



## **G. SANITARY SEWAGE**

### **1. Existing Conditions**

Sanitary sewage on the Project Site is currently served by private septic systems. The only on-site uses currently generating sanitary waste and using septic systems are the three residential lots located on the eastern portion of the Project Site. The rest of the Project Site is vacant and, therefore, does not generate sanitary waste. The Town of Poughkeepsie created a Sewer Master Plan in 1996. This site is not specifically identified in the document. A full analysis of the existing conditions of the WWTP is included in Appendix F - Facilities Plan, Delaware Engineering, D.P.C. May 2017.

Much of the existing sanitary sewer conveyance system leading to the PCC WWTP was installed at the time the WWTP was constructed. The existing conveyance system is reported to consist of 8" diameter piping to the PCC pump station. A full capacity analysis will be conducted during site plan review.

The adjacent Poughkeepsie Business Park is currently served by an on-site private wastewater treatment plant (WWTP), permitted under the facility name of Poughkeepsie Corporate Center (PCC) under State Pollutant Discharge Elimination System (SPDES) Permit # NY0218723. The treatment plant discharges to Wappinger Creek and has a permitted flow of 20,000 gallons per day (gpd). In 2015, the treatment plant had a monthly average flow rate of 2,507 gpd. The average flow rate for 2016 is expected to be similar and had a monthly average flow of 2,116 gpd from January to July 2016.<sup>1</sup>

As discussed further below, the Poughkeepsie Corporate Center Wastewater Treatment Plant is proposed to be expanded as necessary to service the Proposed Project. Any on-site septic systems would be abandoned.

### **2. Future without the Proposed Project**

Without the Proposed Project, on-site infrastructure, including the private septic systems, would continue to remain as is. The majority of the Project Site would remain vacant and no upgrades or improvements to the current sewer system would be necessary.

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<sup>1</sup> Full flow rates for the year 2016 were not yet been compiled at the time of the document preparation.



### 3. Potential Impacts as a Result of the Proposed Project

#### Poughkeepsie Corporate Center Wastewater Treatment Plant Expansion

Sanitary sewer of the Proposed Project would be served by the Poughkeepsie Corporate Center Wastewater Treatment Plant (PCCWWT), an existing wastewater treatment plant located directly south of the Project parcels to be developed. A private Sewage Works Corporation would be created to own, operate, and maintain the wastewater collection and treatment facilities. The existing influent pump station would be upgraded with replacement pumps and controls. The upgraded facility would continue to discharge into Wappinger Creek via a 6" existing outfall piping, which has sufficient capacity for the proposed upgraded treatment facility.

Draft SPDES discharge limits of 20,000 gpd have been provided by the NYSDEC that reflect the design loadings anticipated from the expanded treatment facility (See Appendix F). These draft limits reflect a significant increase in the level of treatment required prior to discharge.

Any existing on-site septic systems would be abandoned and removed during the construction process, including the septic tanks supporting the existing residences proposed to be removed. If any unknown sewer infrastructure is found, either before or during the construction process, removal or abandonment procedures will follow all regulatory and municipal standards.

#### Projected Design Flow

The Project consists of 390 residential units (including 161 one-bedroom units, 198 two-bedroom units, and 31 three-bedroom units) and 122,100 square feet of non-residential, commercial and institutional space. Collectively among all proposed uses, the estimated average daily sanitary wastewater flow rate would be approximately 79,825 gallons per day (gpd). The flow rate of non-residential uses is estimated to be approximately 21,325 gpd and the flow rate of the proposed residential units is estimated to be approximately 58,500 gpd, as demonstrated in Table 3G-1 and further detailed in Section 4.2 - Hydraulic Loading, Solids Loadings and Anticipated SPDES Permit, of the Facilities Plan, Delaware Engineering, D.P.C. May 2017. Appendix F.



**Table 3G-1 Design Hydraulic Loading – MacDonnell Heights Town Center**

Use	# of Units	Flow/Unit (gpd)	Total Flow (gpd on 30 day average basis)
Apartments	650 Bedrooms	90 gpd/bedroom*	58,500
Restaurant/Café	469 Seats	28 gpd / seat **	13,130
General Retail	19,500 ft <sup>2</sup>	0.08 gpd/ft <sup>2</sup> **	1,560
Service	11,000 ft <sup>2</sup>	0.20 gpd/ft <sup>2</sup> ***	2,200
Medical Office	18,000 ft <sup>2</sup>	0.06 gpd/ft <sup>2</sup> *	1,080
Bank/Financial	3,500 ft <sup>2</sup>	0.04 gpd/ft <sup>2</sup> ***	140
General Office	18,500 ft <sup>2</sup>	0.09 gpd/ft <sup>2</sup> ***	1,665
Day Care	80 Children	16 gpd/child**	1,280
Maintenance/ Service Building	9,000 ft <sup>2</sup>	0.03 gpd/ft <sup>2</sup> ***	270
<b>Total Flow – Full Buildout</b>			<b>79,825</b>

\* DEC 2014 – Method 3, Historical Data

\*\* DEC 2014 – Table B-3, Typical Per-Unit Hydraulic Loading Rates

\*\*\* Maryland 2013 as addressed in the Facilities plan in Appendix F

Source: Facilities Plan – Table 4.1 Design Hydraulic Loading – MacDonnell Heights Town Center, Delaware Engineering, D.P.C. May 2017. Appendix F.

Collectively among all of the proposed uses, the estimated sanitary sewage generation of the Proposed Project would be approximately 79,825 gpd (based on a 30-day average), as noted in Table 3G-1, Design Hydraulic Loading – Poughkeepsie Corporate Center Wastewater Treatment Plant. This also represents roughly 84% of the projected design flow of the upgraded Wastewater Treatment Plant. The Poughkeepsie Business Park and future growth are expected to have a total flow of 15,175 gpd, approximately 16% of the total projected design flow.



**Table 3G-2 Design Hydraulic Loading – Poughkeepsie Corporate Center Wastewater Treatment Plant**

Source	Total Flow (gpd on 30-day average basis)
MacDonnell Heights Town Center	79,825
Poughkeepsie Business Park	12,500
Future Growth	2,675
<b>Design Flow</b>	<b>95,000</b>

Source: Facilities Plan – Table 4.2 Design Hydraulic Loading – PCC WWTP, Delaware Engineering, D.P.C. May 2017. Appendix F.

#### Anticipated Capacity

The existing permitted capacity of the Poughkeepsie Corporate Center Wastewater Treatment Plant is 20,000 gpd and the actual existing flow to the Plant is approximately 2,900 gpd<sup>2</sup>. As this existing capacity is 59,825 gpd less than the anticipated sewer flow of the Proposed Project, expanding and upgrading the Wastewater Treatment Plant is necessary and thus has been incorporated as a component of the Proposed Action. It is expected that the expansion of the Poughkeepsie Corporate Center Wastewater Treatment Plant would adequately accommodate the Proposed Project, as well as the Poughkeepsie Business Park and its future growth, with a total anticipated capacity of 95,000 gpd (based on a 30-day average flow or maximum monthly daily flow).

See Facilities Plan (Appendix F) for further details regarding the expansion of the Poughkeepsie Corporate Center Wastewater Treatment Plant.

#### **4. Proposed Mitigation**

Necessary sanitary sewer infrastructure would be installed according to the proposed utilities on the Grading and Drainage Plan (see Exhibits 3C-3A and 3C-3B), including connections to the expanded Poughkeepsie Corporate Center Wastewater Treatment Plant. Final design would be reviewed during the regulatory review process. Site disturbance would be minimized accordingly. The expansion and upgrade of the Poughkeepsie Corporate Center Wastewater Treatment Plant is anticipated to accommodate the expected sanitary sewer flow of the Proposed Project. The Poughkeepsie Corporate Center Wastewater Treatment Plant was constructed in the 1960s, thus modernizing this facility would contribute towards greater efficiency of sanitary sewer flow and management. The draft SPDES discharge limitations imposed by the NYSDEC will further enhance the quality of the wastewater discharged from an expanded treatment facility.

<sup>2</sup> Multi-year average 2010 – 2014. Current flow rates are actually lower, averaging less than 2,500 GPD.



The Applicant would be responsible for creating the Sewage Works Corporation, as well as obtaining all required permits and approvals from the Town, the NYSDEC and the Dutchess County Department of Behavioral and Community Health, to ensure compliance with all applicable regulations.

Water saving fixtures, such as low flow toilets, high efficiency plumbing fixtures and fittings in kitchens and baths, would be used in the proposed structures, to reduce water consumption.