

Borough of Hightstown (1104)

Introduction

This municipal chapter is an element of the Mercer County Wastewater Management Plan prepared by the Mercer County Planning Division in accordance with N.J.A.C. 7:15.

Hightstown Borough, an established, self-governing municipality, is located entirely within East Windsor Township in the southeastern corner of Mercer County. The Borough, like most of the other Boroughs in Mercer County, has a varied, built landscape with very little vacant land remaining and is identified under the New Jersey State Development and Redevelopment Plan as a Town Center. Hightstown Borough is intersected by one stream that runs north-south through a municipal park and a lake on the Borough's eastern edge. The Borough is comprised of a mix of land uses including a variety of housing, commercial uses, educational campuses, and industrial sites. The character of the Borough is defined by its historic structures and cultural resources. Primary transportation corridors define the downtown where CR 571 and CR539 intersect with Route 33.

The 2005 DVRPC (Delaware Valley Regional Planning Commission) population projection estimates Hightstown's population in 2010 to be 5,220 remaining constant with the 2005 projection. The 2007 DVRPC population projection estimates a slight increase in the Borough's 2010 population to be 5,263.

Following are some important considerations for this municipality with respect to wastewater management planning:

- Borough of Hightstown is considered an urban municipality.

In this document the following terms may be used:

EDUs - Equivalent Dwelling Units - a measure where one unit is equivalent to wastewater effluent from one dwelling unit. NJDEP defines a dwelling unit to mean any building or portion of a building, permanent or temporary, used or proposed to be used as a residence either seasonally or throughout the year. Most often, EDU is used in reference to a single family home.

gpd – gallons per day, a unit of flow measurement.

GW – groundwater

HUC11 - Hydrologic Unit Code consisting of 11 digits – a United States Geological Survey (USGS) standard designation for subwatersheds delineated based on topography.

Individual Subsurface Disposal System (ISSDS) – means a system for the disposal of sanitary sewage into the ground, which is designed and constructed to treat sanitary sewage in a manner that will retain most of the settleable solids in a septic tank and discharge the liquid effluent to a disposal field.

mgd – million gallons per day, a unit of flow measurement.

Nitrate Dilution Model (NDM) –The NDM is required by NJDEP and follows the calculations methodology developed by the New Jersey Geological Service (NJGS). The NDM uses the soils type (SSURGO (NRCS) digital soils GIS layer revised by DEP) to estimate the minimum lot size needed to provide enough recharge to dilute nitrate to a specified target. This method is intended to be a guide for estimating the impact of

nitrate from septic tanks on groundwater quality. The NDM uses the minimum lot size to calculate the number of EDUs possible for a given area.

Non-discharge areas - areas where additional wastewater generation and/or discharge are prohibited.

Non-urban municipality – any municipality not officially designated as an urban municipality

Septic Area – means an area to be served by systems for the disposal of sanitary sewage into the ground, which is designed and constructed to treat sanitary sewage in a manner that will retain most of the settleable solids in a septic tank and discharge the liquid effluent to a disposal field. Planning flows for septic areas are 2,000 gpd or less.

Service Areas – areas designated as wastewater discharge to permitted surface water facilities, groundwater facilities, ISSDS, or septic

Sewer Service Area (SSA) – represents the area to be served by a centralized treatment facility.

STP – Sewage Treatment Plant

SW – surface water

Undeveloped/under developed – areas within the existing or future sewer service area that could be developed

WMP – Wastewater Management Plan

WPCF – Water Pollution Control Facility

WPCP – Water Pollution Control Plant

WTF – Water Treatment Facility

WWTP – Wastewater Treatment Plant

Existing Infrastructure

The existing wastewater collection and conveyance infrastructure within this municipality consists of the following:

- Collection System – The entire Borough of Hightstown is largely developed. The collection system and associated trunk sewers convey flow from these populated areas to the Hightstown Advanced WWTP.
- Pumping Stations – Borough of Hightstown currently has two (2) existing pumping stations through-out the municipality.

The existing major wastewater treatment facilities located within the municipality include:

- Hightstown Advanced WWTP – the wastewater treatment facility serving the municipality.

In addition to the existing major wastewater treatment facility, Tables 1a and 1b include additional minor facilities in the Borough of Hightstown regulated through NJDEP that have individual New Jersey Pollutant Discharge Elimination System (NJPDES) discharge permits.

Table 1a shows facilities which are indicated as discharge to groundwater (DGW). Table 1b shows facilities which are indicated as discharge to surface water.

The NJDEP, Division of Land Use Management, provided the data for Tables 1a and 1b.

The existing treatment facilities, if any, are illustrated on Map 2M.

Table 1a: NJPDES (DGW) Permitted Facilities within Borough of Hightstown

NJPDES Permit Number	Facility Name	Permit Program Code	Receiving Stream or Aquifer	Classification	Permittee	Contact Organization Name	Block	Lot	Permitted Flow (MGD)	Existing Flow (MGD)	Future Flow (MGD)	Discharge Category
NJG0101630	HIGHTSTOWN BORO WTP	GW	Upper Raritan Magothy	II-A	Borough of Hightstown	Hightstown Boro						H2O trt filter backwash

Table 1b: NJPDES (DSW) Permitted Facilities within Borough of Hightstown

NJPDES Permit Number	Facility Name	Permit Program Code	Receiving Stream or Aquifer	Classification	Permittee	Contact Organization Name	Block	Lot	Permitted Flow (MGD)	Existing Flow (MGD)	Future Flow (MGD)	Discharge Category
NJ0029475	HIGHTSTOWN BORO AWWTP	SW	Rocky Brook	FW2-NT(C2)	Hightstown Boro	Hightstown Boro			1.0	0.866	0.888	Sanitary

Environmental Features

The Borough of Hightstown is surrounded entirely by East Windsor Township and is bisected by State Highway Route 33. The Borough contains small municipal parks, some that contain environmental features such as streams and lakes.

Two notable water features in the Borough are Peddie Lake which is drained by Rocky Brook flowing north toward the Millstone River.

Delineation of Service Areas and Planning Integration

Sewer Service Areas

Following are the sewer service areas within Borough of Hightstown. Existing areas served and future SSAs are shown on Maps 2M and 3M, respectively. The facilities providing treatment to these service areas have an associated facilities table in the Appendix.

- Hightstown Advanced WWTP (NJPDES NJ0029475) – This SSA encompasses the entire Borough.

An explanation of the mapping method used to delineate the SSA is included in Appendix A to this chapter.

Septic Areas (ISSDS)

Individual subsurface sewage disposal systems (ISSDSs) consist of those areas with planning flows of 2,000 gallons per day or less (i.e. residential septic systems) that are neither designated for sewer service nor as non-discharge areas. These areas can be seen in Maps 2M and 3M.

Future Wastewater Demand and Facilities

For the purposes of evaluating capacity and future sanitary flow rates, the full build-out of the Borough was based on a 20-year projection of population and employment figures provided by the Delaware Valley Regional Planning Commission (DVRPC).

The 20-year projections for Hightstown Borough are as follows:

	2010	2030	Change
Population	5,494	5,628	134
Employment	3,402	3,444	42

Current population was taken from the 2010 Census. All other information was taken from the DVRPC Analytical Data Report, *Regional, County, and Municipal Population and Employment Forecasts, 2005-2035*, No. 14, August 2007.

Future wastewater is calculated from the population and employment projections by multiplying the projected increase in population by 75 gallons per day per person and the projected increase in employment by 25 gallons per day per person.

Sewer Service Area Wastewater Capacity Analysis

Table 2a presents the results of the Build-out Analysis within the SSA indicated above.

The Total Existing Flow included in Table 2a is taken from DMR data February 2011 through January 2012. The total existing flow (mgd) is an average of the monthly reported flow for the period. DEP requires the county to use this reporting period. However, 2011 was a very wet year and in addition to Hurricane Irene occurred late in August. According to the Hightstown AWWTP records of plant flow for the years before and after 2011 and in those years the average monthly flow at the AWWTP ranged from 0.6689 MGD to 0.618 MGD.

Table 2a: Borough of Hightstown Build-out Table (SSAs)

NJPDES Permit Number	Major Public Wastewater Treatment Facility	Capacity Allocation/ Permitted Capacity (mgd)	Total Existing Flow (mgd)	Total Flow Attributed to TWAs Approved But Unconnected (mgd)	Residential Build-out Flow (mgd)	Non-Residential Build-out Flow (mgd)	Existing Septic Systems Flow (mgd)	Total Projected Build-out Flow (mgd)	Remaining Capacity (mgd)
				Committed Flow (mgd)					
NJ0029475	Hightstown AWWTP*	1.0 MGD	0.866	0.01	0.010	0.001	N/A	0.888	0.112
				0.876					

*Refer to Facility Table for Hightstown AWWTP

Treatment Works Approvals (TWAs) approved by NJDEP for unconnected projects within the Borough of Hightstown consist of the following:

Table 2b – Treatment Works Approvals

TWA	Facility	Unconnected Flow (mgd)
North Preserve	Hightstown Advanced WTP	-
Old Heights Overlook	Hightstown Advanced WTP	0.01
Total		0.01

The capacity of Hightstown Advanced WTP is shown in the Facility Table. The facility has no formal agreements with regard to allocation of treatment capacity. Flow to the facility comes almost entirely from within the Borough of Hightstown.

Undeveloped and underdeveloped parcels are shown on Map 3M.

Septic Area Wastewater Capacity Analysis

The Borough of Hightstown is considered an urban community with no ISSDS (i.e., septic) therefore a Septic Area capacity analysis is not applicable.

A list of zoning codes and descriptions are included on Map 4M.

Appendix A – Basis for Service Area Delineations

SSA (Sewer Service Area)

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

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

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

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

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

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

Septic Areas (ISSDS)

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

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

The Open & Utility designation identifies the following:

- Open Space – Mercer County Planning Division maintains an open space layer. The county boundary is the layer’s geographic extent. The open space layer is developed from several sources including a county-owned land inventory, Green Acres ROSI, preserved farmland inventory, municipal open space inventories, and state and non-profit open space inventories. The open space layer served as the basis for identifying undevelopable land designated through the Plan as Municipal, County, or State Land, Deed Restricted properties, Conservation Easements, and certain lands overseen by non-profit entities.

- Open with Facilities - This category was created in response to comments received from municipalities to include recreational lands in the Future SSA. These open space properties currently have support facilities or may have them in the future. This category gives municipalities flexibility in planning for essential facilities that support existing and future recreational programming at the local level.
- Utility - tax assessment data was used to identify lands owned by public utilities.

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

Environmentally Sensitive Areas

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

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

Methodology

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

1. Parcels were evaluated to determine if:
 - a. It was designated under the Mercer County’s open space inventory.
 - b. It was owned by a public utility.Any parcels falling within the above categories were designated as Open/Utility.
2. The remaining parcels were evaluated to determine if they were part of previous approved SSA. If so, these parcels were designated SSA, unless directed otherwise by NJDEP, Mercer County, or the Municipality.
3. The remaining parcels not designated as previously part of an SSA were also evaluated to determine if any existing wastewater generating structures were present onsite using Mercer County’s building footprint (January 2009) layer and aerial photography (2007). County staff further reviewed these parcels with more current aerial photography (2009). COAH and local approvals were also considered in this evaluation. If sewage generating potential was identified, the parcel was further evaluated to determine if it was readily

sewerable by an existing collection system without extending it. If this was the case, the parcel was designated as SSA unless:

- a. A significant portion of the parcel is undeveloped and falls within the constrained boundary AND
- b. Comments were received from NJDEP indicating the constrained portion of the parcel was to be excluded from the SSA.

In cases where a) and b) above apply, the parcel was split along the Constrained boundary. In this case, the portion of the parcel within the Constrained boundary was designated ISSDS and the remaining unconstrained portion was designated SSA.

4. For parcels not addressed under 1, 2, or 3 above, any vacant lands were evaluated to determine if it was readily sewerable by an existing collection system without extending it. If this was the case, the parcel was designated as SSA unless:
 - a. Comments were received from NJDEP, Mercer County, or the Municipality indicating the subject parcel should be excluded from SSA category. If such was the case, the parcel was designated ISSDS.
 - b. The parcel was constrained in whole or in part by Environmentally Sensitive Areas (ESA). If this was the case, the portion of the parcel within the constrained boundary was designated as ISSDS and the remaining unconstrained portion was designated as SSA.
5. Parcels that were not designated under 1, 2, 3, or 4 above were designated as ISSDS.