

***Engineer's Report: Water Supply and Sewage Disposal
for
511 Fishkill Avenue Project***

Prepared for:
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1.0 PROJECT LOCATION

The 511 Fishkill Avenue project is located at 511 Fishkill Avenue (a.k.a. NYS Route 52) and sits on approximately 10.33 acres of land in the City of Beacon, Dutchess County, New York and is further identified as tax parcel 6055-04-580285. The parcel has frontage on Fishkill Avenue to its south, and Prospect Street to its east. The municipal boundary with the Town of Fishkill also lies to the east of the property.

2.0 PROJECT DESCRIPTION

511 Fishkill Avenue is a one-story metal framed building in the HI (Heavy Industrial) Zoning District. It is currently vacant but was last used as manufacturing and warehouse space for Mechtronics Corporation. Mechtronics added a large addition to the building in 2009. The addition had additional warehouse/manufacturing space on the 1st floor, as well as office space on the 2nd floor. The new owner plans to accommodate a number of new uses. They will continue to lease warehouse space to as yet unknown businesses. They will also lease a large portion of the building to Industrial Arts Brewery, who will have both brewing operations, and an event space / tasting room. Industrial Arts will have accessory office space on the 1st floor of the building. The Owner also has plans to lease space to an arcade game operation.

Water for the project will be obtained by utilizing existing connection to the City of Beacon water supply system. The approved plans for the Mechtronics expansion show a new water connection to the building expansion from an onsite water main that runs generally along three sides of the building, and is fed from the existing water infrastructure along Fishkill Avenue to the south. Wastewater generated by the project will be disposed of by means of an existing gravity sewer line that will convey wastewater flows to the existing City of Beacon sewer collection system. Approved plans from the Mechtronics expansion show a 6" diameter ductile iron pipe building sewer line for the building expansion that discharges to a series of onsite sanitary manholes that convey sewage in a southerly direction to the existing collection system on Fishkill Avenue.

This report summarizes all data and information regarding the anticipated water demand and sewage generation.

3.0 ESTIMATED WATER & WASTEWATER QUANTITIES

The following table provides estimated water demand at full buildout of the project, according to the NYSDEC Design Standards for Wastewater Treatment Works, 2014, and per discussions with the Industrial Arts Brewery operators (based on real data from their other local facility in Rockland County, NY).

Flow Component	# of Units	Flow Rate per Unit - gallons per day (gpd)	Total Component Flow (gpd)
Industrial Arts Brewery*	15,000*	31	7,134
Industrial Arts Brewery office space	10 employees	12	120
Industrial Arts Brewery event space	331 occupants	5	1,655
Warehouse	20 employees	12	240
Arcade	11,381 s.f.	0.08	910

* Refers to the brewery portion of the operation. The units represent the brewer's barrels generated annually. In order to make one brewers barrel, the water demand is 4:1, so it takes 124 gallons to make one brewers barrel. The flow has been broken down into a daily usage based on 5-day work weeks $(15,000 \times 31 \times 4) / 365 \times 7/5$

Total Water Demand: 10,059 gpd

The following table provides estimated wastewater generation at full buildout of the project, according to the NYSDEC Design Standards for Wastewater Treatment Works, 2014, and per discussions with the Industrial Arts Brewery operators (based on real data from their other local facility in Rockland County, NY).

Flow Component	# of Units	Flow Rate per Unit - gallons per day (gpd)	Total Component Flow (gpd)
Industrial Arts Brewery*	15,000*	31	3,567
Industrial Arts Brewery office space	10 employees	12	120
Industrial Arts Brewery event space	331 occupants	5	1,655
Warehouse	20 employees	12	240
Arcade	11,381 s.f.	0.08	910

* Refers to the brewery portion of the operation. The units represent the brewer's barrels generated annually. In order to make one brewers barrel, the water demand is 4:1, so it takes 124 gallons to make one brewers barrel. The flow has been broken down into a daily usage based on 5-day work weeks $(15,000 \times 31 \times 4) / 365 \times 7/5$. 25% of the water generation goes into the finished product. An additional 25% is absorbed into spent grain that does not get discharged to the sanitary sewer system. $7,134 \times 50\% =$ the estimated flow to the sanitary sewer.

Total Wastewater Generated: 6,492 gpd

4.0 WATER SUPPLY

At full build-out, the project is expected to require 10,059 gallons of water per day. The City of Beacon has not indicated that there are any water capacity or pressure issues in order to serve the site.

5.0 SEWAGE GENERATION

The project is expected to generate 6,492 gallons of wastewater per day. The City of Beacon's sewage collection system near the site discharges in a southwesterly direction toward an existing pump station generally near 469 Fishkill Avenue. Per email correspondence with the City Engineer and the City of Beacon Chief Operator, an analysis of the pump station will be required. The pumps are not metered at this time per the Chief Operator, and the details of the infrastructure are being investigated (e.g., design plans, as-built records, etc.). The Chief Operator believes that there are 2 pumps that can pump 200 gallons per minute each to an existing 4" CIP forcemain. We also understand that there is another development (in the Town of Fishkill) that has been asked to evaluate the pump station. A combined analysis is most appropriate in terms of understanding the ability of the existing infrastructure to handle the flows from the two projects. We are seeking to coordinate efforts with City consultants and personnel and with the consulting engineer on the adjacent project. This report will be revised based upon those findings.