

F. Utilities

1. Water Supply

a. Existing Conditions

The Project Site is currently not within a water district. Water mains are situated on the roads adjacent to the site that are part of the Village of Briarcliff Manor's (Village) Water District. The Village Water District supplies approximately 8,800 persons within the Village boundaries with an additional $\pm 2,700$ connections in the Towns of Mt. Pleasant and Ossining. In 2008, the system supplied a daily average of 1.1 million gallons per day (mgd) with a peak of 3.3 mgd. The normal source of the water is the New York City Catskill/Delaware system, however in the summer months it is supplemented by water from the Croton Reservoir. The Village is currently implementing a connection to the Lower Catskill System through a connection through Sleepy Hollow to replace the Croton Reservoir connection.

The water mains along Fox Run Road and Carleton Avenue consist of 8" diameter Blue Brute plastic pipe and were constructed in the early 1980's as part of the Countryside subdivision. These lines run along Carleton Avenue and create a loop between Horsechestnut Road and Chappaqua Road.

The water mains in Todd Lane/Washburn Road are comprised of 8" DIP (ductile iron pipe) and dead end in three locations. One is on Washburn Road, approximately 520 feet west of its intersection with Todd Lane. The second is at a hydrant approximately 100 feet east of Todd Lane along the driveway to 128 Todd Lane (lot 17 of the Project Site), which provides water service to 124, 128, and 132 Todd Lane. The final terminates at the Washburn Road dead end adjacent to the Taconic State Parkway. There is however a 2" line that runs under the Parkway that had been abandoned by cutting and capping when the Parkway was reconstructed in the 1990's. The water mains in this area were relined in 2008 by the Village of Briarcliff Water District.

Hydrant flow tests were run on September 3, 2009. The tests were conducted in two sections of the system: the Washburn Road and Carleton Avenue/Fox Run neighborhoods. The results of the flow test are shown in Table III.F-1.

Table III.F-1 – Hydrant Flow Test Results

Location	Hydrant No.	Hydrant Elevation*	Village Data	Recorded Static	Recorded at Full Flow	
Washburn Rd	1	274.0	115 psi	124 psi	49 psi	residual
Washburn Rd	2	245.0	120 psi	132 psi	1050 gpm	flow
Carleton Ave	3	372.0	60 psi	80 psi	52 psi	residual
Fox Run Rd	4	368.5	75 psi	80 psi	650 gpm	flow

* Hydrant Elevation is at Ground Level
Source: WSP Sells

b. Anticipated Impacts**(1) Design Flows**

Household water use was calculated based on the same design load as was used for the sanitary sewer of 150 gallons per bedroom per day¹. The Proposed Action will have 16 new residences, eight of which will be 3- or 4-bedroom houses and the other eight 3-bedrooms. However, no additional usage was included for the existing residence as it is already connected to the public water supply. In addition to the general household use, lawn irrigation was calculated based on 1" irrigation per week as recommended by Cornell University Department of Horticulture. The water used for irrigation will come from the same source as the drinking water. The total water demand for the Proposed Action is 37,026 gallons per day. The peak flow rate for an individual house, based on a 4 times multiple of the average flow was calculated at 3.57 gallons per minute. See Appendix D for the calculations.

(2) Proposed Water Distribution System

The proposed water main will consist of an 8" DIP connecting at Washburn Road, running along proposed Road A, heading west at the intersection with Road B and connect at Carleton Avenue; this establishes a loop, between two existing mains within the Village's water system, that currently is missing. The looping of water mains is desirable so that water service can be maintained if sections of the system are shut down due to breaks or for maintenance. In order to provide for accurate readings for water use to the development, a secondary service line with its own water meter would branch off of the looped water main to serve the homes in the subdivision (see Exhibit III.F-1). This will require a parallel line to run in Road A to service the lots along that Road.

Calculations were run to determine whether there would be adequate pressure at the highest plumbing fixture in the Proposed Action (see Appendix O). According to the computations, approximately 37 psi of pressure would be available at a second-floor plumbing fixture for a residence on proposed Lot 5, the highest house in the Proposed Action. This exceeds the minimum acceptable pressure of 35 psi².

(3) Connection to Village of Briarcliff Manor Water District

The Applicant acknowledges that a water district must be formed before service can be provided to the subdivision; that the Village Water District and the Town of Mount Pleasant are in discussions about the creation of a Town-wide Water District; and that the timing of such an arrangement is unknown.

¹ NYSDEC Design Standards for Wastewater Treatment Works, 1988, Table 3, and Expected Hydraulic Loading Rates

² "Recommended Standards for Water Works" (Ten-State Standards), 2007, Section 8.2.1

c. Proposed Mitigation

It is proposed that the Proposed Action will connect to the Village of Briarcliff Manor water system and at each end, thus providing the benefit of looping the existing system. Although there is adequate volume and pressure for the proposed subdivision, there is the issue of the creation of a new water district and the creation of an intermunicipal agreement between the Town and the Village for the water supply.

If an agreement cannot be reached at the time of construction and public water is not available, the Applicant proposes that individual wells be drilled on each lot. The Applicant has five wells on the project site one of which was tested and yielded 55 gallons per minute (“gpm”). According to the water demand analysis, the project’s domestic and irrigation water supply demand is 3.6 gpm per household per day. The yield of the existing wells demonstrates that an adequate groundwater supply exists on the property to support individual wells for both domestic use and lawn irrigation.

2. Sanitary Sewage**a. Existing Conditions**

The Project Site is located within the Westchester County Department of Environmental Facilities (WCDEF) Saw Mill River Sewer District; however it is not currently served by sanitary sewers. The existing buildings on the property use subsurface treatment system (SSTS’s) for disposal of sanitary sewage. The system for the main residence, which has seven bedrooms, is located to the rear of the house. There is a separate SSTS, which serves the single bathroom in the pool house. It is located south of the building in the vicinity of proposed Lot 3.

For the properties surrounding the Project Site, sanitary sewers are only located in Carleton Avenue area. These sewer mains were installed in the early 1980’s when that area was developed as the Countryside Subdivision and are part of the Town of Mt. Pleasant sewer system. The sewer mains are 8” gravity lines located in Doxbury Circle, Fox Run Road, Carleton Avenue, Woodford Bend and Briars Corner. The gravity lines connect to a pump station located northwest of the intersection of Briars Corner and Carleton Avenue. The sewage is then pumped through a 4-inch force main to a receiving manhole located just north of the Carleton Avenue/Patricia Avenue split. From that point, sewage flows by gravity down Carleton Avenue to Pleasantville Road, via Todd Lane.

A 16” ductile iron pipe WCDEF trunk sewer main is in close proximity to the Project Site. It is located west of the Taconic State Parkway between the Parkway and Washburn Road. It flows south and crosses under the Taconic State Parkway approximately 400’ south of the Washburn Road dead end. There are manholes at each end of this crossing, one of which can be observed in the middle of the NYSDEC Freshwater Wetland O-16 adjacent to the Taconic State Parkway. This main was constructed by WCDEF in the mid-1990’s as the “Kinderogen Sewer Extension”.

Due to the configuration of the sewer mains in the area surrounding the Project Site, only the adjacent properties located along Fox Run Road and Carleton Avenue are serviced by sanitary sewer mains. Houses on Washburn Road and Todd Lane use SSTS's for the treatment of sanitary sewage.

b. Anticipated Impacts

(1) Design Flows

The sanitary sewer flows of the proposed subdivision have been calculated based on the proposed bedroom count. The Proposed Action will have 16 new residences, eight of which will be 3- or 4-bedroom houses and the other eight 3-bedrooms. In addition to the new residences, under the Proposed Action the existing seven-bedroom house and the pool house at 128 Todd Lane will connect to the new sanitary sewer.

The wastewater design flow per bedroom per day was determined to be 150 gallons as per the Water Quality Management Program, "The Design of Small Water Systems", New York State Department of Health. The design load of residential usage for the Proposed Action is 10,655 gallons per day (GPD), see Appendix D (16 new residences plus the buildings at 128 Todd Lane). It should be noted that sewage design load is approximately one-third of the daily water demand of 37,026 GPD. This is due to the fact that the average daily water demand includes 27,426 GPD for lawn irrigation, which would not discharge into the sanitary sewer system. The daily demand for the domestic use of the proposed 16 new residences is 9,600 GPD.

(2) Proposed Sewer System

The proposed subdivision will utilize gravity sewer mains within the roadway areas starting at the two cul-de-sacs and then running downhill along Roads B and C to Road A. The main will continue south on Road A to Washburn Road, where it will flow east towards the dead end adjacent to the Taconic State Parkway. At that point it will connect to an existing trunk sewer main in the Saw Mill Sanitary Sewer District via one of two possible alternatives.

- Alternative 1: proposes turning south off Washburn Road and connecting to the existing sanitary manhole that lies in the middle of a NYSDEC regulated wetlands along the Taconic. This is not the preferred alternative due to all corresponding issues with disturbing wetlands.
- Alternative 2: utilizes the existing pipe alignment of a water main abandoned by the Village of Briarcliff Manor that currently runs under the Taconic. This would require the jacking of the sewer line beneath the Taconic. By using an existing pipe corridor, the potential for problems with jacking, such as encountering rock, is greatly diminished. This pipe layout is approximately 160 feet less than Alternative 1. Both connections are feasible as per existing and proposed elevations and will allow the sanitary sewer to operate as gravity to the existing main.

(3) Growth Potential

The construction of the new sewer connection to the County trunk sewer main will allow houses currently served by SSTS's to connect to the municipal system. Properties along Washburn Road from approximately its intersection with Todd Lane to the dead end adjacent to the Taconic State Parkway would be able to connect to the new sewer main via a gravity line, although for the properties situate north of the intersection of proposed Road A with Washburn Road, a new sewer main would be necessary. This area encompasses approximately 18 existing properties, none of which are capable of being subdivided. Connection to a municipal sewer would however allow for expansion of existing residences to provide additional bedrooms, which may be precluded under the current Westchester County Health Department Regulations that govern the design considerations of SSTS's.

c. Proposed Mitigation

The Proposed Action will connect to the existing County Trunk line via a gravity sewer main on either the east or the west side of the Taconic State Parkway. Neither of these alternatives will have an impact on the sewer system. No further mitigation is proposed. There will be the possibility of a gravity feed for sanitary sewer to the public connections on Carleton Avenue.

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Exhibit III.F-1
**PROPOSED WATER PLAN
 CONSERVATION LAYOUT**

TACONIC TRACT
 Town of Mount Pleasant, New York

Saccardi & Schiff, Inc. - Planning and Development Consultants