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Engineering Report
Water and Sanitary Sewer

For

Tannery Commons

BATH STREET
BALLSTON SPA, NEW YORK

Prepared For

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May 2, 2025

I. Introduction

The proposed project involves the development of a four (4) multi-use buildings located on the west side of Bath Street at the intersection of Hamilton Street and Bath Street. The buildings will have a total of 168 units and 8,400 sf of commercial space. The property has existing buildings onsite that was formerly a Tannery.

Water will be supplied for domestic and fire protection via a new 6-inch service lateral which will connect to the Village of Ballston Spa 6-inch water main on Bath Street. The service lateral will have two connections to the village water main to loop the lateral within the project site.

For sanitary sewer collection, two new service connections will be made to the existing Village of Ballston Spa sewer mains within Bath Street. One connection will be to the existing trunk main at the manhole located at the southeast corner of the site. This manhole is on the 36" trunk main that travels east down Hamilton Street. The second connection will be to the 8" main along Bath Street. This main travels north to the intersection of Bath Street and Van Buren Street and then east down Van Buren Street via a 12" main.

II. Project Description

The project proposes a four multi-use buildings with associated access drives, parking areas, landscaping and stormwater management. The buildings have a total of 168 residential units and 8,400 sf of commercial space.

III. Existing Water and Sanitary Sewer Utilities

Municipal water service is currently provided to the project site by the Village of Ballston Spa. A 6-inch diameter water main is located within Bath Street. It appears the current buildings on-site are serviced via multiple connections to this line.

In discussions with the village hydrant flow test is to be completed in June 2025. At the time of design, the village water system was under repair for painting of a water tank which reduces the overall pressure and flow of the village water main along Bath Street. Once the system is back to full capacity, the most accurate flow and pressure readings of the municipal water main will be obtained.

Municipal sanitary sewer service is available from the Village of Ballston Spa within Bath Street. A sanitary sewer manhole is located at the south eastern corner of the site. The existing on-site building discharges to this manhole. This manhole is on the 30" trunk main that travels east down Hamilton Street. Additionally, there is an 8" main along the center of Bath Street. This main travels north to the intersection of Bath Street and Van Buren Street and then east down Van Buren Street via a 12" main. Wastewater entering both sewer mains is conveyed by gravity conveyance and ultimately discharges to the Saratoga County Sewer District's wastewater treatment plant in Mechanicville.

IV. Projected Water and Wastewater Flows

The tables below provide information on the anticipated wastewater flow rates for the project:

338 Bredrooms	110 gpd/unit	37,180 gpd
8,400 SF Commercial	0.1 gpd/sf	840 gpd
Total		**38,020 gpd**

For the entire project, average daily flow for wastewater is estimated to be 26.4 gallons per minute (gpm) based on a 24-hour day. Estimated peak hourly flow is 104.8 gpm (3.97 x average).[2] The estimated population served is 510 based on 1 person per 75 gpd per 10-States Standards.

Average daily demand for water is estimated to be approximately equal to the wastewater flow or 26.4 gpm. Instantaneous demand is calculated at 1.4 gpm[3] for each unit (338 total units) giving a total instantaneous demand of 473.2 gpm.

Summary of Design Flows

Water Consumption:

Project ADF	=	38,020 gal/day (gpd)
Instantaneous Water Use	=	473.2 gal/min (gpm)

Sanitary Sewer Flows:

Project ADF	=	38,020 gal/day (gpd)
Peak Hourly Flow (PHF)	=	104.8 gal/min (gpm)

For the purposes of input into the Village of Ballston Spa water model, we offer the following estimated water demands for the project:

- Average Day Demand is 26.4 gallons per minute (GPM) over the 24-hour period.
- Max Day Demand is 52.8 gallons per minute (GPM) based on twice the average.
- Peak Hourly Flow is 104.8 gallons per minute (GPM) based on 3.97 times the average.
- Fire Flow Demand is 1,000 gallons per minute (GPM) per ISO guidelines.

V. Proposed Water and Wastewater Utilities

Proposed Water Utilities

To service the project, the existing 6-inch ductile iron waterline on Bath Street is proposed to be wet tapped in two locations to loop the water piping within the site. A new 6-inch lateral will be provided off the existing 6-inch waterline in Bath Street and include 6" gate valves, and thrust blocks. The lateral will provide both potable water and fire protection.

The minimum fire flow based on the largest proposed building (Building 3) is based on the NYS Fire Code Table B105.1, for Type VA construction, is 6,500 gpm. The building will be sprinklered, therefore per B105.2 of the fire code the minimum fire flow shall be 25% of the value in Table B105.1, which equates for a minimum fire flow of 1,625 gpm at 20 psi for a duration of 4 hours.

Connections and appurtenances, including tapping sleeves and valves, mechanical joints, thrust blocks, trenching, bedding, as well as testing and disinfection will all be specified in accordance with Village of Ballston Spa standards. A backflow preventor will be located within the proposed building.

Proposed Wastewater Utilities

Sanitary wastewater will be piped from the buildings via six-inch PVC laterals installed at a minimum slope of 2.0% to the existing Village of Ballston Spa sewer mains. Peak hourly flow is estimated to be 104.8 gpm for the project.

The sanitary sewer lateral will be furnished, installed and tested according with Village of Ballston Spa requirements.

Notes

1. *From Table 1, Appendix 75-A Wastewater Treatment Standards - Residential Onsite Systems (110 gallons per day per bedroom)*
2. *From Figure 1, GLUMRB Recommended Standards for Wastewater Facilities*

Q = (18 + P ½) ÷ (4 + P ½) where P = population in thousands

3. *From Table XXI, Community Water Systems Source Book, Ameen (1.4 gpm/residence).*
4. *From Table B-3, NYSDEC 2014 Design Standards for Wastewater Treatment Systems.*

Attachments

Attachment A Water Design Information:

- Water Demand Calculations
- Hydrant Flow Test Data (To be completed 6/2025)

ATTACHMENT A

WATER DESIGN INFORMATION

TANNERY COMMONS
BALLSTON SPA, NEW YORK

CALCULATIONS FOR SANITARY SEWAGE CAPACITY
Tannery Commons

DETERMINE DAILY AVERAGE AND PEAK HOURLY FLOWS

ESTIMATE MAXIMUM DAILY USAGE:

Residential Units (Proposed)

NO. OF BEDROOMS	NO. OF UNITS	TOTAL NO. OF BEDROOMS		
1 BEDROOM	46	46		
2 BEDROOMS	74	148		
3 BEDROOMS	48	144		
TOTAL BEDROOMS		338		
DESIGN FLOW		110	GPD/EA	(NYSDOH)
Qa =		37,180	GPD	

Commercial Space

Square Footage	8,400	SF	
DESIGN FLOW =	0.1	GPD/SF	(NYSDEC)
Qb =	840	GPD	

NET DAILY FLOW, Q =	**38,020**	GPD	(Qa + Qb)
AVG. DAILY FLOW, Qav =	26.4	GPM	(24 HOURS)
POPULATION	510	EA	(10-STATE STDS. PAGE
PEAKING FACTOR, Qp/Qav	3.97		10-5, FIG. 1, BASED ON 75 GPD/PERSON)
PEAK HOURLY FLOW, Qp =	**104.8**	GPM	(3.97 x AVG)