

**73264**  
**Town of Schodack**  
**Battisti Water District #10**

**P E T I T I O N**  
**FOR**  
**ESTABLISHMENT OF BATTISTI WATER DISTRICT #10**

**PETITION  
FOR THE  
ESTABLISHMENT OF BATTISTI WATER DISTRICT #10  
TOWN OF SCHODACK  
RENSSELAER COUNTY, NEW YORK**

TO: The Town Board of Town of Schodack

We, the undersigned Petitioners, respectfully petition your Honorable Board as follows:

We are the owners of taxable real property situate within the proposed Battisti Water District #10, owning in the aggregate at least one-half of the assessed valuation of all the taxable real property of the proposed District, as shown on the latest completed assessment roll of the Town of Schodack, Rensselaer County, New York, and if any resident owners, owning taxable real property, aggregating at least one-half of the assessed valuation of all the taxable real property, of the proposed District, owned by resident owners, according to the latest completed assessment roll of said Town.

The territory sought to be included in the proposed District will be known as the Battisti Water District #10, and lies wholly within the Town of Schodack and outside of any incorporated City or Village, and consists of those tracts or parcels of land bounded as shown on and described on Appendix A attached hereto.

Annexed to this petition and made a part hereof as Appendix B is a map, plan and report made by Laberge Group, Ltd., competent engineers duly licensed by the State of New York, showing among other things, the boundaries of the proposed District and also the general plan of the water mains, their size, the location of proposed water source and the proposed cost of the improvements.

The maximum amount of funds proposed to be expended by creation of this District is One Million Seven Hundred Ninety Thousand and 00/100 Dollars (\$1,790,000.00). Operation and maintenance costs will equal approximately One Hundred Ten and 00/100 Dollars (\$110.00) per connection for the proposed District plus One Hundred Twenty-One and 00/100 Dollars (\$121.00) per connection for the shared cost of water supply or approximately Two Hundred Thirty-One and 00/100 Dollars (\$231.00) per connection for the first year of operation for the typical property.

The annual debt service to finance this project will be affected by the ability to obtain grants to assist in decreasing the amount to be financed and the cost of financing. Annual debt service will be spread across the properties in the District on a per equivalent dwelling unit basis ranging from a high of One Thousand Nine Hundred Ninety-Nine and 00/100 Dollars (\$1,999.00) to a low of Four Hundred Sixty-Five and 00/100 Dollars (\$465.00) depending on the ability to obtain grants and the cost of financing.

Water meters and individual pressure reducing valves for each individual service is estimated at Nine Hundred and 00/100 Dollars (\$900.00) per connection, per meter.

Connection fees will be waived by the Town for a period of One Hundred Eighty (180) days after the service is made available, and if not connected within One Hundred Eighty (180) days the connection fee to be paid by the property owner shall be Three Hundred and 00/100 Dollars (\$300.00).

It is respectfully requested that the necessary action be taken to create the District as shown above pursuant to the provisions of the Laws of the State of New York and such approvals which shall be required by law.

We have, therefore, signed one of the counterparts of this petition and set opposite our names, the property owned by each of us, together with the assessed valuation thereof, according to the last preceding completed assessment roll of the Town of Schodack, Rensselaer County, New York.



**ACKNOWLEDGMENT**

STATE OF NEW YORK     )  
  ) ss.:  
COUNTY OF RENSSELAER)

On the \_\_\_\_\_ day of May, 2020, before me, the undersigned, personally appeared, \_\_\_\_\_, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual acted(s), executed the instrument.

\_\_\_\_\_  
Notary Public

**ASSESSOR'S CERTIFICATION**

I, \_\_\_\_\_, do hereby certify that I am the Assessor of the Town of Schodack, Rensselaer County, New York; that I have examined the attached petition and that the same has been signed by the owners of taxable real property situated in the proposed Battisti Water District #10, Town of Schodack, Rensselaer County, New York, and that they own, in the aggregate, at least one-half of the assessed valuation of all the taxable real property within the said proposed District, or are resident owners of real property within the proposed District owning taxable real property at least equal to one-half of the assessed valuation of all taxable real property within the proposed District owned by resident owners, as shown upon the latest assessment roll of the Town of Schodack, New York, all according to the latest completed assessment roll of the Town of Schodack, Rensselaer County, New York.

DATED: May , 2020.

\_\_\_\_\_  
Assessor of the Town of Schodack  
Rensselaer County, State of New York

**TOWN CLERK'S CERTIFICATE**

I, Debra Curtis, Town Clerk of the Town of Schodack, Rensselaer County, New York, do hereby certify that I have compared the foregoing Petition, including attached map, the original of which is on file in my office, excluding signature pages and acknowledgment, and that the attached is a true and exact copy.

IN WITNESS WHEREOF, I have hereunto set my hand and seal of the Town of Schodack, this \_\_\_\_ day of May, 2020

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Debra Curtis, Town Clerk  
Town of Schodack  
Rensselaer County, New York

**(SEAL)**

APPENDIX A

Town of Schodack  
Rensselaer County, New York

Water District Boundary Description  
Battisti Water District #10

The following is intended to describe the bounds of the proposed water district in the Town of Schodack, Rensselaer County, State of New York. This District is shown on the map entitled "Proposed Battisti Water District #10 Water District Boundary" prepared by Laberge Group, dated January 16, 2019. The parcels referred to in the following description are shown on the Town of Schodack Tax Map 210.01.

Beginning at a point located at the northwest corner of the intersection of Van Hoesen Road and N.Y.S. Route 9 at the southeasterly corner of Parcel 17(A);

Thence proceeding westerly along the northerly bounds of Van Hoesen Road to a point in its intersection with the easterly bounds of Northern Boulevard, said point also being the southwesterly corner of Parcel 33;

Thence southerly across Van Hoesen Road to a point at the intersection with the southerly line of Van Hoesen Road and the northeasterly corner of lot 2;

Thence southerly along the easterly bounds of lot 2 to the southeasterly corner of lot 2;

Thence westerly along the southerly line of lot 2 to the southwesterly corner of lot 2;

Thence northerly along the westerly bounds of lot 2 to a point in the southerly line of Van Hoesen Road, said point being the northwesterly corner of lot 2;

Thence northerly across Van Hoesen Road to a point at the intersection with the northerly line of Van Hoesen Road and the southeasterly corner of lot 34;

Thence westerly along the northerly bounds of Van Hoesen Road to a point in the easterly bounds of Orchard Road, said point also being the southwest corner of Parcel 43;

Thence westerly across Orchard Road to a point at the intersection with the northerly bounds of Van Hoesen Road, said point also being the southeasterly corner of Parcel 44;

Thence westerly along the northerly bounds of Van Hoesen Road to a point at the southwesterly corner of Parcel 44;

Thence northerly along the westerly bounds of Parcels 44, 45, 46, 47, 48, and 49 to a point in the southerly bounds of the westerly terminus of Orchard Road, said point also being the northwesterly corner of Parcel 49;

Thence northerly along the westerly terminus of Orchard Road to a point in the northerly bounds of Orchard road, said point also being the southwesterly corner of Parcel 52;

Thence northerly along the westerly bounds of Parcels 52, 53, and 2 to a point in the northwest corner of Parcel 2;

Town of Schodack  
Proposed Battisti Water District #10

March 2019, Rev. April 2020

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Thence easterly along the northerly bounds of Parcel 2 to a point in the easterly corner of Parcel 2, said point also being in the northerly terminus of the westerly bounds of a “paper street”;

Thence easterly across the northern terminus of said “paper street” to the easterly bounds of said “paper street”, said point also being the northwest corner of Parcel 1;

Thence easterly along the northerly bounds and southerly along the easterly bounds of Parcel 1 to a point in the southeast corner of said Parcel 1, said point also being the northwest corner of Parcel 3;

Thence easterly along the northerly bounds of Parcels 3, 4, and 7.1 to a point in the northeasterly corner of Parcel 7.1, said point also being in the northerly bounds of Loretta Lane;

Thence easterly along the northerly bounds of Loretta Lane to a point in the northwesterly corner of Parcel 14;

Thence easterly along the northerly bounds of Parcel 14 to a point in the westerly bounds of N.Y.S. Route 9, said point also being the northeasterly corner of Parcel 14;

Thence southerly along the westerly bounds of N.Y.S. Route 9 to a point in the northerly bounds of Orchard Road, said point also being the southeasterly corner of Parcel 15;

Thence southerly across Orchard road to a point in the southerly bounds of said road, said point also being the northeasterly corner of Parcel 16;

Thence southerly along the westerly bounds of N.Y.S. Route 9 to the point and place of beginning.

All Tax map parcel references are based upon those in use by the Rensselaer County Real Property Tax Service Agency in January, 2019.

Town of Schodack  
Proposed Battisti Water District #10

March 2019, Rev. April 2020

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APPENDIX B

TOWN OF SCHODACK  
RENSSELAER COUNTY, NEW YORK  
MAP, PLAN, AND REPORT  
BATTISTI WATER DISTRICT #10  
MARCH 2020  
Revised APRIL 2020

SUPERVISOR

David Harris

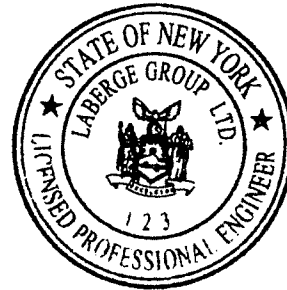
TOWN BOARD

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## **Project Description**

The Town of Schodack, located in Rensselaer County is seeking to establish a new water district to serve the existing private water service area commonly referred to as “The Battisti Subdivision”. The private water system has been abandoned by the previous owner to the Department of Public Service and currently is in need of extensive upgrades. (See Appendix A: Project Location Map for the project’s location.)

The new water district would connect to the Clearview Water District with the installation and connection of a 12 inch in diameter water main from two points on the existing adjacent system. The proposed design would provide a looped system for improved system pressure distribution, water quality, and reliability.

The proposed system connection points are located:

1. At the Van Hoesen Road existing 12 inch water main that connects the Clearview Water District No. 1 to the Maple Crest Water District No. 3 (Clearview Water District Extension No.1) approximately 700 feet west of Orchard Road and approximately 2,200 feet west of Rte. 9; and
2. At Route 9 at the location of existing 12 inch water main stub approximately 100 feet north of Schodack Drive. Battisti residents would be served from a looped connection to the new 12 inch water mains via 8 inch mains.

## **Project Background and History**

### **Site Information**

#### **1. Location.**

The proposed project is located in the southern half of the Town of Schodack, generally located between US I-90 and US Route 9 and is further bounded by Clearview Boulevard and Maple Hill Road. (See Appendix A: Project Location Map.)

#### **2. Geologic Conditions.**

Soils within the proposed Water District and areas of the proposed water main extension are predominately Hoosic gravelly sandy loam. The soil group is Hydrologic Soil Group A and is considered somewhat excessively drained. The typical soil profile is:

H1 - 0 to 9 inches:  
gravelly sandy loam

H2 - 9 to 23 inches:  
very gravelly sandy loam

H3 - 23 to 60 inches:  
very gravelly sand

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The depth to the water table is more than 80 inches. These soils typically do not flood nor pond water. The depth to a restrictive feature such as bedrock is more than 80 inches. Since the proposed water mains will be installed with a cover of 60 inches; it can be anticipated that bedrock would not be encountered. However, geo-probes are recommended along the proposed route of water mains in order to confirm that construction will not encounter a restrictive layer. Slopes along the proposed water main route are relatively flat at between zero and eight percent (1 vertical to 12 horizontal). (See Appendix E: USDA Natural Resources Conservation Services Soil Report.)

### **3. Environmental Resources.**

Environmental Resource Mapper: Based upon a review utilizing the New York State Department of Environmental Conservation Environmental Resource Mapper; the project area does not contain any environmental resources such as rare or endangered plants. Adjacent to the project area are State and Federally regulated wetland areas. (See Appendix F: Wetlands Map.)

US Fish & Wildlife Service IPaC Trust Resource Report: A review of the US Fish & Wildlife Service Information for Planning and Consultation (IPaC) indicates that the project area does not contain any critical habitats. However there is a record of Northern Long-eared Bat (*Myotis septentrionalis*) potentially in the region. It is not expected that the project would impact the species since all work would be within existing highway right-of-ways. (See Appendix G: US Fish & Wildlife Service IPaC Trust Resource Report.)

NYS OPRHP / CRIS: A review of the New York State Office of Parks, Recreation & Historic Preservation (OPRHP) Cultural Resource Information System (CRIS) indicates that the Clearview Water District No 1 Extension No-1 was required to perform additional investigation (Survey 07SR57836). The project performed a Phase IA Literature review and sensitivity assessment and a Phase IB Archeological Field Reconnaissance. Upon submission of this project's area of proposed disturbance map and area photographs, the OPRHP issued its response indicating that the project "...will have no impact on archaeological and/or historic resources..." (See Appendix H: NY State Historic Preservation Office.)

### **4. Floodplain Considerations.**

The proposed district and all areas of the proposed construction are outside the limits of floodplains. The project area map shows the project limits on a FEMA community map for the area. (See Appendix B: Project Area Map & Project Alternative Maps.)

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## **Ownership and Service Area**

The Battisti Water Supply Company is a private water supply and distribution company that developed and abandoned a water system that provided water to 53 parcels of properties (The Battisti Subdivision). The New York State Department of Public Service has appointed NY American Water as the temporary operator. It is the preference of the Department of Public Service that the water system be converted to municipal ownership to avoid the service issues that have plagued the private system over the last 15 to 20 years due to the lack of capital investment.

The severe deterioration of the system is a concern of the Rensselaer County Department of Health, who have expressed concern that catastrophic failure or other shutdown of the system could cause the need to declare a Health Emergency. Potable water would have to be trucked into the neighborhood for distribution in portable containers to the residents until the situation could be remedied.

## **Existing Facilities and Present Conditions**

### **1. Battisti Water System**

The existing distribution system consists of approximately 3,800 linear feet of 3 inch, 2 inch, and ¾ inch galvanized steel pipe. Based upon record mapping, several service connections are provided via common use branches from the main line in the street to serve several residences.

The water supply for the former Battisti Water Company are two existing wells located on a 7.0 acre lot on the extension of Orchard Road. The existing system does not afford the ability to provide any level of fire flow. The water use is not currently metered by the operator.

### **2. Clearview Water District**

It is proposed to connect the Battisti water system to the Town's Clearview Water District. The Clearview District currently serves approximately 210 parcels. The water supply for this district is from a well field with three production wells (PW) to a depth of between 38 feet and 53 feet, capable of a maximum of 61 (PW-1), 66 (PW-2) and 57 (PW-3) gallons per minute (g.p.m.) respectively. According to the "Aquifer Evaluation, Town of Schodack, Clearview Well Field Evaluation", Hanson Van Vleet, LLC, October 25, 2005; the wells have a combined safe yield of 210 g.p.m. However, the operation is limited by the NYS DEC Water Withdrawal Permit ID 4-3844-00248/00001 which has an effective date of April 25, 2016 and an expiration date of April 24, 2026. This permit limits the maximum system capacity to 118 g.p.m. (a maximum safe yield of 61 g.p.m. for production well number 1 and 57 g.p.m. for production well number 3 with production well number 2 as a reserve supply) or 169,920 gallons per day (g.p.d.).



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Table 1 below, provides some basic information on the Clearview Water supply.

**Table 1: Clearview Water Supply**

<b>Well Characteristic</b>	<b>PW-1</b>	<b>PW-2</b>	<b>PW-3</b>
Depth, Feet	38	45	53
Existing Maximum Operation, g.p.m.	61	66	57
Permitted Maximum Well Field, g.p.m.	118		
Permitted Maximum Well Field, g.p.d.	169,920		
Average Daily Flow, g.p.d.	32,000		
Peak Factor	3		

**Definition of the Problem**

The Battisti Subdivision was served by a private water company that delivers water to residences via system of 3 inch, 2 inch and ¾ inch water mains constructed of galvanized pipe, circa 1958. The water company operated the 60-year old infrastructure by performing only necessary maintenance and mandated operational procedures. Typically, galvanized steel piping has been shown to typically have a life expectancy of 40 to 60-years, as evidenced by the many water main breaks in the past 15 to 20 years, which were never documented by the previous owner/operator. Emergency system repairs are frequent, resulting in no water service and boil water orders. It is also reported that the existing mains demonstrate tuberculation which has resulted in reduced capacity and diminished visual water quality as well as plumbing fixture staining.

The private water company has ceased operation by turning the system over to the Department of Public Service who has appointed a temporary system operator. Residents served by the existing system remain concerned about the reliability of the water supply, quality of water and system pressures. The current operator has been making emergency repairs only as needed, but does not have plans for capital investment in the distribution system.

The establishment of a new water district will enable the Town to connect to the existing Clearview Water District No.1 infrastructure to provide a water supply and new system infrastructure allowing the abandonment of the existing aging water system. The proposed project would thus provide improved water quality, pressure and operation and maintenance providing for the long term health and safety of the users.

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**Financial Status**

Until such time as the establishment of a new water district there is no public debt. Operating expenses are currently recouped by the Temporary Operator of the system via receipt of revenue from each existing water system customer. Future operation and maintenance and debt service costs associated with the proposed project are to be paid by individual property owners within the proposed district.

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## **Alternatives Analysis**

Four alternatives have been considered for this project.

### **Description of Alternatives**

**Alternative No. 1 (Take no action):** This alternative would not resolve existing system degradation of service that includes:

1. A 60-year old infrastructure of undersized and reduced capacity (reported tuberculation) water system that provides service to residences mixed system of 3 inch, 2 inch and ¾ inch galvanized pipes;
2. Frequent emergency system repairs of water main breaks resulting in no water service and boil water orders lasting days; and
3. Infrequent and lacking preventative maintenance.

No action on the part of the Town will likely lead to continuation of the system decaying with no capital investment until it ultimately fails, possibly leading to a public health emergency.

**Alternative No. 2 (Looped System):** Extend the existing 12 inch diameter water main from Van Hoesen Road westerly to US Route 9, thence upon crossing under US Route 9 to the east side, continuing southerly to connect to the existing 12 inch diameter water main located just north of the intersection of US Route 9 and Schodack Drive to provide a looped water system supply for improved water quality and system pressures. A connection from the proposed 12 inch diameter water main in Van Hoesen Road with 8 inch diameter water main would be provided along Orchard Road, Northern Boulevard and Loretta Lane.

**Alternative No. 3 (Connect To Van Hoesen Only):** Extend the existing 12 inch diameter water main from Van Hoesen Road westerly to US Route 9. A connection from the proposed 12 inch diameter water main in Van Hoesen Road would be provided with an 8 inch diameter water main along Orchard Road, Northern Boulevard and Loretta Lane.

**Alternative No. 4 (Connect To Rte. 9 Only):** Extend the existing 12 inch diameter water main from just north of the intersection of US Route 9 and Schodack Drive continuing northerly to the intersection of US Route 9 and Van Hoesen Road, thence crossing under US Route 9 to the west side, continuing westerly along Van Hoesen Road to the intersection of Van Hoesen Road and Orchard Drive. A connection from the proposed 12 inch diameter water main in Van Hoesen Road would be provided with an 8 inch diameter water main along Orchard Road, Northern Boulevard and Loretta Lane.

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## **Preferred Alternative**

The preferred alternative is Alternative No. 2, the looped system. This alternative would serve to benefit all users by providing a looped water system supply for improved water quality and system pressures. The looped system provides a higher degree of reliability since water can be fed to the users from two directions, greatly reducing the chance of a service interruption due to a water main break somewhere in the system.

## **Basis of Design**

This analysis utilizes the Great Lakes - Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers "Recommended Standards For Water Works" 2012 edn. as the basis of design of all water system components.

## **Flow Projections**

### **1. Existing Clearview Water District**

Based upon record information for the Clearview Water District (the Clearview Water District & Maple Crest Water District), the average daily water use (use/flow/demand) for the years 2016, 2017 and 2018 is approximately 32,000 g.p.d. Comparing the average daily flows to the peak water usage for each year indicates a peak flow factor of three (3) times the average daily flow.

The Clearview Water District has 210 connected parcels of property for water service. Utilizing the average daily demand of approximately 32,000 g.p.d. indicates that water use per connection is approximately 158 gallons per day.

**Table 2: Clearview Water District Flow Characteristics**

<b>Average Daily Flow</b>	<b>Peaking Factor</b>	<b>Consumption Rate</b>
32,000 g.p.d.	3	158 g.p.d.

The existing Clearview Water District consists of:

- A storage tank with an approximated capacity of 101,400 gallon. Based upon current operations the system's available operational storage (storage utilized to meet daily demand) is approximately 77,000 gallons.
- Three production water wells with a combined permitted safe yield of 118 g.p.m.;
- Various diameter water distribution mains; and
- Treatment/operational appurtenances.

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## 2. Proposed Water District

The proposed Water District would connect 54 parcels. Utilizing the maximum consumption rate of 158 g.p.d.; the new District could reasonably be expected to demand a daily peak of approximately 8,500 g.p.d.

Given the existing Clearview storage tank operating range from a typical low elevation of 453 feet, to a typical high elevation of 460 feet; static pressure range tends to be fairly constant with only a 3 psi pressure change. Should the tank be drawn down to its lowest operational elevation of approximately 441 feet, static pressures could drop over 8 psi. However, within the normal operational range of the storage tank, pressures within the proposed water district would range from an approximate low of 75 psi to an approximate high of 87 psi. Since typical water pressures are provided between 50 and 80 psi under normal conditions and the existing Battisti water system provides customers with a static pressure of approximately 35 psi; new connections to the proposed water system will be required to install individual pressure reducing valves in order to maintain pressures below 60 psi to avoid potential damage to the existing residential water systems.

## 3. Total Projected Water Demand

The total proposed daily demand of the Clearview Water District is the existing Clearview Water District average daily demand of 32,000 g.p.d. plus the proposed Water District's projected average water demand of 8,500 g.p.d. or 40,500 g.p.d. Applying the peak factor, results in a peak daily demand of 121,500 g.p.d.

**Table 3: Proposed Water Demand**

Use / Demand Type	Water Demand Rate*
Clearview Water District	32,000 g.p.d.
Proposed Water District	9,000 g.p.d.
Total Average Demand	41,000 g.p.d..
Total Peak Demand	123,000 g.p.d.
Total Peak Demand	85 g.p.m.

\*Figures rounded.

## 4. Fire Protection Demand

Based upon the Insurance Services Office, "Fire Suppression Rating Schedule" for one and two family dwellings not exceeding two stories in height with a distance between buildings of between 31 and 100 feet (typical construction for the existing and proposed water districts); the recommended fire flow is 750 g.p.m. for a duration of two hours.

The “Recommended Standards for Water Works” Part 7 Finished Water Storage, 7.0.1 Sizing, states that storage provided should have sufficient capacity to meet domestic demands and where fire protection is provided, fire flow demands. Paragraph 7.0.1.c notes that fire flow established by the Insurance Services Office should be satisfied where fire protection is provided.

The existing system storage capacity may be analyzed the following two ways:

1. The volume of storage required for average day demand plus fire protection versus the volume of storage provided.
  - A volume of storage analysis indicates that the existing system, which has a tank storage volume of 101,400 gallons, is not sufficient to provide both average demand of 40,500 g.p.d. and the required 90,000 gallons (750g.p.m. for 2 hours) of fire flow.
2. The rate of demand required for average day demand rate plus the rate of fire protection required versus the rate of supply available to meet the total demand.
  - The proposed average water demand (28 g.p.m.) combined with fire flow demand (750 g.p.m.) equals a total rate of demand of 778 g.p.m. Given an operational scenario where the Clearview storage tank is at full storage, 101,400 gallons and the existing production wells are operating at the maximum permitted rate, 118 g.p.m.; then the fire flow demand would be available for greater than the recommended two hour duration, while providing the average peak daily demand. Therefore, the existing storage combined with supply is sufficient for fire protection demand.

**Table 4: Fire Flow Demand Duration**

<b>Demand</b>	<b>Rate</b>
Fire Flow	750 g.p.m.
Average Daily	28 g.p.m.
<b>Total Demand (Fire Flow + Average Daily Flow)</b>	<b>778 g.p.m.</b>
Flow Provided By Wells Operating At Their Maximum Permitted	118 g.p.m.
Flow Remaining To Be Provided By Storage (Total Demand-Well Capacity)	660 g.p.m.
Flow Provided By Storage	101,400 gallons
Flow Required From Storage	660 gallons/minute
<b>Duration of Flow Provided By Storage (Storage/Flow Rate Required)</b>	<b>153.6 minutes (+2.5 hours)</b>

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### **Land Requirements**

Since all proposed improvements will occur within existing public right-of-ways, no additional lands would be required for any of the proposed alternatives. However, temporary construction easements may be necessary to allow for construction in right-of-ways confined by existing features and construction means and methods.

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## **NYS Department of Public Service Requirements**

The existing water system is operated by the NYS Department of Public Service (DPS). The DPS will require that the Town, as a new public water provider, coordinate the physical abandonment of the existing system and operation of the new system. Further, the existing water distribution piping would be abandoned in place without a cost. The existing system's two shallow wells (approximately 10 feet deep), two existing hydro-pneumatic tanks (3,000 and 2,500 gallon capacity), the well house structure and appurtenances will remain in the possession of the DPS. These existing and parcel assets would be disposed of in accordance with DPS requirements.

## **Environmental Impacts and Mitigation Measures**

There should be no significant negative environmental impacts associated with any of the alternatives since construction would take place within existing public right-of-ways. Past NYS OPRHP reviews that were done for the Clearview Water District No. 1 Extension 1, did not impede construction and OPRHP has concluded that similar results could be expected for this proposed project.

While the project area does not contain any critical habitats; there is a potential for the presence of the Northern Long-eared Bat (*Myotis septentrionalis*) in the region. However, it is not expected that the project would impact the species since all work would be within existing street/highway right-of-ways avoiding typical species habitat. Should any of these resources occur within the project area, the alignment and/or the season of construction could be adjusted to avoid any impacts.

## **New York State Environmental Quality Review Act**

The Town Board, as part of its deliberations, should include a New York State Environmental Quality Review (SEQRA). It is anticipated that the project review would result in a determination of no significant negative effect upon the environment and that the Town Board would then resolve that a Negative Declaration be prepared.

## **Energy Efficiency**

The proposed system would utilize existing well pumps and controls. No efficiency upgrades are planned at this time.

## **Constructability**

There are no known constructability issues.



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### **Preliminary Opinion of Probable Cost**

The preliminary opinion of the probable cost for the recommended alternatives excludes the cost of:

- Water meters and individual pressure reducing valves for each individual service, estimated at \$900 per connection per meter; and
- The connection of individual services on private property within the proposed water district.

Connection fees will be waived by the Town for a period of 180 days after service is made available.

The anticipated costs include a 10% contingency due to potential unknown construction issues that could arise. Preliminary opinions of the probable construction cost for Alternatives 2, 3 and 4 can be found in Appendix J.

### **User Costs**

Capital costs for the proposed improvements are allocated to each parcel of property within the proposed water district by the use of Equivalent Dwelling Units (EDUs) assigned by property type and property code in accordance with the Town of Schodack Code (Water Regulations, Town Board Resolution 18-253).

Within the proposed district there are 58.25 EDUs as summarized in the following:

- 50-Residential 1 family with acreage, Class 201 at 1-EDU/parcel;
- 1-Residential 1 family year round with accessory, Class 215 at 1.5-EDU/parcel;
- 1-Exempt property (water supply), Class 822 at 0-EDU/parcel;
- 1-Vacant land; Class 311 at 0.75-EDU/parcel;
- 1-Mixed use with 4,582 square feet of Offices (Class 464, 3-EDU) and two (2) Apartments (Class 411, 0.5-EDU/apartment) at 4-EDU per mixed use; and
- 1-Diner with 1,000 square feet of space, Class 422 at 2-EDU.

The annual user cost is comprised of two components: operation & maintenance and debt service.

### **Operation and Maintenance Cost**

Operation and maintenance (O & M) cost includes the cost of personnel, equipment, fuel, electricity, materials, payroll benefits and miscellaneous items. In the case of the Clearview Water District, O & M cost is divided into two categories:

1. Cost to the 166 connections within the Clearview Water District associated with O & M for the district; and

2. Cost to the 166 connections within the Clearview Water District plus the 44 connections within the Maple Crest Water District with O & M associated with the production and supply of water.

The proposed water district, being similar in size to the nearby Maple Crest Water District with its 44 connections, is expected to experience similar O&M costs. However, being that the Battisti Water District will have new water system infrastructure, the O&M costs can be expected to be somewhat less than those historically experienced by the Maple Crest Water District. (See Table 5: O&M Costs note 2.) With the addition of the proposed water district and its 54 connections, the O & M cost per connection for supply will be reduced due to the additional connections sharing of the O & M expenses to produce the supply. Therefore, the proposed district total O & M cost will be \$110 per connection for the proposed water district plus \$121 per connection for the shared cost of supply or approximately \$231 per connection.

**Table 5: O & M Costs**

<b>Water District</b>	<b>CONNECTIONS</b>	
Clearview	166	
Maple Crest	44	
Proposed Battisti #10	54	
<b>Operation / Maintenance Item</b>	<b>Existing Costs (2018)</b>	
	<b>Maple Crest O&amp; M Costs</b>	<b>Clearview WD 1 &amp; Maple Crest WD Supply Costs</b>
Personnel	\$3,542	\$20,126
Supplies {chemicals, testing etc.}	\$392	\$1,867
Repairs/Miscellaneous	\$1,914	\$2,264
Power{Gas/Elec}	\$0	\$5,881
Materials	\$1,395	\$1,849
Totals:	\$5,848	\$31,987
<b>Current Cost Per Connection</b>	<b>\$133</b>	<b>\$152</b>
	(Maple Crest WD 1 Total O&M Cost)/(# of Maple Crest connections)	(Total Cost of Supply)/(# of Clearview + # of Maple Crest connections)
<b>Proposed Cost Per Connection</b> (Clearview, Maple Crest and Battisti Users)	<b>\$110</b>	<b>\$121</b>
	See Note 2	See Note 3
<b><u>New Battisti Water District O&amp;M Including Supply Cost: \$231/connection</u></b>		
<b>Notes:</b> 1) Maple Crest does not pay for Clearview WD1 O&M only supply. 2) Basis of Proposed User Cost: 80 to 90% of the Maintenance and testing costs experienced by Maple Crest WD = (132.91\$/connection) x (85%/100%) = 112.97 \$/connection. Use 110\$/connection as a conservative estimate for the New WD 3) (Total Cost of Supply)/(# of Clearview + # of Maple Crest Connections + # of Proposed Battisti WD connections)		

---

## **Debt Service**

The amount of the project to be financed, and hence the annual debt service, will be affected by the ability to obtain grants to assist in decreasing the amount to be financed and the cost of financing. The analysis of debt service will include the use of the following project supplemental funding grant and loan programs:

1. New York State Water Grant. This program provides up to 60 percent of the total project cost, less other agency grant contributions, in grant funds up \$3,000,000.
2. Community Development Block Grant (CDBG). CDBG provides up to \$750,000 in grant funds for income eligible areas. This amount can be increased to \$1,000,000 in some situations where the project is co-funded with another grant agency. In 2018 the Town of Schodack commissioned an income survey of the target area in order to confirm eligibility to apply for CDBG funds. The survey results indicate that the target area has a low-moderate income rate of 53.9% which exceeds the program minimum threshold and allows the Town to apply for grant funds to lower the project cost for the district ratepayers.

The total estimated capital costs for the project are summarized in the following table.

**Table 6: Capital Cost for the Project Alternatives**

<b>Project Alternative</b>		<b>Capital Cost</b>
Alternative No. 1	Take no action.	0
Alternative No. 2	Looped System	\$1,790,000
Alternative No. 3	Connect To Van Hoesen Only	\$1,380,000
Alternative No. 4	Connect To Rte. 9 Only	\$1,710,000

The annual debt service payment will vary depending on the success of the Town's grant applications.

## **Funding Scenarios**

In addition to conventional financing, the following funding scenarios are considered to determine the various annual debt service payments.

Scenario No. A: No funding assistance. The project would be financed with a fixed 30 year loan at 5 % interest.

Scenario No. B: NYS Water Grant assistance with a conventional loan. The project would be funded with a combination of a grant in the amount of 60% of the total project cost and fixed 30 year loan at 5 % interest.

Scenario No. C: CDBG Grant with a conventional loan. The project would be funded with a CDBG grant in the amount of \$750,000 and the remainder financed with a fixed 30 year loan at 5% interest.

Scenario No. D: NYS Water Grant, CDBG Grant and conventional loan. The final project cost would be determined through a three tier process: 1) the project cost would be reduced by a CDBG grant of up to \$750,000; 2) the project cost would then be reduced by a NYS Water grant in the amount of 60% of the remaining project cost; 3) finally the balance would be financed with a fixed 30 year loan at 5% interest.

**Debt Service Rates**

The annual debt service cost will be spread across the properties in the proposed district on a per EDU basis. The following tables present the various funding scenario for each of the project alternatives. Note that Alternative No. 1 is a no action alternative and therefore it is not included in the funding tables.

**Table 7: Project Financing Scenarios & Corresponding Debt Service Rates**

Scenario No.	Description of Funding
A	No Grant funding assistance. Use conventional loan
B	NYS Water Grant assistance with conventional loan
C	CDBG Grant and conventional loan
D	NYS Water Grant, CDBG Grant and conventional loan

Alternative No. 2 (Looped System) - \$1,790,000 Capital Cost						
Funding Source	Loan Rate	Loan Term, yrs.	Funding Scenario:			
			A	B	C	D
CDBG	--	--	--	--	\$750,000	\$750,000
NYS Water Grant	--	--	--	\$1,074,000	--	\$624,000
Conventional Loan	5%	30	\$1,790,000	\$716,000	\$1,040,000	\$416,000
Amount To Finance	--	--	\$1,790,000	\$716,000	\$1,040,000	\$416,000
Debt Service	--	--	\$116,442	\$46,577	\$67,653	\$27,061
Equivalent Dwelling Units:	58.25	Per Parcel Debt Service:	\$1,999	\$800	\$1,161	\$465

Alternative No. 3 (Connect to Van Hoesen Only) \$1,380,000 Capital Cost						
Funding Source	Loan Rate	Loan Term, yrs.	Funding Scenario:			
			A	B	C	D
CDBG	--	--	--	--	\$750,000	\$750,000
NYS Water Grant	--	--	--	\$828,000	--	\$378,000
Conventional Loan	5%	30	\$1,380,000	\$552,000	\$630,000	\$252,000
Amount To Finance	--	--	\$1,380,000	\$552,000	\$630,000	\$252,000
Debt Service	--	--	\$89,771	\$35,908	\$40,982	\$16,393
Equivalent Dwelling Units:	58.25	Per Parcel Debt Service:	\$1,541	\$616	\$704	\$281

Alternative No. 4 (Connect to Route 9 Only) - \$1,710,000 Capital Cost						
Funding Source	Loan Rate	Loan Term, yrs.	Funding Scenario:			
			A	B	C	D
CDBG	--	--	--	--	\$750,000	\$750,000
NYS Water Grant	--	--	--	\$1,026,000	--	\$576,000
Conventional Loan	5%	30	\$1,710,000	\$684,000	\$960,000	\$384,000
Amount To Finance	--	--	\$1,710,000	\$684,000	\$960,000	\$384,000
Debt Service	--	--	\$111,238	\$44,495	\$62,449	\$24,980
Equivalent Dwelling Units:	58.25	Per Parcel Debt Service:	\$1,910	\$764	\$1,072	\$429

Note: The cost of operations and maintenance, approximately \$231, is not included in the above table of expected annual debt service.

### **Total Annual Cost-Typical Properties**

The preferred Alternative No. 2, provides for a looped water system. Using the most favorable funding Scenario, No. D, the project would be funded with by:

1. A CBDG grant of \$750,000;
2. A NYS Water grant in the amount of 60% of the total project cost remaining after applying the CBDG grant; and
3. A conventional 30-year loan.

The resultant total annual cost, including debt service and operation and maintenance, for the typical residential properties within the proposed district is \$696 (\$465 in debt service + \$231 in Operation & Maintenance costs).

### **One Time Costs**

At the time of connection, homeowners will have a one-time cost of approximately \$900 for the installation of the aforementioned meter and a pressure reducing valve installed in their home. This does not include any other connection costs they may wish to undertake.

---

## **Summary and Comparison of Alternatives**

**Alternative No. 1 (Take no action):** This alternative would not resolve existing system degradation of service.

**Alternative No. 2 (Looped System):** This is the preferred alternative as dead end water systems are connected to provide a looped system for improved water quality, uniform service pressures and a redundant route for supply.

**Alternative No. 3 (Connect To Van Hoesen Only) & Alternative No. 4 (Connect To Rte. 9 Only):** These alternatives extend the existing water system to serve the new district at the end of a system extension creating a dead end system with no second connection during a water main break.

## **Recommendations**

Should the Town decide to progress the project, the following action items are recommended:

1. Confirm that Alternative No. 2 (Looped System) is the preferred alternative that best serves the proposed water district, while providing improved water quality, system pressures and reliability for the existing Clearview Water District.
2. Perform a SEQRA and NEPA review to determine if the project will or will not have an adverse environmental impact.
3. Formally submit this report to the NYS Environmental Facilities Corp. and the NYS Department of Health for review and approval.
4. Prepare or cause to be prepared the following grant and loan applications:
  - a. New York State Water Grant.
  - b. Community Development Block Grant.
5. Establish the proposed water district by petition and Town Board resolution after conducting the requisite public hearing.
6. Authorize the preparation of plans and specifications for the project suitable for bidding.

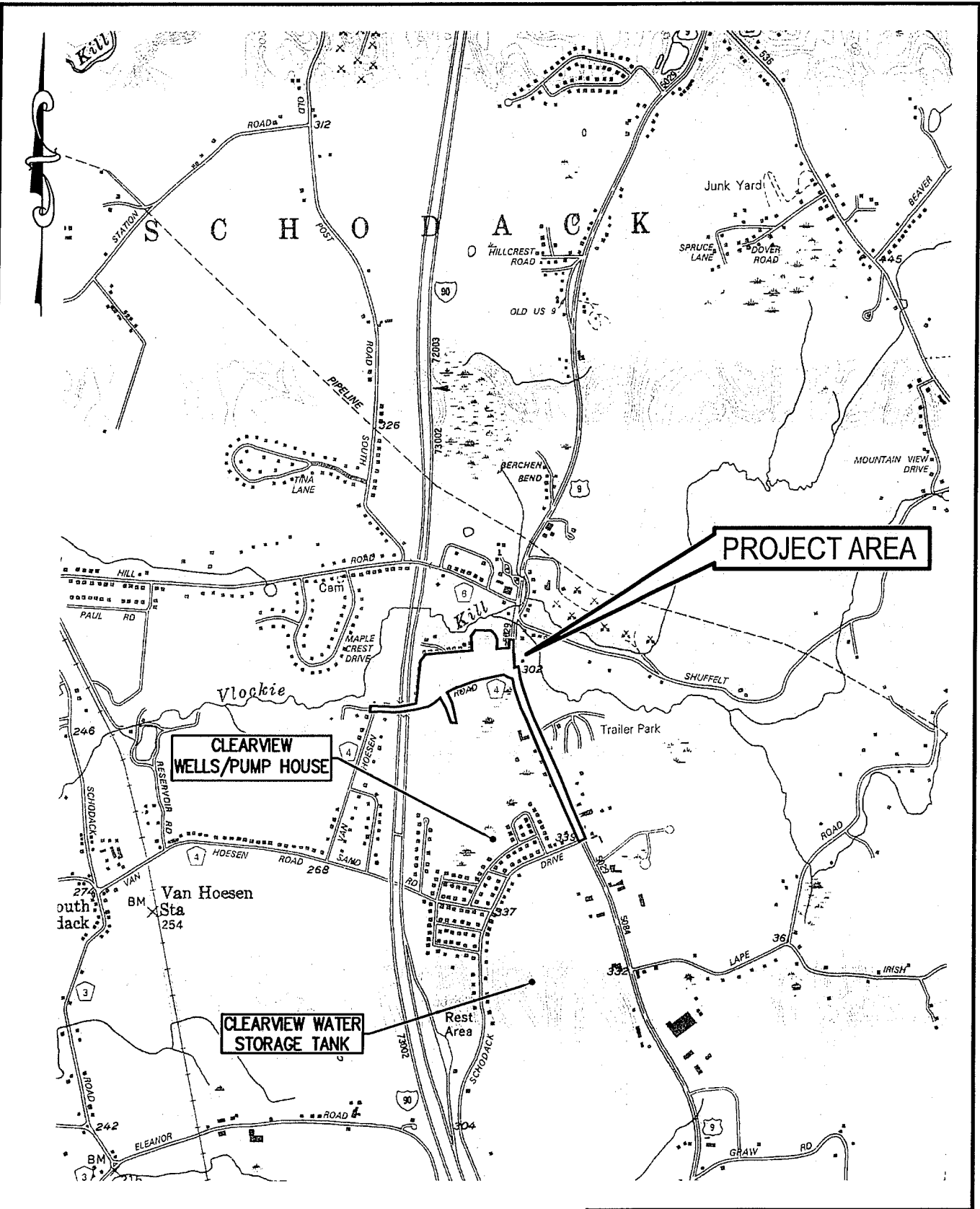
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**Appendices**

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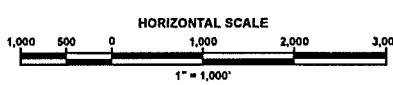
**A. Project Location Map**





Laberge Group - L:\2018007\Cadd\Draw\Water System Improvements Area Map\_01\_16\_2019 PEK.dwg [LOCATION] March 21, 2019 - 4:05pm smt2

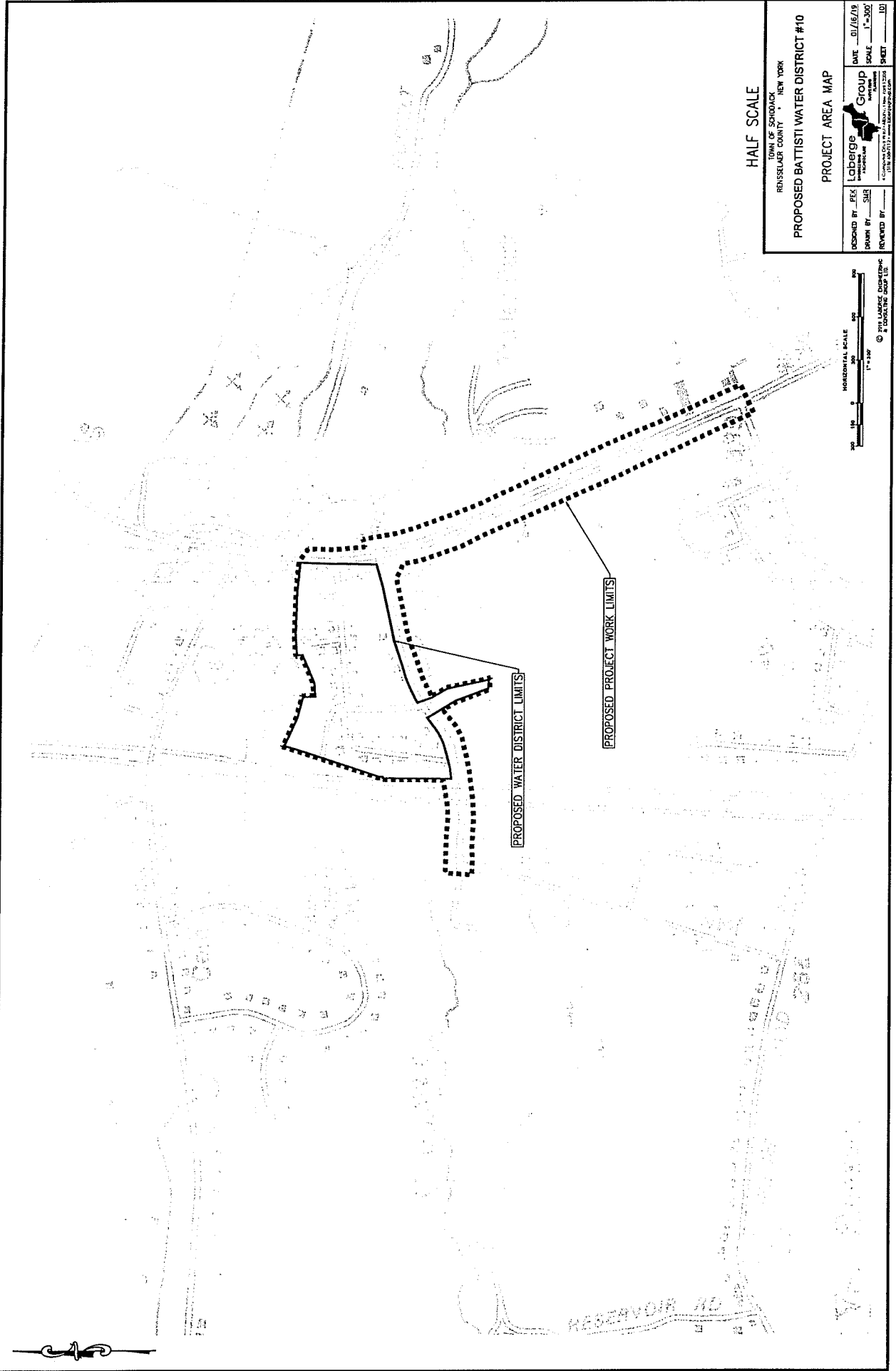
<b>TOWN OF SCHODACK</b> RENSSELAER COUNTY • NEW YORK	
<b>PROPOSED BATTISTI WATER DISTRICT #10</b>	
<b>LOCATION MAP</b>	
DESIGNED BY <b>PEK</b> DRAWN BY <b>SMR</b> REVIEWED BY _____	<div style="display: flex; align-items: center;"> <div> <b>Laberge</b>  <small>ENGINEERING ARCHITECTURE</small>  <b>Group</b>  <small>SERVICING PLANNING</small> </div> </div> <p style="font-size: 8px;">         4 Computer Drive West • Albany, New York 12205          (518) 458-7112 • www.labergegroup.com       </p>
DATE <b>01/16/19</b> SCALE <b>1"=2000'</b> SHEET <b>100</b>	



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**B. Proposed Project Area Map & Project Alternative Maps**



HALF SCALE

TOWN OF SCHENCK  
 RENSSELAER COUNTY, NEW YORK

PROPOSED BATTISTI WATER DISTRICT #10

PROJECT AREA MAP

DESIGNED BY: PEK	DATE: 01/16/19
DRAWN BY: SHR	SCALE: 1"=200'
REVIEWED BY:	SHEET: 01

Laberge Group  
 ENGINEERS  
 401 N. 2ND ST. SUITE 200  
 ALBANY, NY 12202  
 © 2019 LABERGE ENGINEERS  
 & ARCHITECTS LLP

**LEGEND OF SYMBOLS:**

- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED PRESSURE REDUCING VALVE OR VALVE DISTRICT LIMITS
- HOPE
- HOPE
- - - 300
- EXISTING CONTOUR ELEVATION



**HALF SCALE**

TOWN OF SPRINGBURY  
 REMSELER COUNTY, NEW YORK

PROPOSED BATTISTI WATER DISTRICT #10

ALTERNATIVE No. 2



Labarge Group  
 WATERWORKS  
 45 Corporate Park, West Nyack, NY 10994  
 TEL: (845) 471-1200 FAX: (845) 471-1209

DESIGNED BY: JKH  
 DRAWN BY: JKH  
 REVIEWED BY: JKH

DATE: 01/16/19  
 SCALE: 1"=200'

SHEET

1 OF 1

© 1995 BY THE TOWN OF SPRINGBURY

1" = 200'

300'

600'

900'

1200'

1500'

1800'

2100'

2400'

2700'

3000'

3300'

3600'

3900'

4200'

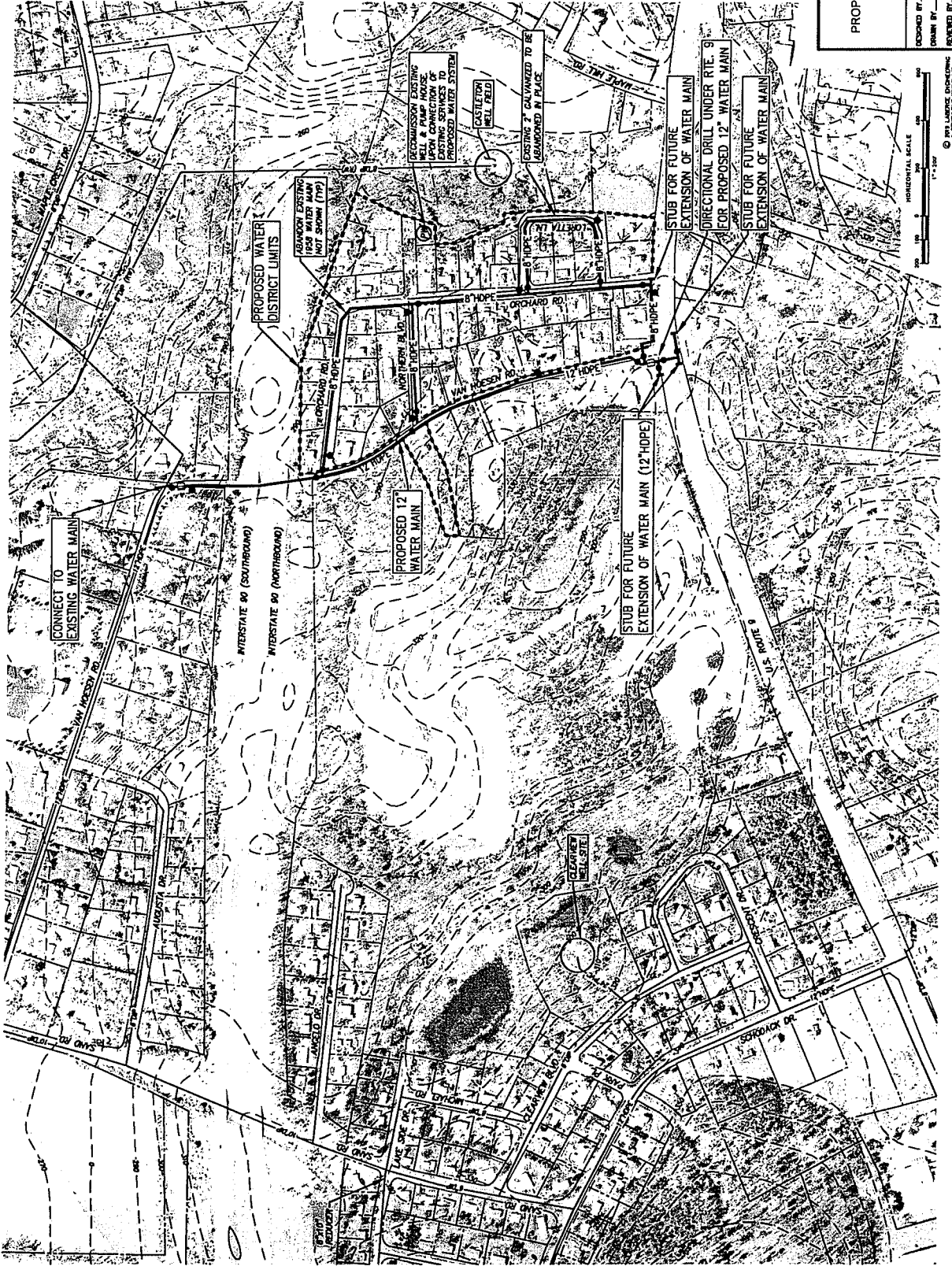
4500'

4800'

5100'

5400'

- LEGEND OF SYMBOLS:**
- PROPOSED FIRE HYDRANT
  - PROPOSED WATER VALVE
  - PROPOSED PRESSURE REDUCING VALVE IN VALVE
  - PROPOSED WATER DISTRICT LIMITS
  - PROPOSED WATER MAIN SIZE AND TYPE
  - EXISTING CONTOUR ELEVATION



HALF SCALE

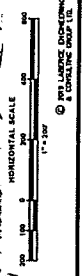
TOWN OF SCHRODICK  
 RENSSELAER COUNTY, NEW YORK

**PROPOSED BATTISTI WATER DISTRICT #10**

**ALTERNATIVE No. 3**

DESIGNED BY: EKI  
 DRAWN BY: MFB  
 REVIEWED BY: \_\_\_\_\_

DATE: 01/16/19  
 SCALE: 1"=100'  
 SHEET: \_\_\_\_\_



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LEGEND OF SYMBOLS.

- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED PRESSURE REDUCING VALVE IN VAULT
- PROPOSED WATER DISTRICT LIMITS
- PROPOSED WATER MAIN SIZE AND TYPE
- EXISTING CONTOUR ELEVATION



HALF SCALE

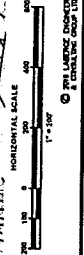
TOWN OF SANDY CREEK  
 RUSSELL COUNTY, NEW YORK

PROPOSED BATTISTI WATER DISTRICT #10  
 ALTERNATIVE No. 4

DATE: 01/16/18  
 SCALE: 1"=200'  
 SHEET: 3

DESIGNED BY: JCK  
 DRAWN BY: MBE  
 REVIEWED BY:

**Loberge Group**  
 ENGINEERS  
 1000 W. 10th Street, Suite 100  
 Sand Springs, Oklahoma 74063  
 TEL: 405.324.1100 FAX: 405.324.1101



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**C. Proposed District Description**

Town of Schodack  
Rensselaer County, New York

Water District Boundary Description  
Battisti Water District #10

The following is intended to describe the bounds of the proposed water district in the Town of Schodack, Rensselaer County, State of New York. This District is shown on the map entitled "Proposed Battisti Water District #10 Water District Boundary" prepared by Laberge Group, dated January 16, 2019. The parcels referred to in the following description are shown on the Town of Schodack Tax Map 210.01.

Beginning at a point located at the northwest corner of the intersection of Van Hoesen Road and N.Y.S. Route 9 at the southeasterly corner of Parcel 17(A);

Thence proceeding westerly along the northerly bounds of Van Hoesen Road to a point in its intersection with the easterly bounds of Northern Boulevard, said point also being the southwest corner of Parcel 33;

Thence southerly across Van Hoesen Road to a point at the intersection with the southerly line of Van Hoesen Road and the northeasterly corner of lot 2;

Thence southerly along the easterly bounds of lot 2 to the southeasterly corner of lot 2;

Thence westerly along the southerly line of lot 2 to the southwest corner of lot 2;

Thence northerly along the westerly bounds of lot 2 to a point in the southerly line of Van Hoesen Road, said point being the northwest corner of lot 2;

Thence northerly across Van Hoesen Road to a point at the intersection with the northerly line of Van Hoesen Road and the southeasterly corner of lot 34;

Thence westerly along the northerly bounds of Van Hoesen Road to a point in the easterly bounds of Orchard Road, said point also being the southwest corner of Parcel 43;

Thence westerly across Orchard Road to a point at the intersection with the northerly bounds of Van Hoesen Road, said point also being the southeasterly corner of Parcel 44;

Thence westerly along the northerly bounds of Van Hoesen Road to a point at the southwest corner of Parcel 44;

Thence northerly along the westerly bounds of Parcels 44, 45, 46, 47, 48, and 49 to a point in the southerly bounds of the westerly terminus of Orchard Road, said point also being the northwest corner of Parcel 49;

Thence northerly along the westerly terminus of Orchard Road to a point in the northerly bounds of Orchard road, said point also being the southwest corner of Parcel 52;

Thence northerly along the westerly bounds of Parcels 52, 53, and 2 to a point in the northwest corner of Parcel 2;

Town of Schodack  
Proposed Battisti Water District #10

March 2019, Rev. April 2020

J:\2018007\Reports\Map Plan Report\Appendix C-Proposed District Description\Appendix C - Proposed District Boundary Description.docx



Thence easterly along the northerly bounds of Parcel 2 to a point in the easterly corner of Parcel 2, said point also being in the northerly terminus of the westerly bounds of a “paper street”;

Thence easterly across the northern terminus of said “paper street” to the easterly bounds of said “paper street”, said point also being the northwest corner of Parcel 1;

Thence easterly along the northerly bounds and southerly along the easterly bounds of Parcel 1 to a point in the southeast corner of said Parcel 1, said point also being the northwest corner of Parcel 3;

Thence easterly along the northerly bounds of Parcels 3, 4, and 7.1 to a point in the northeasterly corner of Parcel 7.1, said point also being in the northerly bounds of Loretta Lane;

Thence easterly along the northerly bounds of Loretta Lane to a point in the northwesterly corner of Parcel 14;

Thence easterly along the northerly bounds of Parcel 14 to a point in the westerly bounds of N.Y.S. Route 9, said point also being the northeasterly corner of Parcel 14;

Thence southerly along the westerly bounds of N.Y.S. Route 9 to a point in the northerly bounds of Orchard Road, said point also being the southeasterly corner of Parcel 15;

Thence southerly across Orchard road to a point in the southerly bounds of said road, said point also being the northeasterly corner of Parcel 16;

Thence southerly along the westerly bounds of N.Y.S. Route 9 to the point and place of beginning.

All Tax map parcel references are based upon those in use by the Rensselaer County Real Property Tax Service Agency in January, 2019.

Town of Schodack  
Proposed Battisti Water District #10

March 2019, Rev. April 2020

J:\2018007\Reports\Map Plan Report\Appendix C-Proposed District Description\Appendix C - Proposed District Boundary Description.docx

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**D. Proposed District Boundary Map**



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**E. USDA Natural Resources Conservation Services Soil Report**

**USDA** United States  
Department of  
Agriculture

**NRCS**

Natural  
Resources  
Conservation  
Service

A product of the National  
Cooperative Soil Survey,  
a joint effort of the United  
States Department of  
Agriculture and other  
Federal agencies, State  
agencies including the  
Agricultural Experiment  
Stations, and local  
participants

# Custom Soil Resource Report for **Rensselaer County, New York**

## Battisti Water District Area of Improvements



# Preface

---

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist ([http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2\\_053951](http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951)).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

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# How Soil Surveys Are Made

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Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

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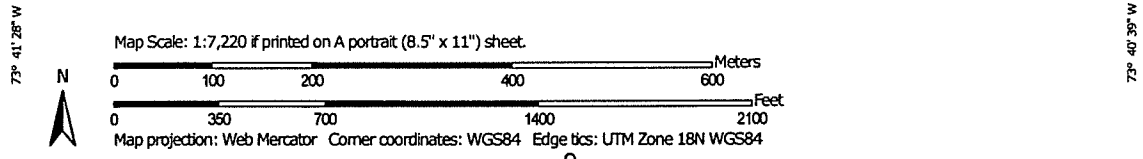
The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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## Soil Map



Soil Map may not be valid at this scale.



## MAP LEGEND

- Area of Interest (AOI)
  - Area of Interest (AOI)
- Soils
  - Soil Map Unit Polygons
  - Soil Map Unit Lines
  - Soil Map Unit Points
- Special Point Features
  - Blowout
  - Borrow Pit
  - Clay Spot
  - Closed Depression
  - Gravel Pit
  - Gravelly Spot
  - Landfill
  - Lava Flow
  - Marsh or swamp
  - Mine or Quarry
  - Miscellaneous Water
  - Perennial Water
  - Rock Outcrop
  - Saline Spot
  - Sandy Spot
  - Severely Eroded Spot
  - Sinkhole
  - Slide or Slip
  - Sodic Spot
- Water Features
  - Streams and Canals
- Transportation
  - Rails
  - Interstate Highways
  - US Routes
  - Major Roads
  - Local Roads
- Background
  - Aerial Photography
- Other
  - Spill Area
  - Stony Spot
  - Very Stony Spot
  - Wet Spot
  - Other
- Special Line Features

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Rensselaer County, New York  
 Survey Area Data: Version 15, Sep 3, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 18, 2016—Oct 16, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BeD	Bernardston gravelly silt loam, 15 to 25 percent slopes	1.6	4.2%
HoA	Hoosic gravelly sandy loam, 0 to 3 percent slopes	1.8	4.7%
HoB	Hoosic gravelly sandy loam, 3 to 8 percent slopes	0.2	0.6%
HoC	Hoosic gravelly sandy loam, rolling	30.5	81.4%
HoD	Hoosic gravelly sandy loam, hilly	3.4	9.0%
<b>Totals for Area of Interest</b>		<b>37.5</b>	<b>100.0%</b>

## Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.



## Rensselaer County, New York

### BeD—Bernardston gravelly silt loam, 15 to 25 percent slopes

#### Map Unit Setting

*National map unit symbol:* 9v16  
*Elevation:* 0 to 1,000 feet  
*Mean annual precipitation:* 36 to 44 inches  
*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 115 to 195 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Bernardston and similar soils:* 80 percent  
*Minor components:* 20 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Bernardston

##### Setting

*Landform:* Drumlinoid ridges, hills, till plains  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Side slope  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Loamy, acid, dense till derived mainly from phyllite, shale, slate, and schist

##### Typical profile

*H1 - 0 to 8 inches:* gravelly silt loam  
*H2 - 8 to 30 inches:* gravelly loam  
*H3 - 30 to 60 inches:* gravelly loam

##### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* 15 to 30 inches to densic material  
*Natural drainage class:* Well drained  
*Capacity of the most limiting layer to transmit water (Ksat):* Moderately low to moderately high (0.06 to 0.20 in/hr)  
*Depth to water table:* About 18 to 24 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 4.9 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* C/D  
*Hydric soil rating:* No

#### Minor Components

##### Pittstown

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

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### **Manlius**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

### **Albrights**

*Percent of map unit: 3 percent*

*Hydric soil rating: No*

### **Nassau**

*Percent of map unit: 3 percent*

*Hydric soil rating: No*

### **Bernardston, very stony**

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

### **Bernardston, eroded**

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

## **HoA—Hoosic gravelly sandy loam, 0 to 3 percent slopes**

### **Map Unit Setting**

*National map unit symbol: 9v22*

*Elevation: 100 to 1,100 feet*

*Mean annual precipitation: 36 to 44 inches*

*Mean annual air temperature: 45 to 48 degrees F*

*Frost-free period: 115 to 195 days*

*Farmland classification: Farmland of statewide importance*

### **Map Unit Composition**

*Hoosic and similar soils: 85 percent*

*Minor components: 15 percent*

*Estimates are based on observations, descriptions, and transects of the mapunit.*

### **Description of Hoosic**

#### **Setting**

*Landform: Deltas, outwash plains, terraces*

*Landform position (two-dimensional): Summit*

*Landform position (three-dimensional): Tread*

*Down-slope shape: Convex*

*Across-slope shape: Convex*

*Parent material: Sandy and gravelly glaciofluvial deposits*

#### **Typical profile**

*H1 - 0 to 9 inches: gravelly sandy loam*

*H2 - 9 to 23 inches: very gravelly sandy loam*

*H3 - 23 to 60 inches: very gravelly sand*

#### **Properties and qualities**

*Slope: 0 to 3 percent*

## Custom Soil Resource Report

*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (1.98 to 19.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3s  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

### Minor Components

#### Castile

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Chenango

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Fredon

*Percent of map unit:* 3 percent  
*Hydric soil rating:* No

#### Unnamed soils, sandy surface

*Percent of map unit:* 2 percent  
*Hydric soil rating:* No

## HoB—Hoosic gravelly sandy loam, 3 to 8 percent slopes

### Map Unit Setting

*National map unit symbol:* 9v23  
*Elevation:* 100 to 1,100 feet  
*Mean annual precipitation:* 36 to 44 inches  
*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 115 to 195 days  
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Hoosic and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hoosic

#### Setting

*Landform:* Outwash plains, terraces, deltas

## Custom Soil Resource Report

*Landform position (two-dimensional):* Summit

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Sandy and gravelly glaciofluvial deposits

### Typical profile

*H1 - 0 to 9 inches:* gravelly sandy loam

*H2 - 9 to 23 inches:* very gravelly sandy loam

*H3 - 23 to 60 inches:* very gravelly sand

### Properties and qualities

*Slope:* 3 to 8 percent

*Depth to restrictive feature:* More than 80 inches

*Natural drainage class:* Somewhat excessively drained

*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (1.98 to 19.98 in/hr)

*Depth to water table:* More than 80 inches

*Frequency of flooding:* None

*Frequency of ponding:* None

*Available water storage in profile:* Low (about 3.0 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3s

*Hydrologic Soil Group:* A

*Hydric soil rating:* No

### Minor Components

#### Castile

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Chenango

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

#### Fredon

*Percent of map unit:* 3 percent

*Hydric soil rating:* No

#### Unnamed soils, sandy surface

*Percent of map unit:* 2 percent

*Hydric soil rating:* No

## HoC—Hoosic gravelly sandy loam, rolling

### Map Unit Setting

*National map unit symbol:* 9v24

*Elevation:* 100 to 1,100 feet

*Mean annual precipitation:* 36 to 44 inches

## Custom Soil Resource Report

*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 115 to 195 days  
*Farmland classification:* Farmland of statewide importance

### Map Unit Composition

*Hoosic and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Hoosic

#### Setting

*Landform:* Deltas, outwash plains, terraces  
*Landform position (two-dimensional):* Shoulder  
*Landform position (three-dimensional):* Tread  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Sandy and gravelly glaciofluvial deposits

#### Typical profile

*H1 - 0 to 9 inches:* gravelly sandy loam  
*H2 - 9 to 23 inches:* very gravelly sandy loam  
*H3 - 23 to 60 inches:* very gravelly sand

#### Properties and qualities

*Slope:* 8 to 15 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (1.98 to 19.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.0 inches)

#### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 3e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

### Minor Components

#### Riverhead

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Windsor

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

#### Unnamed soils, silty surface

*Percent of map unit:* 5 percent  
*Hydric soil rating:* No

## Custom Soil Resource Report

### HoD—Hoosic gravelly sandy loam, hilly

#### Map Unit Setting

*National map unit symbol:* 9v25  
*Elevation:* 100 to 1,100 feet  
*Mean annual precipitation:* 36 to 44 inches  
*Mean annual air temperature:* 45 to 48 degrees F  
*Frost-free period:* 115 to 195 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Hoosic and similar soils:* 85 percent  
*Minor components:* 15 percent  
*Estimates are based on observations, descriptions, and transects of the mapunit.*

#### Description of Hoosic

##### Setting

*Landform:* Outwash plains, terraces, deltas  
*Landform position (two-dimensional):* Backslope  
*Landform position (three-dimensional):* Riser  
*Down-slope shape:* Convex  
*Across-slope shape:* Convex  
*Parent material:* Sandy and gravelly glaciofluvial deposits

##### Typical profile

*H1 - 0 to 9 inches:* gravelly sandy loam  
*H2 - 9 to 23 inches:* very gravelly sandy loam  
*H3 - 23 to 60 inches:* very gravelly sand

##### Properties and qualities

*Slope:* 15 to 25 percent  
*Depth to restrictive feature:* More than 80 inches  
*Natural drainage class:* Somewhat excessively drained  
*Capacity of the most limiting layer to transmit water (Ksat):* High to very high (1.98 to 19.98 in/hr)  
*Depth to water table:* More than 80 inches  
*Frequency of flooding:* None  
*Frequency of ponding:* None  
*Available water storage in profile:* Low (about 3.0 inches)

##### Interpretive groups

*Land capability classification (irrigated):* None specified  
*Land capability classification (nonirrigated):* 4e  
*Hydrologic Soil Group:* A  
*Hydric soil rating:* No

## Custom Soil Resource Report

### Minor Components

#### **Windsor**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

#### **Riverhead**

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

#### **Hoosic, severely eroded**

*Percent of map unit: 3 percent*

*Hydric soil rating: No*

#### **Unnamed soils, sandy surface**

*Percent of map unit: 2 percent*

*Hydric soil rating: No*

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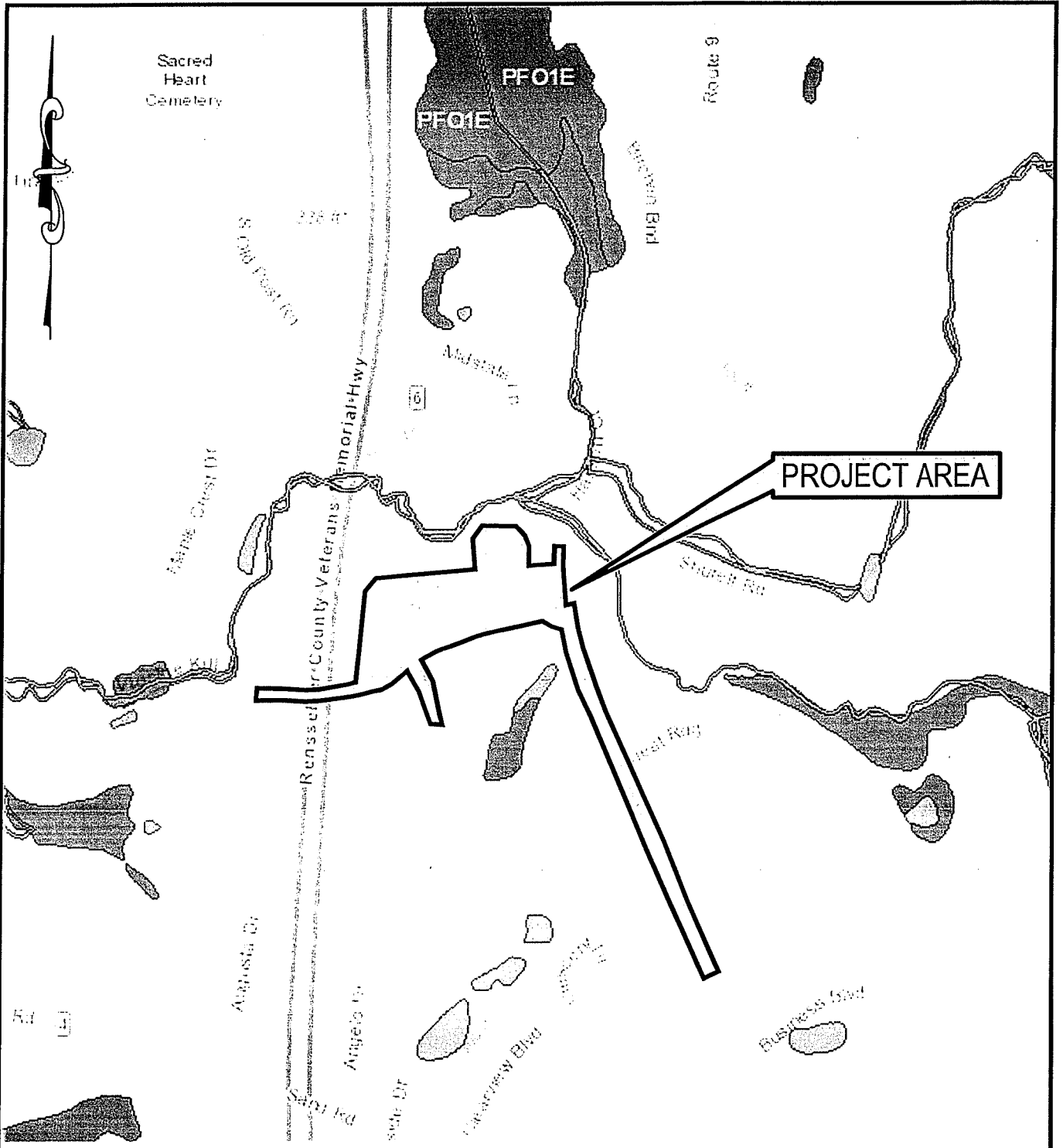
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**F. Wetlands Map**

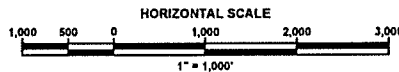
Laberge Group - J:\2018007\Cadd\Draw\Water System Improvements Wetland Map 01\_22\_2019 SMR.dwg [WETLAND MAP] March 21, 2019 - 4:07pm amr2



- Wetlands**
- Estuarine and Marine Deepwater
  - Estuarine and Marine Wetland
  - Freshwater Emergent Wetland
  - Freshwater Forested/Shrub Wetland
  - Freshwater Pond
  - Lake
  - Other
  - Riverine

**NOTE:**

1. MAP TAKEN FROM U.S. FISH & WILDLIFE SERVICE'S NATIONAL WETLAND INVENTORY DATABASE.



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<p>TOWN OF SCHODACK RENSSELAER COUNTY • NEW YORK</p> <p>PROPOSED BATTISTI WATER DISTRICT #10</p> <p>WETLAND MAP</p>		
<p>DESIGNED BY <u>PEK</u></p> <p>DRAWN BY <u>SMR</u></p> <p>REVIEWED BY _____</p>	<p>Laberge ENGINEERING ARCHITECTURE</p> <p>Group SURVEYING PLANNING</p> <p>4 Computer Drive West Albany, New York 12205 (518) 458-7112 • www.labergegroup.com</p>	<p>DATE <u>01/22/19</u></p> <p>SCALE <u>1"=1000'</u></p> <p>SHEET <u>300</u></p>

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**G. US Fish & Wildlife Service IPaC Trust Resource Report**

**IPaC Information for Planning and Consultation U.S. Fish & Wildlife Service**

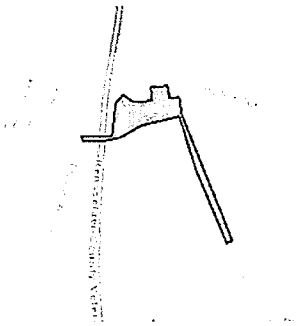
## IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

### Location

Rensselaer County, New York



### Local office

New York Ecological Services Field Office

☎ (607) 753-9334

📠 (607) 753-9699

3817 Luker Road  
Cortland, NY 13045-9385

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

## Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act requires Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species<sup>1</sup> and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries<sup>2</sup>).

Species and critical habitats under the sole responsibility of NOAA Fisheries are not shown on this list. Please contact [NOAA Fisheries](#) for species under their jurisdiction.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.
2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

### Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. <a href="https://ecos.fws.gov/ecp/species/9045">https://ecos.fws.gov/ecp/species/9045</a>	Threatened

### Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

### Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act<sup>1</sup> and the Bald and Golden Eagle Protection Act<sup>2</sup>.

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the [FAQ below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
<p><b>Bald Eagle</b> <i>Haliaeetus leucocephalus</i>                      This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.  <a href="https://ecos.fws.gov/ecp/species/1626">https://ecos.fws.gov/ecp/species/1626</a></p>	Breeds Dec 1 to Aug 31
<p><b>Black-billed Cuckoo</b> <i>Coccyzus erythrophthalmus</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9399">https://ecos.fws.gov/ecp/species/9399</a></p>	Breeds May 15 to Oct 10
<p><b>Canada Warbler</b> <i>Cardellina canadensis</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 20 to Aug 10
<p><b>Cerulean Warbler</b> <i>Dendroica cerulea</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/2974">https://ecos.fws.gov/ecp/species/2974</a></p>	Breeds Apr 20 to Jul 20
<p><b>Lesser Yellowlegs</b> <i>Tringa flavipes</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.  <a href="https://ecos.fws.gov/ecp/species/9679">https://ecos.fws.gov/ecp/species/9679</a></p>	Breeds elsewhere
<p><b>Semipalmated Sandpiper</b> <i>Calidris pusilla</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds elsewhere
<p><b>Wood Thrush</b> <i>Hylocichla mustelina</i>                      This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.</p>	Breeds May 10 to Aug 31

## Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the [FAQ "Proper Interpretation and Use of Your Migratory Bird Report"](#) before using or attempting to interpret this report.

### Probability of Presence ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.

3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

**Breeding Season ( )**

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

**Survey Effort (|)**

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

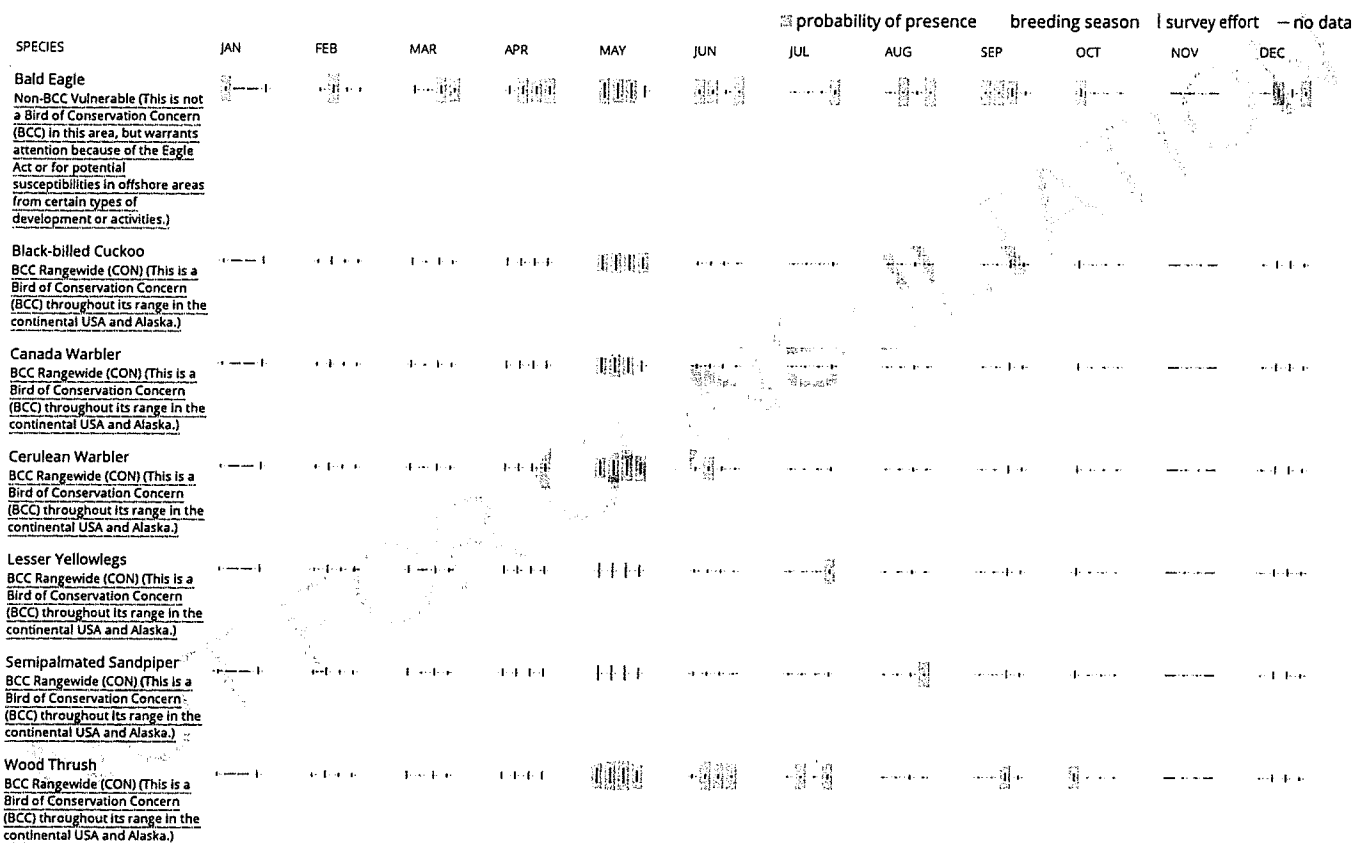
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

**No Data (—)**

A week is marked as having no data if there were no survey events for that week.

**Survey Timeframe**

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the E-bird Explore Data Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?



The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the [Probability of Presence Summary](#) and then click on the "Tell me about these graphs" link.

**How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?**

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

**What are the levels of concern for migratory birds?**

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern \(BCC\)](#) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the [FAQs](#) for these topics.

**Details about birds that are potentially affected by offshore projects**

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

**What if I have eagles on my list?**

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

**Proper Interpretation and Use of Your Migratory Bird Report**

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

## Facilities

### National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

### Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

## Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

#### Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

#### Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

#### Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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**H. State Historic Preservation Office “No Impact” Letter**



## Parks, Recreation, and Historic Preservation

ANDREW M. CUOMO  
Governor

ROSE HARVEY  
Commissioner

January 28, 2019

Mr. Philip Koziol  
Project Manager  
Laberge Group  
4 Computer Drive West  
Albany, NY 12205

Re: DOH  
Town of Schodack Clearview Water District Extension 2  
19PR00440

Dear Mr. Koziol:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the New York State Office of Parks, Recreation and Historic Preservation's opinion that your project will have no impact on archaeological and/or historic resources listed in or eligible for the New York State and National Registers of Historic Places.

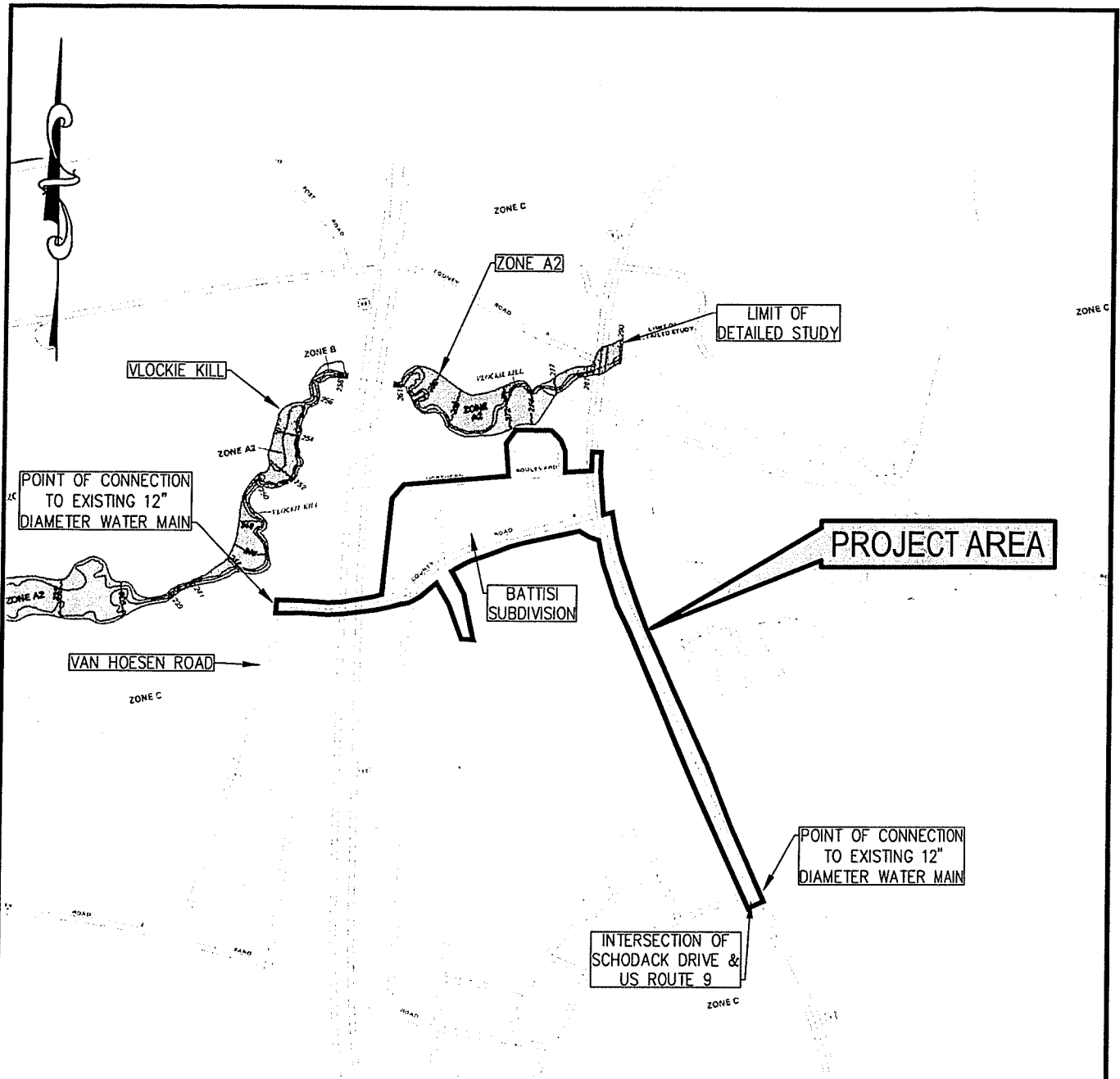
If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

Michael F. Lynch, P.E., AIA  
Director, Division for Historic Preservation

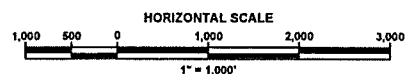
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**I. FEMA Maps**





**NOTE:**  
 1. FLOOD DATA SHOWN TAKEN FROM FEMA FLOOD INSURANCE RATE MAP COMMUNITY PANEL NO. 3611690017A, WHICH BEARS AN EFFECTIVE DATE OF AUGUST 15, 1984.

Laberge Group - J:\2018007\Cadd\Draw\Water System Improvements FEMA Map 03.12.2019 SUB.dwg [FEMA MAP] March 21, 2019 - 9:05am amr2



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TOWN OF SCHODACK RENSSELAER COUNTY * NEW YORK  PROPOSED BATTISTI WATER DISTRICT #10  FEMA FLOOD MAP		
DESIGNED BY <u>PEK</u> DRAWN BY <u>SMR</u> REVIEWED BY _____	 <b>Laberge</b> ENGINEERING ARCHITECTURE   <b>Group</b> ENGINEERING PLANNING	DATE <u>03/12/19</u> SCALE <u>1"=1000'</u> SHEET <u>300</u>
4 Computer Drive West Albany, New York 12205 (518) 458-7112 • www.labergegroup.com		

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**J. Preliminary Opinion of Probable Cost to Construct**



Town of Schodack  
Rensselaer County, New York  
Battisti Water District #10

ALTERNATIVE No.2

Preliminary Opinion of  
Probable Constructin Cost

5/23/2019

ITEM	EST. QUAN.	UNIT	UNIT COST	TOTAL
Valve: 8-inch	7	Ea	\$1,000	\$7,000
Valve : 12-inch	9	Ea	\$1,500	\$13,500
Fire Hydrant Assembly	13	Ea	\$5,500	\$71,500
Tapping Sleeve/Connection to Existing	1	LS	\$5,000	\$5,000
Water Main: 8-inch DIP	3,500	LF	\$65	\$227,500
Water Main: 12-inch DIP	5,000	LF	\$80	\$400,000
Directional Drill Under Rte.9	100	LF	\$300	\$30,000
Rock Excavation	500	CY	\$150	\$75,000
Select Backfill	2000	CY	\$35	\$70,000
Subbase material	600	CY	\$50	\$30,000
Pavement - Binder	2700	SY	\$20	\$54,000
Pavement - Top	2700	SY	\$10	\$27,000
Misc Restorations	8500	LF	\$20	\$170,000
Maint. & Protection of Traffic	1	LS	\$50,000	\$50,000
Subtotal:				\$1,230,500
Contingency			15%	\$185,000
Grant/Loan Administration				\$30,000
Geotechnical				\$20,000
Ecological Review				\$5,000
Survey - Design Mapping				\$50,000
Survey -ROW/Easements				\$15,000
Engineering				\$100,000
Construction Observation				\$120,000
Permitting				\$10,000
Legal Counsel				\$10,000
Bond Counsel				\$15,000
Total:				\$1,790,500

**SAY: 1,790,000**





**Town of Schodack  
Rensselaer County, New York  
Battisti Water District #10**

**ALTERNATIVE No.3  
Preliminary Opinion of  
Probable Construction Cost**

5/23/2019

ITEM	EST. QUAN.	UNIT	UNIT COST	TOTAL
Valve: 8-inch	7	Ea	\$1,000	\$7,000
Valve : 12-inch	7	Ea	\$1,500	\$10,500
Fire Hydrant Assembly	8	Ea	\$5,500	\$44,000
Tapping Sleeve/Connection to Existing	1	LS	\$5,000	\$5,000
Water Main: 8-inch DIP	3,500	LF	\$65	\$227,500
Water Main: 12-inch DIP	2,500	LF	\$80	\$200,000
Directional Drill Under Rte.9	100	LF	\$300	\$30,000
Rock Excavation	500	CY	\$150	\$75,000
Select Backfill	1500	CY	\$35	\$52,500
Subbase material	540	CY	\$50	\$27,000
Pavement - Binder	2400	SY	\$20	\$48,000
Pavement - Top	2400	SY	\$10	\$24,000
Misc Restorations	6000	LF	\$20	\$120,000
Maint. & Protection of Traffic	1	LS	\$50,000	\$50,000
Subtotal:				\$920,500
			Contingency: 15%	\$138,000
Grant/Loan Administration				\$30,000
Geotechnical				\$20,000
Ecological Review				\$5,000
Survey - Design Mapping				\$40,000
Survey -ROW/Easements				\$15,000
Engineering				\$75,000
Construction Observation				\$100,000
Permitting				\$10,000
Legal Counsel				\$10,000
Bond Counsel				\$15,000
Total:				\$1,378,500

**SAY: 1,380,000**



Town of Schodack  
 Rensselaer County, New York  
 Battisti Water District #10

ALTERNATIVE No.4

Preliminary Opinion of  
 Probable Construction Cost

5/23/2019

ITEM	EST. QUAN.	UNIT	UNIT COST	TOTAL
Valve: 8-inch	7	Ea	\$1,000	\$7,000
Valve : 12-inch	8	Ea	\$1,500	\$12,000
Fire Hydrant Assembly	12	Ea	\$5,500	\$66,000
Connection to Existing	1	LS	\$5,000	\$5,000
Water Main: 8-inch DIP	3,500	LF	\$65	\$227,500
Water Main: 12-inch DIP	4,500	LF	\$80	\$360,000
Directional Drill Under Rte.9	100	LF	\$300	\$30,000
Rock Excavation	500	CY	\$150	\$75,000
Select Backfill	2000	CY	\$35	\$70,000
Subbase material	520	CY	\$50	\$26,000
Pavement - Binder	2300	SY	\$20	\$46,000
Pavement - Top	2300	SY	\$10	\$23,000
Misc Restorations	8000	LF	\$20	\$160,000
Maint. & Protection of Traffic	1	LS	\$50,000	\$50,000
Subtotal:				\$1,157,500
Contingency:			15%	\$174,000
Grant/Loan Administration				\$30,000
Geotechnical				\$20,000
Ecological Review				\$5,000
Survey - Design Mapping				\$50,000
Survey -ROW/Easements				\$15,000
Engineering				\$100,000
Construction Observation				\$120,000
Permitting				\$10,000
Legal Counsel				\$10,000
Bond Counsel				\$15,000
Total:				\$1,706,500

SAY: 1,710,000

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**K. Smart Growth Assessment**



# Smart Growth Assessment Form

This form should be completed by the applicant's project engineer or other design professional.<sup>1</sup>

## Applicant Information

Applicant: Town of Schodack

Project No.:

Project Name: Battisti Water District #10

Is project construction complete?  Yes, date:  No

Project Summary: (provide a short project summary in plain language including the location of the area the project serves)

Establish a new water district to serve the existing private water service area commonly referred to as "The Battisti Subdivision" and water service only to existing services of the private water company being addressed.

## Section 1 – Screening Questions

### 1. Prior Approvals

1A. Has the project been previously approved for EFC financial assistance?  Yes  No

1B. If so, what was the project number(s) for the prior approval(s)?  Project No.:

Is the scope of the project substantially the same as that which was approved?  Yes  No

IF THE PROJECT WAS PREVIOUSLY APPROVED BY EFC'S BOARD AND THE SCOPE OF THE PROJECT HAS NOT MATERIALLY CHANGED, THE PROJECT IS NOT SUBJECT TO SMART GROWTH REVIEW. SKIP TO SIGNATURE BLOCK.

### 2. New or Expanded Infrastructure

2A. Does the project add new wastewater collection/new water mains or a new wastewater treatment system/water treatment plant?  Yes  No

*Note: A new infrastructure project adds wastewater collection/water mains or a wastewater treatment/water treatment plant where none existed previously*

2B. Will the project result in either:  Yes  No

An increase of the State Pollutant Discharge Elimination System (SPDES) permitted flow capacity for an existing treatment system;

**OR**

An increase such that a NYSDEC water withdrawal permit will need to be obtained or modified, or result in the NYSDOH approving an increase in the capacity of the water treatment plant?

*Note: An expanded infrastructure project results in an increase of the SPDES permitted flow capacity for the wastewater treatment system, or an increase of the permitted water withdrawal or the permitted flow capacity for the water treatment system.*

<sup>1</sup> If project construction is complete and the project was not previously financed through EFC, an authorized municipal representative may complete and sign this assessment.

IF THE ANSWER IS "NO" TO BOTH "2A" and "2B" ON THE PREVIOUS PAGE, THE PROJECT IS NOT SUBJECT TO FURTHER SMART GROWTH REVIEW. SKIP TO SIGNATURE BLOCK.

**3. Court or Administrative Consent Orders**

- 3A. Is the project expressly required by a court or administrative consent order?  Yes  No
- 3B. If so, have you previously submitted the order to NYS EFC or DOH?  Yes  No  
If not, please attach.

**Section 2 – Additional Information Needed for Relevant Smart Growth Criteria**

EFC has determined that the following smart growth criteria are relevant for EFC-funded projects and that projects must meet each of these criteria to the extent practicable:

**1. Uses or Improves Existing Infrastructure**

- 1A. Does the project use or improve existing infrastructure?  Yes  No  
Please describe:

**2. Serves a Municipal Center**

Projects must serve an area in either 2A, 2B or 2C to the extent practicable.

- 2A. Does the project serve an area **limited** to one or more of the following municipal centers?
- i. A City or incorporated Village  Yes  No
  - ii. A central business district  Yes  No
  - iii. A main street  Yes  No
  - iv. A downtown area  Yes  No
  - v. A Brownfield Opportunity Area  Yes  No  
(for more information, go to [www.dos.ny.gov](http://www.dos.ny.gov) & search "Brownfield")
  - vi. A downtown area of a Local Waterfront Revitalization Program Area  Yes  No  
(for more information, go to [www.dos.ny.gov](http://www.dos.ny.gov) and search "Waterfront Revitalization")
  - vii. An area of transit-oriented development  Yes  No
  - viii. An Environmental Justice Area  Yes  No  
(for more information, go to [www.dec.ny.gov/public/899.html](http://www.dec.ny.gov/public/899.html))
  - ix. A Hardship/Poverty Area  Yes  No  
*Note: Projects that primarily serve census tracts and block numbering areas with a poverty rate of at least twenty percent according to the latest census data*

Please describe all selections:

- 2B. If the project serves an area located outside of a municipal center, does it serve an area located adjacent to a municipal center which has clearly defined borders, designated for concentrated development in a municipal or regional comprehensive plan and exhibit strong land use, transportation, infrastructure and economic connections to an existing municipal center? Yes No

Please describe:

- 2C. If the project is not located in a municipal center as defined above, is the area designated by a comprehensive plan and identified in zoning ordinance as a future municipal center? Yes No

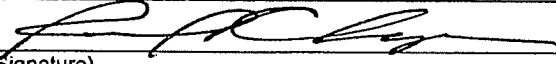
Please describe and reference applicable plans:

### 3. Resiliency Criteria

- 3A. Was there consideration of future physical climate risk due to sea-level rise, storm surge, and/or flooding during the planning of this project? Yes No

Please describe:

**Signature Block:** By entering your name in the box below, you agree that you are authorized to act on behalf of the applicant and that the information contained in this Smart Growth Assessment is true, correct and complete to the best of your knowledge and belief.

Applicant: Town of Schodack	Phone Number: 518-477-7938
Richard F. Laberge, P.E., President	
(Name & Title of Project Engineer or Design Professional or Authorized Municipal Representative)	
	April 22, 2020
(Signature)	(Date)

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## L. Engineering Report Certification

During the preparation of this Engineering Report, I have studied and evaluated the cost and effectiveness of the processes, materials, techniques, and technologies for carrying out the proposed project or activity for which assistance is being sought from the New York State Clean Water State Revolving Fund. In my professional opinion, I have recommended for selection, to the maximum extent practicable, a project or activity that maximizes the potential for efficient water use, reuse, recapture, and conservation, and energy conservation, taking into account the cost of constructing the project or activity, the cost of operating and maintaining the project or activity over the life of the project or activity, and the cost of replacing the project and activity.

**Title of Engineering Report:** Map, Plan and Report Battisti Water District #10

**Date of Report:** March 2020, Revised April 2020

**Professional Engineer's Name:** Richard F. Laberge, P.E.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

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**M. Clearview Water District Record Information**



2016 - Thousand Gallons per Day

Day of Month	J-16	F-16	M-16	A-16	M-16	J-16	J-16	J-16	A-16	S-16	O-16	N-16	D-16
1	34,746	29,313	30,061	30,061	27,264	56,330	43,247	43,247	31,198	35,375	29,142	46,580	21,138
2	33,889	28,141	24,966	24,966	40,922	32,985	45,248	45,248	28,998	2,459	25,422	20,967	29,133
3	25,031	28,945	30,845	30,845	31,665	43,742	78,078	78,078	31,135	31,645	41,487	28,478	26,282
4	44,842	23,296	26,096	35,675	32,648	53,311	25,856	36,683	36,683	41,748	36,740	16,778	27,822
5	20,189	31,214	21,442	26,049	34,204	30,638	44,433	71,604	27,848	40,586	21,090	34,198	32,201
6	25,216	19,279	32,281	18,228	31,080	30,638	44,433	44,433	26,241	41,322	46,024	31,266	24,961
7	30,823	33,050	30,513	18,228	36,643	38,281	51,585	28,040	28,040	37,862	20,171	26,314	26,769
8	32,659	38,286	20,279	27,216	40,725	31,533	40,725	40,725	40,553	38,019	51,341	19,887	26,164
9	16,434	29,037	29,516	31,533	31,533	39,983	26,948	35,293	37,818	40,260	17,618	29,658	6,989
10	34,367	27,630	29,579	33,641	32,249	31,411	48,055	52,249	31,684	31,684	28,656	28,433	39,208
11	36,214	23,796	23,998	26,293	41,524	36,437	48,055	27,105	27,105	36,300	44,132	15,035	33,495
12	30,407	28,466	30,729	25,264	27,824	33,512	30,587	33,462	33,462	33,426	27,543	28,715	29,659
13	35,504	30,450	25,529	25,264	37,318	33,415	33,415	47,000	47,000	33,426	34,010	26,910	10,914
14	26,660	34,497	34,497	24,675	54,629	32,858	54,629	26,189	26,189	35,580	24,280	29,831	40,095
15	30,226	28,499	22,007	34,182	34,470	35,711	36,360	50,836	50,836	21,525	21,032	25,763	29,022
16	25,684	24,587	28,719	19,152	45,215	44,949	64,706	44,949	20,144	15,278	25,802	24,447	14,191
17	32,529	33,334	32,604	31,761	40,702	43,060	40,702	26,071	26,071	44,496	37,538	29,692	36,387
18	23,633	29,441	30,449	49,655	24,557	39,981	50,824	46,839	46,839	46,839	26,187	28,307	22,069
19	35,301	27,739	20,547	34,350	32,730	66,080	38,393	18,269	18,269	23,090	29,396	25,275	24,199
20	35,539	18,417	21,783	30,614	33,621	41,047	48,641	70,632	70,632	31,740	23,030	44,760	38,934
21	24,393	27,754	45,989	34,510	46,001	44,192	35,692	48,641	48,641	35,482	27,166	16,304	26,296
22	30,088	40,129	7,387	25,039	46,722	36,986	52,202	52,202	19,506	29,662	23,648	35,185	15,478
23	34,825	27,761	42,545	626	43,821	48,247	48,247	55,795	38,817	21,131	41,137	21,932	17,072
24	22,059	26,906	19,333	74,820	41,168	43,891	66,455	23,692	23,692	27,651	32,080	28,315	38,832
25	38,375	26,157	30,226	28,537	43,821	48,247	66,455	38,391	38,391	36,662	22,813	28,145	35,814
26	29,607	31,076	33,244	26,449	29,900	4,919	33,353	33,353	32,267	36,250	24,279	30,477	39,987
27	29,634	31,147	30,421	22,401	44,816	87,883	42,819	39,643	39,643	28,436	30,217	21,908	35,830
28	23,627	23,567	35,450	24,237	49,673	105,522	46,285	30,544	30,544	24,873	22,230	37,670	6,764
29	25,647	26,561	26,000	29,334	75,634	48,182	42,594	42,594	37,636	23,861	17,834	28,266	38,002
30	33,021	29,262	24,027	65,987	43,980	43,980	47,233	29,417	29,417	31,573	45,333	19,496	36,689
31	32,076	23,715	23,715	42,033	42,033	1,308,530	25,980	25,980	29,417	31,573	31,692	21,138	11,097
<b>SUM:</b>	<b>933,245</b>	<b>831,487</b>	<b>870,753</b>	<b>876,261</b>	<b>1,179,743</b>	<b>1,308,530</b>	<b>1,386,042</b>	<b>1,386,042</b>	<b>1,026,118</b>	<b>952,368</b>	<b>926,710</b>	<b>849,132</b>	<b>841,473</b>
Check OK	933,245	831,487	870,753	876,261	1,179,743	1,308,530	1,386,042	1,386,042	1,026,118	952,368	926,710	849,132	841,473
Maximum:	44,842	40,129	45,989	74,820	75,634	105,522	78,078	78,078	70,632	46,839	51,341	46,580	40,095
Median:	30,407	28,466	29,516	27,142	35,734	40,520	43,247	43,247	31,167	32,583	27,166	28,266	27,822
Minimum:	16,434	18,417	7,387	626	20,320	4,919	25,856	25,856	18,269	2,459	17,618	15,035	6,764
Average:	30,105	28,672	28,089	29,209	38,056	43,618	44,711	44,711	34,204	31,746	29,894	27,391	27,144
Maximum Daily Flow for Year:	105,522												
Median Daily Flow for Year:	30,776												
Average Daily Flow for Year:	32,737												

**Laberge Group**

Town of Schodock  
Battisti Water System

3/12/2019  
Clearview Water District No. 1  
2017-Water Usage Records

**2017 - Thousand Gallons per Day**

Day of Month	J-17	F-17	M-17	A-17	M-17	J-17	J-17	A-17	S-17	O-17	N-17	D-17
1	41,825	39,266	17,030	45,828	0	39,655	30,767	44,332	27,419	21,960	38,170	38,170
2	33,152	523	37,255	16,432	31,779	31,779	39,343	39,055	26,841	40,731	38,904	15,575
3	29,559	39,529	12,212	41,021	37,270	31,142	36,163	37,304	33,153	17,610	34,333	37,675
4	10,007	23,285	37,116	16,206	35,118	36,667	39,142	31,851	20,899	42,227	35,413	41,612
5	44,957	18,640	37,602	37,843	8,360	38,407	35,238	4,833	40,935	36,659	37,606	0
6	30,415	49,020	34,393	4,823	8,270	35,649	28,111	48,645	23,766	21,631	33,888	39,909
7	10,239	9,942	19,338	41,568	35,368	30,140	35,571	37,539	16,425	29,083	5,648	32,529
8	40,642	30,323	25,627	17,334	24,900	33,654	32,978	34,438	39,317	35,144	39,641	6,151
9	39,352	34,615	38,241	41,246	9,865	21,291	13,897	29,416	14,985	12,864	14,428	41,856
10	1,708	19,410	0	33,729	45,481	37,981	42,777	35,035	37,344	46,713	25,919	33,664
11	40,780	22,085	39,798	13,860	13,860	13,860	40,066	29,416	31,527	15,130	38,865	24,641
12	36,846	32,472	36,056	46,858	46,858	39,593	40,583	39,448	12,373	15,130	23,850	15,647
13	1,080	29,941	7,144	18,032	47,013	44,254	18,986	33,921	36,468	26,477	38,047	42,342
14	41,425	9,108	38,162	24,643	36,545	40,337	11,027	33,921	39,128	38,343	4,166	6,305
15	32,730	39,436	38,626	44,394	27,419	44,991	37,365	35,364	20,511	33,892	35,207	33,946
16	9,438	39,717	1,124	39,504	42,414	26,197	60,190	21,457	24,241	40,783	35,207	36,947
17	40,898	26,584	43,961	35,797	44,221	38,569	0	21,457	40,720	0	4,931	33,382
18	39,164	465	28,050	43,114	44,221	38,569	50,256	34,109	38,656	42,076	15,150	33,382
19	0	37,184	8,907	36,164	48,690	48,690	35,324	34,455	39,832	39,832	39,993	38,565
20	37,938	24,102	48,263	31,672	34,904	35,395	42,149	32,735	37,392	0	38,766	13,190
21	17,653	20,425	7,750	8,897	60,370	30,356	19,971	32,877	34,129	40,022	3,985	29,439
22	23,079	37,066	39,508	38,143	49,932	34,093	42,328	31,416	34,129	36,564	34,370	29,439
23	45,282	0	38,143	41,150	40,563	8,970	42,355	32,880	28,882	34,499	38,537	39,252
24	6,844	38,484	0	10,815	31,231	35,654	37,793	17,977	20,991	26,986	11,355	34,425
25	34,151	36,106	39,474	33,666	38,361	35,643	20,702	34,765	55,417	11,351	33,251	45,103
26	33,904	3,012	38,210	40,201	30,186	51,069	22,765	34,163	39,517	45,176	7,423	45,103
27	0	46,995	1,730	8,897	0	41,779	39,504	30,570	35,315	4,064	34,314	45,908
28	42,750	22,003	36,346	40,235	50,267	39,145	30,733	41,602	25,856	34,465	6,917	24,817
29	40,844	34,291	34,291	34,583	59,567	48,040	41,580	35,628	26,923	36,391	40,794	3,623
30	1,521	1,191	1,191	28,719	18,721	43,307	0	31,733	39,901	34,025	12,928	45,465
31	40,022	723,738	41,801	821,461	35,527	1,150,891	42,636	30,163	869,031	910,358	790,169	888,864
<b>SUM:</b>	<b>848,205</b>	<b>729,738</b>	<b>827,329</b>	<b>820,884</b>	<b>1,069,654</b>	<b>1,150,891</b>	<b>1,010,300</b>	<b>986,550</b>	<b>869,031,0000</b>	<b>910,358</b>	<b>790,169</b>	<b>888,864</b>
<b>Maximum:</b>	45,282	49,020	48,263	46,858	60,370	65,915	60,190	48,645	55,417	46,713	43,612	45,908
<b>Median:</b>	33,904	28,263	36,056	34,156	35,703	37,324	36,163	33,921	32,340	34,465	34,235	33,664
<b>Minimum:</b>	0	0	0	0	0	8,970	0	4,833	12,373	0	0	0
<b>Average:</b>	27,361	26,062	26,688	29,317	34,505	38,363	32,590	31,824	31,037	29,366	26,339	28,673

Maximum Daily Flow for Year: 65,915  
 Median Daily Flow for Year: 34,455  
 Average Daily Flow for Year: 30,199

Maximum Daily Flow for Year: 65,915  
 Median Daily Flow for Year: 34,455  
 Average Daily Flow for Year: 30,199

Date: 18 22  
 Date: 19 19

Aprilreadings removed from above: 577,00000  
 Aprilreadings removed from above: 37,342

Day of Month	I-18	F-18	M-18	A-18	M-18	J-18	J-18	A-18	S-18	O-18	N-18	D-18
1	33,936	33,806	29,159	35,544	9,308	38,922	37,770	26,515	35,276	38,118	38,118	3,936
2	25,751	20,891	34,732	14,582	37,111	41,946	45,590	16,753	40,244	33,754	33,754	33,376
3	14,713	38,480	0	31,313	36,616	41,948	45,590	37,124	40,244	29,312	28,760	28,760
4	39,771	35,004	45,291	35,243	48,999	48,999	61,554	52,072	33,718	29,041	29,041	29,041
5	15,445	34,402	0	2,954	43,335	37,723	47,898	45,483	32,716	31,796	28,480	28,480
6	25,603	2,226	0	39,949	38,454	38,877	38,772	45,483	56,896	31,796	17,008	17,008
7	39,287	36,122	39,934	36,072	3,896	46,174	30,109	14,181	31,444	31,338	17,677	17,677
8	38,150	32,245	29,675	31,953	35,105	45,072	45,857	29,173	32,779	30,237	31,620	31,620
9	3,896	12,826	11,604	14,460	38,128	38,634	58,798	54,356	27,234	30,237	29,632	29,632
10	30,757	27,727	36,450	40,754	37,051	48,375	64,018	34,359	38,593	29,414	7,434	7,434
11	38,272	38,109	29,244	11,844	21,966	58,897	41,987	16,965	32,934	32,151	28,915	28,915
12	17,346	30,799	16,731	40,368	18,575	58,624	80,429	32,968	32,352	30,335	35,323	35,323
13	23,018	0	37,771	24,175	38,431	45,469	69,369	36,811	34,695	29,167	34,863	34,863
14	39,302	44,232	3,465	27,202	43,999	47,780	55,489	34,857	39,584	29,552	28,477	28,477
15	31,910	33,229	37,871	42,835	5,310	49,082	48,890	34,849	34,403	30,654	32,701	32,701
16	15,086	8,155	41,860	38,845	37,354	39,930	56,442	35,477	38,863	29,564	1,506	1,506
17	39,785	35,634	0	30,534	36,769	87,599	39,572	36,528	37,658	33,662	33,510	33,510
18	41,652	12,289	42,011	22,947	18,721	42,675	44,816	34,167	38,336	34,353	33,550	33,550
19	67,287	35,688	34,477	40,124	32,612	59,010	34,809	33,116	33,151	3,121	33,607	33,607
20	28,218	0	37,594	3,123	38,687	35,101	31,283	38,229	33,152	35,829	30,323	30,323
21	4,578	2,159	43,674	35,628	48,956	52,625	34,661	37,863	33,458	31,956	29,830	29,830
22	43,459	38,240	31,938	38,633	36,999	45,450	40,095	34,843	40,693	39,482	28,442	28,442
23	36,619	20,610	7,302	38,704	3,586	48,092	36,735	35,442	33,455	34,234	29,590	29,590
24	5,987	39,910	36,444	13,878	69,084	31,221	33,017	35,479	38,465	29,050	15,143	15,143
25	42,385	9,674	13,428	36,406	38,782	36,439	35,913	31,263	35,854	22,369	32,918	32,918
26	9,503	35,088	39,551	41,483	34,419	36,765	29,237	46,889	31,642	26,943	33,057	33,057
27	34,886	37,198	26,461	18,407	43,954	42,129	28,959	37,377	34,486	16,814	32,638	32,638
28	33,838	15,778	14,351	31,000	30,392	31,920	25,441	37,357	34,781	34,348	34,194	34,194
29	13,366	0	9,279	40,251	41,475	30,425	55,155	35,856	30,786	35,661	34,194	34,194
30	30,893	0	36,849	36,085	58,589	64,478	55,155	35,786	33,279	29,789	32,215	32,215
31	900,460	748,085	806,340	895,506	1,044,016	1,360,381	1,334,427	1,070,280	1,091,188	942,886	808,131	808,131
SUM:	900,460	748,085	806,340	895,506	1,044,016	1,360,381	1,334,427	1,070,280	1,091,188	942,886	808,131	808,131
Check OK	900,460	748,085	806,340	895,506	1,044,016	1,360,381	1,334,427	1,070,280	1,091,188	942,886	808,131	808,131
Check OK	900,460	748,085	806,340	895,506	1,044,016	1,360,381	1,334,427	1,070,280	1,091,188	942,886	808,131	808,131
Maximum:	67,287	44,232	45,291	42,835	69,084	87,599	90,429	54,356	58,896	39,482	35,323	35,323
Median:	31,910	33,518	31,938	35,394	37,051	42,402	41,987	35,479	34,591	31,114	29,731	29,731
Minimum:	3,836	0	0	2,954	1,214	30,425	25,441	14,181	27,234	3,121	1,506	1,506
Average:	29,047	26,717	26,011	29,850	33,678	45,346	45,565	34,525	36,373	30,416	26,938	26,938
YEAR:	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007
Maximum Daily Flow for Year:	90,429	65,915	105,522	105,522	105,522	105,522	105,522	105,522	105,522	105,522	105,522	105,522
Median Daily Flow for Year:	34,628	34,455	30,776	30,776	30,776	30,776	30,776	30,776	30,776	30,776	30,776	30,776
Average Daily Flow for Year:	33,098	30,199	32,737	32,737	32,737	32,737	32,737	32,737	32,737	32,737	32,737	32,737

Date  
 29  
 30  
 13051

readings removed from above  
 0.46217  
 13051

Existing Operation /Permit Conditions				Notes
Wells	PW-1	PW-2	PW-3	
Depth, ft	38	45	53	NYSDEC Water Withdrawal Permit ID 4-3844-00248/00001 Effective Date: 3/25/2016   Expiration Date: 3/24/2026 (gpm)x(1440min/day)
Maximum, gpm	61	66	57	
Maximum, gpd	87,840	95,040	82,080	
<b>Maximum System Capacity</b>	<b>118</b>	gpm		Permitted Withdrawal [NYSDEC Water Withdrawal Permit]
Maximum System Capacity	169,920	gpd		(gpm)x(1440min/day)

The Town's Clearview Water District is supplied by a three well system that typically operates at 60 to 65 gallons per minute (gpm) per well. The Town currently operates wells 1 and 2 which combined have a safe yield in excess of 200,000 gallons per day (gpd). The Town recently brought well 3 on line to add additional capacity to the system. According to the "Aquifer Evaluation, Town of Schodack, Clearview Well Field Evaluation", Hanson Van Vleet, LLC, October 25, 2005, the three wells are capable of operating at their long term estimated yield of 210 gpm or 302,000 gallons per day.

The Clearview well field pumps are 7 Hp, 3 phase with 65 gpm being supplied from each well. The control system calls for a pump to turn on when the water in the Clearview storage tank is at elevation 456 feet. The pump turns off when the tank fills to elevation 461 feet. If demand requires, a second pump, or lag pump, turns on at elevation 453 feet and off at elevation 460 feet. The well pumps are provided emergency power by a standby propane powered 30-KW, 3 phase Kohler generator. Controls, pressure gauges and chlorine disinfection are provided within the pump house. The pump house roof is a flat membrane system that was last replaced in 2011.

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**N. Water System Usage, Future Demand & Capacity Calculations**

Water System Usage & Future Demand					
	2016	2017	2018	Averages	
	(gallons)	(gallons)	(gallons)	(gallons)	
<b>Maximum Daily Flow:</b>	105,522	65,915	90,429	87,289	maximum
Median for the Year:	30,776	34,455	34,628	33,286	mid point of readings
<b>Average Daily Flow:</b>	32,737	30,199	33,098	32,012	average of all readings
<b>Use Peaking Factor:</b>	2016	2017	2018	Averages	
Peaking Factor=Max/Avg:	3.22	2.18	2.73	2.71	
Peaking Factor = 3					
<b>Water Service Connections</b>	Clearview #1 (SW1):	Maplecrest #3 (SW3):	Total Connections:		
	166	44	210		
<b>Determine Existing Per-Connection Consumption:</b>	2016	2017	2018	Averages	
gallons per capita day (gal/connection/day)	(gpcd)	(gpcd)	(gpcd)	(gpcd)	
(Average Daily Flow/Connections)	156	144	158	152	
Use maximum:	158				
<b>Proposed Additional Users</b>	Battisti Subdivision Connections:	53			
	Average Daily Flow	158 gpcd			
	Additional Demand, gpcd	8,353 gpd			
<b>Total Projected Demand</b>	Existing Average Daily Flow	32,012	gpd		
	Proposed additional demand	8,353	gpd		
	<b>Total Proposed Daily Demand</b>	<b>40,365</b>	<b>gpd</b>		
	Apply Peaking Factor = 3			<b>Total Projected Demand with Additional Connections</b>	
	<b>Peak Proposed Daily Demand</b>	<b>121,095</b>	<b>gpd</b>	USE:	<b>120,000 gpd</b>
				Total Connections:	<b>263</b>
				Peak Daily Demand Per Connection:	<b>456 gpcd</b>
Water Supply Capacity					
<b>Allowable Well Production</b>	Maximum System Capacity	118	gpm		
	Maximum System Capacity	169,920	gpd	Well Allowable Capacity Is Greater Than Proposed Peak Demand	
Water Storage Capacity Scenario Review					
<b>Required Storage with Fire Flow (Volume Basis)</b>	w/ Peak Factor applied 3			<b>Avg Peak Demand+FF (GPM Basis)</b>	
Proposed Average Daily Demand, gpd	40,365	121,095		28	Avg Demand
Fire Flow, gpm	750	750		750	Fire Flow
Duration, hours	2	2		778	Total Demand
Volume, gallons	90,000	90,000			
<b>Total Volume Required, gallons</b>	<b>130,365</b>	<b>211,095</b>			
<b>Required Storage w/o Fire Flow</b>	Proposed Average Daily Demand, gpd	40,365	121,095	118	<b>Demand Met By</b>
				90,000	1) Wells at max. permitted rate
					2) Water in Storage starting at Elev. 461',gallons
				136	Duration, minutes =storage volume/(total demand rate-well pump rate)
<b>Storage Provided, gallons</b>	Operational Elevations, ft	456	461	2	Duration, Hours
	Operational Volume, gallons	65,000	90,000		OK
	Operational Storage Used, gallons	25,000			
	Remaining Storage Available, gallons	65,000			
<b>Reset Operational Range, ft to meet proposed demand</b>	453	461			
	Operational Volume, gallons	50,000	90,000		
	Operational Storage Used, gallons	40,000			
	Remaining Storage Available, gallons	50,000			

"Recommended Standards For Water Works 2012 Edition" | Policies for the Review and Approval of Plans and Specifications for Public Water Supplies | A Report of the Water Supply Committee of the Great Lakes--Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers

7.0.1 Sizing

Storage facilities should have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands.

- a. The minimum storage capacity (or equivalent capacity) for systems not providing fire protection shall be equal to the average daily consumption. This requirement may be reduced when the source and treatment facilities have sufficient capacity with standby power to supplement peak demands of the system.
- b. Excessive storage capacity should be avoided to prevent potential water quality deterioration problems.
- c. Fire flow requirements established by the appropriate state Insurance Services Office should be satisfied where fire protection is provided.

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**O. NYS Water Supply Permit**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Permits, Region 4  
1130 North Westcott Road, Schenectady, NY 12306-2014  
P: (518) 357-2069 | F: (518) 357-2460  
www.dec.ny.gov

February 11, 2019

**Permit Transmitted by Email**

Mr. David Harris, Supervisor  
Town of Schodack  
265 Schuurman Rd.  
Castleton, NY 12033

RE: **Modification to Water Withdrawal Permit  
Extensions No. 5 & No. 6**  
DEC Permit ID# 4-3844-00248/00001  
Town of Schodack, Rensselaer County

Mr. Harris,

The permit modification that you applied for is enclosed. Please read it carefully and note the updated conditions that are included. It is valid for only those activities authorized and is **effective February 11, 2019 and will expire on March 24, 2026.** Work beyond the scope of the permit and the approved project plans may be considered a violation of the law and subject to appropriate enforcement action.

Please be advised that the Uniform Procedures Regulations (6 NYCRR Part 621) provide that an applicant may request a public hearing if a permit is denied or contains conditions which are unacceptable to them. Any such request must be made in writing within 30 calendar days of the date of permit issuance and must be addressed to the Regional Permit Administrator at the letterhead address. A copy should also be sent to the Chief Administrative Law Judge at NYSDEC, 625 Broadway, 1st Floor, Albany, NY 12233-1550.

Also note that this permit does not eliminate the need to obtain any other federal, state or local permits or approvals that may be required for this project.

Please feel free to contact me at (518) 357-2459 or by email at [kate.kornak@dec.ny.gov](mailto:kate.kornak@dec.ny.gov) should you have any questions regarding the extent of the work authorized, or your obligations under the permit.

Sincerely,

*Kate Kornak*

Kate Kornak  
Deputy Regional Permit Administrator

encls: Modified Water Withdrawal Permit 4-3844-00248/00001

ecc: NYSDEC Division of Water  
NYS Department of Health  
County Department of Health  
Laberge Group



Department of  
Environmental  
Conservation





## PERMIT

### Under the Environmental Conservation Law (ECL)

#### Permittee and Facility Information

**Permit Issued To:**

TOWN OF SCHODACK

PO BOX 436

EAST SCHODACK, NY 12063-0436

**Facility:**

SCHODACK CONSOLIDATED

WATER DISTRICT 101

TOWNWIDE

SCHODACK, NY 12033

**Facility Location:** in SCHODACK in RENSSELAER COUNTY

**Facility Principal Reference Point:** NYTM-E: 609.189 NYTM-N: 4711.883

Latitude: 42°33'05.9" Longitude: 73°40'12.1"

**Authorized Activity:**

This permit authorizes consolidation of the approved sources of water supply and water service areas of the Town of Schodack. This includes the withdrawal of up to 717,120 gallons per day from the Clearview Well Field, Town Well Field and Village of Nassau water supply system in accordance with Special Condition No. 2. Water from these approved sources may be supplied to: Town Water District No. 1 and No. 3; Town Consolidated Water District No. 101 including outside district users listed in Special Condition No. 9; and sale of water meeting Special Condition No. 20.

**Modification #2:** This permit authorizes the extension of the water supply of the Consolidated Water District No. 101 into Extensions No. 5 and No. 6.

#### Permit Authorizations

**Water Withdrawal Public - Under Article 15, Title 15**

Permit ID 4-3844-00248/00001

New Permit

Effective Date: 3/25/2016

Expiration Date: 3/24/2026

Modification # 2

Effective Date: 2/11/2019

Expiration Date: 3/24/2026

#### NYSDEC Approval

By acceptance of this permit, the permittee agrees that the permit is contingent upon strict compliance with the ECL, all applicable regulations, and all conditions included as part of this permit.

Permit Administrator: KATE KORNAK, Deputy Permit Administrator

Address: NYSDEC Region 4 Headquarters  
1130 N Westcott Rd  
Schenectady, NY 12306

Authorized Signature: \_\_\_\_\_

*K. Kornak* 2019.02.11  
16:31:22 -05'00'

Date: 2 / 11 / 2019



**Permit Components**

WATER WITHDRAWAL PUBLIC PERMIT CONDITIONS

GENERAL CONDITIONS, APPLY TO ALL AUTHORIZED PERMITS

NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

**WATER WITHDRAWAL PUBLIC PERMIT CONDITIONS**

1. **Transfer of Ownership of Water Withdrawal Systems** Unless otherwise specified in this permit, a new water withdrawal permit application is required for the acquisition or condemnation of the approved water withdrawal system.
2. **Approval of Plans by NYS DOH** Contract plans and specifications, or changes thereto, for a public water supply system for which a permit has been issued by the Department are subject to review and approval by the Department of Health prior to the commencement of construction.
3. **Approval of Completed Works from NYSDOH** The water withdrawal permittee shall submit to the Department a copy of the Approval of Completed Works issued by the Department of Health before the commencement of final operation of the water withdrawal system.
4. **Permit Expiration and Renewal** Any permittee who intends to continue to operate a water withdrawal system beyond the period of time covered in the applicable water withdrawal permit must apply for a renewal of the permit at least 30 days prior to its expiration.
5. **Protect Land Around Well** All land within 200 feet of any well approved herein shall be protected and controlled, in order to prevent pollution of the ground or groundwater, by direct ownership of the land, by the acquisition of protective easements, or by other appropriate measures. Any lesser distances must be acceptable to the NYS Department of Health. This area shall further be protected from pollution by surface waters originating outside thereof by the construction of suitable diversion ditches or embankments, and the construction of the wells shall so be carried out that there shall be no opportunity for pollution to enter the wells.
6. **Enclose and Protect Pumping Facilities** The physical pumping facilities and controls at any well site approved herein shall be protected against damage or tampering either by a fence or other suitable enclosure or by their manner of construction and installation.
7. **Treatment Before Distribution** Nothing contained in this permit shall authorize the permittee to supply, sell or distribute, for any purpose, water from any source approved herein unless all such water is first treated in a manner satisfactory to the NYS Department of Health (NYSDOH).
8. **No Distribution Beyond District Without Approval** Nothing contained herein shall authorize the permittee to distribute water to any water district extension or out of district user that has not already



been approved by the Department or its predecessors without first obtaining a further permit from the Department.

**9. Out-of-District Water User Table** The following table summarizes all out-of-district water users:

Out-of-district water users
Address
15 Jenna Lane, East Greenbush, NY
16 Jenna Lane, East Greenbush, NY
20 Jenna Lane, East Greenbush, NY
23 Jenna Lane, East Greenbush, NY
24 Jenna Lane, East Greenbush, NY
27 Jenna Lane, East Greenbush, NY
28 Jenna Lane, East Greenbush, NY
91 Schuurman Road, Schodack, NY
95 Schuurman Road, Schodack, NY
233 Schuurman Road, Schodack, NY
2475 Kraft Road, Schodack, NY
2471 Kraft Road, Schodack, NY
2465 Kraft Road, Schodack, NY
11 Kenney Way, Schodack, NY
1950 US Route 9, Schodack, NY
4293 US Route 20, Schodack, NY

**10. Map of Approved Water Supply Service Area** The approved water service area of the Town of Schodack is shown on a map submitted with the application entitled "Town Water Districts, Town of Schodack, Rensselaer County, NY" received by the Department November 26, 2018, with the following exceptions:

Water District No. 7 is supplied by the Village of Castleton-on-Hudson



**11. Source Approval Table**

The following table summarizes all system source approvals:

<b>Source Approval Table</b>				
<b>Well Field or Source of Water Supply</b>	<b>Source - Status</b>	<b>Past WWA Number</b>	<b>Individual Permitted Source Yield</b>	<b>Maximum Permitted Well Field Yield or Supply of Water</b>
Clearview Well Field	Well No. 1 - Active	5744 (also see 4183)	61 (gpm)	118 (gpm)
	Well No. 2 - Active	5744 (also see 4685)	66 (gpm)	
	Well No. 3 - Active	5744	57 (gpm)	
Town Well Field	Well PW-1 - Active	10961	380 (gpm)	380 (gpm)
	Well PW-2 - Active	10961	430 (gpm)	
<b>Total Approved</b>				<b>717,120 (gpd)</b>



### 12. Service Area Approval Table

The following table summarizes all approved water service areas:

WWA No.	Modification No.	Name	Approval Date	Footnotes
5744	-	Water District No. 1	9/4/1969	(1)
6693	-	Water District No. 2	1/21/1977	(2), (3), (4)
6738	-	Water District No. 2 - Ext. No. 1	5/12/1977	(2), (3), (4)
8509	-	Water District No. 2 - Ext. No. 2	8/27/1990	(2), (3), (4)
8736	-	Water District No. 3	7/24/1995	(1), (3)
9656	-	Water District No. 4	4/21/2000	(2), (3), (4)
9661	-	Water District No. 5	4/29/1998	(2), (4)
11096	-	Water District No. 5 - Ext. No. 1	1/8/2008	(2), (4)
10874	-	Water District No. 8	7/25/2006	(2), (4)
10961	-	Water District No. 8 - Ext. No. 1	7/21/2008	(2), (4)
11175	-	Water District No. 9	8/7/2008	(2), (4)
11768	-	Water District No. 101	3/25/16	(2), (4)
11768	2	Water District No. 101 - Ext. 5 & 5	2/11/19	(2), (4)

*Footnotes:*

- (1) Supplied by the Clearview Well Field
- (2) Supplied by the Town Well Field
- (3) Original source revoked (see condition #21)
- (4) Included in the Consolidated Water District No. 101

### 13. Interconnection Approval Table

This table summarizes all approved water interconnections:

Interconnection Approval Table			
WSA No.	Modification No.	Interconnections	Approval Date
11,768	2	Emergency Interconnection with Village of Castleton-on-Hudson	2/11/2019



**14. Meter All Sources and Customers** The permittee must install and maintain meters on all sources of supply used in the system and on all customer service connections supplied by the system. Source master meters are to be read, and records kept of those readings on a weekly basis. At a minimum, customer service meters are to be read, and records kept of those readings, at least once per year. The permittee must maintain records of production (master meter readings) and consumption (service meter readings) for each calendar year.

**15. Meter Calibration for Publicly Owned Systems** At least once every fifteen years, the permittee must have all of its small service connection meters (less than 1-inch in diameter) calibrated for accuracy according to standards of the American Water Works Association (AWWA). Larger service meters and all source meters must be calibrated more frequently, based upon the AWWA standards for the size of the meter used.

**16. Conduct Water Audits** At least once annually, the permittee must conduct a system-wide water audit that utilizes metered water production and consumption data to determine unaccounted-for water.

**17. Leak Detection and Repair Program** The permittee must develop and implement a leak detection and repair program that uses sonic detection equipment to inspect its entire distribution system in a systematic fashion. At a minimum, this program must cover the entire system in a three-year cycle by inspecting at least one-third of the system each year. Whenever two consecutive annual water audits show that unaccounted-for water is 15% or less of system production, the leak detection and repair program may be modified to cover the entire system in a longer cycle.

**18. Permittee Must Maintain Records** The permittee must retain records of production and consumption, reports of audit results, and summaries of leaks detected and repaired for at least ten years. The permittee must provide copies of such of these records, reports, and summaries as might be requested in writing by the Department within one month of receiving such a request.

**19. Annual Water Withdrawal Reports** The permittee must submit a Water Withdrawal Reporting Form to the Department's Division of Water, Albany, NY by March 31st of each year. The form is available on the Department's website and includes information regarding approved sources of water supply, source capacities, average and maximum day water use data and water conservation and efficiencies employed during the past calendar year.

**20. Agreements for Sale of Water** The permittee may not sell water to any other municipality or private entity without the execution of a proper agreement or contract that includes: the amounts of water to be sold, a requirement that individual customers are metered and that water conservation measures consistent with those practiced by the permittee will be implemented. Such agreements shall be made available to the Department upon request.

**21. Revoked Sources** The following table summarizes all revoked sources:

Source Name	Past WWA No.
Water District No. 2, Well No. 1, 2 & 3 (aka Inglewood)	6693 (also see 2416)
Water District No. 3, Well No. 1 & 2 (aka Maple Crest)	8736 (also see 7801 & 8063)
Water District No. 4, Well No. 1, 2, & 3 (aka Golf View)	9656

The Permittee must properly cap, seal and disconnect these sources from the system. Wells that are to be abandoned must be decommissioned in a manner consistent with the Department's Water Supply Well



Decommissioning Recommendations, <http://www.dec.ny.gov/lands/86055.html>. The Permittee must notify the Department (Regional Permit Administrator and Regional Water Engineer) in writing, when the decommissioning of any such wells has been completed. The sources so abandoned shall not again be used for public water supply purposes without a further permit from the Department of Environmental Conservation.

22. **Right to Rescind** The Department reserves the right to rescind this permit or to take whatever action it may deem suitable and proper if the works authorized to be constructed herein are not initiated by April 1, 2026.

**GENERAL CONDITIONS - Apply to ALL Authorized Permits:**

1. **Facility Inspection by The Department** The permitted site or facility, including relevant records, is subject to inspection at reasonable hours and intervals by an authorized representative of the Department of Environmental Conservation (the Department) to determine whether the permittee is complying with this permit and the ECL. Such representative may order the work suspended pursuant to ECL 71- 0301 and SAPA 401(3).

The permittee shall provide a person to accompany the Department's representative during an inspection to the permit area when requested by the Department.

A copy of this permit, including all referenced maps, drawings and special conditions, must be available for inspection by the Department at all times at the project site or facility. Failure to produce a copy of the permit upon request by a Department representative is a violation of this permit.

2. **Relationship of this Permit to Other Department Orders and Determinations** Unless expressly provided for by the Department, issuance of this permit does not modify, supersede or rescind any order or determination previously issued by the Department or any of the terms, conditions or requirements contained in such order or determination.

3. **Applications For Permit Renewals, Modifications or Transfers** The permittee must submit a separate written application to the Department for permit renewal, modification or transfer of this permit. Such application must include any forms or supplemental information the Department requires. Any renewal, modification or transfer granted by the Department must be in writing. Submission of applications for permit renewal, modification or transfer are to be submitted to:

Regional Permit Administrator  
NYSDEC Region 4 Headquarters  
1130 N Westcott Rd  
Schenectady, NY12306

4. **Permit Modifications, Suspensions and Revocations by the Department** The Department reserves the right to exercise all available authority to modify, suspend or revoke this permit. The grounds for modification, suspension or revocation include:

- a. materially false or inaccurate statements in the permit application or supporting papers;



- b. failure by the permittee to comply with any terms or conditions of the permit;
- c. exceeding the scope of the project as described in the permit application;
- d. newly discovered material information or a material change in environmental conditions, relevant technology or applicable law or regulations since the issuance of the existing permit;
- e. noncompliance with previously issued permit conditions, orders of the commissioner, any provisions of the Environmental Conservation Law or regulations of the Department related to the permitted activity.

5. **Permit Transfer** Permits are transferrable unless specifically prohibited by statute, regulation or another permit condition. Applications for permit transfer should be submitted prior to actual transfer of ownership.

### NOTIFICATION OF OTHER PERMITTEE OBLIGATIONS

**Item A: Permittee Accepts Legal Responsibility and Agrees to Indemnification**

The permittee, excepting state or federal agencies, expressly agrees to indemnify and hold harmless the Department of Environmental Conservation of the State of New York, its representatives, employees, and agents ("DEC") for all claims, suits, actions, and damages, to the extent attributable to the permittee's acts or omissions in connection with the permittee's undertaking of activities in connection with, or operation and maintenance of, the facility or facilities authorized by the permit whether in compliance or not in compliance with the terms and conditions of the permit. This indemnification does not extend to any claims, suits, actions, or damages to the extent attributable to DEC's own negligent or intentional acts or omissions, or to any claims, suits, or actions naming the DEC and arising under Article 78 of the New York Civil Practice Laws and Rules or any citizen suit or civil rights provision under federal or state laws.

**Item B: Permittee's Contractors to Comply with Permit**

The permittee is responsible for informing its independent contractors, employees, agents and assigns of their responsibility to comply with this permit, including all special conditions while acting as the permittee's agent with respect to the permitted activities, and such persons shall be subject to the same sanctions for violations of the Environmental Conservation Law as those prescribed for the permittee.

**Item C: Permittee Responsible for Obtaining Other Required Permits**

The permittee is responsible for obtaining any other permits, approvals, lands, easements and rights-of-way that may be required to carry out the activities that are authorized by this permit.

**Item D: No Right to Trespass or Interfere with Riparian Rights**

This permit does not convey to the permittee any right to trespass upon the lands or interfere with the riparian rights of others in order to perform the permitted work nor does it authorize the impairment of any rights, title, or interest in real or personal property held or vested in a person not a party to the permit.