



F. WATER

1. Existing Conditions

The Town and City of Poughkeepsie jointly own and operate the Poughkeepsies' Water Treatment Facility ("Facility"), located along the Hudson River within the Marist College Campus on Route 9. The water source for the Facility is the Hudson River, which originates from the north in the Adirondacks at Lake Tear of the Clouds, located on the southwest shoulder of Mount Marcy, New York State's highest peak. Raw water is taken from the Hudson River adjacent to the Facility, approximately 1,000 feet from shore at a depth of 48 feet below the mean river elevation and treated at the Facility. According to the Poughkeepsies' Water Treatment Facility Annual Drinking Water Quality Report, water quality tests have shown the treated water to be of very high quality and in compliance with all applicable water quality standards.

The Facility was constructed in 1962 and upgraded in 2004. The Facility is currently rated at a maximum production capacity of 19.3 million gallons per day (mgd) which is split between the Town and the City of Poughkeepsie. The Town owns approximately 45% of the water capacity (or approximately 8.66 mgd)¹. In 2016, the Poughkeepsie Townwide Water District ("District") provided an average daily flow rate of 5.73 mgd to its 10.535 service². A maximum day flow rate of 7.46 MGD was reported by the Town of Poughkeepsie Water Department in July 2017. This equates to 1.29 times the average day flow rate.

The treated water is distributed throughout the District through a series of booster pumps, water main and storage tanks. The system operates with typical operating pressures in the 12" and 8" diameter mains that run along the Project frontage at 75 and 85 psi respectively. Based upon hydrant test results performed by the Arlington Fire District and provided by the Town of Poughkeepsie Water Department, fire flow capacities in the vicinity of the Project were projected to be more than 14,000 gallons per minute (gpm) with a residual pressure of 20 psi.

Water on the Project Site is served by the District. The only uses currently using water 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 consume water. The total estimated water demand from the existing site is less than 700 gallons per day (gpd).

¹ Poughkeepsie Town Plan, adopted September 2007

² Town of Poughkeepsie Water Department, Annual Water Quality Report for Calendar Year 2016.



2. Future without the Proposed Project

Without the Proposed Project, on-site infrastructure, including water usage, would continue to remain as is. The majority of the Project Site would remain vacant and the existing 8" and 12" water mains would not be looped at the Project Site.

3. Potential Impacts as a Result of the Proposed Project

Water Supply

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 domestic average daily demand would be approximately 79,825 gpd. The domestic demand of non-residential uses is estimated to be approximately 21,325 gpd and the domestic demand of the proposed residential units is estimated to be approximately 58,500 gpd, as demonstrated in Table 3F-1, Daily Domestic Water Demands by Use.

Table 3F-1 Daily Domestic Water Demands by Use³

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 ²	0.08 gpd/ft ² **	1,560
Service	11,000 ft ²	0.20 gpd/ft ² ***	2,200
Medical Office	18,000 ft ²	0.06 gpd/ft ² *	1,080
Bank/Financial	3,500 ft ²	0.04 gpd/ft ² ***	140
General Office	18,500 ft ²	0.09 gpd/ft ² ***	1,665
Day Care	80 Children	16 gpd/child**	1,280
Maintenance/ Service Building	9,000 ft ²	0.03 gpd/ft ² ***	270
Total Flow – Full Buildout			79,825

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

³ These flow rates represent the design maximum monthly daily demand and are projected to be approximately 20% higher than average annual daily demand and are therefore conservative estimates.



With an average daily demand conservatively estimated at 79,825 gpd, a maximum day demand can be estimated at 103,000 gpd or 0.103 mgd, based upon the existing District ratio of maximum day demand to average day demand of 1.29.

The Town's capacity at the water treatment facility is 8.66 MGD. In 2016, the District distributed an average of approximately 5.73 MGD and a maximum day flow of 7.46 gpd. Based upon this, the District has adequate reserve capacity to serve the proposed Project.

Water Supply Conveyance System

The water supply conveyance system for the Project will consist of a series of water mains, valves, hydrants and service connections, designed and sized to accommodate the proposed Project demands. A looped water main connection to both the existing 8" and 12" diameter water mains that run along the Project's Route 44 frontage are proposed to service the Project. The District's distribution system has adequate capacity and pressures to service the projected Project demand, based upon the hydrant test results conducted at the Project Site. Sprinklers have been proposed to be installed for the commercial buildings in order to reduce the Project fire flow demands to meet the available site fire flow capacities. All proposed water main will consist of Class 52 cement lined Ductile Iron water main. Hydrants and valves would be located and adequately spaced throughout the Project Site, based upon Town of Poughkeepsie and regulatory requirements. Hydrant and valve locations will be coordinated with the Town of Poughkeepsie Water Department and the Arlington Fire Department.

It is anticipated that the on-site water supply conveyance system would be owned and maintained by the Project. A looped water main connection would be created to the Town's existing water supply. This loop would be owned and maintained by the Town of Poughkeepsie. A Backflow preventer and water meter vault would separate any connections from the Town-owned water main to the water supply components owned and maintained by the Project.

Because the majority of the Project Site is currently vacant, the only existing water utility infrastructure present are services at the existing residential properties, which are proposed to be removed. Water infrastructure at these locations would be removed commensurate with the demolition of the related structures.

All demolition and construction would be performed in accordance with municipal and regulatory standards. If any unknown water supply infrastructure is encountered during or prior to construction removal or abandonment procedures would follow all regulatory and municipal standards.



Adjoining Water Supply Wells

Existing water supply wells serve the Poughkeepsie Business Park facility, located just south of the Project Site. As the Project Site would be connected to the municipal water system the water demand for the Project will not influence the water source for the Poughkeepsie Business Park or other off-site water supplies.

Chapter 3E, Stormwater Management, concludes that the Proposed Project would not adversely impact existing off-site water systems. Therefore, it is not anticipated that adjoining water supply wells would be adversely impacted. See Chapter 3E for additional information regarding stormwater management.

4. Proposed Mitigation

The Project Site is located within the Poughkeepsie Town-wide Water District and water supply and distribution systems are currently available and sufficient capacity exists to service the Project, therefore, no mitigation measures are proposed for water supply. The proposed Project will include a looped water main connection between the existing 8" and 12" water mains, which will become part of the Town water distribution system. As water for the Project is to be provided by the existing District and no water supply wells are proposed, the Project will not influence the water source for the Poughkeepsie Business Park or other off-site water supplies, therefore, no mitigation measures are required or proposed. Mitigation measures for any potential impacts to adjoining water supply wells from stormwater management practices on the Project are incorporated in Chapter 3E, Stormwater Management.

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. The landscaping plan includes low maintenance landscaping, native plants, and irrigation time restrictions to further reduce potential water consumption.