community	NJG0085014
Shady Lake Park Inc	NJG0086860
Shady Oak Trailer Park	NJG0112658
Tip Tam Camping Resort	NJG0085278

- Sewer Service Area**
- DGW
 - T1
 - OCUA Northern DSW (NJ0028142)
 - OCUA Central DSW (NJ0029408)
 - OCUA Southern DSW (NJ0026018)
 - PMUA (Proposed) DSW (NJ0226271)
 - Pinelands Area
 - CAFRA Area
 - Major Sewer Lines
 - Roads
 - OCUA WPCF
 - Non-discharge Areas

Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future consistency determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or federally funded project.

Pursuant to N.J.A.C. 7:15, Riparian zones are: 300 feet from top of bank (or centerline of a first order stream where no bank is apparent) for waters designated as Category One and all upstream tributaries within the same HUC 14; 150 feet for waters designated Trout Production and all upstream waters; 150 feet for water designated Trout Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water; 150 feet or any segments of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body; 150 feet for waters that run through acid-producing soils. And, 50 feet for all waters not designated as C1, trout waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils.

Surface waters that are designated 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. The applicable 300 foot buffer has been applied to these waters and removed from the proposed sewer service areas on the mapping. Lesser width buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. Jurisdictional determinations by the Department will be utilized to determine the extent of the sewer service area on individual lots.

All existing, new, or expanded industrial pretreatment facilities requiring Significant Indirect User (SIU) permits and/or Treatment Works Approvals, and which are located within the specified sewer service area, are deemed to be consistent.

Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewage facilities) which provide for restriction of sewer service to environmentally sensitive areas, are unaffected by the adoption of this WMP and compliance is required.

Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department's Landscape Maps of Habitat for Endangered, Threatened and Other Priority Wildlife as Rank 3, 4 and 5, Natural Heritage Priority Sites, riparian zones, steep slopes, or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested persons should check with the Department for the latest information. Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules.

Areas located within the watershed of a Freshwater One (FW1) stream, as classified in the Surface Water Quality Standards, and/or that have Class I-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation water area based on the Surface Water Quality Standards, at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6. Where this requirement has been studied and reviewed as part of the WMP process this classification appears on Map #5. Non-degradation water areas shall be maintained in their natural state (set aside for posterity) and are subject to restrictions including, but not limited to, the following: 1) DEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the upgrade of continued operation of existing facilities serving existing development. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9-6.

For facilities (including but not limited to sewer connections, sewer extensions and on-site treatment plants) which are located in the Pinelands Area, as defined at N.J.A. 13:18A-11, the approval of the Pinelands Commission pursuant to the requirements of the Pinelands Comprehensive Management Plan (CMP) is required prior to construction. All facilities and activities included within this WMP should be consistent with the requirements of the CMP.

Proposed developments trying into existing and proposed sewer service areas which require coastal permits must demonstrate compliance with all applicable sections of the Coastal Zone Management rules including, but not limited to, Wetlands (N.J.A.C. 7:7E-3.27), Wetlands Buffers (N.J.A.C. 7:7E-3.38), Secondary Impacts (N.J.A.C. 7:7E-6.3), Public Facility Use Policies (N.J.A.C. 7:7E-7.6), Water Quality (N.J.A.C. 7:7E-8.4), Ground Water Use (N.J.A.C. 7:7E-8.6) and the policies under General Land Areas rules, Subchapters 5, 5A and 5B.

Submitted by Ocean County as Wastewater Management Planning Agency
Date of Current Submittal: 01/08/2015
Sources: NJ Department of Environmental Protection
Ocean County Utilities Authority

**FUTURE WASTEWATER SERVICE AREA MAP
AMENDING THE FOLLOWING AREAWIDE WATER QUALITY
MANAGEMENT PLAN: OCEAN**

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ENVIRONMENTAL ANALYSIS

Component of the Ocean County Wastewater Management Plan
Replacing All Previously Adopted Wastewater Management Plans

Submitted By

The Ocean County Board of Chosen Freeholders | January 8, 2015

Approved By

The New Jersey Department of Environmental Protection | December 30, 2015

Prepared By

The Ocean County Department of Planning

129 Hooper Avenue, P.O. Box 2191

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I. Introduction

The purpose of this document is to provide environmental analyses complementary to the Ocean County Wastewater Management Plan, and as required by N.J.A.C. 7:15-5.25. Chapter II includes a build out analysis for each of the three planning areas, except for those portions of the sewer service area that are located in urban municipalities. Chapter III details the nitrate dilution analysis performed for Ocean County's non-urban municipalities. Calculations of municipal public water supply based on the most recent New Jersey Statewide Water Supply Plan are included in Chapter IV. Chapters V through VII document the County's official correspondence regarding habitat suitability determination, wetlands letters of interpretation, and USEPA Section 201 map revisions or grant waivers, respectively.

II. Build out Analysis

In Ocean County's twenty-two urban municipalities, population growth is projected to be the primary driver of additional wastewater flow directed to the three OCUA treatment plants over the course of the next two decades. To calculate this additional flow, the net change in projected population was multiplied by 75 gallons per person per day. Because the urban municipalities are so extensively developed, additional flow generated by future land development was not factored into the analysis.

In the case of non-urban municipalities, which by definition have greater proportions of developable land, future land development in the sewer service area is likely to be a significant generator of additional wastewater flow. To account for flow generated by future development, an analysis of municipal build out was completed. Using GIS, an inventory of developable parcels was created utilizing layers provided by the NJDEP and the most recent available aerial imagery. The maximum allowable commercial square footage and residential units were then determined using municipal zoning regulations. To project the flow generated by new commercial development in a given zoning district, the allowable square footage was multiplied by that district's maximum allowable building lot coverage percentage in lieu of Floor Area Ratio (FAR), then multiplied by 0.125 gallons per square foot per day. To project the flow generated by new residential development in a given zoning district, the developable acreage was multiplied by that district's maximum allowable density, then multiplied by 300 gallons per unit per day. For the purposes of this analysis, all non-residential zones were considered commercial. The sum of these calculations produced the total additional flow directed to OCUA facilities. The results of this analysis are shown in Table 1.

It should be noted that these build out calculations were performed for all but one of the County's non-urban municipalities. Stafford Township had independently completed its own build out analysis as a part of its municipal wastewater management plan in 2010. The results of Stafford Township's analysis were used by the County of Ocean in the preparation of this WMP.

Table 1: Build out Calculation for Non-Urban Municipalities

Facility	Municipality	Commercial Land (Acres)	New Commercial Space (Sq. Ft.)	New Commercial Flow (MGD)	Residential Land (Acres)	New Residential Units	New Residential Flow (MGD)	Total Additional Flow (MGD)
NWPCF	Jackson	911.68	39,712,780.81	1.282	1,633.27	3,422.77	1.027	2.309
	Lakewood	707.35	30,812,192.87	1.106	1,205.35	4,090.70	1.227	2.333
CWPCF	Barnegat	172.40	7,509,976.73	0.374	1,530.69	3,653.56	1.096	1.471
	Berkeley	194.11	8,455,558.69	0.416	613.58	2,028.55	0.609	1.025
	Jackson	390.87	17,026,153.83	0.737	1,550.87	699.18	0.210	0.947
	Lacey	122.69	5,344,628.98	0.201	526.79	2,063.43	0.619	0.820
	Manchester	445.48	17,396,919.11	0.328	2,183.91	3,743.28	1.123	1.451
	Ocean	130.57	5,687,851.79	0.245	285.31	323.99	0.097	0.342
	South Toms River	0.38	16,640.35	0.001	8.10	38.45	0.012	0.013
SWPCF	Barnegat	0.00	0.00	0.000	283.06	291.75	0.088	0.088
	Eagleswood	4.27	186,073.47	0.004	1.90	1.90	0.001	0.005
	Stafford*			0.131			0.717	0.848
Proposed: Plumsted	Plumsted	297.11	12,632,907.39	0.444	692.10	808.08	0.242	0.686

*Stafford Township's flow projections were provided by the OCUA.

III. Nitrate Dilution Analysis

All areas of Ocean County that are outside of the sewer service area, unless otherwise protected from development, are designated as septic areas. Just as determining the capacity of the County's sewage conveyance and treatment infrastructure is critical to future planning within the sewer service area, an accurate assessment of the capacity of the County's rural areas to accommodate septic discharge is necessary to determine the actual development potential outside of the sewer service area. To make this assessment, a nitrate dilution analysis was completed for each sub-watershed area classified as a Hydrologic Unit Code 11 (HUC11).

Nitrate Concentration

Nitrate (NO_3) is a naturally occurring compound which is present in soils and groundwater. Deriving chiefly from decomposing organic matter, it is essential to sustaining plant life. In natural settings, ambient nitrate in groundwater can reach concentrations of up to two parts per million, or 2 mg/L. Certain human activities related to animal husbandry, agriculture, and waste emission are known to increase nitrate concentration in groundwater, which has deleterious effects. At levels above 2 mg/L, eutrophication and other environmental hazards have been shown to occur. Presently, federal drinking water standards enforce a maximum nitrate content of 10 mg/L. Concentrations of nitrate in drinking water above 10 mg/L can pose serious health risks to humans, including cancer, hypertension, and blood diseases.

Because the effluents of Individual Subsurface Sewage Disposal Systems (ISSDSs) contain nitrate, it is imperative to ensure that septic discharges to groundwater do not contribute to localized concentrations above 2 mg/L. Limiting the rate of allowable septic discharge in a given area to that which can be diluted by soil and groundwater through natural processes is an effective means to facilitate environmentally sustainable development in non-sewered areas.

Nitrate Dilution Standards

According to the NJDEP, the standard septic residential unit is assumed to generate 500 gallons of wastewater per day, which equates to thirty pounds of nitrate per year. These equivalency measures apply to all systems that do not have effluent limits established through a NJPDES permit (those which discharge less than 2,000 gallons of wastewater to groundwater per day). Currently approved commercial space can be converted to units by multiplying total commercial square footage by 0.125 gallons per day (GPD), then dividing by 500 GPD. To calculate the potential nitrate generation of future commercial buildings, the total acreage of a given zoning district is converted to square feet, multiplied by that district's greatest allowable building lot coverage percentage, multiplied by 0.125 GPD, then divided by 500 GPD. To project the potential daily wastewater generation in a HUC11 under current zoning regulations, the sum of all existing and potential units is multiplied by 500 GPD.

The NJDEP has established standards for the maximum allowable units on a HUC11 basis to ensure that nitrate levels in groundwater do not exceed 2 mg/L. Each HUC11's septic density value is equivalent to the number of acres needed to accommodate a single ISSDS. To calculate a HUC11's total capacity for additional nitrate dilution in terms of units, the total acreage of all vacant land is divided by that HUC11's septic density. Ocean County opted to include permanently preserved open space in the vacant land calculation in accordance with NJDEP instructions. This value can then be compared to the total units allowed by current municipal zoning regulations. If the total units allowed by zoning is less than or equal to the maximum allowable units capable of sufficient nitrate dilution, no action is required. If the total units allowed by zoning exceed the maximum allowable units capable of sufficient nitrate dilution, steps must be taken to ensure that future development does not exceed the carrying capacity of the sub-watershed.

Nitrate Dilution Analysis

Table 2 presents projected non-sewered development according to current zoning regulations in each non-urban municipality, disaggregated by HUC11. For the purposes of this analysis, all non-residential zones were included in "Commercial Area (Acres)." To calculate the number of residential units at build out, the area of undeveloped residential land was divided by each zoning district's allowable density. As in the build out

calculations, commercial units were calculated according to each zoning district's allowable building lot coverage.

Map Key	HUC11	Septic Density (acres/home)	Municipality	Residential Area (Acres)	Residential Units	Commercial Area (Acres)	Commercial Units	Zoning Acres	Zoning Units
B	02040201040	7.1	Jackson	0.00	0.00	0.00	0.00	0.00	0.00
			Plumsted	483.39	116.53	0.00	0.00	483.39	116.53
C	02040201050	5.3	Jackson	113.99	38.20	91.59	274.26	205.58	312.46
			Plumsted	665.07	138.05	144.31	541.30	809.38	679.35
D	02040202020	5.2	Manchester	73.42	22.94	0.00	0.00	73.42	22.94
			Plumsted	0.00	0.00	0.00	0.00	0.00	0.00
E	02040202030	4.4	Lacey	0.00	0.00	0.00	0.00	0.00	0.00
			Manchester	838.77	59.00	0.00	0.00	838.77	59.00
H	02040301040	6.4	Lakewood	0.00	0.00	0.00	0.00	0.00	0.00
I	02040301050	6.5	Lakewood	13.23	18.01	1.59	5.18	14.82	23.19
J	02040301060	4.6	Jackson	2,124.40	831.67	117.71	462.84	2,242.11	1,294.51
			Lakewood	0.00	0.00	0.00	0.00	0.00	0.00
			Manchester	87.82	9.76	0.00	0.00	87.82	9.76
K	02040301070	4.6	Jackson	1,242.03	411.10	0.00	0.00	1,242.03	411.10
			Manchester	950.36	332.53	31.92	57.14	982.28	389.67
			Plumsted	288.25	164.13	0.00	0.00	288.25	164.13
L	02040301080	4.9	Berkeley	1,427.35	850.25	4.86	52.98	1,432.21	903.23
			Lacey	3.92	3.92	0.00	0.00	3.92	3.92
			Manchester	422.52	294.37	73.44	143.96	495.96	438.33
			South Toms River	5.60	22.89	1.87	7.11	7.47	30.00
M	02040301090	4.5	Berkeley	137.25	282.82	0.00	0.00	137.25	282.82
			Lacey	5,026.48	1,124.32	2.50	10.91	5,028.98	1,135.23
			Manchester	169.74	40.93	0.00	0.00	169.74	40.93
N	02040301100	6.6	Berkeley	4.83	14.46	0.43	7.11	5.26	21.57
			Lacey	7.76	36.15	10.10	44.00	17.86	80.15
			Ocean	0.00	0.00	0.00	0.00	0.00	0.00
O	02040301110	4.6	Barnegat	368.89	299.63	138.51	301.67	507.40	601.30
			Lacey	3,885.81	755.93	670.43	2,611.28	4,556.24	3,367.21
			Ocean	1,867.80	93.39	2.98	13.85	1,870.78	107.24
P	02040301120	5.8	Barnegat	42.22	127.58	7.38	40.21	49.60	167.79
			Ocean	327.59	35.65	4.04	18.09	331.63	53.74
			Stafford	0.00	0.00	0.00	0.00	0.00	0.00
Q	02040301130	5.0	Barnegat	482.01	670.72	102.17	270.07	584.18	940.79
			Eagleswood	864.24	345.96	119.36	384.03	983.60	729.99
			Stafford	747.31	66.02	10.67	70.02	757.98	136.04
R	02040301140	5.6	Eagleswood	0.00	0.00	0.00	0.00	0.00	0.00
S	02040301180	4.5	Barnegat	932.46	664.64	62.83	342.10	995.29	1,006.74
			Lacey	120.54	23.44	0.00	0.00	120.54	23.44
			Ocean	352.37	18.49	0.00	0.00	352.37	18.49
			Stafford	409.09	31.60	0.00	0.00	409.09	31.60
T	02040301190	4.5	Lacey	80.73	14.63	0.00	0.00	80.73	14.63

Having calculated the maximum potential septic development allowed by each non-urban municipality's current zoning regulations, municipal zoning could then be compared to assimilative capacity through nitrate dilution analysis. This analysis was performed on a HUC11 basis. To determine the carrying capacity of each HUC11, the total acreage available for nitrate dilution was divided by the HUC11's septic density; this produced a value expressed as the number of additional units each HUC11 can accommodate while maintaining a nitrate-nitrogen groundwater concentration of no more than 2 mg/L ("Nitrate Units"). A HUC11 is said to meet the nitrate target if the total number of units zoned ("Zoning Units") does not exceed the total nitrate units.

**Table 3: Nitrate Dilution Calculation for Non-Urban Municipalities by HUC11**

Map Key	HUC11	Septic Density (acres/home)	Municipality	Zoning Acres	Nitrate Acres	Zoning Units	Nitrate Units	Total HUC11 Zoning Units	Total HUC11 Nitrate Units	Meets 2 mg/L (Yes/No)
B	02040201040	7.1	Jackson	0.00	7.53	0.00	1.06	1,265.53	1,470.98	Yes
			Plumsted	483.39	1,469.13	116.53	206.92			
C	02040201050	5.3	Jackson	205.58	995.36	312.46	187.80	2,902.30	3,458.88	Yes
			Plumsted	809.38	1,640.65	679.35	309.56			
D	02040202020	5.2	Manchester	73.42	174.35	22.94	33.53	85.94	2,395.83	Yes
			Plumsted	0.00	4,343.55	0.00	835.30			
E	02040202030	4.4	Lacey	0.00	1,137.55	0.00	258.53	59.00	6,850.31	Yes
			Manchester	838.77	10,739.62	59.00	2,440.82			
H	02040301040	6.4	Lakewood	0.00	46.91	0.00	7.33	0.00	7.33	Yes
I	02040301050	6.5	Lakewood	14.82	230.54	23.19	35.46	23.19	35.46	Yes
J	02040301060	4.6	Jackson	2,242.11	7,771.51	1,294.51	1,689.46	1,496.08	1,896.84	Yes
			Lakewood	0.00	0.00	0.00	0.00			
			Manchester	87.82	149.86	9.76	32.58			
K	02040301070	4.6	Jackson	1,242.03	6,755.17	411.10	1,468.52	964.90	2,877.83	Yes
			Manchester	982.28	5,662.06	389.67	1,230.88			
			Plumsted	288.25	820.77	164.13	178.43			
L	02040301080	4.9	Berkeley	1,432.21	7,288.26	903.23	1,487.40	1,375.48	2,581.21	Yes
			Lacey	3.92	953.59	3.92	194.61			
			Manchester	495.96	4,399.95	438.33	897.95			
			South Toms River	7.47	6.14	30.00	1.25			
M	02040301090	4.5	Berkeley	137.25	1,443.41	282.82	320.76	1,458.98	5,183.57	Yes
			Lacey	5,028.98	20,899.26	1,135.23	4,644.28			
			Manchester	169.74	983.41	40.93	218.54			
N	02040301100	6.6	Berkeley	5.26	118.55	21.57	17.96	101.72	104.29	Yes
			Lacey	17.86	328.22	80.15	49.73			
			Ocean	0.00	241.54	0.00	36.60			
O	02040301110	4.6	Barnegat	507.40	429.53	601.30	93.38	4,075.75	3,323.58	No
			Lacey	4,556.24	9,061.00	3,367.21	1,969.78			
			Ocean	1,870.78	5,797.95	107.24	1,260.42			
P	02040301120	5.8	Barnegat	49.60	419.16	167.79	72.27	221.53	198.90	Yes
			Ocean	331.63	711.87	53.74	122.74			
			Stafford	0.00	22.61	0.00	3.90			
Q	02040301130	5.0	Barnegat	584.18	597.06	940.79	119.41	1,806.82	2,502.95	Yes
			Eagleswood	983.60	3,470.67	729.99	694.13			
			Stafford	757.98	8,112.01	136.04	1,622.40			
R	02040301140	5.6	Eagleswood	0.00	0.00	0.00	0.00	0.00	224.00	Yes
S	02040301180	4.5	Barnegat	995.29	8,096.76	1,006.74	1,799.28	1,080.27	9,170.27	Yes
			Lacey	120.54	2,968.38	23.44	659.64			
			Ocean	352.37	424.67	18.49	94.37			
			Stafford	409.09	2,294.90	31.60	509.98			
T	02040301190	4.5	Lacey	80.73	204.19	14.63	45.38	27.63	11,870.38	Yes

Where zoning allows for more development than the upward bound calculated by the nitrate dilution analysis model, steps must be taken to ensure that future development does not exceed the assimilative capacity of the HUC11. There are several ways this could be accommodated: Municipal zoning could be revised to reduce the amount of development permitted, a limit could be established on the number of septic permits in the HUC11, and/or advanced septic system designs could be required in the HUC11 to limit the amount of nitrate released. The specific mitigation measure(s) must be approved by the NJDEP, in consultation with the Ocean County Department of Planning, the County Health Department, and the municipality.

The results of the nitrate dilution analysis are presented in Table 3.

Current Zoning versus Optimal Nitrate Dilution

The nitrate dilution analysis indicates that current municipal zoning is sufficient to regulate future septic development in twenty-two of Ocean County's twenty-five HUC11s, as required by N.J.A.C. 7:15-5.25(e). In a total of seven HUC11s (02030104100, 02040301040, 02040301140, 02040301200, 02040301210,



02040301920, 02040302910), no additional development has been zoned in Ocean County municipalities outside of the sewer service area, and therefore no additional discharge to groundwater is projected in these areas. In another fifteen HUC11s (02040201040, 02040201050, 02040202020, 02040202030, 02040301050, 02040301060, 02040301070, 02040301080, 02040301090, 02040301100, 02040301120, 02040301130, 02040301180, 02040301190, 02040301910), the expected groundwater discharge based on current municipal zoning is within each sub-watershed's capacity for nitrate dilution.

02040301110

The initial results of this nitrate dilution analysis indicate that one HUC11 which covers portions of Barnegat, Lacey, and Ocean Townships, 02040301110, would exceed the nitrate-nitrogen target if built out under current zoning regulations. The NJDEP model used to produce these results—and all nitrate dilution projections in this WMP—incorporates an Equivalent Dwelling Unit (EDU) formula for all non-residential parcels which, lacking specific development parameters such as type of non-residential development, square footage of floor space, number of floors, etc., may project nitrate discharges from non-residential zones that are greater than those from similar areas of residential zones—especially when applied to exceedingly large tracts of land. According to the EDU formula, several industrial and commercially zoned parcels in the vicinity of Lacey Township's Oyster Creek Nuclear Generating Station are projected to discharge more than their proportional share of this HUC11's total assimilative capacity if developed as zoned. At the time of this writing, however, Oyster Creek Nuclear Generating Station is still operational and will start decommissioning in 2019—a process that is expected to take several years. No development is expected to occur in this area until the decommissioning is complete, and any future development in this area is almost certainly to be either NJPDES permitted or added to the sewer service area through amendment. Furthermore, it is also anticipated that a significant percentage of the remaining area in question will be designated for preservation in the course of decommissioning. The NJDEP has acknowledged that the ultimate nitrate discharges from the Oyster Creek area will most likely be less than what is currently projected and has, therefore, determined that as long as this HUC11 is identified as “of Special Concern” in this WMP—such that all proposed projects or activities within be considered on a case-by-case and cumulative basis moving forward—that this WMP may be approved with that preceding acknowledgement.

02040301020 and 02040301030

According to the nitrate dilution analysis, portions of Lakewood Township in HUC11 02040301020 are zoned for a greater intensity of septic development than can be accommodated through dilution (The section of Jackson Township which is within this HUC11 is zoned at a density that meets the nitrate target.). Although 72.26% of this HUC11 is outside the political boundaries of Ocean County, and municipal zoning and or restricted land in these remaining areas could offset the land deficiency on the Ocean County side, local zoning in several parts of Monmouth County also exceed their proportional shares of the assimilative capacity. These localized zoning imbalances in Monmouth County and Lakewood Township contribute to this HUC11 exceeding its cumulative nitrate target.

In HUC11 02040301030, the nitrate dilution model has shown that current zoning regulations in Jackson Township exceed the cumulative capacity for septic development by more than ten percent. As previously mentioned, this may be, in part, due to the projection of greater amounts of septic discharges from large tracts of commercially zoned areas.

At the time of this writing, Ocean County, Monmouth County, and the NJDEP are engaged in discussions regarding 02040301020 and 02040301030, and to propose appropriate remedial actions for specific locations in these HUC11s which are projected to discharge in excess of the assimilative capacity. While this process continues, the NJDEP has advised the County to not include septic dilution projections for those municipalities which are situated in HUC11s initially projected to exceed their cumulative nitrate targets. This applies to Jackson Township and Lakewood Township. The septic analysis for these two municipalities will be submitted separately in the future and according to those mechanisms the County may choose to incorporate.



IV. Water Supply

Public Water Supply

Using data provided by the NJDEP's Division of Water Supply and Geoscience, the County of Ocean has documented current daily, monthly, and yearly supply of potable water by public water utilities, peak demand for potable water, and any deficit or surplus over the same time periods. It should be noted that not all municipalities are served by public water utilities, and that some water utilities serve more than one municipality. The data is presented in Table 4, and each municipality's public water supply is discussed further in its respective Municipal Chapter.

Table 4: Public Water Supply

PWSID	Public Water Purveyor	Municipalities Served	Daily Capacity (MGD)	Daily Peak (MGD)	Daily Surplus (MGD)	Monthly Capacity (MGM)	Monthly Peak (MGM)	Monthly Surplus (MGM)	Annual Capacity (MGY)	Annual Peak (MGY)	Annual Surplus (MGY)
1345001	NJ American Water Company - Coastal Northern	Jackson, Lakewood	N/A	N/A	N/A	2539.580	2116.800	422.780	N/A	N/A	N/A
1501001	Barnegat Light Water Department	Barnegat Light, Long Beach	1.116	1.001	0.115	26.500	31.025	-4.525	175.000	154.799	20.201
1502001	NJ American Water Company	Bay Head, Brick, Lavallette, Mantoloking, Toms River	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1503001	Beach Haven Water Department	Beach Haven	1.500	1.381	0.119	50.000	42.825	7.175	270.000	192.261	77.739
1504001	Beachwood Borough	Beachwood	1.728	1.542	0.186	52.000	47.808	4.192	363.000	358.661	4.339
1505002	Aqua New Jersey Eastern Division	Berkeley	1.620	1.476	0.144	48.000	42.505	5.495	355.000	340.260	14.740
1505003	Shore Water Company	Berkeley	0.634	0.359	0.275	13.500	11.135	2.365	95.000	56.407	38.593
1505004	Berkeley Township MUA	Berkeley	1.872	1.661	0.211	65.000	43.246	21.754	722.000	324.031	397.969
1505312	Crystal Lake Health Care	Berkeley	0.108	0.072	0.036	3.100	2.240	0.860	N/A	15.412	N/A
1506001	Brick Township MUA	Brick	14.000	13.668	0.332	650.000	492.034	157.966	5640.000	3872.77 ₃	1767.227
1507005	United Water Toms River	Berkeley, Toms River, South Toms River	25.675	20.904	4.771	734.350	620.423	113.927	5590.250	4421.557	1168.69 ₃
1507007	New Jersey American Water Company - Ortley Beach System	Toms River	N/A	0.518	N/A	N/A	16.045	N/A	N/A	86.277	N/A
1507008	New Jersey American Water Company - Pelican Island	Seaside Heights, Toms River	N/A	0.397	N/A	N/A	12.300	N/A	N/A	53.336	N/A
1508001	Eaglewood Village Mobile Home Park	Eagleswood	0.058	0.018	0.040	3.100	0.546	2.554	N/A	4.215	N/A
1509001	Harvey Cedars Borough Water Department	Harvey Cedars, Long Beach	0.648	0.908	-0.260	24.000	28.145	-4.145	140.000	133.412	6.588
1510001	Island Heights Water Department	Island Heights	0.576	0.377	0.199	15.500	11.700	3.800	95.000	82.700	12.300
1511001	Jackson Township MUA	Jackson	7.870	6.723	1.147	312.350	220.965	91.385	2060.000	1473.714	586.286
1511002	Jackson Estates Mobile Home Park	Jackson	0.144	0.053	0.091	3.100	1.490	1.610	37.200	10.323	26.877
1511003	Land O Pines Mobile Home Park	Jackson	0.040	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1511004	Maple Glen Mobile Home Park	Jackson	0.048	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1511005	Oak Tree Mobile Home Park	Jackson	0.050	0.027	0.023	3.100	0.845	2.255	N/A	8.175	N/A
1511007	Shady Oak Trailer Court	Jackson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1511008	South Wind Mobile Home Village	Jackson	0.144	0.075	0.069	3.100	2.325	0.775	N/A	21.898	N/A



PWSID	Public Water Purveyor	Municipalities Served	Daily Capacity (MGD)	Daily Peak (MGD)	Daily Surplus (MGD)	Monthly Capacity (MGM)	Monthly Peak (MGM)	Monthly Surplus (MGM)	Annual Capacity (MGY)	Annual Peak (MGY)	Annual Surplus (MGY)
1511010	Naval Air Eng Station - Lakehurst	Jackson, Lakehurst, Manchester	0.706	0.144	0.562	21.000	8.982	12.018	198.000	66.718	131.282
1511011	Luxury Mobile Terrace	Jackson	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1511013	Fountainhead Parks Inc.	Jackson	0.086	0.016	0.070	3.100	0.482	2.618	N/A	4.549	N/A
1511016	Meadowbrook Co-op Inc.	Jackson	0.016	0.011	0.005	3.100	0.335	2.765	N/A	3.181	N/A
1511300	Great Adventure	Jackson	1.152	0.875	0.277	38.250	30.319	7.931	297.500	148.912	148.588
1512001	Lacey Township MUA	Berkeley, Lacey	4.176	3.535	0.641	112.700	99.554	13.146	1027.500	858.831	168.669
1513001	Lakehurst Water Department	Lakehurst, Manchester	0.432	0.303	0.129	15.000	9.400	5.600	140.000	95.120	44.880
1514001	NJ American Water Company - Lakewood	Lakewood	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1514002	Lakewood Township MUA	Lakewood	7.212	6.036	1.176	198.140	191.124	7.016	1653.500	1434.159	219.341
1515001	Lavallette Water Department	Lavallette	1.440	0.910	0.530	30.000	28.210	1.790	175.000	137.568	37.432
1516001	Little Egg Harbor MUA	Little Egg Harbor	4.003	3.317	0.686	112.700	92.399	20.301	867.000	650.457	216.543
1517001	Long Beach Township - Brant Beach	Long Beach	4.342	2.285	2.057	72.100	70.832	1.268	495.000	351.142	143.858
1517002	Long Beach Township - Holgate	Long Beach	1.037	0.403	0.634	14.700	12.493	2.207	100.000	67.926	32.074
1517003	Long Beach Township - North Beach	Long Beach	N/A	0.285	N/A	N/A	8.827	N/A	N/A	48.121	N/A
1517004	Long Beach Township - Love Ladies South	Long Beach	N/A	0.411	N/A	N/A	12.752	N/A	N/A	59.971	N/A
1517005	Long Beach Township - Love Ladies North	Long Beach	N/A	0.365	N/A	N/A	11.323	N/A	N/A	56.054	N/A
1517006	Long Beach Township - High Bar Harbor	Long Beach	N/A	0.152	N/A	N/A	4.701	N/A	N/A	22.600	N/A
1518001	Cedar Glen Homes Inc.	Manchester	0.072	0.063	0.009	3.100	1.943	1.157	N/A	19.146	N/A
1518002	Cedar Glen Lakes Water Company	Manchester	0.432	0.221	0.211	9.000	6.864	2.136	70.000	52.461	17.539
1518003	Cedar Glen West Water Company	Manchester	0.302	0.136	0.166	5.000	4.227	0.773	42.700	44.954	-2.254
1518004	Manchester Township Water Utilities - Western	Manchester	5.184	2.416	2.768	100.000	65.689	34.311	810.000	534.964	275.036
1518005	Manchester Township Water Utility	Manchester	4.974	4.173	0.801	145.000	125.880	19.120	1145.000	908.347	236.653
1518010	Manchester Village	Manchester	0.058	0.015	0.043	3.100	0.442	2.658	N/A	3.992	N/A
1518011	Manchester Township Water Utility - Lacey Road	Manchester	N/A	0.070	N/A	10.474	2.176	8.298	82.762	20.724	62.038
1518345	Manchester Manor Nursing	Manchester	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1520001	Ocean Township MUA - Pebble Beach	Barnegat, Ocean	3.672	1.940	1.732	71.000	57.376	13.624	544.000	395.640	148.360
1521001	Ocean Gate Water Department	Ocean Gate	0.360	0.331	0.029	12.000	10.253	1.747	100.000	76.637	23.363
1522001	Pine Beach Water Department	Pine Beach	N/A	0.450	N/A	14.000	13.959	0.041	92.000	93.465	-1.465
1523001	Collier Mills Mobile Estates	Plumsted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1523002	Jensens Deep Run Adult Village	Plumsted	0.173	0.101	0.072	3.100	3.119	-0.019	24.000	18.834	5.166
1523003	New Jersey American Water Company - New Egypt	Plumsted	0.173	0.173	0.000	7.000	5.178	1.822	60.000	54.878	5.122
1523004	Oak Grove Mobile Home Park	Plumsted	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A



PWSID	Public Water Purveyor	Municipalities Served	Daily Capacity (MGD)	Daily Peak (MGD)	Daily Surplus (MGD)	Monthly Capacity (MGM)	Monthly Peak (MGM)	Monthly Surplus (MGM)	Annual Capacity (MGY)	Annual Peak (MGY)	Annual Surplus (MGY)
1524001	Point Pleasant Water Department	Point Pleasant	3.518	2.912	0.606	108.600	90.287	18.313	1029.000	648.081	380.919
1525001	Point Pleasant Beach Borough	Point Pleasant Beach	1.700	1.392	0.308	52.700	43.143	9.557	620.500	248.321	372.179
1526001	Seaside Heights Water Department	Seaside Heights, Toms River	3.168	1.689	1.479	72.000	52.357	19.643	475.000	301.497	173.503
1527001	Seaside Park Water Department	Seaside Park	0.432	0.761	-0.329	34.000	23.602	10.398	258.000	171.645	86.355
1528001	Ship Bottom Water Department	Ship Bottom	1.152	0.931	0.221	26.000	28.875	-2.875	180.000	151.933	28.067
1530003	Stafford Township MUA - Cedar B	Stafford	N/A	0.025	N/A	N/A	0.760	N/A	N/A	3.290	N/A
1530004	Stafford Township MUA - Beach	Stafford	9.060	4.123	4.937	175.000	104.898	70.102	1359.000	859.691	499.309
1530005	Stafford Township MUA - Fawn	Stafford	0.360	0.158	0.202	11.000	4.908	6.092	95.000	45.634	49.366
1530007	Cedar Run Senior Citizen Apartments	Stafford	0.065	0.049	0.016	3.100	1.510	1.590	N/A	3.315	N/A
1531001	Surf City Water Department	Surf City	1.548	1.139	0.409	46.500	35.307	11.193	315.000	183.682	131.318
1532002	Tuckerton Water and Sewer Department	Little Egg Harbor	0.720	0.489	0.231	20.000	14.413	5.587	180.000	130.118	49.882
1533001	Barneget Township Water and Sewer Utilities	Barneget	6.912	5.568	1.344	154.000	140.109	13.891	1162.000	1019.560	142.440
1533002	Pinewood Estates - Brighten	Barneget	0.404	0.145	0.259	8.467	4.495	3.972	50.000	38.155	11.845

Public Water Supply Deficits

As can be seen in Table 4, periodic deficits in potable water supply have been observed in Barneget Light, Harvey Cedars, Pine Beach, Seaside Park, and Ship Bottom Boroughs. These deficits only occur on occasion, when peak localized demand surpasses system capacity. This typically occurs during summer months, when these boroughs experience seasonal upswings in population. While there is adequate infrastructure to supply water to towns running deficits, there is also ongoing coordination with the NJDEP to address deficits through additional conservation measures and or increased water supply allocation where appropriate.

Public Water Availability

At the time of the submission of this WMP the most recent adopted Statewide Water Supply Plan is dated August 1996, and no timeframe has been identified for adoption of an updated Water Supply Plan. Until such time that a new plan is adopted, the NJDEP does not require a comparison analysis of estimated water availability to water supply demand outside of public water supply areas, unless a regional water supply plan, or TMDL that addresses water supply, with sufficient data to perform the Water Supply Analysis exists.

Lacking a means to calculate water supply demand outside of public water supply areas, Table 6 presents what information is available by municipality: public water supply and public water demand. The column titled, "Total Public Water Supply Capacity (MGD)," accounts for the total potable water supplied by Ocean County's public water purveyors on a daily basis, including any potable water imported from outside of the County. As can be seen in this table, the County's cumulative daily demand for public water is far below the cumulative daily supply of public water available to the County.

V. Habitat Suitability Determination

Documentation of any Habitat Suitability Determination used in defining the adopted sewer service area is included as specified in Table 5:

**Table 5: Habitat Suitability Determinations**

Municipality	Recipient	Block(s)	Lot(s)	Correspondence Date
Jackson Township	K2 Consulting Engineers	14301	8	3/25/2011
Jackson Township	Mitch Leigh	4101/4201	2-13, 15 & 16/ 2,15,27-32,52-54 & 56-60	4/27/2012
Lacey Township	Speitel and Speitel, Inc.	1837	8.02 & 9	11/24/2014

VI. Wetlands Letters of Interpretation

Documentation of any Wetlands Letters of Interpretation used in defining the adopted sewer service area is included as identified in Table 6:

Table 6: Wetlands Letters of Interpretation

Municipality	Recipient	Block(s)	Lot(s)	Correspondence Date
Lakewood Township	Cedarbridge Development Co.	961/ 961.01/ 961.02	2.01/ 1, 2.01-2.04/ 1	3/20/2009
Jackson Township	Professional Design Services	4303/4304	1-40/ All lots	4/27/2009
Toms River Township	Alan Krupnick	146.01-156	All lots	6/17/2010
Jackson Township	Vinciguerra	3001	1	11/19/2010
Barnegat Township	Michael J. Gross	263	1.02, 4, 5	5/20/2011
Toms River Township	FWH Associates	164	4	4/9/2014
Jackson Township	Matrix New World	4201	P/O 3	9/16/2014
Lakewood Township	Aaron Perlow	1159	25,26,28 – 38,86	12/1/2014

VII. USEPA Section 201 Map Revisions or Grant Waivers

Documentation of any USEPA Section 201 Map Revisions or Grant Waivers used in defining the adopted sewer service area is included as specified in Table 7:

Table 7: USEPA Section 201 Map Revisions or Grant Waivers

Municipality	Recipient	Block(s)	Lot(s)	Correspondence Date

VIII. SSA Amendments

Documentation of amendments to the adopted sewer service area map is included as identified in Table 8:

Table 8: SSA Amendments

Municipality	Recipient	Block(s)	Lot(s)	Correspondence Date
Eagleswood Township	Johnson	4	263.02	2/6/2014
Barnegat Township	7 Mills Lane	262	2	2/28/2014
Toms River Township	Freedom Village	164	4	4/1/2014
Toms River Township	Norma Place Subdivision	105	1-3	5/15/2014
Jackson Township	Cedar Swamp Development	4201	3	9/10/2014
Lacey Township	Lacey Affordable Apartments	1837	8.02 & 9	11/24/2014
Lakewood Township	Clinton Avenue	1159	25,26,28-38,86	11/25/2014
Stafford Township	Yoder - Cedar Run Dock Road	133	89	2/10/2015
Toms River Township	Toms River Affordable Apartments	166	2 & 10	2/15/2015
Lakewood Township	Congregate Care Center	1587	1	6/4/2015
Manchester Township	Route 70 Townhouses	52	2	6/29/2015

