

**A. INTRODUCTION**

This chapter will discuss the infrastructure on the project site and in the vicinity, including water supply, wastewater, and energy usage. Proposed impacts to these services and required components of water, sewer and electric systems needed to service the proposed Four Seasons at Hamptonburgh will be discussed. The appendices contain more detailed reports on the proposed water and wastewater facilities.

**B. EXISTING CONDITIONS****WATER SUPPLY**

Potable water in the Town of Hamptonburgh for both individual homes and businesses is supplied by individual wells. These wells are primarily drilled into consolidated rock aquifers, although there may also be cases of individual wells in unconsolidated deposits. Individual wells primarily draw from consolidated metamorphic rock, a geological water supply that underlies the majority of the Town. The Rural Ridge subdivision in the Town is the only residential subdivision serviced with central water.

**WASTEWATER**

Existing development in the Town of Hamptonburgh is primarily served by individual septic systems. The Windsor Estate subdivision is the only residential subdivision in the Town served by a sewage treatment plant.

The adjacent Township of Montgomery owns and operates a wastewater treatment plant (WWTP) which is located approximately three (3) miles north of the subject site. The WWTP has a permitted capacity of 147,500 gallons per day. 125,500 gallons per day of this capacity are committed and the remainder of the capacity will be reserved for the treatment of future commercial/industrial sites.

**ENERGY**

Central Hudson Gas and Electric provides electric and natural gas services in the Montgomery, NY area, including in the area of the project site. Three phase electric distribution lines are located along Route 416 on the west boundary of the project site. A gas distribution main is located along Neelytown Road, east of the project site.

**TRANSPORTATION**

Lazy Lane, an unimproved dirt road is located on Parcel A and serves as a driveway for the existing horse farm. Parcel B is served by a private driveway that connects to Route 416.

## **C. THE FUTURE WITHOUT THE PROPOSED PROJECT**

### **WATER SUPPLY**

If the project were not built, individual wells will continue to serve most of the Town of Hamptonburgh. As vacant parcels are developed within the vicinity of the project site, water will likely be supplied by wells.

### **WASTEWATER**

In the future without the proposed project, individual septic systems will continue to serve most of the Town of Hamptonburgh.

Industrial parcels, including the proposed Pyramid Industrial Subdivision to the north of the project site, will utilize the Town of Montgomery sewage treatment plant. The discharge site for the existing wastewater treatment plan is the Wallkill River. The outfall point is near the intersection of Route I-84 and Route 416.

### **ENERGY**

If the project were not built, electric and natural gas services will continue to be served by Central Hudson Gas and Electric.

### **TRANSPORTATION**

If the proposed project were not built, the site would be served by the existing driveways and Lazy Lane.

## **D. POTENTIAL IMPACTS OF THE PROPOSED PROJECT**

### **WATER SUPPLY**

The water supply for the proposed project will be served by three onsite bedrock wells, a water treatment plant and a water storage tank. See Figure 3.8-1 for the location of the water storage tank. The total water demand for the project site for both domestic and irrigation demand is 207,440 gpd (144 gpm). Detailed information about the proposed potable water supply wells can be found in Appendix B.

Of the three onsite bedrock wells, one will serve as the primary supply and the other two will serve as a backup supply. The wells are referred to as wells PW2, TW1 and TW4 and the locations are shown in Chapter 3.6, "Groundwater Resources," Figure 3.6-1. Well PW2 will be the primary supply well with TW1 and TW4 as backup wells. A proposed irrigation well, OW3, will supply irrigation water for the community so as to not compromise the potable demand. The proposed water tower and potable water facilities will be located in the northern central portion of Parcel A, just south of Eager Road.

The maximum month average daily demand is 130 gpd per bedroom in accordance with New York State Department of Health (NYSDOH) guidelines for housing units using water savings plumbing fixtures. The proposed water system will serve 68 attached three-bedroom townhome units, 232 detached two-bedroom single-family units and a 6,000 square foot clubhouse. The total calculated domestic water demand is 87,440 gallons per day (gpd) or 61 gallons per minute (gpm). As discussed in Chapter 3.6, "Groundwater Resources," the three proposed supply wells

(PW2, TW1, and TW4) on the site will provide a firm capacity of 140 gpm (201,600 gpd) or slightly more than twice the average daily demand.

The anticipated irrigation water demand for the project is 400 gpd per unit. This results in a total irrigation demand of 120,000 gpd (83.3 gpm), bringing the total demand for the project site to 147 gpm (207,440 gpd). Although the total estimated demand is slightly higher than the firm capacity of the three public supply wells, no significant impacts are expected for several reasons. It is expected that the irrigation demand will occur during the late night to early morning period and will therefore not coincide with the normal domestic water demand. The irrigation demand would also only be applicable for about six months of the year, from April through September. It is intended that the irrigation demand will be met primarily through the potable water supply system when extra capacity is available however, a proposed irrigation well (OW3), has also been developed to supply up to 122,400 gpd so as to not compromise potable demand. Results of onsite groundwater pump tests indicate that there is no excess water available for use by neighboring properties. All raw water from onsite groundwater wells is to be treated and utilized exclusively for the Four Season residential development.

The proposed project will also be designed to provide water for fire-fighting purposes. It is anticipated that the proposed townhome units will be provided with sprinkler systems as requested by the Town of Hamptonburgh while the single-family homes will receive fire protection through a traditional distribution system/hydrant arrangement. Table 3.8-1 below summarizes the total water system demands for the proposed project.

As discussed in Chapter 3-6, "Groundwater," pump tests of water supply wells indicated that adverse impacts to nearby domestic wells are considered unlikely. A discussion of potential impacts from the proposed project's water needs is further discussed in Section 6.0 of the Hydrogeologic Technical Report, Appendix G.

**Table 3.8-1  
Water System Demands**

Demand Type	Demand (gpm)
Average Daily Demand	61
Irrigation Demand	83
Needed Fire Flow (Townhomes with sprinklers)	750
Needed Fire Flow (Single-Family Homes)	1,000
<b>Sources:</b> "Hydrogeological Technical Report for Public Water Supply at the Eager Road Site," prepared by Mid-Atlantic Geosciences, LLC., April 2005.	

*Water Distribution System*

The proposed water distribution system will serve a total of 301 service connections, including 300 dwelling units and one clubhouse. Each of the dwelling units will have a separate metered water service.

All of the units will be equipped with sprinklers for fire fighting. In addition, fire hydrants are proposed to provide the needed fire flow to all single-family homes within the proposed service

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area. A booster station will be needed to serve those units closest to the storage tank. This booster station will be located adjacent to the storage tank and will be provided with emergency power.

### *Water Storage Tank*

Water for the proposed project will be stored in a storage tank sized at 250,000 gallons located adjacent to the water treatment plant on Parcel A. See Figure 3.8-1 for the location of the water storage tank. The tank has been sized to provide the average daily demand and the maximum volume required for fire fighting. The tank will be 45 feet in diameter with a height of 35 feet and will be located at the site of maximum elevation, as shown in Figure 3.8-1, which will make it possible to serve the lower elevations by gravity.

### *Water Treatment Plant*

Appropriate water treatment will be necessary with at least pH adjustment and chlorination. The New York States Public Health Law, Section 225, Part 5, Subpart 5-1-Public Water Systems, states that minimum treatment of a ground water source shall be disinfection by chlorination or other disinfection methods acceptable to the department in accordance with the provisions of the Ten State Standards (“Recommended Standards for Water Works” published by Health Research Inc.). Should any regulated contaminant or water quality parameter occur in the raw water above enforceable limits, additional treatment may be necessary. Such treatment would also be provided. It is expected that treated water will be used for potable purposes. An onsite treatment building, approximately 1600 square feet in size, will house these facilities.

The Four Seasons water treatment plant will be sized to treat an additional 18,000 GPD of water to serve the future needs of the office/warehouse development proposed for the adjacent property. However, as discussed above, the onsite wells do not have excess capacity and are intended to exclusively serve the proposed project. Therefore, the office/warehouse development will have to supply its own raw water for treatment at some future date. In addition, the storage tank on the Four Season site will provide shared storage capacity for the office/warehouse development including average daily demand storage and fire demand storage.

Section 150-15(k) of the Town’s Zoning Code requires that an active adult community shall be serviced by a public or private water supply facility. It is the applicant’s intent to maintain private ownership of the project’s water treatment plant, booster stations, storage tanks and distribution system. These facilities are intended to be owned, operated and maintained by a transportation corporation called a water works corporation (“WWC”) which will be created by the applicant and approved by the Town Board. The WWC is intended to provide water service exclusively to homeowners in the project, although, this service area could be expanded in the future if requested by the Town. The applicant has retained American Water—Applied Water to run the WWC. American Water is a large national utility company with the financial, managerial and technical skills needed to effectively manage the project’s water system. American Water has extensive experience in designing, constructing, operating and maintaining thousands of private and public water systems across the country. In this project, American Water will design, build, operate and maintain the project’s water system for the WWC. These activities will be funded exclusively by usage fees paid to the WWC by homeowners in the project. To protect the homeowners in the project, the water fees set by the WWC must be approved by the New York State Public Service Commission. No public funds or tax dollars will be used in connection with the construction, operation or maintenance of the project’s water system.

Water works corporations are commonly used through out New York State to provide water service to private residential and commercial facilities where municipal facilities are not readily available. The creation and operation of a WWC is governed by the NYS Transportation Corporations Law. Under the law, the creation of a WWC must be approved by the Town Board, the Orange County Department of Health and the Town's Highway Superintendent. In addition, there a number of legal safeguards that could be used by the Town to ensure the long-term financial and operational health of the WWC. For example: (1) the Town Engineer could examine the plans and specifications of the water facilities before they are constructed; (2) the Town Engineer could periodically inspect the construction of the water facilities to ensure they are being constructed in accordance with all applicable building codes and standards; (3) the Town may require the applicant to post a performance bond or some other financial guarantee to ensure that the water facilities are constructed and operated properly; and (4) as part of its approval, the Town Board may require an option to purchase the water facilities from the WWC in the future.

The scoping document required the DEIS to discuss the option of Town ownership of the project's water system. Under that scenario, the Town would have to create a water district to take over the operation and maintenance of the project's water supply system. Water districts are usually created where there are exiting municipal water facilities or where private ownership is not available or preferred. The creation of a district would require the Town to hire and train new employees to operate and manage the water system. The Town would also need to develop administrative and management procedures for running the district, including billing and accounts receivables. Based on the foregoing, it is the applicant's position that the creation of a water district is not preferred over the creation of a WWC.

## **WATER SUPPLY ALTERNATIVES**

### *SURFACE WATER SUPPLY - WALLKILL RIVER*

Although not the preferred alternative, surface water from the Wallkill River can provide sufficient supply for the project's potable and irrigation water demand. Based on the lowest possible flow rate for the Wallkill River, as indicated by the United States Geological Survey (USGS) stream flow monitoring database, the proposed project's water demand would remove about 1.7% of the Wallkill River's available surface water supply. This small amount would have negligible effects on the Wallkill River resource. Should highly treated wastewater be returned to the Wallkill River downstream of the potable water intake, it would account for approximately 90,100 gpd, and therefore replace 1.03% of the flow. Thus, were the Wallkill used as a surface water supply for the project, the project's wastewater recharge would decrease the net removal of water from the Wallkill River to 0.26% of its flow.

Membrane filtration would be required for treatment of surface water in order to meet the National Primary Drinking Water Regulations. An elevated water tank would be needed to hold 30% of the peak day flow plus fire flow for a total volume of 250,000 gallons.

### *SURFACE WATER SUPPLY – QUARRY*

A stone quarry located immediately southeast of the project site is unlikely to be a viable water supply option for the project site. Of primary concern is that the Applicant does not own or control the quarry property and therefore has no rights to withdraw water from it. The utility would need to own and control land around the quarry to the extent that it could prevent any

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detrimental runoff entering the water supply. Should adequate water be available in the quarry, and were it available for project use, the water source would require treatment similar to using water from the Wallkill River, as discussed above. Furthermore, the reliable yield of the quarry is not known, and extensive hydrogeologic testing would be needed to determine the reliable yield. Surface water supplies are more prone to adverse impacts from drought. It would need to be determined if the quarry receives sufficient ground-water input to be a reliable supply during drought. The proposed ground-water source from deep bedrock fractures is considered a safer, more reliable, and more economical water supply.

### WASTEWATER

The proposed project is expected to generate approximately 97,400 gallons per day (gpd) of wastewater which will be treated in a wastewater treatment plan located on Parcel C of the project site, as shown on Figure 3.8-1 Detailed information about the wastewater treatment system can be found in Appendix C. The peak hourly flow was determined by estimating the population of the site according to the "Recommended Standards for Wastewater Facilities." The average peaking factor was determined to be 3.72. Flow information from the New York State Department of Environmental Conservation (NYSDEC) publication entitled Design Standards for Wastewater Treatment Works: Intermediate Sized Sewerage Facilities"<sup>1</sup> was used in computing projected wastewater flow to wastewater conveyance and treatment facilities as follows:

68 Three Bedroom Units @ 400 GPD/Unit = 27,200 gpd

232 Two Bedroom Units @ 300 GPD/Unit = 69,600 gpd

6,000 Square Foot Clubhouse @ 0.1 GPD/Square Foot = 600 gpd

**Total** = 97,400 GPD

Soil tests were conducted at the project site to determine the characteristics of the soil. Two distinct types of soil were identified. The first is a yellow brown Clayey Silt with varying amounts of sand, gravel, and boulders. The second is a brown-gray Clayey Silt with varying amounts of rock fragments.

Wastewater from all residential units will be collected and conveyed to the wastewater treatment plant via a collection system that will include gravity sewers and three pumping stations. The wastewater will be treated in a wastewater treatment plant located on the approximately nine (9) acre Parcel C of the project site. Although surface discharge is the preferred alternative, should subsurface discharge of treated wastewater be required by the regulatory agencies at this time or

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<sup>1</sup> Regarding the discrepancy between the water demand and wastewater generation rates - the water flow demand was calculated using New York State Department of Health (NYSDOH) guidelines for housing units using water saving plumbing fixtures. The NYSDOH sets the maximum month average daily demand at 130 GPD per bedroom. Using this criterion gives flow rates of 260 GPD and 390 GPD for two and three bedroom units, respectively. The NYSDOH guidelines also specify rates for irrigation demand, which increases the rates above by an additional 400 GPD per housing unit. By comparison, the wastewater flow demand was calculated in accordance with the New York State Department of Environmental Conservation (NYSDEC) publication entitled Design Standards for Wastewater Treatment Works: Intermediate Sized Sewerage Facilities". The NYSDEC established flow rates of 300 GPD and 400 GPD for two and three bedroom units, respectively. These are slightly higher than the NYSDOH rates and do not take into consideration any water demand for irrigation.

in the future, Parcel C has been sized to allow for drip irrigation or subsurface disposal beds. See Figure 3.8-1 for the location of the wastewater treatment plant. The plant will discharge to the Wallkill River via a gravity line. If future additional capacity is needed, adequate land area is available so that the plant could be expanded to accommodate the additional flow.

Section 150-15(k) of the Town's Zoning Code requires that an active adult community shall be serviced by a public or private sewerage facility. It is the applicant's intent to maintain private ownership of the project's waste water treatment plant and collection system. These facilities are intended to be owned, operated and maintained by a transportation corporation called a sewage-works corporation ("SWC") which will be created by the applicant and approved by the Town Board. The SWC is intended to provide wastewater collection and treatment exclusively to homeowners in the project, although this service area can be expanded in the future if requested by the Town. The applicant has retained American Water—Applied Water to run the SWC. American Water is a large national utility company with the financial, managerial and technical skills needed to effectively manage the project's wastewater system. American Water has extensive experience in designing, constructing, operating and maintaining thousands of private and public wastewater treatment systems across the country. In this project, American Water will design, build, operate and maintain the project's wastewater system for the SWC. These activities will be funded exclusively by usage fees paid to the SWC by homeowners in the project. To protect the homeowners in the project, the sewer fees set by the SWC must be approved by the Town Board. No public funds or tax dollars will be used in connection with the construction, operation or maintenance of the project's wastewater system.

Sewage-works corporations are commonly used through out New York State to provide wastewater service to private residential and commercial facilities where municipal facilities are not readily available. The creation and operation of a SWC is governed by the NYS Transportation Corporations Law. Under the law, the creation of a SWC must be approved by the Town Board and the Orange County Department of Health. The law also provides for a number of built-in safeguards that can be used by the Town to ensure the long-term financial and operational health of the SWC. For example: (1) the Town Engineer must examine the plans and specifications of the wastewater facilities before they are constructed; (2) the Town Engineer must periodically inspect the construction of the wastewater facilities to ensure they are being constructed in accordance with all applicable building codes and standards; (3) the Town Board may require that the stock of the SWC be held in escrow, allowing title to pass to the Town in the event the SWC fails to properly construct, maintain or operate the facilities; (4) the Town may require the applicant to post a performance bond or some other financial guarantee to ensure that the wastewater facilities are constructed and operated properly; and (5) as part of its approval, the Town Board may require an option to purchase the wastewater facilities from the SWC in the future.

The scoping document required the DEIS to discuss the option of Town ownership of the project's wastewater system. Under that scenario, the Town would have to create a sewer district to take over the operation and maintenance of the project's wastewater system. Sewer districts are usually created where there are exiting municipal water facilities or where private ownership is not available or preferred. The creation of a district would require the Town to hire and train new employees to operate and manage the wastewater system. The Town would also need to develop administrative and management procedures for running the district including billing and accounts receivables. Based on the foregoing, it is the applicant's position that the creation of a sewer district is not preferred over the creation of a SWC.

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The Wallkill River borders the north end of the property and is classified by the NYSDEC as a Class B Fresh Surface Waters. According to 6NYCRR Part X Section 701.8, Class B waters are associated with “primary and secondary contact recreation and fishing. These waters shall be suitable for fish propagation and survival.” The Wallkill River is a south to north flowing river beginning in New Jersey and flowing into the Hudson River just south of the Capital District. The River is located in the Rondout River Watershed in the greater Lower Hudson River Basin. According to the NYSDEC Priority Water Bodies List found in the New York State Water Quality Assessment 2000, the Wallkill River is known to stress the propagation of aquatic life due to silt, sediments, and/or pesticides. This is further labeled as “Water Quality Problem” or impairment.

The regulatory limits for discharge to surface water in the state of New York are site specific and are determined by the NYSDEC when the permit application is received. Currently, the NYSDEC has issued two permits in nearby Montgomery Township and Village for the discharge of treated wastewater into the Wallkill River. To estimate the potential for discharge into the Wallkill River from the project site, the limits established by the NYSDEC for these two wastewater treatment plants were used. Proposed discharge limits were obtained from the NYSDEC for the proposed discharge of 99,500 gpd to the Wallkill River and are indicated in Item 12 of Appendix A - letter from Natalie Browne of the NYSDEC. The proposed wastewater treatment plant will consist of a two train Sequencing Batch Reactor (SBR). The SBR will be followed by gravity filtration and ultraviolet disinfection. The facility will be designed such that all water quality criteria set forth by NYSDEC will be met prior to discharge. As a result, there are not expected to be any potential impacts from bio-degradables or thermal loading on the Wallkill River.

All the major unit processes will be contained within a single 50-foot by 100-foot accessory building structure. This accessory building will be provided with a façade that is architecturally compatible with both the nature and the character of the Town of Hamptonburgh and the proposed development. This building will be an accessory structure to the residential use on Parcel A, and will be required to adhere to the height limitation under section 150-9(B)(2) of the Town’s Ordinance (35 feet) and will require a building permit review by the Town’s Building Inspector. Landscaping and berming will be utilized to minimize any visual impact that this facility may present to any of the residents or visitor to the proposed development, any other existing nearby residences or visitors to Thomas Bull Memorial Park. In addition, the plant will be equipped with an odor control system.

The system will be designed per DOH regulations, and a SPDES Permit will be required from the NYSDEC as the flow exceeds 1,000 GPD. The construction will be inspected by both the Health Department and the design engineer. The construction of the system will be certified by a NYS Professional Engineer.

Consistent with Section 150-15(K) of the Town’s Zoning Ordinance, the proposed community will be a condominium form of ownership, with each home being a separately identified unit that is owned and maintained by each homeowner. Separate and apart from the units, the common elements of the community such as the land, common structural elements of buildings, roads and related roadway improvements, and the recreational improvements will be owned by a homeowners association and maintained using dues paid by all homeowners as required members of the association. Services such as snow removal, refuse collection and disposal (including bulk pick-up) and recycling could be provided by the Town or by private contractors and haulers engaged by the homeowners association and paid from association dues paid by the

homeowners as members of the association. As discussed above, the water treatment and storage facilities, and the sewer treatment and disposal system, will be owned, operated and maintained by a transportation corporation created by the Town and funded from usage fees paid to the transportation corporation by the homeowners in the community for their use of such services.

### **ENERGY**

The project will be serviced by underground utilities originating from Eager Road and Route 416. The individual utilities will include telephone, cable, gas and electricity and will be installed within the roadway network, just outside the curb line, within an access and utility easement. Each of these utility companies has confirmed that there is adequate capacity to service this project. Figure 3.8-3 shows the proposed "Utility Plan."

Central Hudson Gas and Electric will provide services to the proposed project. Three phase electric distribution lines are located along Route 416 and a gas distribution main is located along Neelytown Road. The gas main will need to be extended approximately 2700 feet along Eager Road from Neelytown Road to reach the proposed development. Extension of electric and gas facilities to and throughout the property will be according to Central Hudson tariffs at the time of application for service. The applicant will apply for electric and gas service when approvals are received.

### **TRANSPORTATION**

The proposed project will construct approximately 17,500 linear feet of new roads. These roads will be of various widths and design to match the character of the surrounding development, as illustrated in Figure 3.8-2. On street parking will be permitted in certain portions of the roadway, in locations where parked cars will not interfere with the safe and efficient movement of vehicles, including emergency service vehicles.

## **E. MITIGATION**

### **WATER SUPPLY**

No significant adverse impacts to water supply are anticipated and therefore no mitigation is proposed.

### **WASTEWATER**

No significant adverse impacts from wastewater are anticipated and therefore no mitigation is proposed.

### **ENERGY USE**

No significant adverse impacts to energy are anticipated and therefore no mitigation is proposed.

### **TRANSPORTATION**

No significant adverse impacts to energy are anticipated and therefore no mitigation is proposed.