

Chapter IX.11

**WASTEWATER MANAGEMENT PLAN
FOR
SALEM COUNTY, NEW JERSEY
LOWER DELAWARE WATER QUALITY
MANAGEMENT PLANNING AREA**

PITTSGROVE TOWNSHIP CHAPTER

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I. INTRODUCTION

This chapter represents the Pittsgrove Township portion of the Salem County WMP. The Salem County WMP has been submitted to the New Jersey Department of Environmental Protection for approval so that it may be incorporated into the Lower Delaware Water Quality Management Plan via the Plan Amendment Procedure (N.J.A.C 7:15).

Pittsgrove Township is located in the Delaware River Drainage Basin and the Lower Delaware Water Quality Management Planning Area. The Planning Area is not located within the jurisdiction of the Pinelands Commission nor is it located within the Coastal Area Facility Review Act (CAFRA) area. The future wastewater service area (FWSA) for the Township are identified on Map No.3. This service area does not include any areas that lay within adjacent municipalities.

The Township of Pittsgrove is a rural, agriculturally based municipality, bounded by two (2) municipalities within Salem County including Upper Pittsgrove Township and Elmer Township (both to the north-west). Two (2) other counties bound the Township as well, including Gloucester County (to the northeast) and Cumberland County (to the east and south). Pittsgrove encompasses a total area of 29,273 acres (45.7 square miles) including approximately 518.7 acres of which is surface water (ponds, lakes, reservoirs) and 87.4 miles of streams (shown on map No.1) flowing in the municipality. This municipality has been developed mostly agriculturally and for rural residential use. Commercial development is concentrated along the highways US Route 40 and NJ State Route 56 as well. Pittsgrove Township has a population density of approximately 205.5 people/sq mi according to (2010) U.S. Census data.

Pittsgrove Township has a population of 9,393 persons. The municipality’s population trend over the past decade can be seen as a 0.56% average increase in population each year (5.6% over ten years), according to the most recent (2010) U.S. Census data. Table 1.1 is a summary of the historic population and trends for Pittsgrove Township. In terms of population change over the next three decades, Pittsgrove is expected to continue growing steadily according to the most recent study by the South Jersey Transportation Planning Organization, prepared in 2011. A summary of the SJTPO projected population can be found below in Table 1.2:

Table 1.1: Pittsgrove- Historic Population

Year	Population	Population Change	
		#	avg yearly %
1980	6,954		
1990	8,121	1,167	1.68%
2000	8,893	772	0.95%
2010*	9,393	500	0.56%

~Source: 1990 U.S. Census, *2010 U.S. Census

Table 1.2: Pittsgrove- Projected Population

Year	Population	Population Change	
		#	avg yearly %
2010	9,393		
2020	10,307	914	0.97%
2030	11,145	838	0.83%
2040	12,018	873	0.83%

~Source: SJTPO, 2011

A. STATUS OF PREVIOUS APPROVED WMPs

Pittsgrove Township has not submitted any Water Quality Management Plans (WQMP's) / Amendments to date. A small sewer service area (the B&B Poultry Co. site) within Pittsgrove Township was recognized in Vineland City's 1995 revision to the Tri-County WQMP as having a service connection to the Landis Sewerage Authority Sewage Treatment Plant in Cumberland County. The Township has not currently identified any need that necessitates an amendment at this time.

Pittsgrove Township does not currently have an adopted WMP in effect. The enclosed plan reflects current zoning and includes the default wastewater management alternative to support development in areas that are not designated as sewer service area, which is a discharge to groundwater of less than 2,000 gallons per day. The Pittsgrove Township WMP has been incorporated within the overall Salem County Wastewater Management Plan. The proposed plan, upon adoption, will remain in force and in effect until the expiration date noted in the Chapter 1, Salem County Summary.

B. CURRENT WASTEWATER SERVICES

Pittsgrove Township is not currently served by a public sanitary sewer system, nor does it contain any infrastructure for wastewater service.

C. CURRENT WATER SERVICES

Pittsgrove Township does not own or operate a community public water supply system. However, the municipality does contain six small (fewer than 1,000 people) privately owned community water supply systems. These systems are the Harding Woods Mobile Home Park, Picnic Grove Mobile Homes park, Village I mobile home park, Rainbow Nursing Homes, and the two serving Holly Tree Acres Mobile Home Park. Together, these systems serve approximately 1,852 persons within Pittsgrove Township (according to NJDEP data). The remaining portion of the municipality is served by individual private water wells.

D. OVERVIEW OF ENVIRONMENTAL, 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 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 25 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 Department of Environmental Protection's statutory mandate to protect these resources.

It should be noted that under limited circumstances environmentally sensitive areas that meet the 25 acre threshold 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 Department of Environmental Protection through the plan endorsement process.

E. OVERVIEW OF WATER RESOURCE MANAGEMENT ISSUES

Pittsgrove Township's existing sewer service area is completely served by individual water wells. The municipality has not identified any issues regarding water quality, water supply or concerns with non-sewered areas.

F. OVERVIEW OF FUTURE WASTEWATER SERVICES

Pittsgrove Township does not own or operate any wastewater facilities or associated infrastructure. The Township has not identified future sewer service areas for inclusion within the Salem County Wastewater Management Plan (WMP). Areas not designated as a sewer service area will continue to be serviced by Individual subsurface sewage disposal systems (ISSDS's) with wastewater flows less than or equal to 2,000 gpd.

Based on the environmental, and local land use planning objectives discussed above, Map No.2 and Map No.3 identify areas presently served by public sewers and the areas planned to be served by public sewers in the future. These maps also identify sites that are served by an on-site treatment works, if applicable, that are regulated under a New Jersey Pollutant Discharge Elimination System (NJPDES) permit. Future expansion of a treatment works facility is not required to meet the future wastewater generation needs of the municipality.

G. SUMMARY OF SIGNIFICANT ACTIONS

Amendments to the Water Quality Management Planning Rules adopted on July 7, 2008, 40 N.J.R. 4000(a), necessitated a modification to certain sewer service areas based on environmental sensitivity and local planning objectives as described in this document. In accordance with the regulatory requirements, undeveloped lands within the existing sewer service area have been removed based on the limits of environmental constrained areas. In addition, areas have been added based on local planning objectives and an environmental sensitivity assessment. Maps No.2 and No.3 reflect the changes in sewer service area as a result of this wastewater management plan.

1. All areas not proposed to be included within the sewer service area in this WMP will be served by ISSDS's with 2,000 gpd or less flows.

II. EXISTING INFRASTRUCTURE AND TREATMENT FACILITIES

A. Existing Areas Served by Wastewater Facilities

Pittsgrove Township does not own or operate any wastewater treatment or conveyance systems. Map No.2 depicts the areas actively served by existing wastewater facilities, and the facilities tables in Chapter 7 (VII) provide detailed information on each facility. As with sewer service, the term "actively served" means that the collection lines exist and that the property either is connected or has all regulatory approvals necessary to be connected.

B. Major Transmission Piping and Pumping Stations

This Section is not applicable as Pittsgrove Township does not own or operate a sanitary sewer conveyance system consisting of major interceptors, trunk lines and pumping stations for public wastewater treatment facilities.

C. Existing On-site, Non-industrial Wastewater Facilities

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 2.C.1 lists all 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. The Wastewater Facilities Tables provided in Chapter 7 (VII) list all 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.

Municipal Map Designation	Facility Name	NJPDES Permit Number	Discharge Type (Groundwater or Surface Water)	Facility Table Number
30	Harding Woods Inc	NJ0099678	GWIND	30
31	Arthur Shalick High School	NJ0090221	GWIND	31
32	Daytop of NJ	NJ0157716	GWIND	32
33	Picnic Grove Mobile Homes	NJG0066214	T1	33
34	The Villages I	NJG0084883	T1	34
35	Holly Tree Acres Trailer Home	NJG0108405	T1	35
36	Centerton Country Club	NJG0129577	T1	36
37	Parvin State Park	NJG0133167	T1	37
38	Rainbow Center	NJG0158496	T1	38

D. Existing Industrial Wastewater Facilities

Some industrial land uses have independent wastewater treatment facilities that treat and discharge manufacturing process waste or sanitary sewage, rather than other types of effluent such as non-contact cooling water. They may be discharged to ground water or to surface water. Table 2.D.1 lists all existing industrial treatment works that discharge 2,000 gallons per day or more of process and wastewater and are regulated under a NJPDES permit. The Wastewater Facilities Tables provided in Chapter 7 (VII) list all existing industrial treatment facilities that discharge 2,000 gallons per day or more of domestic wastewater and are regulated under a NJPDES permit.

Municipal Map Designation	Facility Name	NJPDES Permit Number	Discharge Type (Groundwater or Surface Water)	Facility Table Number
39 (*)	B&B Poultry Co., Inc.	NJ0061841	D-STP	39

Note (*): This is an SIU Permit that conveys industrial wastewater to the LSA (NJ0025364)

E. General Wastewater Management Areas for Septic Systems

Generally, remaining areas of a municipality, 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 less than 2,000 gallons per day of wastewater and discharge to ground water.

F. Existing Areas Served by Public Water Supply Facilities

Pittsgrove Township does not own or operate any public potable water supply wells or distribution mains. Map No.1 generally depicts the areas actively served by existing public water supply facilities.

III. ENVIRONMENTAL AND OTHER LAND FEATURES

A full description of the mapping of environmental features for the County can be found in Chapter I of this report. This section includes a summary of the environmental features and public open space for the municipality that were taken into account when preparing the mapping. 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. Some of this mapping has been used in the development of a map of environmentally sensitive areas where the extension of sewer service areas is restricted (see **Delineation of Sewer Service Areas, below**).

Development in areas mapped as wetlands, flood prone areas, 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 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.

The following environmental features have been identified within the County map set:

- A.** Surface Waters and Classifications—Refer to Map No.5A of County map set
- B.** Riparian Zones -- Refer to Map No.5C of County map set
- C.** Flood Prone Areas – Refer to Map No.5A of County map set
- D.** Freshwater Wetlands -- Refer to Map No.5B of County map set
- E.** Coastal Wetlands –Refer to Maps 5A and 5B of County map set
- F.** Public Open Space and Recreation Areas –Refer to Map No.5B of County map set
- G.** Preserved Agricultural Areas and Other Conservation Easements on Private Lands – Refer to Map No.5C of County map set
- H.** Suitable Habitat for Threatened and Endangered Species – Refer to Maps 5B and 5C
- I.** Natural Heritage Priority Sites –Refer to Map No.5C of County map set

IV. DELINATION OF SEWER SERVICE AREAS AND PLANNING INTEGRATION

The results of the environmental analyses, summarized in Section III above, provide justification for the established service area delineations by demonstrating consistency with all applicable NJDEP requirements and criteria. This WMP chapter provides the most current planning efforts within the municipalities WMP planning area.

The WQMP rules at NJAC 7:15-5.22 require coordination with and solicitation of comments or consent from certain agencies, entities and plans, and consistency with other plans. These requirements are addressed in the Chapter 1, Salem County Summary within this document.

This chapter provides the method used to delineate future sewer service areas based on the mapping of significant environmentally sensitive areas, and consistency with other regional plans.

A. Environmentally Sensitive Areas Map

Under the Water Quality Management Planning Rules, large contiguous environmentally sensitive areas, generally defined as 25 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 Department of Environmental Protection through the Plan Endorsement process. Maps 5A, 5B and 5C, of the County map set, reflect the final results for the mapping of environmentally sensitive areas, based on the information described above and the WQMP rules. These maps were created using the following process:

1. 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. Note: 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.
2. Merge the GIS layers for wetlands, Category One riparian zones, Natural Heritage Priority Sites, and Threatened and Endangered Species habitats, and any others used by the County areas into a single composite GIS coverage.
3. Correct the composite areas by eliminating areas designated as urban in the most recent land use land cover layer (2002) to address land use/land cover modifications that have occurred since the environmental feature layers were prepared.
4. Identify and delete any composite areas less than 25 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.

B. Sewer Service Areas in Environmentally Sensitive Areas

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

1. 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.
2. Where a project has an approved site-specific water quality management plan and wastewater management plan amendment from the Department the project may be included in the wastewater management plan consistent with that approved site specific amendment for a period of six years from the date the amendment was adopted. The general locations of these developments are indicated on Map No.3, if applicable, and are keyed to a list of qualifying developments in each municipal chapter.
3. Where environmentally sensitive areas are bordered on either side 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.
4. Where sewer service is necessary to support for 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 such modifications have been made, they are noted in the individual municipal chapters.
5. Where necessary to create a linear boundary that 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. Where necessary to create a linear boundary that 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.

C. Exceptions to the Use of Geographic or Political Boundaries

Pittsgrove Township has not identified a delineated SSA at this time. Consequently, there are no exceptions necessary for the delineations used in this WMP.

D. Environmentally Sensitive Areas – Data Sources

The information described above with regard to the mapping of proposed sewer service areas and Environmentally Sensitive Areas was obtained from various sources. Table 4.D.1 below highlights the information and sources used to delineate environmentally constrained areas.

TABLE 4.D.1: Information Sources for Environmentally Constrained Areas				
Category	Source	Source Location	Original Date	Date Last Revised
Wetlands	NJDEP	www.state.nj.us/dep/gis	11/9/99	
Floodplains	FEMA	www.msc.fema.gov/webmap/wcs	1/9/03	
Stream Corridors	NJDEP	www.state.nj.us/dep/gis	8/1/08	12/1/10
Threatened & Endangered Species	NJDEP	www.njfishandwildlife.com	11/1/09	2/13/09
Parks, Preserves, & Open Space	Green Acres Recreation Program & NJDEP	www.state.nj.us/dep/gis	2/13/09	
Preserved Agricultural Lands	NJ SADC	www.nj.gov/agriculture/sadc	1/25/11	
Surface Water Quality Standards	NJDEP	www.state.nj.us/dep/gis	10/1/07	1/19/11
National Heritage Priority Sites	NJDEP	www.state.nj.us/dep/gis	2/13/09	
Zoning	Municipality	Current Master Plan	N/A	12/1/10

V. FUTURE WASTEWATER DEMAND AND FACILITIES

This chapter describes the build out methodology used to project future wastewater treatment demand for future sewer service areas and general wastewater management service areas within the County WMP.

Pittsgrove Township is not proposing future wastewater demand or public wastewater treatment facilities at this time. Consequently, wastewater demand projections have not been included within this municipal chapter. However, zoning, as described below has been utilized to assess the potential build out and available dilution for each HUC-11 area.

Pittsgrove Township has not identified a sewer service area and therefore needed only to consider build-out in non-sewer service areas. A build out analysis for the non sewer service area was prepared for Pittsgrove Township by Clarke Caton Hinz in August 2009. The build out in the non-sewer service area was calculated by applying the zoning, as defined within the August 2009 report, over all undeveloped land. The number of residential units and non-residential floor area 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 within this chapter. The methodology of preparing the build-out analysis is further defined within the Clarke Caton Hinz report.

A. Conformance and Nonconformance with Zoning and Prior Land Use Approvals

Where the WMP build out deviates from either current zoning or prior land use approvals, such deviation and the reasons for the deviation are explained in this chapter

B. MUNICIPAL ZONING AND COMPOSITE ZONING

The municipal zoning information provided below is specific to this chapter. A composite zoning map has not been developed as municipal zoning ordinances are not uniform in their nomenclature or definitions. Table 5.B.1 below identifies the zoning specific to this chapter and was been utilized for the associated non-sewer service area build-out analyses. The HUC-11 areas referenced were obtained from the data presented within the report prepared by Clarke Caton Hinz

Zone	Zone Description	HUC-11 Area (ac)
A	AGRICULTURAL	5,206.9
B-1	NEIGHBORHOOD BUSINESS	321.7
B-40	HIGHWAY BUSINESS RT. 40	144.1
B-56	HIGHWAY BUSINESS RT. 56	161.1
C	CONSERVATION	6,261.5
MC-1	INDUSTRIAL/ COMMERCIAL	412.6
P	PUBLIC	1,423.9
PHB	PLANNED HIGHWAY BUSINESS	282.7
R-1	RESIDENTIAL (SINGLE-FAMILY DETACHED, CLUSTERING PERMITTED)	2,651.3
R-2	RESIDENTIAL (SINGLE-FAMILY ATTACHED, MULTIPLEX CLUSTERING)	1,383.8
R-3	RESIDENTIAL (30,000 S.F.)	296.6
R-4	RESIDENTIAL (0.5 AC.)	4,530.5
RR	RURAL RESIDENTIAL	9,979.1

C. Calculating Future Wastewater and Water Supply Needs and Capacity

This Section is not applicable as Pittsgrove Township does not own or operate a wastewater treatment plant or sanitary sewer conveyance system consisting of major interceptors, trunk lines and pumping stations associated with public wastewater treatment facilities. In addition, Pittsgrove Township does not own or operate any public community water supply facilities, wells, or distribution mains.

D. MUNICIPAL DEMAND PROJECTIONS IN URBAN MUNICIPALITIES

This Section is not applicable, as Pittsgrove Township is not designated as an Urban Municipality.

E. MUNICIPAL DEMAND PROJECTIONS IN NON-URBAN MUNICIPALITIES

Development of vacant land will be the predominant factor in determining 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 ground water quality for the entire projected build out allowable by zoning. There are two separate methods employed for calculating future wastewater generation at build out, based on the wastewater service area designation.

1. Future Wastewater from Non-Urban Municipalities' Sewer Service Areas

This Section is not applicable, as Pittsgrove Township is not proposing a sewer service area as a part of this submission of the Salem County WMP.

2. Sewer Service Area Build Out Analysis

An analysis of the existing sewer service area does not apply to Pittsgrove Township as this municipality does not currently have an approved sewer service area and is not proposing a sewer service area as a part of this submission of the Salem County WMP.

F. Future Wastewater Outside of Sewer Service Areas

Generally, the default wastewater management alternative to support development in areas that are not designated as sewer service area is discharge to groundwater less than 2,000 gallons per day. A nitrate dilution analysis for septic systems is typically performed, in similar fashion to that conducted for sewer service areas, except that environmentally sensitive areas are not removed prior to performing the build out analysis. The intent of this analysis is to assess the available dilution on a HUC 11 basis used to establish the maximum number of units that can be built in a watershed and continue to meet the regulatory nitrate target.

The nitrate dilution analysis for septic systems was performed independently by Clarke Caton Hinz on behalf of Pittsgrove Township. The analysis prepared by Clarke Caton Hinz utilized NJDEP's nitrate-nitrogen target of 2 mg/L. The methodology utilized to develop the net nitrite dilution and associated build-out capacity of each zone is further defined within the August 2009 report.

Table 5-F-1 summarizes the number of residential units and commercial square footage that could potentially generate wastewater per zone within each HUC11, outside the sewer service area, within the municipality.

Table 5.F.1: HUC-11 Build-out (Based on Existing Zoning)				
HUC11	Zoning	Total Acres	Residential (Units)	Commercial (SF)
02040206120	A	262.8	73.6	0.0
	HB-40	80.8	15.2	76,172.1
	C	813.1	25.1	0.0
	PHB	165.2	78.4	391,865.8
	R-1	435.3	103.4	0.0
	R-2	157.6	103.1	0.0
	RR	837.5	128.1	0.0
	TOTALS		2,797.0	526.9
02040206130	C	262.3	0.0	0.0
	TOTALS	262.3	0.0	0.0
02040206140	A	943.8	184.4	0.0
	B-1	238.8	53.0	264,960.5
	HB-56	112.1	63.7	318,626.1
	C	2,185.7	22.5	0.0
	MC-1	210.4	140.4	701,781.1
	P	69.1	12.8	63,880.7
	PHB	42.6	45.9	229,477.1
	R-1	1,280.5	375.6	0.0
	R-2	400.2	214.6	0.0
	R-3	296.6	342.3	0.0
	R-4	64.1	36.0	0.0
	RR	4,675.2	853.3	0.0
	TOTALS		10,819.2	2,344.5
02040206150	A	4,000.3	697.6	0.0
	B-1	82.9	18.8	93,934.6
	HB-40	63.3	10.6	52,777.4
	HB-56	49.0	25.4	126,946.8
	C	3,000.4	56.4	0.0
	MC-1	202.2	185.2	925,829.7
	P	1,354.8	39.8	198,979.7
	PHB	74.9	39.7	198,271.3
	R-1	935.5	108.4	0.0
	R-2	826.0	410.1	0.0
	R-4	305.2	107.3	0.0
	RR	4,466.4	701.9	0.0
	TOTALS		15,360.9	2,401.2

The wastewater summary projections presented above for areas outside the SSA are identified within the August 2009 report prepared by Clarke Caton Hinz on behalf Pittsgrove Township.

The goal of this HUC11-scale planning exercise to estimate the number of residential and commercial units within each HUC 11 on a municipal basis. The number of units that could be built under the existing zoning is compared to the allowable number of residential and commercial units in an effort to ensure that the current nitrate dilution standards can be satisfied. This method is intended to be a guide for estimating the impact of nitrate from septic tanks on HUC11-scale ground-water quality. Other, more specific, methods may be required to further detail impacts to the zoning of each municipality.

The condition of any area appearing suitable for an intended use must be assessed by a comprehensive, due diligence investigation of several factors, including but not limited to a Natural Resource Inventory, physical on-site conditions, local, State and Federal requirements, approvals, status of any outstanding violation, the past uses and possible residual contamination of a site. NJDEP Land Use/ Land Cover and 2002 aerial photographs were utilized as the base layers.

The method/data generated by the analysis may have specific limitations. As a result of these limitations, the current output can only be qualified as an initial screen of current field conditions per County/ Municipality. Further customization of more specific methods may be required to further detail impacts to the zoning of each municipality.

VI. ANALYSIS OF CAPACITY TO MEET FUTURE WASTEWATER NEEDS

This section of the wastewater management plan analyzes whether there is sufficient wastewater treatment capacity to meet the needs of the Municipality based on the projections described above. For sewer service areas this requires a comparison of the projected future demand to the existing capacity of the sewage treatment plant.

A. Adequacy of Sewage Treatment Plant Capacity

Pittsgrove Township does not own or operate a Wastewater Treatment Plant. The Township is not proposing future wastewater demand or public wastewater treatment facilities at this time. Consequently, wastewater treatment plant capacity and associated demand projections have not been included within this municipal chapter.

B. ANTIDegradation ANALYSIS FOR NEW AND EXPANDED DOMESTIC TREATMENT WORKS

This section is not applicable to Pittsgrove Township, as the Township is not proposing any new or expanded wastewater facilities.

C. Discharges to Ground Water

The number of units allowed by zoning exceeds that which can be supported in a particular watershed. The Municipality is currently reviewing the results of the dilution analysis in an effort to determine what zoning adjustments may be appropriate to meet both the regulatory requirements and the development objectives of the municipality. The method/data generated by the August 2009, Clarke Caton Hinz report may be considered an initial step in depicting of development potential for the municipality. The Municipality may need to apply more specific methods of analysis prior to making adjustments to the current zoning.

D. Adequacy of dilution to meet future non-sewer service area demand

The results of the Pittsgrove build-out analysis dated August 2009 was utilized to compare existing zoning to the available nitrate dilution within each HUC11. The HUC11 analysis was performed for each municipality independently. The available land use within each HUC was proportioned based upon the total number of acres located within the municipal boundary. Consequently, distributing the total number of allowable units among municipalities within a given HUC11 was not necessary, as the land area used for the analysis had already been proportioned. When determining the number of potential units, based on zoning, permanently preserved open space was removed from the potential build-out. Conversely, the number of allowable units, based on available dilution capacity within each HUC, utilized permanently preserved open space areas.

Table 6-D-1 below summarizes the allowable number of residential units and commercial square footage that could be developed by the municipality outside the wastewater service area, while maintaining a target concentration of nitrate in groundwater.

Table 6.D.1: HUC-11 BUILDOUT CAPACITY / DENSITY				
HUC11	Zoning	Total Acres	Residential (Units)	Commercial (SF)
02040206120	A	262.8	32.4	0.0
	HB-40	80.8	1.3	6,701.2
	C	813.1	19.0	0.0
	PHB	165.2	6.9	0.0
	R-1	435.3	13.2	0.0
	R-2	157.6	0.9	0.0
	RR	837.5	55.5	0.0
	TOTALS		2,797.0	129.2
02040206130	C	262.3	0.0	0.0
	TOTALS	262.3	0.0	0.0
02040206140	A	943.8	77.5	0.0
	B-1	238.8	14.3	71,539.3
	HB-56	112.1	5.3	26,717.1
	C	2,185.7	16.3	0.0
	MC-1	210.4	11.5	57,418.5
	P	69.1	0.6	2,755.2
	PHB	42.6	3.9	19,607.2
	R-1	1,280.5	96.3	0.0
	R-2	400.2	0.0	0.0
	R-3	296.6	9.5	0.0
	R-4	64.1	0.0	0.0
	RR	4,675.2	334.5	0.0
	TOTALS		10,819.2	569.7
02040206150	A	4,000.3	294.8	0.0
	B-1	82.9	18.8	24,986.6
	HB-40	63.3	10.6	4,442.7
	HB-56	49.0	25.4	10,486.9
	C	3,000.4	38.7	0.0
	MC-1	202.2	14.9	74,627.5
	P	1,354.8	1.7	8,455.1
	PHB	74.9	3.3	16,689.9
	R-1	935.5	20.0	0.0
	R-2	826.0	14.5	0.0
	R-4	305.2	0.0	0.0
	RR	4,466.4	268.5	0.0
TOTALS		15,360.9	711.2	139,688.7

The following Table 6.D.2 summarizes the results of the nitrate dilution capacity analysis. The table reflects the differences between the potential number of residential units and commercial square footage that could be projected by the municipality outside the sewer service area and the allowable number of residential units and commercial square footage that could be developed by the municipality outside the sewer service area, while maintaining a target concentration of nitrate in groundwater.

TABLE-6-D-2: HUC11 Dilution Analysis Summary- Potential Development and Available Dilution					
HUC11	Total Acres	Residential Build-out (Units)	Residential Capacity (Units)	Commercial Build-out (SF)	Commercial Capacity (SF)
02040206120					
TOTALS	2,797.0	526.9	129.2	468,037.9	6,701.2
02040206130					
TOTALS	262.3	0.0	0.0	0.0	0.0
02040206140					
TOTALS	10,819.2	2,344.5	569.7	1,578,725.5	178,037.3
02040206150					
TOTALS	15,360.9	2,401.2	711.2	1,596,739.5	139,688.7

The comparison of analyses shows that a build-out based on zoning would result in much more development than can actually be sustained to achieve adequate nitrate dilution. Therefore, the build-out based on the nitrate dilution analysis should be used in future planning. In addition, the current septic densities for the HUC-11's in Pittsgrove Township are also expected to be much lower than required to achieve adequate nitrate dilution, when compared to the results of the nitrate dilution analysis.

The nitrate dilution analysis prepared for the Water Quality Management Plan results in the number of residential units and commercial square footage allowable for each for each watershed within the Municipality. *The method/data generated by the Wastewater Estimation model builder has specific limitations within the application*, as previously indicated above. As a result of these limitations, the current output of this GIS tool can only be qualified as an initial screen of current field conditions per County/ Municipality.

VII. FUTURE WATER SUPPLY AVAILABILITY

The purpose of the Depletive/Consumptive Water Use Analysis is to determine if there is sufficient water supply to serve the proposed development of the municipality. The analysis should compare the build out water supply need with the existing permitted water allocation. To complete the objective of this analysis, water allocation and drinking water within the existing sewer service area are compared. A build-out projection of the proposed sewer service area is then prepared to determine the additional water demands that may result. Finally, the demands are compared to the water allocation to verify whether sufficient water supply exists to serve the proposed development. However, there currently isn't any existing or proposed sewer service area included as part of this WMP, therefore a Depletive/Consumptive Water Use Analysis was not performed at this time.

A. SUFFICIENCY OF WATER SUPPLY

Pittsgrove Township does not own or operate any public potable water supply wells or distribution mains. Development within this municipality is supplied by individual water wells. Consequently, a comparison of water allocation was not performed.

VIII. MAPPING REQUIREMENTS

A. BASIS FOR SERVICE AREA DELINEATIONS

The results of the required environmental analyses, summarized in Section III and the delineation of the sewer service areas identified in section IV above provide justification for the established service area delineations by demonstrating consistency with all applicable NJDEP requirements and criteria. The Salem WMP provides the most current planning efforts within the Sewer Service Area.

The Pittsgrove Township Sewer Service Area encompasses the future sewer service area necessary to implement the goals and objectives of the municipality. Those areas have been reduced to account for the buffer requirements regarding wetlands, the habitats of Threatened and Endangered Species and Riparian Corridors.

The Pittsgrove Township Sewer Service Area does not contain any areas located within the Pinelands. Areas located within the watershed of a Fresh Water One (FWI) 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 NJ.A.C. 7:9B, and/or the Ground Water Quality Standards at NJ.A.C. 7:9-6." Areas so designated are included on Map 3. Non-degradation water areas shall be maintained in their natural state (set aside for posterity) and are subject to restrictions.

B. MAPPING CLASSIFICATION

The mapping for this municipal chapter of the WMP was created by using available data from NJDEP, online GIS data sets and has been prepared in accordance with NJDEP WMP guidelines. The maps included within this submission reflect the requirements for preparing a Water Quality Management Plan Amendment. Five (5) maps with specific features have been provided. Supplemental maps have been included to clarify information in an effort to clearly depict the required information. Each map has been provided with a complete and readily understandable legend. All 24" x 36" maps have been developed using New Jersey Department of Environmental Protection Geographic Information System digital data at a scale of 1" = 3,000'. Additional 11" x 17" maps have been provided within each report for convenience. The maps are classified below:

1. MAP #1: WMP MUNICIPAL MAP/WATER INFRASTRUCTURE

The map depicts the municipal boundary as well as the potable water infrastructure, if applicable. The map also includes HUC-11's, and existing water service infrastructure. Map No.1 shows areas of the municipality that lay within the Hackensack Meadowlands District, Pinelands Areas, Pinelands National Reserves, or franchise areas.

2. Map No.2: Existing Facilities & Service Areas

This map depicts the existing wastewater service area. This map also identifies the present extent of the actual sewer infrastructure within the municipal boundary of Pittsgrove Township, including any sewer department buildings and existing NJPDES facility locations. All areas outside the existing sewer service area are served by ISSDS with wastewater planning flows of less than or equal to 2,000 gpd.

3. Map No.3: Proposed Facilities & Service Areas

The map illustrates the wastewater service areas, non-degradation areas, and related infrastructure that may be proposed in the future. The boundaries of future service areas coincide with recognizable geographic or political features (i.e., roads, lot lines, zoning area boundaries, water bodies). The proposed future infrastructure and facilities are also depicted on the map. The existing infrastructure and facilities from Map No.2 are also included in this map.

4. Map No.4: Pittsgrove Township Zoning Map

The map depicts the current zoning of Pittsgrove Township. The zoned minimum lot acreage for Commercial, Industrial and Residential areas within the WMP proposed Sewer Service Area indicated in Table 8.B.4.1 below were utilized to determine calculated flows within the future sewer service area.

Table 8.B.4.1: Zoning Regulations

Zone	Zone Title	Minimum Lot Area	Minimum Lot Width	Minimum Lot Depth	Minimum Front Yard Setback	Minimum side yard setback	Minimum rear yard setback	
A	AGRICULTURAL	FARM	6.0	250	300	60	30	60
		AGRICULTURAL/HORTICULTURAL USES	2.0	200	200	50	30	50
		CONSERVATION AREAS/TRAIL HEADS	5.0	200	300	50	40	40
		SINGLE FAMILY DETACHED	3.0	300	300	50	50	50
		EDUCATIONAL FACILITIES	5.0	300	300	50	40	50
		MUSEUMS, LIBRARIES & CULTURAL STRUCTURES	1.0	200	150	0	30	40
		PARKS, PLAYGROUND, BALLFIELDS OR REC. FACILITIES	2.0	200	200	50	40	40
		FRATERNAL OR CIVIC ORG. BLDGS.	3.0	200	400	200	50	50
	MUNICIPAL USE							
B-1	NEIGHBORHOOD	AGRICULTURAL/HORTICULTURAL USES	2.0	200	200	50	30	50
		CONSERVATION AREAS/TRAIL HEADS	5.0	200	400	50	40	40
		PARKS, PLAYGROUND, BALLFIELDS OR REC. FACILITIES	1.0	150	150	50	40	40
		DAY CARE CENTER OR PRE-SCHOOL	2.0	200	200	50	30	40
		PERSONAL SERVICE BUS. SUCH AS HAIR OR NAIL CARE	2.0	200	300	50	30	40
		PROFESSIONAL OR BUS. OFFICE, BRANCH BANK, INS. OFFICE	2.0	200	300	50	30	40
		STORES/OFFICES FOR RETAIL & PERSONAL BUSINESS	2.0	200	300	50	30	40
		LANDSCAPING/GARDEN CEN.	3.0	250	300	50	30	30
	MUNICIPAL USE							
C	CONSERVATION	AGRICULTURAL/HORTICULTURAL USES	5.0	200	400	30	30	30
		PUBLIC/PRIVATE CONS. AREAS/TRAIL HEADS	5.0	200	400	50	40	40
		PARKS, PLAYGROUND, BALLFIELDS OR REC. FACILITIES	5.0	200	400	50	40	40
		PUBLIC BLDGS., OFFICE & FACILITIES OR YARDS	2.0	200	200	50	40	40
		EDUCATIONAL, ENV. CEN., WILDLIFE FACILITIES & SIMILAR USES	5.0	300	300	50	40	50
		SINGLE FAMIL, DETACHED DWELLING	5.0	300	400	50	50	50
			MUNICIPAL USE					
HB-40	HIGHWAY BUSINESS	FARM AGR./HORT. USES	2.0	200	200	50	30	50
		CONSERVATION AREAS INCLUDING TRAIL HEADS	5.0	200	300	50	40	40
		MUSEUMS, LIBRARIES & CULTURAL/HISTORIC STRUCTURES	1.0	200	150	0	30	40
		PARKS, PLAYGROUNDS, BALLFIELDS/REC. FACILITIES	2.0	200	200	50	40	40
		LOW INTENSITY STORES/SHOPS FOR RETAIL/PERSONAL SERVICE	1.5	200	150	150	30	50
		GASOLINE SERVICE STATION & REPAIR GARAGES & CARWASHES	3.0	400	300	150	30	40
		LANDSCAPING OR GARDEN CEN.	3.0	400	300	100	30	40
		VETERINARY HOSPITAL, KENNEL OR ANIMAL SHELTER	5.0	500	400	150	100	100
		REPAIR & SERVICE BUS. OFFICES & FACILITIES	5.0	500	400	150	75	75
		PROFESSIONAL/BUSINESS OFFICES & FACILITIES	2.0	300.00	300	150	30	30
		RESTAURANT, CAFÉ OR TAKE OUT FOOD OUTLET	3.0	300	300	150	30	40
		NURSING, CONVALESCENT OR ASSISTED LIVING FACILITY	15.0	500	500	100	100	100
		CHURCH OR PLACE OF WORSHIP	5.0	500	400	100	100	100
			MUNICIPAL USE					
		FARM AGR./HORT. USES	2.0	200	200	50	30	50
		CONSERVATION AREAS & USES	5.0	200	300	50	40	40
		MUSEUMS, LABRARIES & HIS. USES	1.0	200	150	0	30	40

5. Map No.5A: Environmental Features (Refer to County Map Set)

The map depicts environmental features indicated in N.J.A.C. 7:15-5.17 including major drainage basin boundaries (U.S.G.S. Hydrologic Unit Code (HUC) 11 Watersheds), CAFRA boundary and flood prone areas (FEMA). Map No.5A shows any New Jersey and Federal Wild and Scenic Rivers, FW 1-Trout Production or FW 2 Trout Production or farmlands preservation areas. Streams with FW2-NTC1/SE1 and FW2-NT/SE1 ranking are also shown.

6. Map No.5B: Environmental Features (Refer to County Map Set)

The map depicts environmental features indicated in N.J.A.C. 7:15-5.17 including wetlands, required wetlands buffers, public open space and recreation areas greater than or equal to (10) ten acres. Additional information including major drainage basin boundaries (U.S.G.S. hydrologic unit code (HUC) 11 watersheds), landscape project areas for grasslands, emergent and forested areas with rankings of 3, 4 and 5 are also shown. MapNo.5B shows any New Jersey and Federal Wild and Scenic Rivers, FW 1 Trout Production or FW 2 Trout Production or farmlands preservation areas.

7. Map No.5C: Environmental Features (Refer to County Map Set)

The map depicts environmental features indicated in N.J.A.C. 7:15-5.17 including the natural heritage priority sites for threatened and endangered species. Landscape Project Areas for Forested Wetlands and Bald Eagle Foraging are shown on this map. Map No.5C shows any New Jersey and Federal Wild and Scenic Rivers, FW 1-Trout Production or FW 2 Trout Production or Farmlands Preservation areas. C-1 water bodies are identified on the map as well. Sewer service areas are excluded from the 300ft buffers of C-1 water bodies and on all tributaries within the HUC 11 watershed.