3.9 WATER AND SEWER INFRASTRUCTURE

This section examines the potential for significant adverse impacts and the capacity to adequately serve the Project's need for water supply, which is discussed in 3.9i and sanitary wastewater treatment discussed in 3.9ii. The analyses confirm that the Project would not have the potential to generate any significant adverse impacts regarding water supply and wastewater treatment. Therefore, no mitigation would be necessary.

3.9i Water Supply Infrastructure

The analysis below includes a description of the required infrastructure for the water supply and summarizes the findings of the Project's Water Supply Report and Node Analysis.

3.9i.1 Existing Conditions

As detailed in Section 3.8ii.2, if the Project's wells are not connected to and not incorporated as a part of the Village's municipal water supply system, the Project's wells would have sufficient capacity to supply water for 600 four-bedroom single-family dwelling units and associated swimmers, which would be 273,600 gpd or 190 gpm. The Project's wells would be able to supply more than twice the average water demand of 547,200 gpd or 380 gpm, in accordance with NYSDOH water supply system requirements.

If the Project's wells are connected to and incorporated as a part of the Village's municipal water supply system, the Project's best well would not be excluded and the Project's wells would be able to supply water for 600 four-bedroom homes and a maximum of 600 accessory apartments (300 one-bedroom accessory units and 300 two-bedroom accessory units) and associated swimmers (two swimmers per primary unit and one swimmer per accessory unit) of 377,400 gpd or 262.1 gpm. The Project's wells would be able to supply more than twice the average water demand of 754,800 gpd or 524.2 gpm, in accordance with NYSDOH water supply system requirements.

Several existing wells were examined and the results of their tests are found in the Water Supply Report and Node Analysis included in G-2 of Appendix G. The Project would include a water supply system, comprised of multiple on-site water wells, new distribution piping, fire hydrants and an on-site water storage tank.

3.9i.2 Potential Impacts

The Scoping Document requested the following information regarding potential impacts to water quality and supply:

(a) Development of required domestic and fire protection demands as based on the projected population data and proposed project development.

A full well development and water taking analysis has been prepared and is included in Appendix F and detailed in Section 3.8ii. Wells have been drilled on the Project Site and a 72-Hour Water Well Pumping Test was performed.

The simultaneous 72-Hour Water Well Pumping Test was conducted on wells C-6, C-12, C-14, C-16, and C-23 between July 10 and July 16, 2017. The five wells were pumped concurrently for 5.5 days (132 hours-50 hours more than the 72-hour regulatory requirement) and were measured at pumping rates of 45 gpm, 40.5 gpm, 157 gpm, 50 gpm, and 90 gpm, respectively, for a combined yield from the five wells of 382.5 gpm or 550,800 gpd.

An individual pumping test was then conducted on Well C-21. Well C-21 was pumped individually as the best well between July 25 and July 28, 2017 for 72.5 hours. This well alone was measured at a pumping rate of 163 gpm or 234,720 gpd. The total combined yield of the six wells is a rate of 545.5 gpm or 785,520 gpd.

An average daily water demand for the Project has been calculated based on the March 2014 New York State Design Standards for Intermediate Sized Wastewater Treatment Systems water usage rate of 110 gpd/bedroom.

As detailed in Section 3.8ii.2, if the Project's water wells are connected to and incorporated into the Village's Water Supply System, the Project's water demand for 600 single-family homes, plus 300 one-bedroom and 300 two-bedroom accessory apartments and associated swimmers would total 377,400 gpd. The system's maximum daily demand, calculated in accordance with the NYSDOH requirement that a new water system have the capacity to supply at least twice the average water demand) would be 754,800 gpd or 524.2 gpm. The Project well's combined yield of 785,520 gpd under this scenario would supply sufficient water to meet this demand.

If the Project's wells are not connected to and incorporated into the Village's Water Supply System, the Project's water demand for 600, four-bedroom single-family units and associated swimmers would total 273,600 gpd or 190 gpm. The system's maximum daily demand, calculated in accordance with the NYSDOH requirement that a new water system have capacity to supply at least twice the average water demand), would be 547,200 gpd or 380 gpm. The Project well's combined yield of 550,800 under this scenario with the best well out of service would supply sufficient water to meet this demand.

(b) Water model to demonstrate provision of adequate flow and pressure to all proposed services.

A node analysis has been prepared for the preliminary water distribution system under normal, or domestic, flow conditions and is included in the Water Distribution System Engineer's Report in Appendix G-2. Included in the analysis are all hydrants, tee's, low points and high points in the system. Water distribution would consist of 8", 10" and 12" PVC pipe. A minimum pressure of 35 psi would be provided to all locations in the system with the majority of the system operating at 60-80 psi. Pressure reducing valves would be incorporated where needed in the lowest portions of the system to keep system pressures from exceeding 100 psi.

(c) Fire protection analysis to demonstrate adequate available fire flow to serve the development as well as provide adequate residual system pressures.

A node analysis has been prepared under fire flow conditions and is included in the Water Distribution System Engineer's Report in Appendix G-2. Pursuant to Insurance Services Office (ISO) standards, the needed fire flow within the system is taken to 1,000 GPM under fire flow conditions with the system being capable of providing the needed fire flow for a period of two hours. Included in the analysis are all fire hydrants. Water distribution to the hydrants would consist of 8", 10" and 12" PVC pipe. A minimum pressure of 20 psi would be provided to all locations in the system over the duration of needed fire flow.

(d) Compliance with NYSDOH regulations as well as Recommended Standards for Water Works (10 States Standards), year of latest revision.

Water source, storage and distribution facilities would be constructed of materials, and be of such workmanship, as to be in conformance with NYS Department of Health Standards Appendix Part 5D Standards and the Recommended Standards for Water Works (10 State Standards), latest revision. Minimum separation distances for water supply wells would be maintained. Distribution piping would maintain minimum ten-foot horizontal separation and 18 inches of vertical separation from storm drainage and sanitary sewer piping. Hydrants would be placed no further than 500 feet apart with valving to be placed at intervals not to exceed 800 feet. The Project would comply with all applicable NYSDOH standards.

The Groundwater Well Investigation summarized in Appendix F concludes the Project's water supply system and associated six wells that would be used to provide water supply to the Project would not adversely impact the aquifer or nearby water wells. Accordingly, there would be no significant adverse environmental impacts from this method of water supply.

3.9i.3 Mitigation

As summarized above and detailed in Appendices F and G, no significant adverse environmental impacts on water quality or supply would result from the Project's proposed water supply system

infrastructure. The short-term construction impacts caused by drilling the wells were completely mitigated by incorporating erosion and sediment controls. A node analysis found in the Water Distribution System Engineer's Report was performed and likewise determined there would be no significant adverse impacts from the Project. Accordingly, no mitigation is necessary.

3.9ii Wastewater Infrastructure

The analysis below includes a complete description of the required infrastructure for the sewage collection and treatment system for the Project.

3.9ii.1 Existing Conditions

The Project would be served by a new central wastewater treatment facility designed to treat and dispose of an average of up to 273,600 gallons of effluent per day in accordance with the Recommended Standards for Wastewater Facilities (10 State Standards) and the 2014 NYS Design Standards for Intermediate Sized Wastewater Treatment Systems and and would meet the effluent requirements set forth by the NYS SPDES Permit that will be issued for the Project. Treated water from the WWTP would discharge into an on-site tributary to Satterly Creek.

Raw sanitary sewer discharge from residential units would be collected by means of a minimum 4-inch diameter building sewer. Community Center and swimming pool facilities would be served by a minimum 6-inch diameter building sewer. Building sewers would connect to laterals of the same diameter with the laterals conveying the sewage to the sewer main. For the Project, gravity sewer mains would generally be located within the street right-of-way.

Sewer mains would be a minimum of 8-inch diameter PVC pipe having a minimum slope of 0.4%. All mains would be straight runs connected by sewer manholes. Manholes would be precast, reinforced concrete having a minimum inside diameter of 4 feet. Manhole spacing would be as needed for sewer alignment but no greater than 400 ft. The placement of all sewer mains would be such that a minimum of 10 feet of horizontal separation is provided from water system mains. At crossings with water mains a minimum of 18 inches of vertical separation would be provided. All sewer collection appurtenances would be tested for water tightness prior to being placed into service.

A portion of the Project's gravity sewer collection system would discharge flow toward the proposed WWTP. The remainder of the gravity collection system would flow toward one sewer pumping station. The sewer pumping station would be a wet well type pump station fitted with a minimum of two pumps. Each pump would be capable of handling the design peak hourly flow. Prior to entering the pump station, incoming raw sewage would pass through a grinder device which would grind sanitary wipes and other deleterious materials to prevent pump fouling.

The sewer pump station would be fitted with a gas-powered backup power supply. A 4-inch diameter force main would be routed from the pumping station to the nearest sewer manhole that is capable of conveying the pumped effluent via gravity to the WWTP.

The WWTP is shown in Figure 391. This direction was chosen after studying two different approaches; connection to an existing wastewater treatment and disposal system and developing an independent system for the Project. The initial design of the WWTP accommodated approximately 420,000 gpd. However, according to the Project's water demand and yield data detailed in Section 3.8ii, the Project's wells have a yield able to accommodate up to 275,400 gpd without the best well in service.

Therefore, the WWTP's design was revised to accommodate a daily capacity of 280,000 gpd, which would be sufficient capacity for the demand of 273,600 gpd as detailed above. Should the Project interconnect its wells with the Village and utilize the yield from its best well, the Project would either request the Village release its excess sewer capacity from the Orange County Sewer District No. 1 or extend the service capacity of the Project's WWTP up to the initial 420,000 gpd.

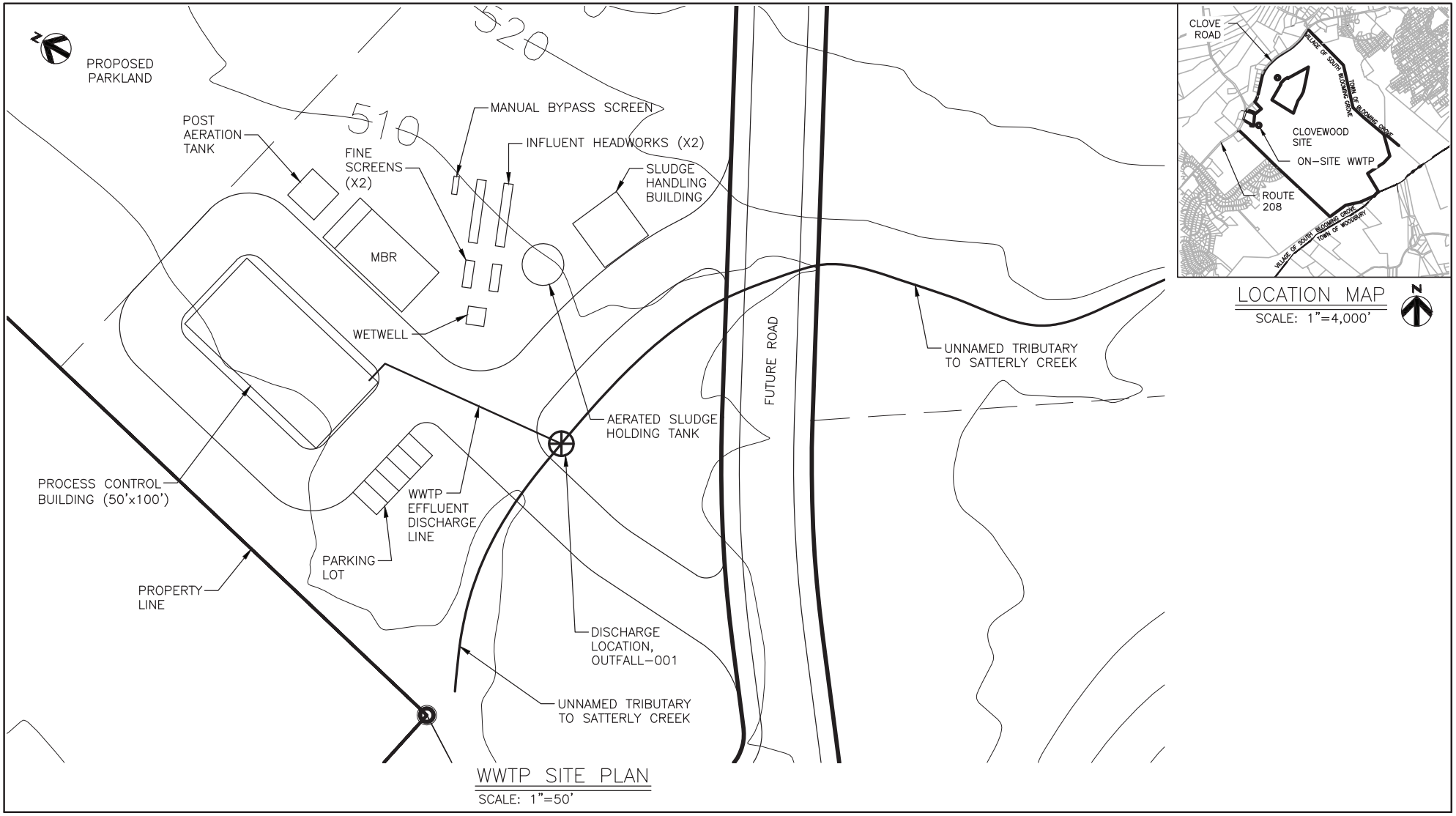
Portions of the Village are currently served by municipal sewer, as they lie within the Village of South Blooming Grove Consolidated Sewer District #1 ("SBGCSD#1"). The service area generally consists of existing residential developments on the north and south sides of NYS Route 208, generally ending at Merriewold Lane to the east and Duelk Avenue to the west. Six commercial properties are located within Sewer District #1. The sewer district touches the Project at the southwesterly and central portions of the Site, in the area of Virginia Avenue and Arlington Drive.

Currently, SBGCSD#1 utilizes the Harriman WWTP, which is part of Orange County Sewer District #1 ("OCSD#1). The current capacity allotted to the Village by OCSD#1 for use of the Harriman WWTP is 0.490 mgd. An average 12-month usage by the Village for the 2014 calendar year was approximately 0.267 mgd. The available capacity within the Village's allotment is approximately 0.223 mgd. In total, the Harriman WWTP's average 12-month usage for 2014 was 4.375 mgd. The available capacity at the Harriman WWTP is approximately 1.625 mgd.

Given the above, there would be available capacity at OCSD#1's Harriman WWTP to accommodate the sewer needs of the Project. However, a connection to the County WWTP through the Village's infrastructure would result in the need for an increase in the allotment to the Village, and the Village to apply for the same.

Requests were submitted to the Village to confirm with the Village whether the remaining balance of the sewer surplus capacity would be available for the Project. It is important to note that in September 2016, Orange County released a study conducted by Delaware Engineering, which

Figure 391: Proposed WWTP Site Plan



HDR

PROJECT TITLE	CLOVEWOOD WASTEWATER TREATMENT PLANT
SHEET TITLE	**PROPOSED WWTP SITE PLAN**
PROJECT NUMBER	244319
PROJECT MANAGER	B. LEE
DATE	10/2/2015
REFERENCE SHEET	-
REFERENCE DOCUMENT	-
EXHIBIT NUMBER	-

suggested a major upgrade of the Harriman WWTP to increase its longevity. It also recommended that sewage flow be diverted to the WWTP from the Village of Chester, a portion of the Town of Chester, and potentially South Blooming Grove. Such a diversion of flow would free up one-third of the treatment capacity at the Harriman WWTP.

However, to date, the Village has been unwilling to provide its surplus sewer capacity to serve the Project (see Section 3.9ii.4). Based on the assumption that the Village Board may not expand the existing Sewer District to include the Project, the Applicant developed plans for a new sewage collection system and WWTP. Such a new system would offer additional advantages over the use of County's WWTP. Use of the Harriman WWTP would result in inter-basin wastewater transfers out of the Moodna Creek watershed and into the Ramapo Creek watershed, potentially impacting stream flows. In contrast, a new system created by the Project would not impact stream flows.

Alternatives regarding the type of system to be used to treat wastewater are summarized below and in more detail in Appendix I for the purpose of identifying the applicable biological treatment technology that would meet the preliminary effluent stream limits issued by NYSDEC.

Two activated sludge configurations such as sequencing batch reactors ("SBRs") and membrane bioreactors ("MBRs") were compared during this evaluation. Additional biological treatment configurations such as conventional activated sludge, moving bed bioreactor ("MBBR") and the STM Aerotor process were initially reviewed and screened with CPC and the alternatives were shortlisted to focus on SBR and MBR processes. A conceptual design would be completed by HDR for the selected treatment system.

As part of the alternatives evaluation, a comparison of the advantages and disadvantages and life-cycle cost estimates were prepared for the two biological treatment scenarios. Non-cost factors such as footprint, expandability to accommodate future wastewater flows, sustainability, operation and maintenance ("O&M") requirements, ease of operation, process control and reliability were also evaluated and incorporated into the alternatives selection process.

The evaluation concluded the following: Alternative 1 (MBR) had a capital cost of $15.12/gallon and O&M cost of $1.05/gallon and Alternative 2 (SBR) had similar costs to the MBR alternative, with a capital cost of $17.23/gallon and O&M cost of $1.19/gallon. Both alternatives' capital costs would be relatively close. Therefore, the Project Sponsor elected to proceed with the conceptual design for the MBR system, as it generates the highest quality effluent to consistently meet preliminary SPDES discharge limits as proposed by DEC for intermittent streams. The Project's wastewater engineer prepared a conceptual design for the selected treatment system.

A Sewage Works Corporation ("SWC") would be established under the Transportation Corporations Law of the State of New York. A copy of the documentation submitted to the Village

in order to create an SWC is included in Appendix I-3. The documentation for the establishment of the Transportation Corporation for both water and sewage works has been submitted to the Village but has not been acted upon as of yet by the Village. The service area for the SWC would be the Project Site. Consent for incorporation, including a review of the proposed rate structure, would be sought and received by the Applicant from the applicable agencies.

3.9ii.2 Potential Impacts

The Scoping Document adopted by the Co-Lead Agencies requested information on the following potential impacts of the proposed wastewater infrastructure associated with the Project. Responses to requests (a), (c), (d) and (e) are provided in an "Application for State Pollutant Discharge Elimination System and Approval Plans for a Wastewater Disposal System for the Clovewood Wastewater Treatment Plant, and an accompanying Wastewater Treatment Engineering Report," prepared by HDR and attached as Appendix I. The Response to (b) is found in the SWPPP included in Appendix H. The following Table 391 references the relevant sections Appendices H and I where the detailed analysis can be found, and a summary is provided below.

Table 391
Location Summaries for Appendices H and I

Scoping Document Item	Referenced Sections in Appendix H: SWPPP & Appendix I: Wastewater Treatment Engineering Report
Chapter 3.9ii.2(a)	**Appendix I**
Hydraulic Demands	Section 5.1 Design Flow, Table 5-1 Average Design Flow Calculation, Section 7.3 Hydraulic Analysis
Biological Sewage Demands	Section 5.2 Influent Wastewater Characteristics, Table 5-2 Influent Wastewater Characterization,
Chapter 3.9ii.2(b)	**DEIS Section 3.9ii.2(b)**
Design Criteria	Recommended Standards for Wastewater Facilities (Ten State Standards)
Chapter 3.9ii.2(c)	**Appendix I**
Design Criteria Appendix I	Section 5.0 Development of Treatment Facility Design Parameters Section 7.0 Design of Treatment System Section 7.2 Process Sizing and Descriptions
• *Influent Headworks*	Section 7.2.1, Table 7-1
• *Fine Screens*	Section 7.2.2, Table 7-2
• *Membrane Bioreactor Tanks*	Section 7.2.3, Tables 7-3, 7-4, 7-5, 7-6, 7-7, 7-8, 7-9 and 7-10
• *Post Aeration System*	Section 7.2.4, Table 7-11
• *Ultraviolet Disinfection System*	Section 7.2.5, Table 7-12
• *Solids Handling*	Sections 7.2.6,7.2.7, 7.2.11, 7.4 and Tables 7-13 and 7-14
• *Odor Control*	Section 7.2.9
Chapter 3.9ii.2(d)	**Appendix I**
Anticipated Effluent Water Quality	Section 8.0 Final Effluent Characteristics, Section 8.1 Mass Balance Summary, Figure 8-1, Estimated Final Effluent Mass Balance based on Average Design Flow
Impacts to Receiving Stream	Addressed in Items 1, 2 and 3 above
Chapter 3.9ii (e)	**Appendix I**
Compliance with NYSDEC Standards	Section 5.0
Source: Appendices H & I	

(a) Development of required hydraulic and biological sewage demands for the proposed development.

The sewage demands for the Project were developed according to 2014 NYSDEC Design Standards for Intermediate Sized Wastewater Treatment Systems as detailed in 3.8ii.2 and 3.9i.2 above totaling 273,600 gpd for the 600 four-bedroom homes and associated swimmers. Therefore, the selected design average daily flow is 280,000 gpd. This is detailed in Appendix I, Section 5.1 Design Flow, Table 5-1 Average Design Flow Calculation, Section 7.3 Hydraulic Analysis. The Biological Sewer Demands are detailed in Appendix I, Section 5.2 Influent Wastewater Characteristics, Table 5-2 Influent Wastewater Characterization. Should the Project interconnect its wells with the Village and utilize the yield from its best well, the Project would either request the Village release its excess sewer capacity from the Orange County Sewer District No. 1 or extend the service capacity of the Project's WWTP up to the initial 420,000 gpd.

(b) Design criteria for sewage collection system components including gravity sewer mains, sewage pump stations, and sewage force mains.

The design criteria for the Project's sewage collection system components, including gravity sewer mains, sewage pump stations and sewage force mains has been developed based on guidelines and standards from the NYSDEC Design Standards for Intermediate Sized Wastewater Treatment Systems, March 2014 (ISWTS); Recommended Standards for Wastewater Facilities (Ten State Standards); as well as the applicable standards from Orange County Sewer District No. 1.

(c) Design criteria for wastewater treatment facility including typical components such as solids handling, secondary and tertiary treatment, disinfection, and odor control.

The development of the design basis and has been developed based on guidelines and standards from the following references: NYSDEC Design Standards for Intermediate Sized Wastewater Treatment Systems, March 2014 (ISWTS); Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (GLUMBR) Recommended Standards for Wastewater Facilities (Ten State Standards), 2014 Edition; New England Interstate Water Pollution Control Commission Guides for the Design of Wastewater Treatment Works –Technical Report-16 (TR-16), 2011; and Wastewater Engineering, Metcalf & Eddy, 2004.

The raw wastewater would flow from the sewer collection system to the head of the WWTP by gravity or pump as mentioned above. The influent headworks facilities would provide pretreatment to remove large particles in the influent to protect downstream pumps, valves, pipes, and other appurtenances from damage and clogging.

A combined headworks system would provide two-stage influent screening, screenings dewatering and aerated grit removal. Two units of combined headworks system would be installed; each with the ability to handle the design peak hourly flows with the inclusion of any WWTP drainage or return flows. An emergency bypass to a manually cleaned bar screen would be provided.

The influent headworks would consist of the following components: mechanically cleaned influent screen; manually cleaned bar screen; aerated grit removal tank; screenings and grit dewatering system; utility water connection and hose station for washdown; and dumpster area. Screenings and dewatered grit would be discharged to dumpsters located on a concrete pad adjacent to the headworks facility. An access platform for inspection and maintenance of the screens would be provided. The design criteria for the headworks are presented in Table 7-1 of Appendix I, as is an equipment cut sheet. Tables 7-1 through 7-14 in Section 7 of Appendix I further detail data related to the WWTP's influent headworks, fine screens, membrane bioreactor tanks, post aeration system, ultraviolet disinfection system, solids handling and odor control.

(d) Anticipated effluent water quality and potential impacts to the receiving stream;

Based on literature information provided from vendors and a WWTP simulation using EnviroSim BioWin the estimated removal rates and residuals production through the proposed WWTP were calculated and effluent quality was estimated. Figure 8-1 in Appendix I presents a mass balance for the proposed wastewater treatment processes based on the average design flow.

Because the proposed Project wastewater treatment facility would be designed to meet effluent limits established by NYSDEC, stream quality would not be degraded and no significant adverse environmental impacts would arise from the wastewater components of the Project. Implementation of erosion and sediment controls would prevent any significant adverse impacts from construction of the WWTP.

(e) Compliance with NYSDEC regulations as well as Recommended Standards for Wastewater Treatment Works (Ten State Standards), year of latest revision.

The design basis was developed based on guidelines and standards from the following references: NYSDEC Design Standards for Intermediate Sized Wastewater Treatment Systems, March 2014 (ISWTS); Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (GLUMBR) Recommended Standards for Wastewater Facilities (Ten State Standards), 2014 Edition; New England Interstate Water Pollution Control Commission Guides for the Design of Wastewater Treatment Works –Technical Report-16 (TR-16), 2011; and Wastewater Engineering, Metcalf & Eddy, 2004.

3.9ii.3 Mitigation

There would not be significant adverse environmental impacts from the wastewater collection and treatment or stormwater components of the Project, as confirmed by the consideration of wastewater treatment and collection design alternatives and studies of stream wastewater assimilative capacity. The selected wastewater collection and treatment system would meet NYSDEC effluent limits, and ensure protection of stream quality. Any short-term construction impacts stemming from construction of the WWTP and collector system would be adequately mitigated by incorporating the erosion and sediment controls. Therefore, no mitigation would be necessary.

3.9ii.4 Alternative Wastewater Option

Requests were submitted to the Village to confirm whether the Village Board would authorize the remaining balance of the Village's surplus sewer capacity to be allocated to the Project. In September 2016, Orange County released a study conducted by Delaware Engineering, which recommended a major upgrade of the Harriman WWTP to increase its longevity. It also recommended that sewage flow be diverted to the WWTP from the Village of Chester, a portion of the Town of Chester, and potentially South Blooming Grove. Such a diversion of flow would free up one-third of the treatment capacity at the Harriman WWTP. However, to date, no confirmation has been received from the Village regarding the feasibility of connecting the proposed Project to the existing Village sewer infrastructure. Connection to the system by new out-of-district users was discouraged by the Village Engineer as shown in the following documentation. Unless the Village Board recommends extension of the existing sewer district to serve the Project or recommends authorization for the Project to be served as an out-of-district user, these alternatives are not viable.

C • P • C

P.O. Box 2020, Monroe, New York 10949 | Tel. (845) 774-8000

MEMORANDUM

Date: 09/01/2016
From: Simon Gelb
To: Keen Equities
Subject: Clovewood Alternative Wastewater Option

The Village of South Blooming Grove (VoSBG) is currently served by the Orange County Sewer District #1 (OCSD #1) Wastewater Treatment Plant located in the Village of Harriman (Harriman WWTP). The Harriman WWTP has a current capacity of 6.0 million gallons per day (mgd), and the County is in the midst of expanding the capacity to 9.0 mgd. Its average 12-month usage (07/01/15 to 06/30/16) is approximately 4.23 mgd, which results in a surplus in available capacity of 1.77 mgd. The current capacity allotted from the Harriman WWTP to the VoSBG is 0.490 mgd, and the average 12-month usage by the VoSBG is approximately 0.244 mgd. Thus, the remaining available capacity of the existing VoSBG community wastewater system is approximately 0.246 mgd.

On multiple occasions in 2014 and 2015, we had requested the VoSBG confirm if the remaining balance of the sewer surplus capacity is available for the Clovewood Project. Having received no response in 2014 and 2015, we reached out to the VoSBG again in 2016 and finally received a response on February 5, 2016 stating, "The sewer allocation at the Harriman WWTP is for properties that lie within the Village of SBG Consolidated Sewer District," and, “Our office is unaware of a fee that the Village may have for out of district users.”

While the Clovewood Project Site is indeed located outside of the VoSBG Consolidated Sewer District, on December 14, 2015, the VoSBG re-published and updated the 2016 Rates including sewer fees for out-of-district users ($172.50/unit). The update included a list properties outside of the VoSBG Consolidated Sewer District that currently utilize the VoSBG sewer allocation from the Harriman WWTP.

While VoSBG previously allocated and currently allocates its available capacity from OCSD # 1 for properties lying outside of the VoSBG Consolidated Sewer District, including some properties that are not even located within the VoSBG’s municipal boundary as illustrated in VoSBG Consolidated Sewer District 1 Map dated September 24, 2014, it is unwilling to do the same for the Clovewood Project, which lies within VoSBG’s boundaries.

Therefore, we must consider the development of a new on-site WWTP for the Clovewood Project or connection to the Village of Kiryas Joel’s wastewater treatment system (which may include potential annexation of the Project Site to the Village of Kiryas Joel).

Related Attachments:

(a) Correspondence of Kirk Rother, PE and Village of SBG Engineer (2/10/15, 1/11/16 and 2/5/16)
(b) HDR to Village of SBG Clerk - Re: Inquiry as to Sewer Capacity for Clovewood (2/23/15)
(c) Village of SBG 2016 Rates (12/14/15)
(d) Orange County DPW - Harriman WWTP Flow Report (6/30/16)
(e) Village of South Blooming Grove Consolidated Sewer District 1 Map

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From: Michael Weeks
Sent: Friday, February 05, 2016 1:23 PM
To: Kirk Rother
Cc: Dennis Lynch
Subject: RE: South Blooming Grove 2014 sewer flow

Kirk

The sewer allocation at the Harriman WWTP is for properties that lie within the Village of SBG Consolidated Sewer District. Our office is unaware of a fee that the Village may have for out of district users.

Mike

From: Kirk Rother
Sent: Monday, January 11, 2016 3:43 PM
To: Michael Weeks
Cc: Gelb Simon
Subject: Fw: South Blooming Grove 2014 sewer flow

Good Afternoon Mike,

Last February we inquired with your office about available sewer capacity within the Village of South Blooming Grove for the Clovewood project. I attach a copy of the email below.

To date we have not gotten a response.

Can you please confirm whether there is any sewer capacity available within the Village of South Blooming Grove's allocation into the County's Harriman plant for the Clovewood project?

The email from last year included flow data for 2014 as provided by the County Sewer Dept. Updated flow data as provided by same is herewith attached. Note that they are awaiting data from new instrumentation to complete the flows for the second half of 2015. The full year data is expected to be available by the end of the month.

Kirk

From: Kirk Rother
Sent: Tuesday, February 10, 2015 9:28 AM
To: Weeks Mike
Cc: Gelb Simon ; Lynch Dennis ; Barshov Steven
Subject: Fw: South Blooming Grove 2014 sewer flow

Good Morning Mike,

We are preparing for a meeting with the DEC regarding proposed sewer for the Clovewood project. In anticipation of this meeting we are collecting as much information as we can about various sewer options.

Attached you will find information from Sewer District #1 regarding the Village's sewer use for 2014. As Anthony Griffin points out in his email below, although their may be capacity available from the County's perspective as far as sewer allocated to the Village, we would like to confirm with the Village what part of this surplus capacity is available for the Clovewood project.

It is understood that the project does not currently lie within the Village's sewer district. It is further understood that the Village has a fee for out of district users.

In consideration of the above, kindly advise as to how many gallons per day of the Villages existing sewer capacity are potentially available for the Clovewood project. We would like to have this information available when we meet with the DEC in the coming weeks.

Feel free to contact me with any questions. Thanks.

Kirk

From: Griffin, Anthony
Sent: Tuesday, February 10, 2015 8:35 AM
To: 'Kirk Rother'
Subject: RE: South Blooming Grove 2014 sewer flow

Kirk,

Per your request, please find attached the latest flow report for the Harriman STP. Bear in mind the remaining available balance shown is for "dry" flow conditions. "Normal" 12 mo. precipitation is approx. 50" for the service area. The remaining available capacity will fluctuate depending on the amount of precipitation. You will need to contact Blooming Grove to determine the exact amount that may be "truly" available for that municipality since some "available" capacity may be allocated to projects yet to be constructed and/or discharging to the public sewer.

Best regards,

Anthony

From: Kirk Rother [mailto:krother@kirkrother.com]
Sent: Monday, February 09, 2015 3:45 PM
To: Griffin, Anthony
Subject: South Blooming Grove 2014 sewer flow

Good Afternoon Anthony,

You recall I was pestering you with questions about the capacity and operation of municipal sewer in South Blooming Grove some months ago. The project I have there remains on-going. With the new year I was wondering if you have the final sewer flow values for the Village of South Blooming Grove for 2014 available with corresponding available capacity? Thanks.

Kirk Rother, PE
Consulting Engineer, PLLC
5 Saint Stephens Lane
Warwick, NY 10990
Office: 845.988.0620
Fax: 845.988.1628
Email: krother@kirkrother.com

February 20, 2015

Village of South Blooming Grove
PO Box 295
Blooming Grove, NY 10914
Attn: Kelly Dougherty, Village Clerk

Dear Ms. Dougherty,

Henningson, Durham & Richardson Architects and Engineers, P.C. (HDR) is evaluating wastewater treatment alternatives for the proposed discharge from the Clovewood development in the Village of South Blooming Grove, Orange County, New York.

The Clovewood development is reviewing information on the various sewer options and would like to confirm with the Village of South Blooming Grove if the Village's sewer district has a surplus capacity available for the Clovewood project.

Please see the attached flow information provided by Anthony Griffin from Orange County Sewer District #1. The Clovewood development would like to confirm how many gallons per day of the Village's existing sewer capacity is potentially available for the project?

Sincerely,
Henningson, Durham & Richardson
Architects and Engineers, P.C.

Kristin Munoz, PE
Project Manager

cc: Joseph Cleary, PE (HDR)
Simon Gelb (CPC)

Attachments

hdrinc.com

500 7th Avenue, 15th Floor, New York, NY 10018-4502
(212) 542-6000

Village Of South Blooming Grove

Incorporated in July 14, 2006
P.O. Box 295
Blooming Grove, New York 10914
(845)-782-2600
Fax (845)-782-2600
www.villageofsouthbloominggrove.com

2016 Rates

1) CONSOLIDATED WATER DISTRICT - (billed quarterly by flow)

Residential Rate

- 0 to 10,000 Gallons $ 4.95 (per 1,000)
- 10,001 to 30,000 Gallons $ 5.95 (per 1,000)
- Over 30,001 Gallons $ 7.48 (per 1,000)

Facility charge $26.00 per unit

Residential (in-district) - 100 % (per-unit)
Residential (out of district) - 125 % (per-unit)

Commercial Rate

- 0 to 10,000 Gallons $ 75.00
- 10,001 to 40,000 Gallons $ 6.00 (per 1,000)
- Over 40,001 Gallons $ 7.50 (per 1,000)

Facility charge $26.00 per unit

Commercial (in-district) - 100 % (per-unit)
Commercial (out of district) - 150 % (per-unit)

2) SEWER DISTRICT # 1 – CONSOLIDATED (billed quarterly by unit)

- Residential (in-district) - $ 138.00 (per-unit)
- Residential (out of district) - $ 172.50 (per-unit)
- Commercial (in-district) - $ 172.50 (per-unit)
- Commercial (out of district) - $ 207.00 (per-unit)

Residential (in-district) - 100 % (per-unit)
Residential (out of district) - 125 % (per-unit)
Commercial (in-district) - 125 % (per-unit)
Commercial (out of district) - 150 % (per-unit)

Commercial In the Sewer District

Provident Bank – 821 Route 208	01 - Units @ $ 172.50 (per-unit)
C & G Deli – 809 Route 208	01 - Units @ $ 172.50 (per-unit)
Kaye Cleaners – 809 Route 208	01 - Units @ $ 172.50 (per-unit)
Dentist Office – 809 Route 208	01 - Units @ $ 172.50 (per-unit)
Gerri-Ann's – 809 Route 208	01 - Units @ $ 172.50 (per-unit)
K & C Pizza – 809 Route 208	01 - Units @ $ 172.50 (per-unit)
So. Blooming Grove F.D. – 819 Route 208	01 - Units @ Exempt (per-unit)

Village Of South Blooming Grove

Incorporated in July 14, 2006
P.O. Box 295
Blooming Grove, New York 10914
(845)-782-2600
Fax (845)-782-2600
www.villageofsouthbloominggrove.com

Commercial Out of the Sewer District

Good-fellows - 590 Route 208	**04 - Units @ $ $ 207.00 (per-unit)**
O & R Utilities - 500 Route 208	**17 - Units @ $ 207.00 (per-unit)**
First Care Physicians -505 Route 208	**26 - Units @ $ 207.00 (per-unit)**
Reiger Homes – Reiger Drive	**04 - Units @ $ 207.00 (per-unit)**

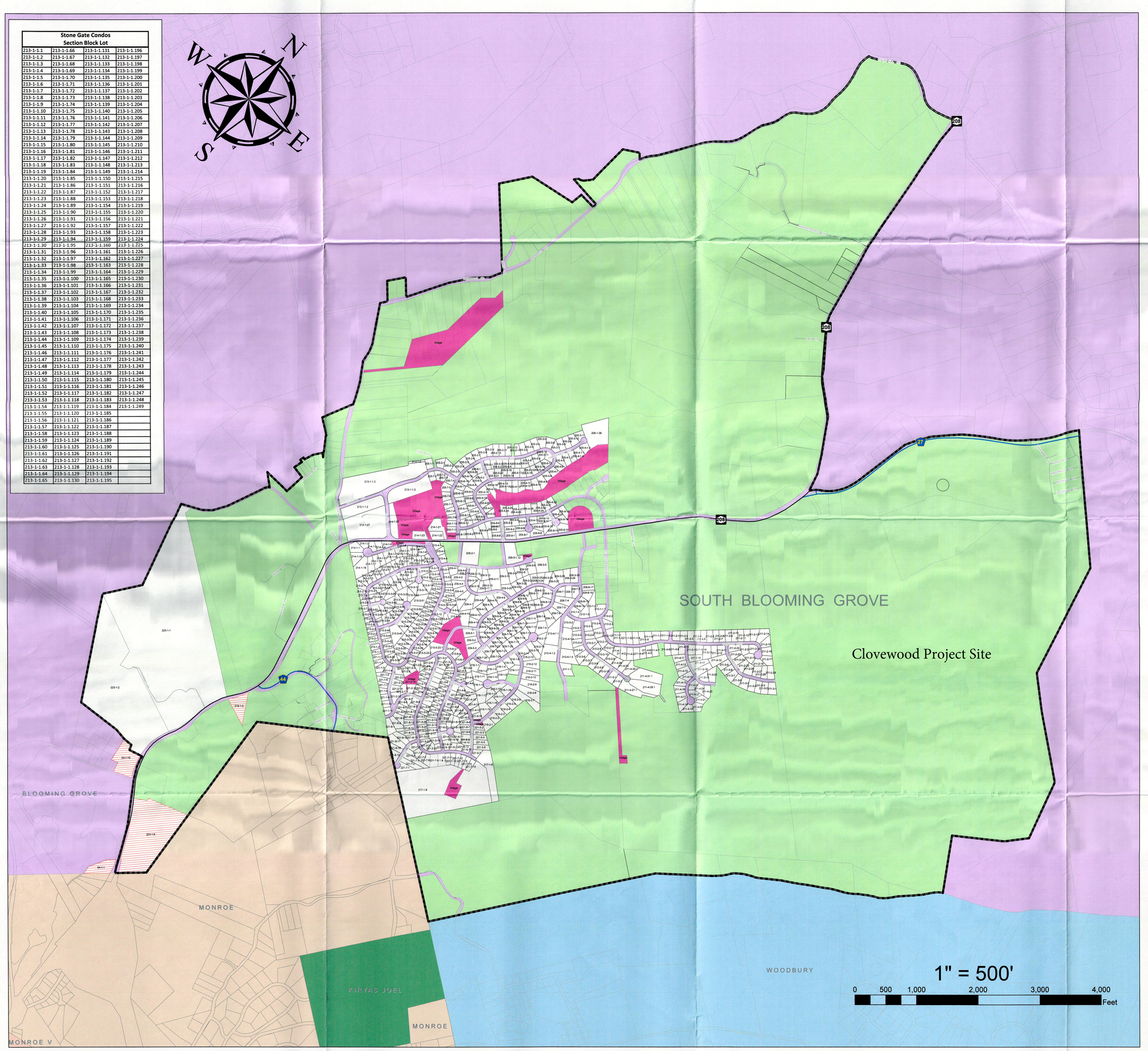
ORANGE COUNTY DEPARTMENT OF PUBLIC WORKS -
DIVISION OF ENVIRONMENTAL FACILITIES AND SERVICES
EXISTING FLOW INTO THE 6.0 MGD
HARRIMAN SEWAGE TREATMENT PLANT
REPORT DATE OF June 30, 2016

	2015 JUL	AUG	SEP	OCT	NOV	DEC	2016 JAN	FEB	MAR	APR	MAY	JUN	Total	12 MONTH AVG. ENDING 30-Jun-16	PRESENT LIMIT	REMAINING AVAILABLE BALANCE
RAIN IN INCHES	0.65	2.86	4.35	3.30	1.81	3.80	2.08	4.92	0.93	1.48	3.53	2.44	32.15			
VILLAGE OF CHESTER	348,540	381,469	349,611	367,267	383,803	393,633	404,489	419,734	358,282	338,826	392,054	346,163		373,656	347,000	(26,656)
TOWN OF CHESTER	239,104	198,165	212,859	226,360	237,728	268,812	281,969	317,142	250,907	230,277	240,188	199,342		241,904	410,000	168,096
TOWN OF MONROE	206,955	197,200	202,264	206,418	214,696	210,427	208,867	216,501	199,266	196,576	202,272	191,551		204,416	133,000	(71,416)
V. OF S. BLOOMING GROVE	194,065	182,219	203,417	220,084	244,720	304,168	304,239	326,669	259,374	229,833	263,419	196,853		244,088	490,000	245,912
VILLAGE OF WOODBURY	612,242	557,422	563,027	590,093	655,290	741,729	846,974	993,640	734,630	672,637	772,525	634,338		697,879	1,030,000	332,121
MOODNA TOTAL	1,600,906	1,516,475	1,531,178	1,610,222	1,736,237	1,918,769	2,046,538	2,273,686	1,802,459	1,668,149	1,870,458	1,568,247		1,761,944	2,410,000	648,056
OCSD#1	1,922,094	1,804,525	2,083,822	2,180,778	2,324,763	2,807,231	2,763,462	3,093,314	2,481,541	2,552,851	3,067,542	2,551,753		2,469,473	3,590,000	1,120,527
HSTP TOTAL	3,523,000	3,321,000	3,615,000	3,791,000	4,061,000	4,726,000	4,810,000	5,367,000	4,284,000	4,221,000	4,938,000	4,120,000		4,231,417	6,000,000	1,768,583

Village of South Blooming Grove = Village of South Blooming Grove PS + Unmetered Service Area (21,200 gpd).
Village of Woodbury = Smith Clove PS + Woodbury Junction PS#3 + Woodbury Commons Premium Outlet PS + Unmetered Service Area (20,761 gpd).
Town of Chester = Surry Meadows PS + Walton Lake Estates PS + Lake Hill Farms PS + King Tract PS + Sugar Loaf PS#1 + Unmetered Oxford Heights Service Area (41 Units @ 400 gpd/unit = 16,400 gpd).
Village of Chester = 3A PS - Surry Meadows PS - Sugar Loaf PS#1 - Unmetered Oxford Heights Service Area (41 Units @ 400 gpd/unit = 16,400 gpd).
Town of Monroe = Monroe Hills PS + Unmetered Walton Lake Service Area (400 Units @ 400 gpd/unit = 160,000 gpd) + Unmetered Seven Oaks Road Service Area (24 Units @ 400 gpd/unit = 9,600 gpd).

Village of Woodbury - 30,400 GPD of treatment capacity leased by Village of Woodbury from OCSD#1's allocation.

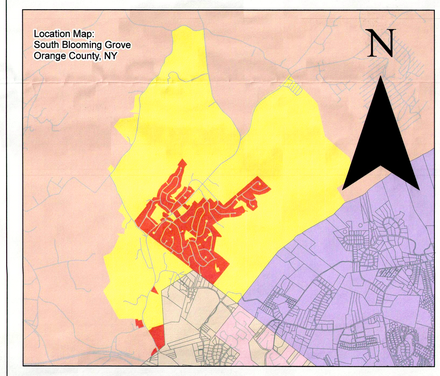
Stone Gate Condos Section Block Lot			
213-1-1.1	213-1-1.66	213-1-1.131	213-1-1.196
213-1-1.2	213-1-1.67	213-1-1.132	213-1-1.197
213-1-1.3	213-1-1.68	213-1-1.133	213-1-1.198
213-1-1.4	213-1-1.69	213-1-1.134	213-1-1.199
213-1-1.5	213-1-1.70	213-1-1.135	213-1-1.200
213-1-1.6	213-1-1.71	213-1-1.136	213-1-1.201
213-1-1.7	213-1-1.72	213-1-1.137	213-1-1.202
213-1-1.8	213-1-1.73	213-1-1.138	213-1-1.203
213-1-1.9	213-1-1.74	213-1-1.139	213-1-1.204
213-1-1.10	213-1-1.75	213-1-1.140	213-1-1.205
213-1-1.11	213-1-1.76	213-1-1.141	213-1-1.206
213-1-1.12	213-1-1.77	213-1-1.142	213-1-1.207
213-1-1.13	213-1-1.78	213-1-1.143	213-1-1.208
213-1-1.14	213-1-1.79	213-1-1.144	213-1-1.209
213-1-1.15	213-1-1.80	213-1-1.145	213-1-1.210
213-1-1.16	213-1-1.81	213-1-1.146	213-1-1.211
213-1-1.17	213-1-1.82	213-1-1.147	213-1-1.212
213-1-1.18	213-1-1.83	213-1-1.148	213-1-1.213
213-1-1.19	213-1-1.84	213-1-1.149	213-1-1.214
213-1-1.20	213-1-1.85	213-1-1.150	213-1-1.215
213-1-1.21	213-1-1.86	213-1-1.151	213-1-1.216
213-1-1.22	213-1-1.87	213-1-1.152	213-1-1.217
213-1-1.23	213-1-1.88	213-1-1.153	213-1-1.218
213-1-1.24	213-1-1.89	213-1-1.154	213-1-1.219
213-1-1.25	213-1-1.90	213-1-1.155	213-1-1.220
213-1-1.26	213-1-1.91	213-1-1.156	213-1-1.221
213-1-1.27	213-1-1.92	213-1-1.157	213-1-1.222
213-1-1.28	213-1-1.93	213-1-1.158	213-1-1.223
213-1-1.29	213-1-1.94	213-1-1.159	213-1-1.224
213-1-1.30	213-1-1.95	213-1-1.160	213-1-1.225
213-1-1.31	213-1-1.96	213-1-1.161	213-1-1.226
213-1-1.32	213-1-1.97	213-1-1.162	213-1-1.227
213-1-1.33	213-1-1.98	213-1-1.163	213-1-1.228
213-1-1.34	213-1-1.99	213-1-1.164	213-1-1.229
213-1-1.35	213-1-1.100	213-1-1.165	213-1-1.230
213-1-1.36	213-1-1.101	213-1-1.166	213-1-1.231
213-1-1.37	213-1-1.102	213-1-1.167	213-1-1.232
213-1-1.38	213-1-1.103	213-1-1.168	213-1-1.233
213-1-1.39	213-1-1.104	213-1-1.169	213-1-1.234
213-1-1.40	213-1-1.105	213-1-1.170	213-1-1.235
213-1-1.41	213-1-1.106	213-1-1.171	213-1-1.236
213-1-1.42	213-1-1.107	213-1-1.172	213-1-1.237
213-1-1.43	213-1-1.108	213-1-1.173	213-1-1.238
213-1-1.44	213-1-1.109	213-1-1.174	213-1-1.239
213-1-1.45	213-1-1.110	213-1-1.175	213-1-1.240
213-1-1.46	213-1-1.111	213-1-1.176	213-1-1.241
213-1-1.47	213-1-1.112	213-1-1.177	213-1-1.242
213-1-1.48	213-1-1.113	213-1-1.178	213-1-1.243
213-1-1.49	213-1-1.114	213-1-1.179	213-1-1.244
213-1-1.50	213-1-1.115	213-1-1.180	213-1-1.245
213-1-1.51	213-1-1.116	213-1-1.181	213-1-1.246
213-1-1.52	213-1-1.117	213-1-1.182	213-1-1.247
213-1-1.53	213-1-1.118	213-1-1.183	213-1-1.248
213-1-1.54	213-1-1.119	213-1-1.184	213-1-1.249
213-1-1.55	213-1-1.120	213-1-1.185	
213-1-1.56	213-1-1.121	213-1-1.186	
213-1-1.57	213-1-1.122	213-1-1.187	
213-1-1.58	213-1-1.123	213-1-1.188	
213-1-1.59	213-1-1.124	213-1-1.189	
213-1-1.60	213-1-1.125	213-1-1.190	
213-1-1.61	213-1-1.126	213-1-1.191	
213-1-1.62	213-1-1.127	213-1-1.192	
213-1-1.63	213-1-1.128	213-1-1.193	
213-1-1.64	213-1-1.129	213-1-1.194	
213-1-1.65	213-1-1.130	213-1-1.195	



Village of South Blooming Grove Consolidated Sewer District 1

Legend

- County Route
- Local Road
- State Route
- Village Boundary
- VIllage_Properties
- Out of District User
- Sewer District Parcels
- South Blooming Grove Parcels



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PLAN FOR:

CONSOLIDATED SEWER DISTRICT 1

VILLAGE OF: SOUTH BLOOMING GROVE ORANGE COUNTY, NY

DESIGN:

DRAWN: D.J.S.

CHECKED:

SCALE: 1" = 500'

DATE: 24 September 2013

JOB NO: 13-142

SHEET 1 OF 1

REVISION:	DATE:

ConsolidatedSewerDistrict 1 9-24-1