

IV. G. – UTILITIES

INTRODUCTION

The impact of the Proposed Action on utility services will be evaluated in this section of the DEIS, including water supply, sanitary sewage, solid waste and energy.

1.) EXISTING CONDITIONS

(a.) **Water Supply:**

The Project Site is served by an existing 6-inch diameter water line located within Waverly Avenue. The existing self-storage facility is served by a 1-inch diameter domestic water service and a 6-inch diameter fire service connection.

The existing buildings to be removed and the existing self-storage facility combined have a total of 6 bathrooms, 2 service sinks, and 1 kitchen sink. Based upon the New York State Plumbing Code, Appendix E, the building is utilizing an estimated 42 (public) water supply fixture units (wsfu) per day. The peak flow rate for the facility is estimated at 27.7 gpm.

(b.) **Sanitary Sewage:**

The Project Site is served by an existing 4-inch sanitary service lateral to the existing 8-inch sanitary sewer line in Waverly Avenue. [Sanitary sewage from this area is treated at the Mamaroneck Wastewater Treatment Facility which according to the Westchester County Department of Environmental Facilities, treats an average of 1.4 mgd and has a design capacity of 2.88 mgd.](#)

Based upon the New York State Department of Environmental Conservation's Design Standards for Wastewater Treatment Works (1988), the Expected Hydraulic daily Loading is 15 gallons per person per day per shift ("office"). The existing employee load for the 7 rentable contractor units and the existing self-storage facility is approximated at 2-shifts of 9-employee (1 per each rentable contractor unit and 2 employees for the storage area) at the facility; therefore, the Total Daily Hydraulic Loading is 270 gallons per day.

(c.) **Use and Conservation of Energy:**

The existing Mamaroneck Self Storage facility was built as the first state-of-the-art, first-of-its-kind "green" self-storage facility in Westchester County. Energy efficiency was a priority. The Applicant enrolled the project in NYSERDA's New Construction Program (NCP), which required compliance with rigorous energy-efficiency and sustainability standards set by the program. The Applicant partnered with high performance building consultants Steven Winter Associates to develop the project to incorporate sustainable features and realize energy cost savings from their investment. Notable energy conservation measures incorporated into the existing building include:

- High-efficiency HVAC equipment including Variable Frequency Flow (VRF) heat pumps for heating and cooling, a 65% Efficient Energy Recovery Ventilation system (ERV) for mechanical ventilation;
- High-efficiency interior and exterior LED lighting on motion sensors;
- All water-saving devices;
- 8.5Kw solar shingle array on the SE & SW sides of the building;
- The building envelop consisting of 4" rigid insulation, 4" close cell spray foam with 8" close-cell spray foam in the ceiling.

Energy savings were 52% over the baseline standard building code with over \$30,000 annual electric-cost savings. The existing Mamaroneck Self Storage energy bills currently run from \$1,400 - \$1,800 monthly (similar to the cost of the average 6,000 square foot residential home).

The Mamaroneck Self Storage project was the recipient of three prestigious awards for its energy-efficient construction:

- HBRA-CT HOBI Award: Best Green Commercial Project;
- Best of BOMA Westchester County Signature Award;
- Westchester County Earth Day Award.

As construction was completed on the existing facility, the Applicant was awarded a NYSEDA Community Microgrid Project grant to investigate how a Community Microgrid system could be incorporated into future expansion plans in order to provide necessary affordable energy to the surrounding neighborhood in the event of natural or man-made disaster.

(d.) **Solid Waste & Recycling:**

The volume of solid waste generated from the site is quite low. All solid waste and recycling is collected and removed from the Site by private carters.

2.) **FUTURE CONDITIONS WITHOUT THE PROPOSED ACTION:**

(e.) **Water Supply:**

If the Proposed Action is not developed, the existing water consumption rate of 27.7 gpd would continue, unchanged.

(f.) **Sanitary Sewage:**

If the Proposed Action is not developed, the existing sanitary wastewater rate of 270 gpd would continue, unchanged.

(g.) **Use and Conservation of Energy:**

If the Proposed Action is not developed, the amount of energy use at the Site would remain unchanged. Additionally, it is unlikely that the Applicant would pursue the micro-grid project.

(h.) **Solid Waste & Recycling:**

If the Proposed Action is not developed, the existing generation and collection of solid waste and recycling would continue, unchanged.

3.) **ANTICIPATED IMPACTS:**

(a.) **Water Supply:**

The proposed building includes a total of four bathrooms, 1 service sink and 1 water fountain. Based upon the New York State Plumbing Code, Appendix E, the existing buildings to remain and the proposed storage building addition utilize an estimated 32 (public) water supply fixture units (wsfu) per day. The peak flow rate for the facility is estimated at 24.9 gpm, a reduction over existing condition. Hence, no flow testing has been performed on the Waverly Avenue water line as water usage in the proposed condition is less than in the existing. The proposed improvements result in approximately a 10% reduction in the peak flow rate (approximately a 25% reduction in the daily flow rate) from the property.

The new proposed addition water service will be provided by a connection to the existing internal water line serving the existing building. This line was sized to adequately accommodate the water line for the addition. Therefore, no new water line connection is required to the Waverly Avenue water line. Since overall water usage is decreased in the proposed condition, no storage or 'looping' of the system are required.

All fixtures installed within the proposed building addition will meet the New York State requirements for water conservation.

(b.) **Sanitary Sewage:**

Based upon the New York State Department of Environmental Conservation's Design Standards for Intermediate Sized Wastewater Treatment Systems (March 5, 2014), the Expected Hydraulic Daily Loading is 15 gallons per person per day per shift ("factory"). It is anticipated that there will be 2-shifts of 5-employee each at the facility; therefore, The Total Daily Hydraulic Loading is 150 gallons per day, less than the existing condition. Hence, the Proposed Action will not result in any impact on the sanitary sewer line in Waverly Avenue nor on the Mamaroneck Wastewater Treatment Plant. The proposed improvements result in approximately a 45% reduction in sewer flows from the Site.

The wasteline from the proposed fixtures will connect to the existing sanitary sewer service utilizing the internal plumbing system. This line was sized to adequately accommodate the sanitary line for the addition. Therefore, no new sanitary line connection is required to the Waverly Avenue water line.

(c.) **Use and Conservation of Energy:**

The proposed building addition will require energy to operate the building, provide lights, security systems HVAC equipment, etc. As noted below, the building addition is being designed as an all-electric, net-zero building.

(d.) **Solid Waste & Recycling:**

It is anticipated that with the removal of the existing 7 contractor tenants on the Site, the amount of solid waste and recycling generated will be reduced. No adverse impacts are anticipated.

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4.) MITIGATION MEASURES

The Proposed action will result in a decrease in water demand, sanitary wastewater and solid waste generation. This is due to the elimination of the existing on-Site buildings and the foresight incorporated into the design of the existing self-storage building. No mitigation measures are necessary.

The Proposed Action will incorporate the same energy-efficient measures as the existing building. It is the goal of the Applicant to operate a net-zero facility. Additionally, the Applicant is proposing a Community Solar System, pursuant to NYSERDA's Community Solar Program, consisting of the installation of roof-mounted photovoltaic solar arrays. The Applicant will partner with a NYSERDA approved Community Solar Developer to oversee the engineering, permitting, installation and operation of the Community Solar System. The Community Solar System program is designed to provide clean energy to local residents. The Applicant will install roof mounted photovoltaic solar arrays as follows:

- Existing self-storage building – 121.5 kW dc (810 m²);
- Proposed self-storage building – 149.2 kW dc (995 m²);
- Existing Murphy Brothers office – 11.6 kW dc (78 m²).

These solar arrays are connected to the existing ConEd electrical grid via a separate service connection on the Site adjacent to the existing electric meter. Electricity produced from the solar panels is sent directly into the ConEd grid. The Applicant then offers subscriptions to Mamaroneck residents for a portion of that electricity, resulting in reductions in their ConEd bills. This system democratizes solar, and affords everyone access to clean energy, even those who cannot install a solar system on their own property.

As an all-electric, "net zero" building, the building will effectively have no carbon footprint. This is perhaps the most definitive measure the Applicant can take to minimize the overall impact on climate change, including sea level rise and flooding.

