High Bridge Borough
Chapter of the Hunterdon County Wastewater Management Plan

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

August 2015

HIGH BRIDGE BOROUGH CHAPTER: HUNTERDON COUNTY 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 municipal WMP or municipal chapter for a County WMP, as appropriate, in conformance with the RMP and N.J.A.C. 7:15. The purpose of the municipal WMP chapter 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 municipal chapter of the relevant County WMP where a County WMP is developed, or as a stand-alone document where a County WMP is not developed. 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 January 20, 2011, the Highlands Council adopted Resolution #2011-2 (attached as Appendix 1) which approved High Bridge Borough's Petition for Plan Conformance, subject to conditions as set forth in the Final Consistency Review and Recommendation Report for High Bridge Borough. Plan Conformance applies to the entirety of High Bridge Borough – entirely located in the Highlands Planning Area. A condition of the approved Petition for Plan Conformance, as detailed in the Final Consistency Review and Recommendation Report, is the requirement that High Bridge adopt a WMP working with the Highlands Council under Plan Conformance. As such, this High Bridge Borough Chapter of the Hunterdon County WMP is developed under Plan Conformance for the entire Borough (see Figures High Bridge-1 through High Bridge-3). The Highlands Council worked cooperatively with High Bridge Borough 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 High Bridge Borough, 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 defined by the RMP.

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.

   NOTE: For any Existing Area Served parcel that is greater than 1 acre in total size and located in the Conservation Zone, 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 Existing Community Zone and Lake Community Sub-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 High Bridge-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 Lake Community 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.

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, Conservation 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 sewered 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 of the Highlands Land Use Ordinance (# 2013-20) adopted by High Bridge Borough pursuant to Highlands Council approval of its Petition for Plan Conformance. (NOTE: Approval pursuant to these provisions of the Highlands Land Use Ordinance is deemed in conformance with the septic system density requirements of N.J.A.C. 7:15); or

   ii. 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 of the Highlands Land Use Ordinance adopted by High Bridge Borough pursuant to Highlands Council approval of its Petition for Plan Conformance. (NOTE: Approval pursuant to these provisions of the Highlands Land 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; or

   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

6. **RMP Consistency Determinations:** Any proposed modification to this Chapter of the County 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 High Bridge Borough, 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 Chapter 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 High Bridge Borough, the High Bridge Borough Chapter of the Hunterdon County 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 Land Use Ordinance (as specified below) for High Bridge Borough, approved for Plan Conformance by the

Highlands Council[1]. GIS spatial data have also been provided to NJDEP, Hunterdon County and the municipality.

- **Jurisdictional Boundaries** – The affected WMP Chapter Area is High Bridge Borough, Hunterdon County, within the Upper Raritan Areawide Water Quality Management Plan, both of which are not shown on the municipal maps. High Bridge Borough is entirely within the Highlands Region, with the Planning Area and major roads shown in the WMP Figures High Bridge-1, -2 and -3.
- **Existing domestic treatment works and service areas** – See Figure High Bridge-1
- **Existing industrial treatment works and service areas** – See Figure High Bridge-1
- **Future domestic treatment works and service areas** – See Figure High Bridge-2
- **Future industrial treatment works and service areas** – See Figure High Bridge-2
- **Freshwater wetlands** – High Bridge Borough Highlands ERI
- **Flood prone areas**, including flood hazard areas – High Bridge Borough Highlands ERI
- **Public open space and recreational areas** – High Bridge Borough Highlands ERI
- **Preserved agricultural lands** – High Bridge Borough 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. Not Applicable.
- **Category One Water, trout production waters, and trout maintenance waters** – High Bridge Borough Highlands ERI (NOTE: Under the Regional Master Plan, all Highlands Open Waters are associated with 300 foot buffers.)
- **Surface waters and HUC14 boundaries** – High Bridge Borough Highlands ERI
- **Suitable habitat for endangered and threatened wildlife species** – High Bridge Borough Highlands ERI
- **Natural Heritage Priority Sites** – High Bridge Borough Highlands ERI
- **Riparian Zones** – High Bridge Borough Highlands ERI (NOTE: this map uses the Highlands Council definition, which is more expansive than the NJDEP definition.)
- **Steep slopes** – High Bridge Borough Highlands ERI (NOTE: this map uses the Highlands Council definition and LiDAR data)
- **Current composite or municipal zoning** – High Bridge Borough Highlands Land Use Ordinance Exhibit 1, "Highlands Zones and Sub-Zones." (Highlands Council approval of Plan Conformance and municipal adoption of the Highlands Land Use Ordinance address this requirement.)
- **Municipal parcel mapping** and **Roads** – WMP Figures High Bridge-1, -2 and -3, and also shown in all High Bridge Borough Highlands Land Use Ordinance Exhibits
- **Undeveloped and underdeveloped property** – High Bridge Borough Highlands Municipal Build-Out Report
- **Public water supply service area** – See Figure High Bridge-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 High Bridge-2) used in the High Bridge Borough Chapter of the Hunterdon County 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, the Conservation 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

[1] See http://www.highlands.state.nj.us/njhighlands/planconformance/highbridge_boro.html

Waters buffer areas, Riparian Areas, the forested portion of the Forest Resource Area, agricultural lands of Agricultural Resource Areas (ARAs), 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, agricultural lands of ARAs, 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 7 G2 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 Land Use Ordinance adopted by the Borough. The Highlands Land Use Ordinance is equivalent with or more stringent than the Department'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 Land Use 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;

   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 though 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 Department's "Surface Water Quality Standards" GIS data layer was utilized to determine these waters. Jurisdictional determinations by the Department 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 High Bridge-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 Department 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. Additional properties may be included in Figure High Bridge-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, 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 has been demonstrated through adoption of High Bridge Borough Ordinance [# 2013-3].

7. **Environmental Features:** Development in areas mapped as wetlands, flood prone areas, suitable habitat for endangered and threatened species as identified on the Department'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 Land Use Ordinance of High Bridge Borough), or designated river areas may be subject to special regulation under Federal or State statutes or rules, and interested persons should check with the Department for the latest information. 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 Department 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

High Bridge Borough is located entirely within the Planning Area. The Highlands municipal build-out analysis for High Bridge Borough is based upon a combination of the Highlands Municipal Build-Out Report[2]). The Highlands Council estimated the following new development results for potential developable lands for the entire municipality, as summarized in **Table 1** below. 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 High Bridge Highlands Municipal Build-Out Report, the municipal results are a result of current conditions and 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 High Bridge Borough.

   a. Total Projected Development: As summarized in **Table 1**, zero (0) residential dwelling units and 16,484 square feet of non-residential development, resulting in a wastewater demand of 1,648 gallons per day (gpd), or 0.001648 million gallons per day (MGD), and estimated public water supply demands of 2,060 gpd, or 0.00206 MGD. However, it should be noted that these values do not include the potential water supply demand and wastewater generation associated with inclusionary residential projects that may be or are approved by the Borough, as the build-out model used for the Highlands Municipal Build-Out Reports are based upon local zoning in place, rather than development plans that may have taken place through court settlements or other processes.

2. **Development Reliant on Septic Systems:** The Build-out Report identified the potential for 10 septic systems in the Planning Area for all RMP Land Use Capability Zones and HUC14 subwatersheds.

The build-out results based on potential developable lands are not constrained by wastewater utility capacity but not water supply utility capacity, as discussed in the next sections. The water supply demands from the build-out are not constrained by water availability, defined as Net Water Availability by the RMP.

Table 1 – Municipal Build-Out Results Summary (Not Reflecting Capacity Constraints)			
	Preservation Area	**Planning Area**	**Totals**
Residential units – Sewered	NA	0	0
Septic System Yield	NA	10	10
Total Residential Units	NA	10	**10**
Non-Residential – Sewered	NA	16,484 sq ft	**16,484** sq ft

[2] http://www.highlands.state.nj.us/njhighlands/hunterdon_county/high_bridge/2_High_Bridge_BOR_100209.pdf

Available Wastewater Utility Capacity and Municipal Build-Out Results

The Highlands Domestic Sewerage Facility (HDSF) serving High Bridge Borough is the Town of Clinton WTP, which at this time has an approved and operative total permitted system capacity of 2.03 MGD, as described in NPDES Permit No. NJ0020389. Town of Clinton STP is a municipal facility with contracts in other municipalities (Clinton Township, Clinton Town, and Union Township), all within the Highlands Region. The current available capacity for the utility is 0.358 MGD, based on flow data of January 2005 through July 2014 (see **Table 2**), using the Highlands Regional Master Plan method which subtracts the maximum 3-month flow (MAX3MO) from the permitted capacity, with the most limiting MAX3MO from 2011. Note: NJDEP calculates available capacity by subtracting the most recent available 12-month average, which is 1.248 MGD for the Town of Clinton STP for the period of August 2013 through July 2014, from the permitted capacity resulting in an available capacity of 0.782 MGD. This method applies to all non-conforming municipalities in the Highlands Region. (Note: all of the municipalities served by the Town of Clinton STP have petitioned for Plan Conformance.) The Highlands Council's calculations used in the RMP are more conservative and are used to determine whether extension of sewer service beyond the Existing Sewer Service Area may occur, other than for activities eligible for a waiver from the Regional Master Plan or Highlands Act. Regardless of the method used, most if not all of the available capacity is contracted to individual customers.

Table 2 – Town of Clinton STP Remaining Available Capacity

	Permitted Flow	Maximum Three Month (MAX3MO) Average Flow	Remaining Available Capacity (RMP)	Annual Average Flow	Remaining Available Capacity (NJDEP)
2005	**2.03**	1.49	0.535	1.337	0.693
2006	**2.03**	1.552	0.473	1.389	0.641
2007	**2.03**	1.49	0.535	1.379	0.651
2008	**2.03**	1.558	0.467	1.354	0.676
2009	**2.03**	1.422	0.602	1.316	0.714
2010	**2.03**	1.543	0.482	1.342	0.688
2011	**2.03**	1.672	**0.358**	1.504	0.526
2012	**2.03**	1.255	0.775	1.204	0.826
2013	**2.03**	1.426	0.604	1.264	0.766
2014*	**2.03**	1.365	0.665	1.248	**0.782**

NOTE: All flows are in MGD.
*Flows through July 2014

Dry weather sewage flow during the period of 2005 through July 2014 was approximately 449,000 gpd, in 2012. For the same year, annual average flows were 1,204,000 gpd, with an estimated I&I (Inflow & Infiltration) rate of roughly 63%. I&I for each calendar year ranged between 5% to 15% from 2005 through July 2014, and 63% in 2012. I&I for the maximum month (September 2011, 2.01 MGD) was 59%, based on the lowest three-month flow for that year.

The flows for High Bridge Borough itself ranged from 0.2497 to 0.3620 MGD, based on flow data of January 2005 through July 2014 (see **Table 3**). There is no specific allocated flow for High Bridge Borough, but under various agreements with the Town of Clinton dating back to 1968, High Bridge Borough has a maximum contracted volume of daily wastewater flow that can be conveyed to the Town of Clinton STP. The total contracted wastewater volume is 0.402 MGD, of which 0.06372 is committed to second party (pass-through) users located outside the Borough of High Bridge resulting in a net contract flow of 0.33828 MGD. The current available capacity for High Bridge Borough itself using the Highlands RMP and NJDEP methods are -0.10022 MGD and 0.06342 MGD respectfully. The total estimated wastewater generation from the High

Bridge Borough build-out report for the Town of Clinton STP facility is 0.001648MGD. **Table 7** provides additional information on planned flows from municipalities served by the Town of Clinton STP.

Table 3 – High Bridge Borough Sewage Flows and Remaining Available Capacity

	Contracted Flow	Estimated Borough Annual Average Flow	Estimated Borough MAX3MO Flow*	Remaining Borough Capacity (RMP)	Remaining Borough Capacity (DEP)
2005	0.33828	0.3016	0.3494	-0.01112	0.03666
2006	0.33828	0.2992	0.3519	-0.01362	0.03908
2007	0.33828	0.2944	0.3612	-0.02292	0.04389
2008	0.33828	0.2944	0.3734	-0.03512	0.04381
2009	0.33828	0.2935	0.3297	0.00858	0.04476
2010	0.33828	0.2907	0.3961	-0.05782	0.04763
2011	0.33828	0.3620	0.4385	**-0.10022**	-0.02371
2012	0.33828	0.2497	0.3411	-0.00282	0.08854
2013	0.33828	0.2678	0.3225	0.0158	0.07048
2014**	0.33828	0.2749	0.3516	-0.0133	**0.06342**

NOTE: All flows are in MGD. Any allocations identified in this document are neither NJDEP-determined nor NJDEP-enforced. They are used entirely by the utility and its customers for internal allocation and billing purposes.

*Based on assumption that High Bridge Borough contribution to MAX3MO flow is equivalent to its contribution to the Annual Average Flow for the Town of Clinton STP.
**Flows through July 2014

The total estimated wastewater generation from the Highlands build out report for all municipalities contributing to the Town of Clinton STP facility is 0.067302 MGD for the Planning Area and the totals do not exceed the utility capacity conditions. The Highlands build-out report identifies that Union Township has no projected wastewater generation, High Bridge Borough will contribute 0.001648 MGD, Clinton Town will contribute 0.055298, and Clinton Township will contribute 0.010356 MGD in the Planning Area for the Town of Clinton STP facility (see **Table 4**).

Table 4. Wastewater Generation from the Highlands Municipal Build-out Reports for Municipalities served by the Town of Clinton STP

Municipality	Planning Area (MGD)	Preservation Area (MGD)
Union Township	0	0
High Bridge Borough	**0.001648**	0
Clinton Town	0.055298	0
Clinton Township	0.010356	0
Total	**0.067302**	0

Other NJPDES Permitted Facilities

There are no other NJPDES permitted facilities in High Bridge Borough (see **Table 6**).

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

Public Water Supply utility serving High Bridge Borough is listed in **Table 5**; High Bridge Water Department. The current available (2003) Highlands Region capacity for the utility is 4.68 million gallons per month (MGM). The current capacity available to High Bridge Borough is approximately 4.17 MGM. The total estimated public water demand from the build out is 0.00206 MGD for the Planning Area (0.0006 MGD of consumptive water use) and does not exceed the utility capacity conditions. The Highlands Council typically evaluates utility capacity based on water source permit limits, not on specific utility infrastructure or operational conditions.

Figure High Bridge-3 shows the existing areas served for the facility.

Table 5. Future Monthly Water Demands for Existing Facilities Serving High Bridge Borough

Purveyor (Approval ID)	Water Allocation Monthly Diversion Limit (MGM)	Peak Monthly Demand[1] (MGM)	Projected Monthly Water Demand[2] (MGM)	Monthly Allocation Excess (Deficit) MGM*
Existing Facilities				
High Bridge Water Department (PWSID# 1014001)	19.13	14.876	0.06386	4.19

[1] Peak monthly diversion occurred July 2010

[2] 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.html. Some facilities lack Water Allocation permits, as their demands are less than statutory thresholds.

Designation of Wastewater Service Areas within High Bridge Borough

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 High Bridge-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 6**. Please note that Figure High Bridge-1 is considered definitive by NJDEP for purposes of permit approvals.
2. **Future Sewer Service Area** – This map (**Figure High Bridge-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 6**. Finally, **Figure High Bridge-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 8 and 9**.

3. **Public Community Water System Utilities** – This map (**Figure High Bridge-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.

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 Land Use Ordinance in compliance with the Plan Conformance approval of the Highlands Council, as noted. Others are adopted independently by the municipality, where noted.

- **Zoning** – See Highlands Land Use Ordinance 2013-20. All extensions of sewer service must be in conformance with the Highlands Land Use Ordinance and subject to Plan Conformance approval and requirements of the Highlands Council. The Highlands Land Use Ordinance also regulated septic system density for new development that is subject to the ordinance.
- **Water Conservation** – See Highlands Land Use Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Stormwater Management** – High Bridge Borough has adopted the required stormwater management ordinance in compliance with its NJPDES MS4 stormwater permit 2006-27. Also, see Highlands Land Use Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Riparian Zone** – See Highlands Land Use Ordinance, which is more stringent than the NJDEP model ordinance provisions.
- **Steep Slope** – See Highlands Land Use 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 Borough 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 has been demonstrated through adoption of a High Bridge Borough Ordinance, [#2013-3]. Not addressed by Highlands Land Use Ordinance.

Table 6 – NJPDES Permitted Facilities in or Serving High Bridge Borough							Discharge Location	
NJPDES Permit #	PI #	Facility Name	Discharge Category Code	Street Address	Post Office	ZIP	Longitude	Latitude
NJ0020389	46220	Town of Clinton STP	A	2 RAMSEY RD	Clinton	08809	74° 54' 36.5"	40° 37' 33.2"

Selected NJPDES Discharge Activity Category Codes

Discharge to Surface Water (DSW)

• A – Domestic Surface Water Discharge

Table 7. Projected Wastewater Generation by Sewage Treatment Facility						
Facility	Facility Type	NJPDES Permit	Permitted Flow (GPD)	2014 Flow (GPD)*	Projected Wastewater Generation by Source High Bridge Only	Projected Flow (GPD)
Town of Clinton STP	DSW	NJ0020389	2,030,000	351,600 (274,900)	Existing Flows (2012, including I&I)	274,900
					Projected Residential	0
					Projected Commercial	1,648
					Total Projected	**276,548**

* 2014 Maximum Three Month Flows (Annual Average Flows). Based upon RMP and NJDEP methods.

Table 8. High Bridge Borough Septic System Densities and Allocations by HUC14 for Annual Average and Drought Ground Water Recharge Using GSR-32					
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 (See Table 9)**
02030105010080	Raritan R SB(Spruce Run-Stone Mill gage)	N/A	By LUCZ	N/A	9
02030105020040	Spruce Run Reservoir / Willoughby Brook	N/A	By LUCZ	N/A	1

Table 9. High Bridge Borough RMP Build-Out Septic System Yield Analysis				
Planning Area				
HUC14 Subwatershed	**Subwatershed Name**	**CZ Yield**	**ECZ Yield**	**PZ Yield**
02030105010080	Raritan R SB(Spruce Run-Stone Mill gage)	0	9	0
02030105020040	Spruce Run Reservoir / Willoughby Brook	0	1	0
	totals	**0**	**10**	**0**
Preservation Area	**NA units (Not disaggregated by HUC14)**			