

# **Town of Hackettstown Wastewater Management Plan**

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Prepared by the State of New Jersey Highlands Water Protection  
and Planning Council in support of Hackettstown's approved  
Petition for Plan Conformance and the Water Quality Management  
Planning Rules, N.J.A.C. 7:15

February 2016

# TOWN OF HACKETTSTOWN

## WASTEWATER MANAGEMENT PLAN

### Introduction and Methods

Of the 88 municipalities in the Highlands Region, 77 have submitted to the Highlands Water Protection and Planning Council (Highlands Council) a Notice of Intent to conform to the Highlands Regional Master Plan (RMP, effective date September 8, 2008) regarding the Preservation Area, Planning Area or (where applicable) both within their municipalities. The New Jersey Department of Environmental Protection (NJDEP) is responsible for ensuring that all areas of New Jersey are addressed by Wastewater Management Plans (WMPs) that comply with the provisions of the Water Quality Management Planning Rules at N.J.A.C. 7:15-5. Within the Highlands Region, this process will be achieved through a coordinated process with the Highlands Council as provided in N.J.A.C. 7:15-3.10 and N.J.A.C. 7:38-1.1. One of the conditions for each municipality that fully conforms to the RMP (“Plan Conformance” for the entire municipality) is the development of a WMP in conformance with the RMP and N.J.A.C. 7:15. The purpose of the WMP is to ensure that future sewer service areas and septic areas for planning flows of 2,000 gallons per day (gpd) or less (individual subsurface sewage disposal systems – ISSDS) are consistent with the Land Use Capability Zone Map designations and policies of the Highlands RMP. The WMP is therefore a direct result of the Plan Conformance process, intended to be adopted as a stand-alone document. Municipalities that do not pursue Plan Conformance for the Planning Area will address their wastewater planning responsibilities in cooperation with their counties or directly with NJDEP, which in turn will request a consistency determination from the Highlands Council.

On August 3, 2011, the Highlands Council adopted Resolution #2011-25 (attached as Appendix 1) which approved Hackettstown’s Petition for Plan Conformance, subject to conditions as set forth in the Final Consistency Review and Recommendation Report for Hackettstown. Plan Conformance applies to the entirety of Hackettstown – both the Highlands Planning and Preservation Areas. A condition of the approved Petition for Plan Conformance, as detailed in the Final Consistency Review and Recommendation Report, is the requirement that Hackettstown adopt a WMP working with the Highlands Council under Plan Conformance. As such, this Hackettstown Town of Hackettstown WMP is developed under Plan Conformance for the entire Town (see Figures Hackettstown-1 through Hackettstown-3). The Highlands Council worked cooperatively with Hackettstown throughout the Plan Conformance process to conduct an extensive analysis of the complete land area of the municipality, using a geodatabase that documents for each parcel the status of development, water supply and wastewater utility service, build-out potential, etc. Using the Highlands Municipal Build-Out Report and the Final Consistency Review and Recommendation Report for Hackettstown, the Highlands Council has identified and mapped the following areas:

- 1. Existing Areas Served** – As defined by the RMP, these are developed lands for which sewer service exists and is connected and operational. Sewer service is defined as the service area for any NJPDES-permitted domestic treatment works, including but not limited to Highlands Domestic Sewerage Facilities as defined by the RMP. Specifically, Existing Area Served “means areas connected to ... an existing public wastewater collection system ... where such infrastructure is already constructed. It does not include areas of designated sewer service areas ... where collection, transmission, or distribution systems do not currently exist.” These areas are generally but not exclusively located within an Existing Community Zone or Highlands Center as defined by the RMP, and may be within the Preservation Area or the Planning Area.

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2. **Existing Sewer Service Area** – These areas include, in any RMP Land Use Capability Zone, as applicable for the municipality:
- a. The Existing Areas Served including all NJPDES-permitted wastewater treatment facilities, including domestic or industrial, and whether discharging to surface or ground water, including T1 sites (NJPDES general permit for sanitary wastewater discharges to ground water), and
  - b. Any other lands previously approved by the NJDEP as sewer service areas for which a currently valid municipal development approval and valid NJDEP Treatment Works Approval (TWA) have been received and are currently in effect, where such information was documented by the municipality or the NJDEP and provided to the Highlands Council, including through the geodatabase for the Highlands Municipal Build-Out Report.
    - i. Planning Area- Route 57 Age Restricted Apartments: There is a TWA permit (# 09-0492) for Block 129 Lot 26 to serve a proposed 40 one-bedroom age-restricted apartment complex and 64 two-bedroom age-restricted apartment units known as Riverwalk owned by Jane Paftinos LLC. The permitted design flow is 0.0153 MGD.

NOTE: For any Existing Area Served parcel that is greater than 1 acre in total size and located in the Protection Zone or Existing Community Zone Environmentally-Constrained Sub-Zone, the map shows as Existing Sewer Service Area (SSA) only the developed portion of the parcel. Undeveloped portions of such parcels are not shown as Existing SSA. Within the Highlands Center or Existing Community Zone only, the undeveloped portions of such Existing Area Served parcels are included as Existing SSA regardless of size. For any Existing Area Served parcel that is less than or equal to 1 acre in total size, the map shows the entire parcel as Existing SSA regardless of development status and Land Use Capability Zone. Such parcels are considered fully developed.

3. **General Service Area for Wastewater Facilities with Planning Flows Equal to or Less Than 2,000 gpd which Discharge to Ground Water** – Included in Figure Hackettstown-1 are areas served by septic systems (ISSDS) and other wastewater systems with planning flows equal to or less than 2,000 gpd.. This designation incorporates septic areas that were included in WMPs adopted under previous versions of N.J.A.C. 7:15.

#### 4. **Future Sewer Service Area**

- a. Planning Area: These areas include all lands in the Existing SSA, plus all lands in the Highlands Planning Area identified by the RMP as being both within the Existing Community Zone (excluding the Environmentally-Constrained Sub-Zone) and also located within areas identified by the municipality for sewer service and approved by the Highlands Council as part of the municipality's Petition for Plan Conformance. Under this WMP, permits will not be granted by NJDEP for extension of sewer service into any other lands of the Planning Area unless:
  - i. The extension is consistent with municipal plans and ordinances approved by the Highlands Council pursuant to the municipal Petition for Plan Conformance; or
  - ii. A Consistency Determination has been approved by the Highlands Council, pursuant to N.J.A.C. 7:38-1.1(k) and 7:15-3.10(a) or (b),
  - iii. An amendment or revision to this WMP has been approved by NJDEP pursuant to N.J.A.C. 7:15.
- b. Planning Area – Hackettstown Highlands Center Designation: The approved Petition for Plan Conformance for Hackettstown was accompanied by the designation of, the Hackettstown Highlands Center. This Highlands Center is mostly within a previously approved NJDEP sewer service area. Therefore, the Hackettstown Highlands Center is part of the Future SSA, to the extent depicted in Figure Hackettstown HC-1. The Highlands Center is described in more detail below.

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- c. Preservation Area: The Highlands Act limits future sewer service in the Highlands Preservation Area to those developments for which an exemption from the Highlands Act has been determined and remains valid, or where a Highlands Preservation Area Approval (HPAA) with waiver has been granted by the NJDEP. For all other areas of the Preservation Area, Future SSAs were rescinded by the Highlands Act (Section 42, N.J.S.A. 58:11A-7.1).
5. **Septic Area (Planning Flows of 2,000 gallons per day (gpd) or Less)** – This category applies to all lands not included within the above categories, for which the density of new septic system development will be consistent with applicable septic density/nitrate dilution allowances. At a minimum, areas identified by the Highlands RMP as Protection Zone and Existing Community Zone-Environmentally Constrained Sub-Zone, which are outside of the Existing or Future SSA, are designated as “Septic Area (Planning Flows of 2,000 gpd or Less).” Portions of the Existing Community Zone that are not sewerred and are not intended to receive sewer service may be designated in the same manner.
- a. Permits or approvals for projects in this area with cumulative wastewater flows of 2,000 gpd or less shall not be permitted by NJDEP unless:
- i. The project is approved under septic system density provisions consistent with the RMP, as required by the Highlands Checklist Ordinance (#2012-02) adopted by Hackettstown pursuant to Highlands Council approval of its Petition for Plan Conformance. (NOTE: Approval pursuant to these provisions of the Highlands Checklist Ordinance is deemed in conformance with the septic system density requirements of N.J.A.C. 7:15); or
  - ii. Within the Preservation Area, the development activity is exempt from the Highlands Act or received a Highlands Preservation Area Approval from NJDEP. Within the Planning Area, the development activity is exempt from the Highlands Act. Such development shall be in conformance with N.J.A.C. 7:15 regarding septic system densities.
- b. Permits or approvals for projects in this area with cumulative wastewater flows in excess of 2,000 gpd shall not be permitted by NJDEP unless:
- i. The project is approved under septic system density provisions consistent with the RMP, as required by the Highlands Checklist Ordinance adopted by Hackettstown pursuant to Highlands Council approval of its Petition for Plan Conformance. (NOTE: Approval pursuant to these provisions of the Highlands Checklist Ordinance is deemed in conformance with the septic system density requirements of N.J.A.C. 7:15);
  - ii. The Highlands Council has determined that the discharge is consistent with the RMP and the discharge is approved by NJDEP as a revision or amendment to this Wastewater Management Plan;
  - iii. Within the Planning Area, the development activity is exempt from the Highlands Act and the discharge is approved by NJDEP as a revision or amendment to this Wastewater Management Plan; or
  - iv. Within the Preservation Area, the development activity is exempt from the Highlands Act or received a Highlands Preservation Area Approval from NJDEP and the discharge is approved by NJDEP as a revision or amendment to this Wastewater Management Plan. Such development shall be in conformance with N.J.A.C. 7:15 regarding septic system densities.
6. **RMP Consistency Determinations:** Any proposed modification to this Wastewater Management Plan will not be approved without a determination of consistency from the Highlands Council as required by N.J.A.C. 7:38-1.1(k) and 7:15-3.10(a).

## Mapping Requirements Pursuant to N.J.A.C. 7:15-5

The relevant mapping requirements of the Water Quality Management Planning Rules at N.J.A.C. 7:15-5 are met through the following mapping for Hackettstown, as developed specifically for the Wastewater Management Plan or as incorporated by reference from the Highlands Plan Conformance documents approved by the Highlands Council. Maps of existing and future domestic treatment works and service areas are used by the NJDEP for WQMP consistency reviews regarding proposed Treatment Works Approvals and NJPDES permits. They have been developed specifically for this WMP and are incorporated herein. Maps of environmental and administrative features are used by NJDEP as basis and background information for the identification of future sewer service areas. However, in the case of Hackettstown, the Town of Hackettstown WMP is based upon approval of Plan Conformance by the Highlands Council, which includes requirements that are as or more stringent than those of N.J.A.C. 7:15. Therefore, the relevant maps are incorporated by reference to the Highlands Council approval of Plan Conformance. These features are included in maps associated with the Highlands Municipal Build-Out Report, Highlands Environmental Resource Inventory (ERI), Highlands Element and Highlands Checklist Ordinance (as specified below) for Hackettstown, approved for Plan Conformance by the Highlands Council.<sup>1</sup> GIS spatial data have also been provided to NJDEP, Warren County and the municipality.

- **Jurisdictional Boundaries** – The affected WMP Area is the Town of Hackettstown and the Areawide Water Quality Management Plan is the Upper Delaware, both of which are not shown on the municipal maps. Hackettstown is entirely within the Highlands Region; Planning and Preservation Areas and major roads are shown in the WMP Figures Hackettstown-1, -2 and -3.
- **Existing domestic treatment works and service areas** – See Figure Hackettstown-1
- **Existing industrial treatment works and service areas** – See Figure Hackettstown-1
- **Future domestic treatment works and service areas** – See Figure Hackettstown-2
- **Future industrial treatment works and service areas** – See Figure Hackettstown-2
- **Freshwater wetlands** – Hackettstown Highlands ERI
- **Flood prone areas**, including flood hazard areas – Hackettstown Highlands ERI
- **Public open space and recreational areas** – Hackettstown Highlands ERI
- **Preserved agricultural lands** – Hackettstown Highlands ERI
- **Wild and Scenic River** areas designated under the New Jersey Wild and Scenic Rivers Act or the Federal Wild and Scenic Rivers Act – Hackettstown Highlands ERI. Applicable to Musconetcong River.
- **Category One Water, trout production waters, and trout maintenance waters** – Hackettstown Highlands ERI (NOTE: Under the Regional Master Plan, all Highlands Open Waters in both the Preservation and Planning Areas are associated with 300 foot buffers.)
- **Surface waters and HUC14 boundaries** – Hackettstown Highlands ERI
- **Suitable habitat for endangered and threatened wildlife species** – Hackettstown Highlands ERI
- **Natural Heritage Priority Sites** – Hackettstown Highlands ERI
- **Riparian Zones** – Hackettstown Highlands ERI (NOTE: this map uses the Highlands Council definition, which is more expansive than the NJDEP definition.)
- **Steep slopes** – Hackettstown Highlands ERI (NOTE: this map uses the Highlands Council definition and LiDAR data)
- **Current composite or municipal zoning** – Hackettstown Highlands Checklist Ordinance Exhibit 1, “Highlands Zones and Sub-Zones.” (Highlands Council approval of Plan Conformance and municipal adoption of the Highlands Checklist Ordinance address this requirement.)

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<sup>1</sup> [www.highlands.state.nj.us/njhighlands/planconformance/hackettstown.html](http://www.highlands.state.nj.us/njhighlands/planconformance/hackettstown.html)

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- **Municipal parcel mapping and Roads** – WMP Figures Hackettstown-1, -2 and -3, and also shown in all Hackettstown Highlands Checklist Ordinance Exhibits
- **Undeveloped and underdeveloped property** – Hackettstown Highlands Municipal Build-Out Report
- **Public water supply service area** – See Figure Hackettstown-3

### Special Provisions Regarding Future Sewer Service Areas

The following are required statements of constraints, jurisdiction and caveats regarding the map of Future Sewer Service Areas (Figure Hackettstown-2) used in the Town of Hackettstown WMP:

- 1. Highlands Restrictions (from Highlands RMP):** New, expanded, or extended public wastewater collection and treatment systems and community on-site treatment facilities within the Protection Zone, and the Environmentally-constrained Sub-Zones of the Planning Area are prohibited unless they are shown to be necessary for and are approved by the Highlands Council for one or more of the purposes listed below. For approvals regarding purposes 1, 2 and 3, the project must maximize the protection of sensitive environmental resources such as Highlands Open Waters buffer areas, Riparian Areas, the forested portion of the Forest Resource Area, steep slopes, Prime Ground Water Recharge Areas and Critical Habitat. For approvals regarding purpose 3, the project must avoid disturbance of Highlands Open Waters buffer areas, Riparian Areas, Steep Slopes, and Critical Habitat, and must minimize disturbance of the forested portion of the Forest Resource Area, and Prime Ground Water Recharge Areas. The choice of extension or creation of systems shall follow the requirements in Objective 2K3d (2 and 3). The applicable purposes are:
  - 1) To address through a waiver under Policy 7G1 or 7G2 a documented existing or imminent threat to public health and safety from a pattern of failing septic systems (where the failing systems cannot reasonably be addressed through rehabilitation or replacement) or highly concentrated septic systems, where the threat is of sufficient scale to justify a public wastewater collection and treatment system or community on-site treatment facility and where no alternative is feasible that would sufficiently assure long-term protection of public health and safety. To address other issues of public health and safety, such needs shall have highest priority for allocation of existing system capacity;
  - 2) To address development permitted through a Highlands Redevelopment Area or takings waiver under Policy 7G1 or 7G2; or
  - 3) To serve a cluster development that meets all requirements of Objective 2K3d.
- 2. Highlands Open Water Buffers/Riparian Zones:** Pursuant to the Highlands Regional Master Plan, Highlands Open Water buffers extend 300 feet from top of bank (or centerline of a first order stream where no bank is apparent). This requirement applies to all Highlands Open Waters within the Highlands Region, regardless of stream classification in the Surface Water Quality Standards at N.J.A.C. 7:9B. The Highlands Open Water buffers have not been graphically removed from the sewer service area but are not proposed for sewer service. Such buffers will be regulated through the Highlands Checklist Ordinance adopted by the Town, applicable to both the Planning and Preservation Areas. The Highlands Checklist Ordinance is equivalent with or more stringent than the NJDEP's riparian zone standard, the Flood Hazard Control Act Rules (N.J.A.C. 7:13) and Water Quality Management Rules (N.J.A.C. 7:15).
- 3. NJDEP Riparian Zones:** For any proposed development that is not subject to the Highlands Checklist Ordinance or Highlands Regional Master Plan (i.e., exempt from the Highlands Act), pursuant to N.J.A.C. 7:15, riparian zones are:
  - a. 300 feet from top of bank (or centerline of a first order stream where no bank is apparent) for waters designated as Category One (C1) and all upstream tributaries within the same HUC 14 subwatershed;
  - b. 150 feet for waters designated Trout Production and all upstream waters;

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- c. 150 feet for water designated Trout Maintenance and all upstream waters within one linear mile as measured along the length of the regulated water;
- d. 150 feet for any segments of water flowing through an area that contains documented habitat for a threatened or endangered species of plant or animal, which is critically dependent on the surface water body for survival, and all upstream waters (including tributaries) within one linear mile as measured along the length of the surface water body;
- e. 150 feet for waters that run through acid-producing soils; and
- f. 50 feet for all waters not designated as C1, trout waters, critically water dependent Threatened and/or Endangered Species Habitat, or associated with acid soils.

Surface waters that are designated C1 are listed in the Surface Water Quality Standards at N.J.A.C. 7:9B. The NJDEP's "Surface Water Quality Standards" GIS data layer was utilized to determine these waters. Jurisdictional determinations by the NJDEP will be utilized to determine the extent of the sewer service area on individual lots. The riparian zones have not been graphically removed from the sewer service area but are not proposed for sewer service.

4. **Industrial Pretreatment Facilities:** All existing, new, or expanded industrial pretreatment facilities requiring Significant Indirect User (SIU) permits and/or Treatment Works Approvals, and which are located within the specified sewer service area, are deemed to be consistent.
5. **Applicability of Grant Conditions:** Pre-existing grant conditions and requirements (from Federal and State grants or loans for sewerage facilities) that provide for restriction of sewer service to environmentally sensitive areas are unaffected by adoption of this WMP and compliance is required.
6. **Limitations on Individual Subsurface Sewage Disposal Systems:** Individual subsurface sewage disposal systems (ISSDS) for individual residences may be constructed in depicted sewer service areas (Figure Hackettstown-2) only if legally enforceable guarantees are provided, before such construction, that use of such systems will be discontinued when the depicted sewer service becomes available. This applies to ISSDS that require certification from the NJDEP under the Realty Improvement Sewerage and Facilities Act (N.J.S.A. 58:11-23) or Individual Treatment Works Approval or New Jersey Pollutant Discharge Elimination System Permits (under N.J.A.C. 7:14A). It also applies to ISSDS which require only local approvals. However, this provision does not apply in the Preservation Area for properties not specifically denoted as Future Sewer Service Area in Figure Hackettstown-2. Additional properties may be included in Figure Hackettstown-2 through NJDEP approval of revision(s) to this Wastewater Management Plan, where determined to be exempt from the Highlands Act or consistent with (through a Highlands Council Consistency Determination) the Regional Master Plan. Specifically, revisions may be approved to address public health and safety issues related to failure of ISSDS on properties upon which repair or replacement with compliant systems is not practicable. Further, in both the Preservation Area and the Planning Area, connection of additional properties or expansion of flows from existing connections is subject to municipal approval regarding availability of utility capacity, regarding both remaining available utility capacity (i.e., wastewater flows) and infrastructure capacity (e.g., pump stations, mains). Compliance with the connection requirement will be governed through compliance with NJAC 7:9A-1.6(e), which provides guidance on sewer connections.
7. **Environmental Features:** Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the NJDEP's Landscape Project Maps of Habitat for Endangered, Threatened and Other Priority Wildlife as Rank 3, 4 and 5 (Version 3.0 or more recent), Natural Heritage Priority Sites, riparian zones as defined above, steep slopes (including steep slopes as defined and mapped in the Highlands Checklist Ordinance of Hackettstown), or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested persons should check with the NJDEP for the latest information.

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Depiction of environmental features shall be for general information purposes only, and shall not be construed to define the legal geographic jurisdiction of such statutes or rules.

8. **Future Treatment Works:** Locations of future pump stations, major interceptors, and trunk sewers are being provided for general information only and will not serve as the basis for any future WQMP Consistency Determinations or permit reviews unless the pump station, major interceptor or trunk sewer is part of a State or federally funded project.
9. **Water Quality Standards:** Areas located within the watershed of a Freshwater One (FW1) stream, as classified in the Surface Water Quality Standards, and/or that have Class 1-A ground water (Ground Water of Special Ecological Significance), as classified in the Ground Water Quality Standards, are identified as "Non-degradation water area based on the Surface Water Quality Standards at N.J.A.C. 7:9B, or the Ground Water Quality Standards at N.J.A.C. 7:9C." Non-degradation water areas shall be maintained in their natural state (set aside for posterity) and are subject to restrictions including, but not limited to, the following:
  - a. The NJDEP will not approve any pollutant discharge to ground water nor approve any human activity which results in a degradation of natural quality except for the upgrade or continued operation of existing facilities serving existing development.
  - b. For additional information please see the Surface Water Quality Standards at N.J.A.C. 7:9B, and/or the Ground Water Quality Standards at N.J.A.C. 7:9C.

### **Municipal Build-Out Results**

Hackettstown is located within both the Preservation Area and Planning Area. The Highlands municipal build-out analysis for Hackettstown is based upon a combination of the Highlands Municipal Build-Out Report,<sup>2</sup> prior development approvals, a 2008 report for the Hackettstown Municipal Utilities Authority by Hatch Mott MacDonald ("HMM Report") and the Highlands Council approval of the Hackettstown Highlands Center. The Highlands Council estimated the following new development results for potential developable lands for the entire municipality, as summarized in **Table 1** below. The results for the Hackettstown Highlands Center are specific to the proposed Center. As specified in the Highlands Municipal Build-Out Report, the results of the municipal build-out analysis are designed to be utilized at a municipal scale and are not appropriate for determining if a particular parcel or development project is consistent with the RMP (for example, the report includes certain results regarding residential or non-residential development that may be altered through a specific development review). Affected public water supply and wastewater facilities are discussed below. As noted in the Hackettstown Highlands Municipal Build-Out Report, the municipal results are a result of conditions within the Town in 2009 and the application of RMP requirements. The Report and the analysis below provide a critical planning tool but cannot be used as a definitive prediction of the future or as a basis for parcel-based development potential.

1. **Development in Sewer Service Areas:** All new development proposed to be served by public wastewater systems are within the Planning Area portion of Hackettstown. No new wastewater demand for domestic treatment works is projected in the Preservation Area.
  - a. Projected Development from the Highlands Build-Out Report: As summarized in **Table 1**, 0 residential dwelling units and 167,536 square feet of non-residential development, resulting in a wastewater demand of 7,331 gallons per day (gpd), or 0.007331 million gallons per day (MGD), and estimated public water supply demands of 8,264 gpd, or 0.008264 MGD. These values do not include the TWA permits listed in **Table 4** and discussed in 1.b below and parcels that overlap with the HMM report.

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<sup>2</sup> [www.highlands.state.nj.us/njhighlands/warren\\_county/hackettstown/2\\_Hackettstown\\_BuildOut\\_Report.pdf](http://www.highlands.state.nj.us/njhighlands/warren_county/hackettstown/2_Hackettstown_BuildOut_Report.pdf)

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It should be noted that the aforementioned data does not match the 2009 Build-Out Report, as the analysis used the Build-Out Report as a basis and then added current data to determine a revised build-out.

- b. Treatment Works Approvals: Table 4 lists one TWA permit that calls for a total of 15,300 gpd, or 0.0153 MGD. The Riverwalk development was approved to construct 104 apartments. All the units have been built and occupied. This flow must be included in the build-out estimate. Having received NJDEP approvals, these numbers are more accurate than either the Build-Out Report or the HMM Report.
- c. Development potential from the HMM report: The HMM Report estimate of 0.321032 MGD, in **Table 2**, is likely more accurate than the Highlands Municipal Build-Out Report, which only addressed the potential for new development on undeveloped or underdeveloped lots. The HMM report includes both redevelopment and new development potentials that the BO Report does not identify. This estimate also reflects the full build-out potential conducted by HMM for the Highlands Center. HMM predicts 74,732 gpd of flow for the Future Sewer Service Area and 28,479 gpd of flow for the Existing Sewer Service Area for the Highlands Center, totaling 103,211 gpd of wastewater generation. The public water demand for the Future Sewer Service Area parcels mentioned within the Center Analysis equals 75,457 gpd. All the parcels within the Existing Sewer Service Area tab within the Center Analysis are also currently served by public water and no new future projections of public water usage have been reported. There are also six parcels with future flow from committed projects that are not yet built with 154,871 gpd of flow. Therefore, the total projected flow for the Center Analysis from the HMM reports is 258,082 gpd. The TWA permits listed in **Table 4** and discussed in 1.b above are not reflected in the HMM flows, as the TWA permit flows are higher than those listed in the HMM report. The HMM report identifies a public water demand of 0.164828 MGD. The updated information from HMM determines there is approximately 0.03015MGD wastewater generation in the Future Sewer Service Area outside the Highlands Center for Hackettstown MUA, of which 0.0168 MGD are for existing development resulting in a shift from septic to sewers.
- d. Total Development Potential in Sewer Service Area: The combined wastewater flows from the HMM Report, TWAs and the Highlands Municipal Build-Out Report are 0.343663 MGD, reflecting the full development potential for Hackettstown with use of the most accurate estimates for each parcel, and the projected public water demand is estimated to be 0.263849 MGD as seen in **Table 2**.

2. **Development Reliant on Septic Systems (Highlands Build-Out Report)**: The Build-out Report identified the potential for 9 septic systems in the Planning Area, for all RMP Land Use Capability Zones and HUC14 subwatersheds, and 0 septic systems in the Preservation Area.

The build-out results based on potential developable lands are **not constrained** by wastewater and water supply utility capacity (which will be provided to the Hackettstown Highlands Center as discussed below).

The water supply demands from the build-out are constrained by water availability, defined as Net Water Availability by the RMP. Assuming that all water demand for development in Hackettstown is derived from wells within the local HUC14 subwatershed, Net Water Availability represents a constraint on build-out potential. Therefore, impacts on Net Water Availability will be addressed through the development and implementation of Water Use and Conservation Management Plans for any affected subwatersheds and will not constrain implementation of the Highlands Center.

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<b>Table 1 – Municipal Updated Build-Out Results Summary</b>			
	<b>Preservation Area</b>	<b>Planning Area</b>	<b>Totals</b>
<b>Residential units – Sewered</b>	0	0	0
<b>Septic System Yield</b>	0	9	9
<b>Total Residential Units</b>	0	9	<b>9</b>
<b>Non-Residential – Sewered</b>	0	167,536 sq ft	167,536 sq ft
<b>Total Non-Residential</b>	0	167,536 sq ft	<b>167,536 sq ft</b>

<b>Table 2 – Hackettstown Total Anticipated Flows (MGD)</b>			
<b>Build-Out Report*</b>	<b>HMM Report</b>	<b>TWAs</b>	<b>Total</b>
0.007331	0.321032	0.0153	0.343663

\* Not including parcels addressed by HMM Report and TWAs

### Overview of the Hackettstown Highlands Center

Incorporated in 1853, the Town of Hackettstown has functioned as a regional center for decades. Located on the northeastern edge of Warren County along the Musconetcong River, Hackettstown is home to Centenary College, M&M/Mars, Hackettstown Regional Medical Center, diverse residential neighborhoods, and a thriving downtown business district. Hackettstown is accessible from a well-developed road and transit network. Several major roadways traverse the Town – State Routes 57, 46, 182, and County Routes 517 and 604. The Town is served by the NJ Transit Montclair-Boonton train line, as well as multiple bus routes.

Although Hackettstown is almost completely developed, it has been experiencing a surge in development and redevelopment initiatives. The Town adopted the Stiger Street Redevelopment Area in 1999, which encompasses the area around the Hackettstown Train Station, including the Bergen Tool Site. Proposals have also been made for development associated with Hackettstown Regional Medical Center, including affordable housing projects. M&M/Mars recently installed a solar facility on land adjacent to its industrial facilities to supply energy for their operations.

Hackettstown’s Highlands Center encompasses the central business district, the Hackettstown Historic District, the Centenary College Campus, the Stiger Street Redevelopment Area, the Hackettstown Regional Medical Center and adjacent affordable housing projects, M&M/Mars, and commercial/residential development near the border with Mansfield Township. The total area of the Highlands Center includes approximately 743 acres, all of which is in the Planning Area and is served by both water and sewer service.

The designation of the Hackettstown Highlands Center supports Hackettstown’s efforts to redevelop and revitalize the core of the municipality. The Town’s overall purpose for their regional center is to facilitate development/redevelopment of a mix of land uses, where appropriate; compact design; walkable neighborhoods; distinctive and attractive residential neighborhoods; a thriving downtown business area; enhanced parks and open space; future development/redevelopment, where infrastructure is available; and efficient transportation options. Coordination of roadway improvements, downtown enhancement and redevelopment, context sensitive design, form-based zoning, and low impact development techniques will all serve to strengthen the economic well-being and long-term health of the community and support the goals of the Town of Hackettstown.

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The anticipated wastewater flows from the Hackettstown Highlands Center are as follows, based on a combination of existing TWA permits, committed allocations, and local planning documents, with use of the most accurate estimates for each parcel:

<b>Table 3 – Hackettstown Highlands Center Anticipated Flows Summary (MGD)</b>			
<b>Build-Out Report</b>	<b>HMM Report</b>	<b>TWA Permits</b>	<b>Total</b>
0.003731	0.258082	0.0153	0.277113

<b>Table 4. Treatment Works Approvals</b>			
	<b>Block</b>	<b>Lot</b>	<b>TWA permit (MGD)</b>
Riverwalk Apartments	129	26	0.0153

Table 2 is considered the most comprehensive estimate of new future wastewater flows to the Hackettstown WPCF from the Town, and Table 3 is the most comprehensive estimate for the flows associated with Hackettstown’s Highlands Center.

### **Available Wastewater Utility Capacity and Municipal Build-Out Results**

The sole NJPDES permitted facilities serving Hackettstown (as listed in **Table 8**) is the Highlands Domestic Sewerage Facility (HDSF) Hackettstown WPCF, which at this time has an approved and operative total capacity of 3.39 million gallons per day (MGD), as described in NJDES Permit No. NJ0021369. Hackettstown Municipal Utilities Authority (HMUA) is a utility authority that provides sewer service primarily to Hackettstown, but also to portions of Independence Township, Mansfield Township, Mount Olive Township, and Washington Township (Morris). HMUA does not have a specific contract with each municipality to treat a specific flow, but rather serves all customers within its approved Future Sewer Service Area (SSA) equitably. The current available Highlands Region capacity for the utility is 0.617 MGD for all municipalities served by the system, based on flow data of January 2005 through September 2014, using the Highlands Regional Master Plan method which subtracts the maximum 3-month flow (MAX3MO) from the permitted capacity, with the most limiting MAX3MO being from 2011. However, NJDEP calculates available capacity by subtracting the most recent available 12-month average from the permitted capacity, which is 2.12 MGD for Hackettstown WPCF for the period of October 2013 through September 2014, resulting in an available capacity of 1.27 MGD. This method applies to all non-conforming municipalities in the Highlands Region, and to NJDEP determinations regarding whether a facility expansion is required to accommodate existing or necessary future flows. The Highlands Council’s calculations used in the RMP are more conservative. Regardless of the method used, most if not all of the available capacity is contracted to individual customers.

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<b>Table 5 – Hackettstown WPCF Remaining Available Capacity</b>					
	<b>Permitted Flow</b>	<b>Maximum Three Month (MAX3MO) Average Flow</b>	<b>Remaining Available Capacity (RMP)</b>	<b>Annual Average Flow</b>	<b>Remaining Available Capacity (NJDEP)</b>
<b>2005</b>	<b>3.39</b>	2.571	0.819	2.25	1.14
<b>2006</b>	<b>3.39</b>	2.636	0.754	2.347	1.043
<b>2007</b>	<b>3.39</b>	2.461	0.929	2.246	1.144
<b>2008</b>	<b>3.39</b>	2.485	0.905	2.315	1.075
<b>2009</b>	<b>3.39</b>	2.393	0.997	2.234	1.156
<b>2010</b>	<b>3.39</b>	2.605	0.785	2.249	1.141
<b>2011</b>	<b>3.39</b>	2.773	<b>0.617</b>	2.508	0.882
<b>2012</b>	<b>3.39</b>	2.403	0.987	2.097	1.293
<b>2013</b>	<b>3.39</b>	2.174	1.216	2.082	1.308
<b>2014</b>	<b>3.39</b>	2.371	1.019	2.120	<b>1.27</b>
<b>NOTE:</b> All flows are in MGD. Any allocations identified in this document are neither NJDEP-determined nor NJDEP-enforced. * 2014 flows through September.					

The lowest dry weather sewage flow (the lowest consecutive three months of flow) for the Hackettstown WPCF during the period of 2005 through September 2014 was 748,000 gpd, in 2012 (this number is not included in Table 5, its source is NJDEP). For the same year, annual average flows were 2,097,000 gpd, resulting in an estimated annualized I&I (Inflow & Infiltration) rate of roughly 64%. I&I for each calendar year has ranged from 3.5% to 64% from 2005 through September 2014 with the highest I & I rate of 65% in 2013. I&I for the maximum month (September 2011, 3.131 MGD) was 47%, based on the lowest three-month flow for that year. In all cases, I&I rates are relatively low, except in 2012.

As shown in Table 5, annual average flows have generally remained at roughly 2.3 MGD or less, except for 2011-2013, and the MAX3MO flows are roughly 2.7 MGD or less. While in late 2003 the three-month flow exceeded 2.64 MGD (80% of the then-permitted flow of 3.3 MGD, triggering the NJDEP Capacity Assurance Program requirements), later flows have generally been less. Even the maximum single-month flow from 2005-2014 was 3.131 MGD.

According to the HMM Report, the total estimated committed/proposed wastewater generation is 0.236 MGD for Hackettstown. The committed flows and the development potential of the Hackettstown Highlands Center and Redevelopment Areas do not exceed the utility capacity conditions, as shown in **Table 10**. However, not all of the anticipated projects are likely to occur due to development that varies from the Regional Master Plan based on exempt activities, as well as the nature and extent of development that occurs in other Hackettstown WPCF contributing municipalities. Updated estimates are as follows:

<b>Table 6: Hackettstown WPCF Projected Flows (Source)</b>	
<b>Municipality</b>	<b>Total</b>
Hackettstown (See Table 2)	0.343663
Independence (WMP)	0.037025
Mansfield (HMM Report & Build-out Report)	0.049
Mount Olive (HMM Report)	0.0327
Washington Township (WMP)	0.141967
<b>Total</b>	<b>0.604355</b>

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The total projected flows of **0.604355 MGD** are within both the Highlands Council and NJDEP estimates of available capacity (0.617 and 1.27 MGD, respectively). Therefore, sufficient capacity exists at the Hackettstown WPCF to address anticipated wastewater flows from the combined build out.

### Other NJPDES Permitted Facilities

There is one NJPDES permitted T1 facility in Hackettstown; the facility serves Allamuchy State Park (NJG0133345) (see **Tables 8& 9**). There is no additional wastewater generation predicted for this facility from the build-out analysis.

### Available Public Community Water System Utility Capacity and Municipal Build-Out Results

The sole Public Water Supply utility serving Hackettstown, as listed in **Table 7**, is HMUA. The current available Highlands Region capacity for the utility is 27.58 million gallons per month (MGM). The current capacity available to Hackettstown is approximately 12.39 MGM. The total estimated public water demand from the build-out, HMM report, and TWA permits is 0.263849 MGD (0.077 MGD of consumptive use) and does not exceed the utility capacity conditions. The Highlands Council evaluates utility capacity based on water source permit limits, not on specific utility infrastructure or operational conditions.

Figure Hackettstown-3 shows the existing areas served for all of the above facilities.

<b>Table 7. Future Monthly Water Demand for Existing and Proposed Facilities Serving Hackettstown</b>				
<b>Purveyor (Approval ID)</b>	<b>Water Allocation Monthly Diversion Limit (MGM)</b>	<b>Peak Monthly Demand<sup>1</sup> (MGM)</b>	<b>Projected Monthly Water Demand<sup>2</sup> (MGM)</b>	<b>Monthly Allocation Excess (Deficit) MGM*</b>
<b>Existing Facilities</b>				
Hackettstown MUA: (PWSID #2108001)	123.7	98.049	8.179319	17.471681

<sup>1</sup> Peak monthly diversion occurred July 2012

<sup>2</sup> Project monthly water demand is estimated from average daily wastewater flows associated from approved TWA permits and Highlands Build-out report (multiplied by 31 days). No peaking factor is applied as in firm capacity analysis

\* Amount remaining after projected demands and peak monthly demand is deducted from monthly allocation. Reflects maximum monthly demands where available, see <http://www.nj.gov/dep/watersupply/pws.htm>. Some facilities lack Water Allocation permits, as their demands are less than statutory thresholds.

### Designation of Wastewater Service Areas within Hackettstown

The following maps are provided to show the existing and future sewer service areas for NJPDES-permitted sanitary wastewater treatment facilities, and to show the existing water supply service areas for major public water systems serving the municipality:

1. **Existing Sewer Service Area** – This map (**Figure Hackettstown-1**) shows the parcels and portions of parcels within the Existing Sewer Service Area as described in the Introduction, for the facilities discussed under the section Available Wastewater Utility Capacity and Municipal Build-Out Results and listed in **Table 8**. Please note that Figure Hackettstown-1 is considered definitive by NJDEP for purposes of permit approvals.

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2. **Future Sewer Service Area** – This map (**Figure Hackettstown-2**) shows the parcels and portions of parcels within the future sewer service area as described in the Introduction, for the facilities discussed under the section Available Wastewater Utility Capacity and Municipal Build-Out Results and listed in **Table 8**. Figure Hackettstown-2 includes the approved Hackettstown Highlands Center showing parcels that are within the Future SSA. Finally, Figure Hackettstown-2 indicates all “Septic Area (Planning Flows of 2,000 gpd or Less).” The septic system yields associated with this latter area are listed in **Tables 11 and 12**. Please note that Figure Hackettstown-2 is considered definitive by NJDEP for purposes of permit approvals.
  - a. **Hackettstown Highlands Center** – This map (**Figure Hackettstown HC-1**) shows the parcels and portions of parcels within the Hackettstown Highlands Center as described above.
3. **Public Community Water System Utilities** – This map (**Figure Hackettstown-3**) shows the parcels and portions of parcels within the existing service area for public community water supply systems as described in the Introduction, for the facilities discussed under the section Available Public Community Water System Utility Capacity and Municipal Build-Out Results. Water service for the approved Hackettstown Highlands Center will approximate that of the Future SSA for the same area.

### **Municipal Ordinances Required by N.J.A.C. 7:15-5.25**

The following ordinances are required by the Water Quality Management Planning Rules. Most of the ordinance requirements are implemented through municipal adoption of the Highlands Checklist Ordinance in compliance with the Plan Conformance approval of the Highlands Council, as noted. For designated Highlands Centers, a center-specific land use ordinance will be developed and adopted. In this instance, all extensions of sewer service shall be in conformance with the appropriate land use ordinance. Others are adopted independently by the municipality, where noted.

- **Zoning** – See Highlands Checklist Ordinance [#2012-02]. All extensions of sewer service must be in conformance with the Highlands Checklist Ordinance and subject to Plan Conformance approval and requirements of the Highlands Council. The Highlands Checklist Ordinance also regulated septic system density for new development that is subject to the ordinance.
- **Water Conservation** – See Highlands Checklist Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Stormwater Management** – Hackettstown has adopted the required stormwater management ordinance in compliance with its NJPDES MS4 stormwater permit Ordinance #2006-14, effective May 2, 2006, Section 525 of the Land Development Ordinance. Also, see Highlands Checklist Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Riparian Zone** – See Highlands Checklist Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Steep Slope** – See Highlands Checklist Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Septic System Maintenance** – NJDEP has determined that municipality-wide septic system maintenance ordinances are not required at this time under N.J.A.C. 7:15, but rather that septic system maintenance plans are required. The Town commits to development of such plans in cooperation with the Highlands Council.
- **Required Connection of Septic Systems to Sanitary Sewers in Adopted Sewer Service Areas** – Compliance with this requirement will be governed through compliance with NJAC 7:9A-1.6(e), which provides guidance on sewer connections. Not addressed by Highlands Checklist Ordinance.

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<b>Table 8 – NJPDES Permitted Facilities in or Serving Hackettstown</b>							<b>Discharge Location</b>	
<b>NJPDES Permit #</b>	<b>PI #</b>	<b>Facility Name</b>	<b>Discharge Category Code</b>	<b>Street Address</b>	<b>Post Office</b>	<b>ZIP</b>	<b>Longitude</b>	<b>Latitude</b>
NJ0021369	46415	Hackettstown WPCF	A	Esna Dr	Hackettstown	07840	400034	722846
NJG0133345	49676	Allamuchy Mountain State Park	T1	800 Willow Grove Street	Hackettstown	07840		

**Selected NJPDES Discharge Activity Category Codes**

**Discharge to Surface Water (DSW)**

- A – Domestic Surface Water Discharge

**Discharge to Ground Water (DGW)**

- T1 – General Permit Sanitary Subsurface Disposal

<b>Table 9. Hackettstown NJPDES T1 Facilities</b>								
<b>NJPDES</b>	<b>Facility Name</b>	<b>Project Summary</b>	<b>Block</b>	<b>Lot</b>	<b>Street Address</b>	<b>Street City</b>	<b>X Coord. Number</b>	<b>Y Coord. Number</b>
NJG0133345	Allamuchy Mountain State Park	An 8,683 acre state park providing multiuse recreational opportunities. An office and restrooms are available.	134	1	810 Willow Grove Street	Hackettstown	406131	740787

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Facility	Facility Type	NJPDES Permit	Permitted Flow (GPD)	Existing Flow (GPD)*	Municipal Sources	Projected Flow (GPD)
Hackettstown WPCF	DSW	NJ0021369	3.39	2,371,000 (2,120,000)	Existing Flows (Includes estimated I&I)	2,120,000
					Projected- Hackettstown	343,663
					Projected- Independence Township	37,025
					Projected- Mansfield Township	49,000
					Projected- Mount Olive Township	32,700
					Projected- Washington Township (Morris)	141,967
					<b>Total Projected</b>	<b>2,724,355</b>

\* Based on Monthly Report for period between October 2013 and September 2014.

HUC14 Subwatershed	Subwatershed Name	Density (Average Recharge) NJAC 7:15	Density (Drought Recharge) RMP	Total Units Allowed (Average Recharge) NJAC 7:15	Total Units Allowed (Drought Recharge) RMP
02040105150100	Musconetcong R (Trout Bk to Saxton Falls)		By LUCZ		6
02040105160010	Musconetcong R (Hances Bk thru Trout Bk)		By LUCZ		3

Planning Area				
HUC14 Subwatershed	Subwatershed Name	CZ Yield	ECZ Yield	PZ Yield
02040105150100	Musconetcong R (Trout Bk to Saxton Falls)	0	4	2
02040105160010	Musconetcong R (Hances Bk thru Trout Bk)	0	3	0
	<b>totals</b>	<b>0</b>	<b>7</b>	<b>2</b>
<b>Preservation Area</b>	<b>0 units (Not disaggregated by HUC14)</b>			

Figure Hackettstown HC-1. Hackettstown Highlands Center Delineation

