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# Borough of Mount Arlington (1426)

## Introduction

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

The Borough of Mount Arlington lies along the eastern bank of Lake Hopatcong. Access by railroad shaped Mount Arlington's development as a resort community during the second half of the 19th Century. The Borough was established in 1890 when it separated from Roxbury Township.

The Borough of Mount Arlington is located in the northwestern portion of Morris County and encompasses approximately 2.8 square miles. Approximately 30% of the Borough consists of parks and recreation areas. The remaining land within the Borough consists mainly of residential uses. Portions are zoned and utilized for commercial use and these areas are located predominantly along the southern and eastern border of the Borough along the Howard Boulevard and Interstate 80 Interchange. The Borough zoning designations are shown on Map 4M.

The Census Bureau estimates the Borough of Mount Arlington had a population of 5,827 in 2008. The population has grown significantly since 2000, increasing by almost twenty five percent (25%) with the development of the Seasons Glen planned residential development.

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

- Borough of Mount Arlington is considered a non-urban municipality.
- About 7% of the Borough of Mount Arlington is located in the New Jersey Highlands (Highlands) Preservation Area and the remaining 93% is located in the Highlands Planning Area.

In this document, the following terms are used frequently:

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| <ul style="list-style-type: none"><li>• EDUs – Equivalent Dwelling Units<br/>- 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,</li></ul> | <ul style="list-style-type: none"><li>• EDU is used in reference to a single family home.</li><li>• gpd – gallons per day, a unit of flow measurement.</li><li>• GSA – General Service Area – represents the area to be served by residential septic systems. NJDEP refers to septic systems as discharges to groundwater with a</li></ul> |
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design capacity of less than 2,000 gallons per day.

- GW - groundwater
- HUC11 - Hydrologic Unit Code consisting of 11 digits - a United States Geological Survey (USGS) standard designation for subwatersheds delineated based on topography.
- HUC14 - Hydrologic Unit Code consisting of 14 digits - a USGS standard designation for subwatersheds delineated based on topography.
- mgd - million gallons per day, a unit of flow measurement.
- NDM - Nitrate Dilution Model - The NDM) is required by NJDEP and follows the calculations methodology developed by the New Jersey Geological Service (NJGS). The NDM uses the soil type to estimate the minimum lot size needed to provide enough recharge to dilute nitrate to a specified target. This method is intended to be a guide for estimating the impact of nitrate from septic tanks on groundwater quality. The NDM uses the minimum lot size to calculate the number of EDUs possible for a given area.
- Non-discharge areas - areas where additional wastewater generation and/or discharge are prohibited.
- SSA - Sewer Service Area - represents the area to be served by a centralized treatment facility.
- STP - Sewage Treatment Plant
- SW - surface water
- WMP - Wastewater Management Plan
- WPCF - Water Pollution Control Facility
- WPCP - Water Pollution Control Plant
- WWTP - Wastewater Treatment Plant

## **Existing Infrastructure**

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

- Collection System - The Borough of Mount Arlington has two collection systems. The collection system and associated trunk sewers from the southern portion of the Borough convey flow to the United Water Mid-Atlantic STP. The collection system and associated trunk sewers from the remainder of the Borough convey flow to the Musconetcong STP.
  - Pumping Stations - No pumping stations have been noted for this municipality.
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Existing major wastewater treatment facilities located within the municipality include:

- United Water Mid-Atlantic (Arlington Hills) STP serves a small area in the southern portion of the Borough and is located just north of Interstate 80.

Tables 1a and 1b below include additional minor facilities in the Borough of Mount Arlington that are regulated by NJDEP and have individual New Jersey Pollutant Discharge Elimination System (NJPDDES) discharge permits. Table 1a identifies facilities that discharge to groundwater (DGW). There are no minor facilities indicated as discharging to surface water (DSW) in the municipality. However, Table numbered 1b is reserved for such facilities if they are noted in the future.

The existing treatment facilities are illustrated on Map 2M.



**Table 1a: Additional NJPDES (DGW) Minor Permitted Facilities within Borough of Mount Arlington**

<b>NJPDES Permit Number</b>	<b>Facility Name</b>	<b>Permit Program Code</b>	<b>Receiving Stream or Aquifer</b>	<b>Classification</b>	<b>Permittee</b>	<b>Contact Organization Name</b>	<b>Block</b>	<b>Lot</b>	<b>Permitted Flow (gpd)</b>	<b>Existing Flow<sup>1</sup> (gpd)</b>	<b>Future Flow<sup>1</sup> (gpd)</b>	<b>Discharge Category</b>
NJG0141658	Courtyard by Marriot	GW	No Data	No Data	Todd B. Eppli	Hospitality Ventures Inc	61	23	2,500	No Data	No Data	Sanitary

<sup>1</sup>Flow indicated is daily maximum flow



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## Environmental and Other Land Features

County-wide environmental features are shown on maps 5A & 5B.

The Borough of Mount Arlington is located on the southeastern side of Lake Hopatcong. Lake Hopatcong is a popular recreation facility with boating access from Morris County's Lee's Marina and the Lake Hopatcong Yacht Club. The main access to Mount Arlington is provided via Howard Boulevard and Interstate 80 interchange located in the very southern portion of the Borough. Concerning water features, there are small tributaries and wetlands throughout the Borough. The largest water body, Lake Hopatcong forms the shoreline along the northwestern corner of the Borough. Lake Rogerene and Dunlap Pond are two smaller water bodies located in the southern portion of the Borough. More than 500 acres of the Borough is publicly owned open space, consisting of parks and active recreation areas and unimproved wooded open space for passive recreation.

## Delineation of Service Areas and Planning Integration

### Sewer Service Areas

Following are the sewer service areas and associated facilities within the Borough of Mount Arlington. 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.

- Musconetcong STP (NJPDES NJ0027821; DSW) - This SSA serves the most of the Borough north of the United Water Mid-Atlantic SSA described below.
- United Water Mid-Atlantic (Arlington Hills) STP (NJPDES NJ0065226; DGW) - This SSA serves the southern portion of the Borough.

The following represent smaller defined service areas within the Borough of Mount Arlington. These facilities do not have an associated facilities table.

- Courtyard by Marriot (NJPDES NJG0141658; DGW) - The small SSA serves the Courtyard by Marriot located in the southern portion of the Borough just north of Interstate 80 off Howard Boulevard.

### General Service Area

General Service Areas (GSAs) consist of those areas with discharges to groundwater of less than 2,000 gallons per day (i.e. residential septic systems) that are designated neither for sewer service nor as non-discharge areas.



## **Coordination and Compliance with the New Jersey Highlands Regional Master Plan**

Approximately seven percent (7%) of the Borough of Mount Arlington is located in the Highlands Preservation Area. The remaining 93% is located in the Highlands Planning Area. As of December 7, 2009, the Borough of Mount Arlington has not chosen to conform to the Highlands Regional Master Plan for the Planning Area. Therefore, the standards in the NJDEP Water Quality Management Rules, N.J.A.C. 7:15-1 et seq., were utilized for the Borough within the Planning Area

## **Future Wastewater Demand and Facilities**

For the purposes of evaluating capacity and future sanitary flow rates, the full build-out of undeveloped or underdeveloped land in the Highlands Planning Area portion of the Borough was derived from the existing zoning and the development potential of land parcels within the Borough. The results of the build-out analysis were compared to the permitted treatment capacities of major wastewater treatment facilities. An analysis was not required for the minor facilities listed in Table 1a above.

## **Sewer Service Area Wastewater Capacity Analysis**

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



**Table 2a: Borough of Mount Arlington Build-out Table (SSAs)**

<b>Major Public Wastewater Treatment Facility</b>	<b>Capacity Allocation/ Permitted Capacity (mgd)</b>	<b>Total Existing Flow (mgd)</b>	<b>Total Flow Attributed to TWAs Approved But Unconnected (mgd)</b>	<b>Residential Build-out Flow (mgd)</b>	<b>Non-Residential Build-out Flow (mgd)</b>	<b>Existing Septic Systems Flow (mgd)</b>	<b>Total Projected Build-out Flow (mgd)</b>	<b>Remaining Capacity (mgd)</b>
Musconetcong STP	0.330	0.189	0.014	0.054	0.008	0.0069	0.273	0.057
United Water Mid-Atlantic STP	0.158	0.120	0	0.003	0.038	0	0.161	-0.003



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

**Table 2b - Treatment Works Approvals**

<b>TWA</b>	<b>Facility</b>	<b>Unconnected Flow (mgd)</b>
Parker/Circle/Southard	Musconetcong STP	0.014
<b>Musconetcong STP Total</b>		<b>0.014</b>
None	United Water	0
<b>United Water STP Total</b>		<b>0</b>

The Musconetcong STP serves most of the Borough of Mount Arlington. The allocated capacity for the Borough of Mount Arlington is 0.330 mgd from the Musconetcong STP and the total projected build-out flow is 0.273 mgd leaving a surplus in capacity of 0.057 mgd. As shown in Table 2a, the Borough of Mount Arlington has sufficient allocated capacity to meet the expected build-out potential for the areas of the Borough served by Musconetcong STP.

The Borough of Mount Arlington is also served by the United Water Mid-Atlantic (Arlington Hills) STP. The allocated capacity for the Borough of Mount Arlington is 0.158 mgd from the United Water Mid-Atlantic STP. The total projected build-out flow is 0.161 mgd, or 0.003 mgd above the allocated capacity. As shown in Table 2a, the Borough of Mount Arlington does not have sufficient allocated capacity to meet the expected build-out potential for areas served by United Water Mid-Atlantic (Arlington Hills) STP. Therefore, the Borough will need to determine the best solution to ensure that build-out does not exceed capacity for the United Water Mid-Atlantic (Arlington Hills) STP.

Undeveloped and underdeveloped parcels are shown on Map 3M.

Flows for the additional minor facilities in the municipality are anticipated to remain the same through at least the term of this WMP.

### **General Service Area Wastewater Capacity Analysis**

Table 3 presents the results of the Build-out Analysis within the GSA for the portion of the Borough that is located in the Highlands Planning Area only. GSAs in the Highlands Preservation Area were not evaluated. The GSA is shown on Map 3M.

The breakdown by HUC14 subwatershed is shown below.



**Table 3 - Borough of Mount Arlington Build-out by HUC14 (GSA)**

HUC14 <sup>1</sup>	Build-out Potential (Equivalent Dwelling Units)		Surplus/ Deficit
	Using Nitrate Dilution Model	Under Municipal Zoning	
02030105010010	3.17	11.24	-8.07
02030105050010	5.89	14.00	-8.11
02040105150020	62.70	0.00	62.70

<sup>1</sup> The Build-out potential within this HUC 14 is for that portion within the municipal boundary. It does not represent the entire HUC 14 boundary within Morris County and only represents the portion of the HUC14 within the Borough of Mount Arlington. GSAs in the Highlands Preservation Area were not evaluated.

For Table 3, equivalent dwelling units were calculated by adding [potential residential flow (gpd)/350] + [potential non-residential flow (gpd)/500].

The General Service Area (i.e., septic) build-out capacity analysis for Borough of Mount Arlington was based on the 2.0 mg/L statewide standard for the target concentration of nitrate in groundwater.

Following are the results of this analysis shown in Table 3 for the Borough of Mount Arlington's portion of the HUC14:

- For HUC 02040105150020 the build-out results based on existing zoning is less than the number of potential EDUs generated by the Nitrate Dilution Model (NDM) for septic capacity, and therefore, no change in zoning is required.
- For HUC 02030105010010 and 02030105050010, the build-out results based on existing zoning is more than the number of potential EDUs generated by the Nitrate Dilution Model (NDM) for septic capacity, and therefore, further analysis of HUC 02030105010010 and 02030105050010 will be required.

NOTE: Where the number of EDUs generated by zoning is greater than the number of EDUs generated by the NDM, zoning build-out and NDM will be run for the entire HUC 14 to determine if the entire HUC 14 has sufficient nitrate dilution capacity to accommodate full zoning build-out.