
Borough of West Wildwood Cape May County Wastewater Management Plan

Amending the Following Areawide Water Quality Management Plans:
Cape May County

Submitted by:
The Board of Chosen Freeholders of the County of Cape May

On Behalf of:
The Borough of West Wildwood

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(to be inserted after NJDEP Approval)

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Chapter 14. BOROUGH OF WEST WILDWOOD

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I. INTRODUCTION

The purpose of this Chapter is to provide a comprehensive Wastewater Management Plan (“WMP”) for the Borough of West Wildwood, pursuant to the newest Water Quality Management Planning rules, adopted October 6, 2016 and published in the New Jersey Register on November 7, 2016. This Chapter of the WMP has been submitted to the New Jersey Department of Environmental Protection (“NJDEP”) for approval so that it may be incorporated into the Cape May County Water Quality Management Plan (“WQMP”) via the plan amendment procedure at N.J.A.C. 7:15-3.

Wastewater Management Planning Area Responsibility

As of the date of submittal, wastewater management planning responsibility for the full County remains with the Cape May County Board of Chosen Freeholders and no alternative assignments have occurred pursuant to N.J.A.C. 7:15-2.8

The Cape May County Board of Chosen Freeholders is the agency charged with WMP preparation, which has been delegated to the Cape May County Planning Department. The Cape May County Health Department is the designated 208 agency and is responsible for implementation of the WMP. The County of Cape May has retained Maser Consulting, PA to assist in preparation of the WMP.

This WMP Chapter has been prepared by Maser Consulting, PA and the Cape May County Planning Department as the WMP Chapter for the Borough of West Wildwood. Cooperation has been provided by the Cape May County Municipal Utilities Authority and the Borough of West Wildwood in the preparation of this plan.

Status of Previous Approved Local and Regional WMPs Affected by the County WMP

This WMP incorporates or replaces all or part of any previously approved WMPs prepared by municipality or wastewater authorities for the Borough of West Wildwood. The WQMP rule provides that any WMP that was prepared and adopted in accordance with the WQMP rules in effect as of July 7, 2008, or P.L. 2011, c. 203 as amended and supplemented by P.L. 2013, c. 188, will continue in effect for the remainder of the term for which it was originally approved. Therefore, WMPs that were fully compliant with the 2008 rules maintain their expiration date as provided at the time of adoption. The previously approved Cape May County Water Quality Management Plan/Waste Water Management Plan (“CMCWMP” or “208 Plan”) was adopted on September 28, 2001 and was set to expire September 28, 2007. The NJ Permit Extension Act extended the expiration of the plan to December 31, 2012. The 2001 CMCWMP is still considered current through that date. However, adoption of this WMP Chapter for West Wildwood Borough would supersede the previously approved WMP.

Overview of Municipality

The Borough of West Wildwood is an island community located in southeast Cape May County, New Jersey. It consists of 220 total acres, nearly half of which is environmentally sensitive lands where development is prohibited. The Borough is bordered by the communities of Wildwood City, North Wildwood City, and Middle Township. Based on the 2010 US Census, West Wildwood has a year-round population of 603 persons, however, the summer population increases to over 5,000. The primary land



use in the Borough is residential. There also exist significant undeveloped and vacant land, public and recreational facilities, and a small percentage of commercial uses, mainly water-dependent marinas.

The character of the island is seasonal residential, with a variety of house sizes and styles. The lot areas are relatively small, common to most of the New Jersey shore communities. Due to the proximity of houses, the Borough's geographical location, and the single point of access to the island, residents and visitors enjoy the familiarity, safety, and remoteness of West Wildwood.¹

The existing land use patterns within West Wildwood are illustrated on **Map 14-1: Existing Land Use** based on tax class parcel data. The existing zoning is shown on **Map 14-2: Existing Zoning**.

According to the State Development and Redevelopment Plan ("SDRP"), West Wildwood is classified entirely as PA5B Environmentally Sensitive Barrier Island Planning Area. West Wildwood Borough is completely encompassed within the NJDEP Coastal Management Zone, subject to the CAFRA – N.J.S.A. 13:19. The developed portion of West Wildwood Borough is designated as part of the Wildwoods Regional CAFRA Center.

Overview of Current Wastewater Services and Wastewater Responsibilities

The West Wildwood Borough existing sewer service area encompasses the majority of the Borough, except the environmentally sensitive areas.

The Borough is served by the Cape May County Municipal Utilities Authority ("CMCMUA") Wildwood/Lower Twp Region Wastewater Treatment Plant ("WTP").

There are no combined sewers within the Borough of West Wildwood.

II. SUMMARY OF ACTIONS

Sewer Service Area Delineation Criteria

This chapter describes the criteria used for the delineation of areas eligible for sewer service area and includes a description of the number of acres added and/or subtracted from the area eligible for sewer service.

Eligible Sewer Service Areas

The term "Eligible for sewer service area" means areas determined to meet the criteria for designation as sewer service in accordance with N.J.A.C. 7:15-4.4, and are identified as "Assigned sewer service area", differentiating between area that currently conveys sewage to each existing facility and that which is

¹ Borough of West Wildwood. Master Plan. August 2008.

proposed to convey sewage to each existing or proposed facility; or “Unassigned sewer service area”, which are areas mapped for future sewer service with no designated treatment facility.

Amendments to the WQMP Rules adopted on July 7, 2008 [40 N.J.R.4000(a)] necessitated a modification to certain sewer service areas based on environmental sensitivity. In accordance with the regulatory requirement, 19 acres were removed from the previously approved sewer service area. Additionally, 3 acres that were not part of the previously approved sewer service area have been added based on local planning objectives and satisfaction of an environmental sensitivity assessment.

On January 13, 2012, the New Jersey Legislature enacted the ‘180 Day Rule’ (P.L.2011, Chapter 203), which required that Future Sewer Service Area Maps be submitted to NJDEP within 180 days of adoption of the act (July 15, 2012). A public meeting was held by the Cape May County Board of Chosen Freeholders on June 26, 2012 to approve the submission of the Draft Future Sewer Service Area Maps to NJDEP. A Draft Future Sewer Service Area Map for West Wildwood Borough was submitted to NJDEP on July 12, 2012. On November 6, 2013, the NJDEP adopted an amendment to the Cape May County WQMP, which included the Future Wastewater Management Areas Map for West Wildwood Borough designating the sewer service areas. The adopted wastewater management areas for West Wildwood Borough are reflected on **Map 14-3: Adopted Sewer Service Areas**.

Sewer Service Areas in Environmentally Sensitive Areas

Under the WQMP rules, large contiguous environmentally sensitive areas, or “ESAs”, defined as 25 acres or larger consisting of habitat for threatened and endangered species as identified on the Landscape Project Maps of Habitat for Endangered, Threatened or Other Priority Species, Natural Heritage Priority Sites, Category One special water resource protection areas, and wetlands, alone or in combination, should be excluded from areas eligible for sewer service. Additionally, Coastal Fringe Planning Areas, Coastal Rural Planning Areas, or Coastal Environmentally Sensitive Planning Areas identified on the CAFRA Planning Map, shall not be identified as eligible for sewer service area. However, the WQMP rule provides, at N.J.A.C. 7:15 – 4.4(i)-(l) and 4.4 (f), several exceptions which allow ESAs and CAFRA areas to be included in areas eligible for sewer service.

In accordance with N.J.A.C 7:15-1.5, "environmentally sensitive areas" means those areas identified in an areawide WQM plan as land areas possessing characteristics or features that are important to the maintenance or improvement of water quality, or to the conservation of the natural resources of the State. Environmentally sensitive areas include, but are not limited to, areas mapped as endangered or threatened wildlife species habitat on the Department's most currently available Landscape Maps of Habitat for Endangered, Threatened or Other Priority Species, Natural Heritage Priority Sites, wetlands and riparian zones.

For the purposes of this report, the following environmental constraints, as shown on **Map 14-4: Hydrologic Features**, were assumed to constrain future development within the adopted wastewater service areas:

- Open Water Bodies as delineated by the NJDEP National Hydrography Dataset (NHD) Waterbody GIS data, last updated by NJDEP on November 1, 2010.
- Freshwater Wetlands were extracted from the 2012 NJDEP Land Use/Land Cover data. Transitional area buffers were added to the constrained area. Wetlands areas associated with a



- primary water body (river, bay, ocean, etc.) and/or containing habitat for threatened and endangered species (Rank 3, 4 and 5 as per the NJDEP Landscape Project Version 3.3) were assumed to have exceptional resource value and 150-foot transition area buffers were applied. Isolated patches of wetlands not containing threatened and endangered species habitat were assumed to have intermediate resource value and 50-foot buffers were applied.
- Category-One ("C1") Waters and their Tributaries as delineated by the NJDEP Surface Water Quality Standards data were given a 300-foot Special Water Resource Protection Area (SWRPA) buffer included in the constrained area.
 - Riparian Buffers were added to non C1 streams in accordance with the NJDEP Flood Hazard Control Act. Streams adjacent to threatened and endangered species habitat are given a 150-foot wide riparian buffer. All other streams are given a 50-foot riparian buffer.

Map 14-5: Natural Features depicts the following layers, which were considered in the adoption of the wastewater service areas:

- Habitat for Endangered, Threatened or Other Priority Species. Rank 3, 4 & 5 habitat patches for state and federally listed threatened and endangered species are shown, as published in Version 3.3 of the NJDEP Landscape Project mapping.
- Natural Heritage Priority Sites as published by the NJDEP March 1, 2007.

USEPA Section 201 Grant Conditions

The CCMUA Wastewater Treatment Facility is subject to USEPA 201 Grant Restrictions which prohibit the connection of sewer to parcels of land within environmentally sensitive areas. Such environmentally sensitive areas include tidal and freshwater wetlands, intermittent stream corridors, critical uplands and wildlife habitat, beach and dune areas, and flood-prone areas. Environmentally sensitive areas cannot be sewered unless a mapping revision or waiver is received from the USEPA prior to sewer connection of such parcels.

As set forth in item 3b of the USEPA Grant Conditions Wildwood/Lower Region (May 6, 1980), "no sewer hookup or other connections to the sewage treatment facilities included in the scope of this grant will be allowed or permitted so as to allow the discharge of wastewater from any building, facility or other construction on any parcel of land within any wetland or within 100 year floodplains, which land parcel as of the date of the FNSI/EA was undeveloped, unless approved in writing by the Regional Director." The process for approval is delineated by the USEPA on its regional website, <http://www.epa.gov/region2/water/sewer.html>

Requests for development/sewer connection on parcels that encroach on floodplains are dependent upon whether or not the community in which the project is located participated in the regular phase of FEMA's National Flood Insurance Program and the location of the project within the floodplain. Since West Wildwood Borough is a FEMA participant, USEPA typically grants waivers for development/sewer connection in floodplains. However, the USEPA does not typically grant a general mapping waiver for wetlands. At the time development is proposed, the USEPA requires the submission of information for a waiver request on the specific project.



The USEPA's review criteria for wetlands mapping waivers, as detailed on the USEPA's website, are more stringent. As such, the Adopted Future Sewer Service Area accurately reflects the regulatory, statutory and contractual requirements that must be met in order for development/sewer connection of properties located in environmentally sensitive areas to occur. Wherever possible, the SSA excluded wetlands that have been verified by an LOI. In other areas, the NJDEP provided a revised wetlands layer in GIS which is shown as "Potential Environmentally Sensitive Area Subject to EPA Grant Restrictions" on the Adopted Future Sewer Service Area Map.

Planning Coordination

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 WQMP 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 48 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 because providing centralized sewer service would encourage a development pattern inconsistent with the environmental sensitivity, recreational importance, and risk to life and property in these areas.

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, outside of the proposed CAFRA Centers 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 sewer service areas.

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), 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), Ground Water 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

The Borough of West Wildwood is located within the Wildwoods CAFRA Regional Center. The Borough has coordinated with NJDEP regarding the future sewer service area boundaries.



Coordination with Municipalities and Sewer Authorities

Table 14-1 lists the municipalities and wastewater utilities that have been consulted during the preparation of the West Wildwood Borough WMP. The County consulted with them through mailings and E-mails, as well as a WMP Project Initiation Meeting on September 9, 2011. The County also held a municipal implementation meeting with West Wildwood Borough, the NJDEP and the CMCMUA on May 3, 2012 to discuss Sewer Service Area mapping requirements pursuant to P.L.2011, c.203.

Table 14-1: Coordination with Municipalities and Sewer Authorities	
Municipality	Wastewater Utilities
<ul style="list-style-type: none"> • Lower Township • Middle Township • North Wildwood City • Wildwood City • Wildwood Crest Borough 	<ul style="list-style-type: none"> • Cape May County Municipal Utilities Authority

III. EXISTING AND FUTURE WASTEWATER TREATMENT FACILITIES

This section addresses wastewater treatment facilities currently or anticipated to be utilized by development within the Borough of West Wildwood, whether the treatment works itself is located within or outside of the Borough. Facility tables are provided for each existing and proposed wastewater treatment facility- [in Section V at the end of this chapter.](#)

Existing Areas Served by Wastewater Facilities

Map 14-3 shows the areas actively served by existing wastewater facilities, and the tables in Section V provide detailed information on each facility. “Actively served” means that the collection lines exist and that the property either is connected or has all regulatory approvals necessary to be connected.

Sewer service areas may include industrial businesses that discharge process and/or sanitary wastewater to the collection system for treatment by a facility not owned by that business.

Existing Public Wastewater Treatment Works and Service Area

Table 14-2 lists the major domestic wastewater treatment facilities and the municipalities they serve. The wastewater districts, franchise areas, and the associated treatment works are depicted on **Map 14-3**.

Table 14-2: Existing Wastewater Districts and Municipalities Served	
Wastewater Utility	Municipalities Served
CMCMUA Wildwood/Lower Township Region	Lower Township (Shawcrest) Middle Township (Rio Grande) North Wildwood City West Wildwood Borough Wildwood City Wildwood Crest Borough



Major Transmission Piping and Pumping Stations

Map 14-3 shows the major interceptors, trunk lines and pumping stations within the various sewer service areas for public wastewater treatment facilities. There are no known pipes or pump stations that restrict flow or constrain the ability of any portion of the sewer service area to accept increased flows.

Existing On-site, Non-industrial Wastewater Facilities

The Borough of West Wildwood does not contain any existing on-site, non-industrial treatment facilities that discharge 2,000 gallons per day or more of domestic wastewater and are regulated under a NJPDES permit.

Existing Industrial Treatment Works for Process Wastes and Sanitary Sewage

The Borough of West Wildwood does not contain any existing industrial treatment works that discharge 2,000 gallons per day or more of process and wastewater and are regulated under a NJPDES permit.

Wastewater Management Areas for Septic Systems and Other Small Treatment Works Not Discharging to Surface Waters

Remaining areas of the Borough, not otherwise designated as service areas for treatment facilities requiring a NJPDES permit, are included within a wastewater management area designation for septic systems and other small treatment works that treat 2,000 gallons per day or less of wastewater and discharge to ground water. This plan assumes that all of the developable lands have been included in the sewer service area. Any areas that are found to be developable would likely seek an amendment to the sewer service area and would be connected to public sewer. It is not anticipated that any future development would utilize an on-site septic system.

IV. WASTEWATER TREATMENT CAPACITY ANALYSIS - SEWER SERVICE AREA

The existing and future wastewater management needs of each sewer service area of a Domestic Treatment Works ("DTW"), or industrial wastewater facility that receives wastewater from outside the facility boundaries shall be identified and evaluated in a wastewater treatment capacity analysis. This chapter describes the build out methodology used to calculate existing wastewater flows for assigned sewer service areas (SSAs with a permitted treatment facility), as well as project future wastewater treatment demand for assigned and unassigned sewer service areas within the County.

Calculating Existing Wastewater Flows

Existing Development

In accordance with N.J.A.C. 7:15-4.5(b)(1)(i), the County has identified the existing wastewater flow using the highest consecutive 3-month rolling average over the most recent ten-year period. The peak 3-month average flow is used instead of the 12-month average because this alternate method better predicts peak flows in the summer months due to the seasonal population shift of the tourist economy in Cape May County.

Wastewater flow was also projected for existing development within the assigned and unassigned sewer service areas, which are not yet connected to the treatment facility, but which are currently discharging to septic system. Methodology to determine these wastewater flow totals is described below.

Projecting Future Wastewater Flows

Wastewater Demand Projections in Urbanized Municipalities' Sewer Service Areas

The WQMP rules (N.J.A.C. 7:15-1.15) define urbanized municipalities as municipalities where 90 percent of the municipality's land area appears as Urban Lands on the most recent Land Use/Land Cover GIS database. Urbanized municipalities also include those municipalities identified as "Urban Aid" pursuant to the New Jersey Redevelopment Act, N.J.S.A. § 55:19-20 et seq.; as an "Urban Enterprise Zone" pursuant to the New Jersey Urban Enterprise Zones Act, N.J.S.A. 52:27H-60 et seq.; as a "Garden State Growth Zone" municipality pursuant to the New Jersey Economic Opportunity Act of 2013, N.J.S.A. 52:27D-489p et seq.; and as Transit Villages approved by the New Jersey Department of Transportation and NJ Transit.

In urbanized municipalities it is assumed that redevelopment of previously developed portions of the municipality will make up the majority of the future wastewater management needs. Therefore, an analysis limited to development potential based solely on the zoning of the undeveloped and developable land area of the municipality in these municipalities may underestimate their future wastewater management needs. In these urbanized municipalities, a 20-year wastewater projection is based on population and employment projections.

As shown in **Table 14-3**, West Wildwood encompasses 238.8 acres in total (including water bodies other constrained lands). According to the 2012 NJDEP Land Use/Land Cover data, only 104.1 acres (44.7 percent) of West Wildwood are classified as Urban Lands. West Wildwood is an Urban Enterprise Zone pursuant to the New Jersey Urban Enterprise Zones Act, N.J.S.A. 52:27H-60 et seq. Therefore, West Wildwood meets NJDEP's definition of an urbanized municipality.

Table 14-3: Urbanized Municipality Analysis	
Total Municipal Area	232.8 acres
Urban Land Area	104.1 acres
Urban Land Coverage	44.7%
Urban Aid Municipality	No
Urban Enterprise Zone	Yes
Garden State Growth Zone	No
Transit Village	No
Urbanized Municipality	Yes

Wastewater Demand Projections in Urban Municipalities' Sewer Service Areas

In assigned and unassigned sewer service areas, where development exists on septic in the sewer service area, future flow is calculated with consideration of the type of development (ex. single family home, restaurant, office building, warehouse) and the amount of wastewater estimated to be generated by the



development as provided in N.J.A.C. 7:14A-23.3. The build-out data is 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. Similarly, for developable or redevelopable areas within the sewer service area, existing zoning is applied to project a build-out condition for use in estimating the future wastewater management needs of each sewer service area.

A municipal buildout analysis has been prepared in order to assess the amount of remaining developable lands within the Borough of West Wildwood and to assess the amount of potential development, if these lands were fully developed to their maximum potential. Utilizing GIS (geographic information system) technology, the amount of developable land has been assessed based on lot area and bulk requirements as compared to the minimum requirements of each individual zone district. (The complete Municipal Buildout Report is included in the **Appendix**).

This study is meant to demonstrate that the overall extent of potential future development based on the proposed zoning and the implications to the wastewater treatment facilities serving existing and future development. The results generated by this analysis were based on mathematic calculations of lot area and contiguous unconstrained land with regards to the requirements of the respective zoning. These analyses represent an approximation of the total development limits of the municipality and do not account for time factors, economic factors or real estate trends. In other words, the analyses represent the anticipated maximum amount of development that could occur based on the amount of remaining developable lands. This study does not make any assumptions as to timeframe for the municipality to reach full buildout, or even if it will. The results of this study are meant to illustrate the effects that the zoning would have if the municipality were to become fully built-out. The calculated development potential of each parcel is subject to site-specific review of applicable state environmental regulations as well as municipal subdivision and site plan procedures.

Methodology and Assumptions

For West Wildwood Borough, the 20-year wastewater demand projections are based on future estimates of permanent and seasonal residential population, permanent population living in group quarters (i.e. college residence halls, residential treatment centers, nursing facilities, group homes, correctional facilities, etc.), seasonal population in marinas, seasonal population in motels, and number of permanent and seasonal employees. The methodology and assumptions for each category are described below.

Permanent and Seasonal Residential Population

- Future permanent and seasonal residential population is projected utilizing the methodology and base data from the seasonal municipal demographic projections prepared by the South Jersey Transportation Planning Organization (“SJTPO”) for their 2040 Regional Transportation Plan. However, as the SJTPO projections were prepared to estimate future traffic conditions, it was necessary to modify some of the assumptions of the SJTPO projections in order to better reflect wastewater conditions.
- The 1990, 2000, and 2010 US Censuses were utilized to establish the historic trends and provide a baseline for existing permanent populations. Since the Census does not provide data on seasonal variations in population, the 2010 summer residential populations are estimated using reductions in the household vacancy rate from the yearly average to 75% occupancy of vacant units on summer weekdays and 93% (the state average) on weekends and multiplying those values by an average seasonal household size of 3.7 persons per dwelling unit. The average daily



occupied summer population is calculated by averaging the summer weekday and weekend values.

- Future seasonal residential population projections are estimated by SJTPO by multiplying the household ratios described above against permanent population projections. The SJTPO projections for Cape May County were utilized for 2020, 2030 and 2040. The County population projections were then distributed to each municipality in accordance with the municipality-to-county ratio in 2010.
- Residential population projections are assigned a wastewater multiplier of 75 GPD per person, in accordance with NJDEP projected flow criteria for permanent residents (N.J.A.C. 7:14A - 23.3).

Permanent Population Living in Group Quarters

- A group quarters is defined by the US Census as a place where people live or stay, in a group living arrangement that is owned or managed by an entity or organization providing housing and/or services for the residents. This is not a typical household-type living arrangement. These services may include custodial or medical care as well as other types of assistance, and residency is commonly restricted to those receiving these services. People living in group quarters are usually not related to each other. Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, and workers' dormitories.
- Population counts of group quarters were obtained from the 2010 US Census and were subtracted from the 2010 permanent population prior to applying the seasonal population ratios described above, since these populations are not subject to seasonal variations.
- Population in group quarters for 2020, 2030 and 2040 were projected by first projecting the group quarters residents for the entire County. The 2010 ratio of group quarters population to total permanent population is projected at an equal rate in 2020, 2030 and 2040 for Cape May County. The County group quarters population projections were then distributed to each municipality in accordance with the municipality-to-county ratio in 2010.
- Group quarters residents are assigned a wastewater multiplier of 75 GPD per person, in accordance with NJDEP projected flow criteria for permanent residents (N.J.A.C. 7:14A - 23.3).

Seasonal Population in Marinas

- Marina slip counts include marinas with bathhouse facilities from the 2010 "Boaters Guide to Cape May County". Marina population density is assumed at two persons per slip.
- Marina population is projected based on the same methodology employed by SJTPO for group quarters. First, marina population is projected for the entire County by projecting the 2010 ratio of marina population to total summer population at an equal rate in 2020, 2030 and 2040. Then each municipality is assigned a percentage of the County total for 2020, 2030 and 2040 based on its percentage of the 2010 County total.
- Marina residents are assigned a wastewater multiplier of 25 GPD per person, in accordance with NJDEP projected flow criteria for clubs with bathhouse and showers (N.J.A.C. 7:14A - 23.3).



Seasonal Population in Motels

- Motel room counts are from the Cape May County Planning Board. The projections assume a motel population of 2.5 persons per room.
- Motel population is projected based on the same methodology employed by SJTPO for group quarters. First, motel population is projected for the entire County by projecting the 2010 ratio of motel population to total summer population at an equal rate in 2020, 2030 and 2040. Then each municipality is assigned a percentage of the County total for 2020, 2030 and 2040 based on its percentage of the 2010 County total. Motel population is then converted back to motel units by dividing by 2.5 residents per room.
- Motels are assigned a wastewater multiplier of 75 GPD per room, in accordance with NJDEP projected flow criteria for hotel rooms (N.J.A.C. 7:14A - 23.3).

Permanent and Seasonal Employment

- Seasonal variation in employment is estimated by SJTPO by using monthly data that is reported on a regular basis. Year-round employment is that level reported in January while summer employment is from July levels. The estimation of summer employment was performed by subtracting NAICS categories that would be unlikely to be operating during the summer (i.e. educational services).
- Employment is assigned a wastewater multiplier of 25 GPD per employee, in accordance with NJDEP projected flow criteria for non-residential facilities (N.J.A.C. 7:14A - 23.3).

Wastewater Demand and Capacity AnalysisWastewater Demand

Table 14-4 provides an analysis of the population, employment and wastewater flow projections for the next 20 years. Summer residential population is expected to increase by 117 residents (4.1 percent) and population in group quarters is projected to increase by 1 resident (9.1 percent) for West Wildwood Borough by 2040. Marina population is projected to increase by 7 residents (4.1 percent) and occupied motel rooms are expected to increase by 2 units (3.7 percent). Employment is expected to increase by 12 employees (15.6 percent).

Table 14-4: 20-Year Summer Peak Population and Employment Projections					
	2010	2020	2030	2040	% Change (2020 to 2040)
Population	2,834	2,912	2,988	3,029	4.1%
x Multiplier (GPD)	75	75	75	75	
= Flow (GPD)	212,550	218,400	224,100	227,175	
Group Quarters Population	11	11	12	12	9.1%
x Multiplier (GPD)	50	50	50	50	
= Flow (GPD)	550	550	600	600	
Marina Population	168	173	177	180	4.1%
x Multiplier (GPD)	25	25	25	25	
= Flow (GPD)	4,200	4,325	4,425	4,500	
Motel Units	52	54	55	56	3.7%
x Multiplier (GPD)	75	75	75	75	
= Flow (GPD)	3,900	4,050	4,125	4,200	
Employees	63	77	82	89	15.6%
x Multiplier (GPD)	25	25	25	25	
= Flow (GPD)	1,575	1,925	2,050	2,225	
Total Estimated Flow (GPD)	222,775	229,250	235,300	238,700	
Growth Factor		2.9%	2.6%	1.4%	

The total estimated flow as calculated above is not consistent with the existing flows documented by the CMCMUA. This is the result of using NJDEP projected flow criteria, which is not be equal to the actual recorded flows. In order to remedy this issue, the percent change of the total estimated flow between each ten-year period is used as a growth factor to estimate the projected future flows for 2030 and 2040 based on the existing flow reported by the CMCMUA. The existing flow is equal to the historic peak 2-month average for the last 10 years (2008-2017).

Table 14-5: 20-Year Wastewater Flow Projections		
	Growth Factor	Flow (GPD)
Existing		239,871
2030	2.6%	246,202
2040	1.4%	249,760
20-Year Growth	4.1%	9,450

As calculated in **Table 14-5**, the wastewater demand for West Wildwood is expected to increase by 0.009 MGD (4.1 percent) over the next 20 years.



V. WASTEWATER FACILITY TABLES

The wastewater facility tables for all sanitary and/or process wastewater discharge to surface water facilities and those sanitary and/or process wastewater discharge to groundwater facilities discharging greater than 2,000 gallons per day (i.e., requiring NJPDES permits) are listed below. They include domestic wastewater treatment facilities which may serve one or multiple municipalities, onsite domestic treatment facilities, onsite sanitary subsurface sewage disposal system general permit (T-1 Permit) treatment facilities, and/or industrial treatment facilities which treat only industrial process wastewater, and/or facilities serving industrial land uses that have independent wastewater treatment facilities that treat and discharge manufacturing process waste and/or sanitary sewage that may be discharged to ground water or to surface water.

Domestic Wastewater Facilities with Sewer Service Areas in Multiple Municipalities

Table 14-6: Wildwood/Lower Region Wastewater Treatment Facility		
1. Existing or Proposed Facility:	Existing	
2. NJPDES Permit Number:	NJ0053007	
3. Discharge Type:	A – Domestic Discharge to Surface Water (DSW)	
4. Receiving Water or Aquifer:	Atlantic Ocean	
5. Classification of Receiving Water:	SC	
6. Owner of Facility:	Cape May County Municipal Utilities Authority	
7. Operator of Facility:	Cape May County Municipal Utilities Authority	
8. Co-Permittee of Facility:	Not Applicable	
9. Location of Facility:		
a. Municipality & County	Middle Township, Cape May County	
b. Street Address	2701 Rio Grande Blvd (Route 47 South) Rio Grande, NJ 08212	
c. Block(s) and Lot(s)	Block 1525, Lot 2	
10. Location of Discharge:	Latitude: 38° 59' 56.8" Longitude: 74° 51' 13.7"	
11. Design Capacity:	14.18 MGD	
12. Summary of wastewater flows:	Existing Flow (MGD)	Build-out or 20-Year Future (Year 2040) (MGD) ²
Lower Township (Shawcrest)	0.091	0.092
Middle Township (Rio Grande)	0.429	1.026
North Wildwood City	2.213	2.300
West Wildwood Borough	0.240	0.250
Wildwood City	2.154	3.765
Wildwood Crest Borough	0.240	2.313
Facility Total	5.366	9.746

² Wildwood City's buildout is a 30-year projection to year 2050.



VI. STRATEGIES TO MITIGATE POTENTIAL CAPACITY DEFICIENCIES

Strategies to Mitigate Capacity Deficiency in Sewer Service Areas

Where a sewage treatment plant does not have sufficient remaining capacity to meet the future wastewater needs of the sewer service area, the WMP agency must identify and evaluate strategies for addressing the potential capacity deficiencies, including management approaches and infrastructure improvements. Through the buildout and capacity analysis of the municipalities served by the Wildwood/Lower Region Wastewater Treatment Plant, it has been determined that there will be sufficient capacity to serve existing and future development within the adopted sewer service area.

Although West Wildwood is not served by the Seven Mile Beach/Middle Township Region sewer service area, the CMCMUA plans to redirect flows from Middle Township to the CMCMUA Wildwood/Lower Region WTP to address capacity issues at the Seven Mile Beach/ Middle Township Region WTP. This would redirect existing and future flow of 1.285 MGD to the Wildwood/Lower Region WTP. As shown in **Table 14-7**, the redirected flow from Middle Township would result in a total wastewater projection of 11.031 MGD for the Wildwood/Lower Region WTP, which is within the permitted capacity of 14.180 MGD.

Table 14-7: Revised Wastewater Projections for Wildwood/Lower Region WTP	
	Build-out or 20-Year Future (Year 2040) (MGD)
Lower Township (Shawcrest)	0.092
Middle Township (Redirected)	1.285
Middle Township (Rio Grande)	1.026
North Wildwood City	2.300
West Wildwood Borough	0.250
Wildwood City	3.765
Wildwood Crest Borough	2.313
Facility Total	11.031
Permitted Capacity	14.180

VII. APPENDIX

Municipal Buildout Report

Map 14-1: Existing Land Use

Map 14-2: Existing Zoning

Map 14-3: Adopted Sewer Service Areas

Map 14-4: Hydrologic Features

Map 14-5: Natural Features

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