



Memorandum

Date: July 26, 2019

To: Newburyport Manager, LLC

From: Stephen Glowacki

Regarding: Waterfront West
Newburyport, MA
Utilities

This memorandum analyzes existing infrastructure and concludes that the proposed Project includes appropriate infrastructure improvements and will be adequately served by water, sewer, gas, and electric infrastructure capacity in satisfaction of amended Section XXIV-F(2)(n)-(o).

1. Stormwater Management

a. Existing Drainage System

Stormwater runoff on site generally sheet flows overland from south to north to the Merrimack River. Two catch basins exist on site but appear to function as leaching basins if at all. Stormwater runoff from a portion of Merrimac Street and an area of Newburyport, south of Merrimac Street is collected in a 42-inch drain that runs along the east side of the site and discharges into the Merrimack River at a bulkhead located in the northeast corner of the property. A second drainage trunk line along the west side of the site collects runoff from the site and presumably discharges to the Merrimack River. An investigation to determine the location of the outlet to the river revealed that the pipe is in serious disrepair and barely functioning, if at all. This drain line was replaced in 2017. The design incorporated a headwall with a Tideflex check valve to prevent backflow from the tides into the closed drainage system. These check valves feature a one-piece, rubberized body and are not effected by rust, corrosion or ultra-violet. A stone rip rap apron was installed to minimize erosion from the flow from Merrimac Street.

b. On-Site Conditions

The existing on-site drainage system consists of two catch basins that function essentially as leaching basins, infiltrating any captured storm runoff into the ground. Other than existing building roofs and paved parking areas around Michael's Harborside and the Black Cow restaurants, ground cover on site consists entirely of compacted gravel resulting in a variable rate of stormwater runoff.

No water quality management features currently exist on site. The catch basins are not equipped with deep sumps or inverted hoods and there are no oil/particle separators present on site. Thus, the addition of these BMPs as part of the proposed drainage system will result in a significant

improvement to the water quality of runoff discharged from the site compared to the current condition.

c. Stormwater Management Objectives for the Project

The proposed stormwater management system will be designed to significantly improve upon current runoff conditions in terms of downstream water quality. This will be accomplished by incorporating into the design specific Best Management Practices that are not currently used on site including: catch basins with deep sumps and inverted outlets, oil/particle separators, a pavement sweeping regime and scheduled catch basin and oil/particle separator cleaning.

d. Phased Drainage Buildout

The project site has been subdivided into three separate design points for the analysis of the existing drainage patterns. The runoff from the area in the vicinity of the Black Cow restaurant flows overland towards the restaurant and eventually into the Merrimack River without treatment. The second area in the center part of the project site, runoff flows overland towards the existing bulkheads and directly into the Merrimack River without treatment. Runoff from the final area, in the area north and east of Michael's Harborside restaurant, flows overland towards the existing bordering vegetated wetland and salt marsh area. In addition, there is an existing drainage trunk line that collects runoff from an area upstream of Merrimac Street and flows to a 42-inch pipe east of the Black Cow. There is also an existing 24-inch pipe collecting runoff from the one-story brick building just south of Michael's Harborside. This 24-inch pipe appears to be partially collapsed and is proposed to be replaced.

The proposed development will be phased. The first phase will be in the central part of the project site. The runoff in this area will be directed to a closed drainage system and treated prior to discharging to the Merrimack River. Runoff from this area will be distributed between the 42-inch pipe and 24-inch pipe as necessary to balance the runoff exiting the project site.

The second phase of the development will be initiated in the Brown's Wharf area. Runoff of from this phase will be collected in a closed drainage system and treated prior to discharging into the Merrimack River. It is proposed that the closed drainage system connect to the existing 42-inch pipe east of the Black Cow restaurant.

The third phase of the development will be in the western part of the project site. Areas will be directed to a closed drainage system and treated prior to discharging to the Merrimack River. The runoff from this area will be directed to the 24-inch pipe east of Michael's Harborside restaurant, prior to discharging to the Merrimack River.

The proposed project proposes to treat as much runoff as possible from the site. It is anticipated that areas primarily used for pedestrian walkways and minimal vehicular traffic directly abutting the Merrimack River will runoff directly into the Merrimack River.

This is the anticipated phasing development program at this time however, it may change as the tenant program becomes more defined and the design is finalized. In all phases of this project, there will be a substantial in improvement the water quality of runoff compared to existing conditions.

2. Sewer

a. Existing

The existing capacity of the Newburyport waste treatment plant is 3.4 million gallons per day (MGD). Current average daily flows to the Newburyport waste treatment plant 2.30 MGD, leaving approximately 1.10 MGD in excess capacity.

With the exception of the building located in the southwest corner of the site that discharges by gravity, sewage from existing buildings on site is pumped in one of three force mains to the sanitary sewer in Merrimac Street. Sewage flows by gravity, in Merrimac Street eastward to the Wastewater Treatment facility on Water Street. Based on a meeting with staff from the Department of Public Services, there are potential capacity issues with the existing 42-inch brick sewer in Merrimac Street. The applicant will evaluate the data provided by the City and perform a sewage flow assessment program, if required, to determine if there is adequate capacity, and to verify the condition of, the sanitary line.

b. Proposed

The proposed design flow is approximately 47,194 Gallons per Day (GPD). This will increase flows to the existing treatment plant by approximately 2.11%. The applicant will work with the Town's Sewer and Planning Departments to verify existing flows to the treatment plant, evaluate proposed design flows from current projects in planning, incorporate design flows from the proposed project, and verify the anticipated excess capacity.

Eight-inch polyvinyl chloride sewer mains will be installed on the south and north sides of the site to serve the proposed buildings and flow by gravity to a proposed pump station located at the southwest corner of Building 3. Sanitary sewage will be pumped via a proposed force main located in Brown's Wharf Way and will discharge into a manhole in Merrimac Street. Service connections to the proposed buildings will be a minimum of 6-inch diameter and will connect to new sewer at manholes on the main line. Separate waste lines will be provided for all restaurants and food handling facilities and exterior grease tanks will be installed on kitchen waste lines to intercept and separate grease, minimizing the potential for clogging sanitary sewers.

3. Water

a. Existing

The existing capacity of the Newburyport water treatment plant is 3.77 MGD. Current average daily flows is 1.86 MGD, leaving about 1.91 MGD in excess capacity.

There is a 16-inch water main in Merrimac Street. Existing buildings on site are served by an 8-inch water line which runs along the east side of the site to the west of the Black Cow restaurant. There is an 8-inch stub located on the west side of the site, at Tournament Wharf which connects to the 16-inch water line in Merrimac Street.

b. Proposed

The proposed design flow is approximately 45,500 GPD. An 8-inch water line will be installed in the drive aisles at the north side of the site and will be tied into the existing 8-inch line to the east and the existing 8-inch stub to the west, providing a looped system to the 16-inch water main in Merrimac Street. The loop will supply fire protection and domestic water to the proposed buildings. It will be sectionalized with zone control valves and new hydrants will be installed throughout the site to provide adequate fire protection coverage.

4. Electric

a. Existing

Currently, National Grid provides electrical distribution to the existing buildings on the site via existing utility poles and overhead wires routed along the existing right-of-ways. There appears to be no ground mounted transformers, with all transformers mounted on existing utility poles.

b. Proposed

The existing electric service will be maintained until a new combination of overhead and underground electric system is installed throughout the site to service new and existing buildings to remain. The system will consist of overhead wires, concrete encased conduits, manholes and switchgear as necessary based upon National Grid's requirements.

5. Gas

a. Existing

Currently National Grid has an 8-inch gas main in Merrimac Street that services the existing businesses on the project site. There is a 4-inch gas service installed to Michael's Harborside Restaurant, a 1-1/4 – inch gas service installed in McKay's Wharf to the Windward Yacht Yard, and a 2-inch gas service installed in Brown's Wharf to the Black Cow and Plum Island Coffee Shop.

b. Proposed

The proposed gas service layout will utilize the same right-of-ways to provide service to the proposed project. The gas line in each right-of-way may need to be replaced with a larger diameter pipe in order to meet the proposed demand of the development.