STORMWATER POLLUTION PREVENTION PLAN for CONSTRUCTION ACTIVITIES at

JERRY SMITH BATTERY ENERGY STORAGE SYSTEM
TOWN OF LANSING

Prepared for

JERRY SMITH LLC C/O NEXAMP, LLC
101 SUMMER STREET, SECOND FLOOR
BOSTON MA, 02110

Prepared by
The Environmental Design Partnership, LLP
900 Route 146
Clifton Park, NY 12065
Telephone: (518) 371-7621
Facsimile: (518) 371-9540

JUNE 2026

Table of Contents

SECTION 1

Written Stormwater Pollution Prevention Plan

I. SCOPE

A. **PURPOSE:** JERRY SMITH LLC intends to implement the appropriate Stormwater Pollution Prevention Plan measures in accordance with the SPDES general permit governing stormwater discharges during construction, and in accordance with erosion control practices. This section provides a descriptive explanation of the means by which JERRY SMITH LLC will comply with the National Stormwater Pollution Prevention Program.

B. **NPDES GENERAL PERMITS FOR STORMWATER DISCHARGE FROM CONSTRUCTION SITES:** Regulations promulgated by the New York State Department of Environmental Conservation (NYSDEC) regulate the discharge of storm water from construction activities on sites where one (1) or more acres of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities. (Copy enclosed herewith) In order to be authorized to discharge under the General Permit, a Stormwater Pollution Prevention Plan (SWPPP) for the site must be prepared in accordance with all applicable requirements of this permit and followed during the construction activities. If the construction activity is **not** subject to the requirements of a regulated, traditional land use control MS4 a Notice of Intent (NOI) form must be completed and received by the New York State Department of Environmental Conservation at least 5-days prior to any earth-disturbing activities. If the construction activity is subject to the requirements of a regulated, traditional land use control MS4, then the owner/operator must have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the Department. The owner/operator shall have the "MS4 SWPPP Acceptance" form signed and then submit that form along with the NOI to the Department.

C. **RESPONSIBILITIES OF CONTRACTOR REGARDING THE GENERAL PERMIT:** The CONTRACTOR shall manage the discharge of stormwater from the site in accordance with the SPDES General Permit for Construction Activities conditions and the following provisions of this section of the specifications. The CONTRACTOR shall be responsible for conducting the stormwater management practices in accordance with the permit. The CONTRACTOR shall be responsible for providing qualified inspectors to conduct the inspections required by the SWPPP. The CONTRACTOR shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the CONTRACTOR'S failure to comply with the permit provisions. It shall be the responsibility of the CONTRACTOR to make any changes to the SWPPP necessary when the CONTRACTOR or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The CONTRACTOR should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site JUNE impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The NOI Permittee petitions the New York State Department of Environmental Conservation for the stormwater discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) (using the form required by the NYSDEC) to be covered under this permit is hereby filed. An Erosion and Sediment Control Plan has been prepared and is attached herewith.

E. **CONTRACTOR RESPONSIBILITIES**: The SWPPP and associated Erosion and Sediment Control Plans represent the **MINIMUM** erosion and sediment control measures that will be required to protect the site during construction. JERRY SMITH LLC and the CONTRACTOR understand that additional erosion and sediment control measures will be necessary during construction. It will be the responsibility of the CONTRACTOR to implement additional erosion and sediment control measures as necessary to protect the site

during construction. JERRY SMITH LLC and the CONTRACTOR shall designate a Project Manager prior to commencing construction. The Project Manager will ensure that all construction managers and sub-contractors are appropriately assigned and understand the importance of the following topics:

- Erosion and Sedimentation Control for Water Quality Protection
- Implementation of the Erosion and Sedimentation Control Plan
- The Importance to Proper Installation of Erosion and Sedimentation Control Measures
- Regular Inspection by qualified personnel of Erosion and Sedimentation Control Measures
- Diligent Maintenance of Erosion and Sedimentation Control Measures
- Contemporaneous preparation of accurate and complete records regarding inspection and maintenance of Erosion and Sedimentation Control Measures
- Record Keeping for Inspections and Maintenance activities

F. **REQUIREMENTS FOR THE CONTRACTOR AND SUBCONTRACTOR(S):** The *SWPPP Ledger* shall provide a "Contractor's Certification Log" **(Form 2)**, identifying the Company Name, Business Address and Telephone Number along with the Responsible Person for the CONTRACTOR and all subcontractors' who will implement the measures identified in the SWPPP. Each of the entities identified on **Form 2** shall sign a "Contractor's Certification" **(Form 3)**, verifying they have been instructed and fully understand the requirements of the New York State Department of Environmental Conservation and SWPPP. **This certification must be signed, by a fully qualified individual on behalf of each entity, prior to the beginning of any construction activities and shall be filed in the project's *SWPPP* Ledger.**

Additionally, the "Trained Contractor" must be identified on Form 3 and his/her credentials should be kept on-site in the SWPPP ledger.

G. **STORMWATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The *SWPPP Ledger* is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the NOI Permittee's personnel or New York State Department of Environmental Conservation or any other agency with regulatory authority over stormwater issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. Refer to Part VII., F., Duty to Provide Information, of the General Permit for additional public viewing requirements.

H. **SWPPP LEDGER:** The SWPPP Ledger shall be a 3-ring Binder, tabbed and indexed for the following sections:

SECTION 1:
- **Written SWPPP**

SECTION 2:
- **Site Map and General Location Map**
- **Erosion and Sediment Control Plan(s)**

SECTION 3:
- **New York State Notice of Intent**
- **New York State NOI Acknowledgement Letter**
- **New York State MS4 SWPPP Acceptance Form**

SECTION 4:

- **New York State SPDES General Permit**

SECTION 5:

- **NOI Permittee's Certification (Form 1)**
- **Contractor's/Subcontractor's Certification Log (Form 2)**
- **Contractor's Certification for each contractor listed on Form 2 (Form 3)**
- **Inspection Report (Form 4)**
- **Modification Report (Form 5)**
- **Record of Stabilization and Construction Activities Report (Form 6)**
- **Record of Temporary Erosion and Sediment Control Practices (Form 6A)**
- **Project Rainfall Log (Form 7)**
- **Final Stabilization/Termination Checklist (Form 8)**

SECTION 6:

- **Supplemental Information**
  – Stormwater Management Report

SECTION 7:

- **Completed Inspection Forms**

The Project Manager must review and evaluate for compliance the *SWPPP Ledger* at each Project Review meeting. All Inspection and Maintenance Forms (*Forms 4 - 7*) will be initialed by the Project Manager at each reporting interval.

I. **INSPECTIONS AND RECORD KEEPING:** Inspections are required at least weekly by a "Qualified Inspector". Sites that have a waiver to disturb greater than five (5) acres require two (2) inspections every seven (7) days with at least two (2) days between inspections. Inspections shall continue until the site complies with the "Final Stabilization" section of this document and a Notice of Termination (NOT) has been filed with the NYSDEC. Each inspection must be followed up by a report documenting the inspector's findings and request the required maintenance and/or repair for the erosion and sedimentation control measures. The inspector shall notify the Project Manager within one day of the inspection of any deficiencies. Within one day of this notification the Project Manager must commence with corrective measures. It is imperative that the Project Manager documents the Inspection and Maintenance of all erosion and sedimentation control measures as soon as possible after the inspection and/or maintenance is completed. These records are used to prove that the required inspection and maintenance were performed and shall be placed in the *SWPPP Ledger*. In addition to inspection and maintenance reports, records should be kept of the Construction Activities that occur on the site. The Project Sponsor shall retain copies of the SWPPP, all reports and data for a minimum of five (5) years after the project is complete. The following list identifies the **required** Inspection and Maintenance documentation that must be maintained by the Project Manager under this SWPPP.

- **Form 4 Inspection Report for SWPPP**
- **Form 5 Requested Changes to the SWPPP (Modification Report)**
- **Form 6 Record of Stabilization and Construction Activities**
- **Form 6A Record of Temporary Erosion and Sediment Control Practices**
- **Form 7 Project Rainfall Log**

J. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever the design, construction, operation, or maintenance of the site changes in a way which significantly affects the potential for the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. Any such changes to the SWPPP must be made in writing on the Modification Report Form **(Form 5)** within 7 days of the date such modification or amendment is made. The CONTRACTOR'S failure to monitor or report deficiencies to the NOI Permittee will

result in the CONTRACTOR being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

K. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** The site will be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the development area no longer discharges stormwater associated with construction activities and a Notice of Termination (NOT) form filed by the NOI Permittee with the New York State Department of Environmental Conservation. This filing terminates coverage under the General Permit and terminates the CONTRACTOR'S responsibility to implement the SWPPP. Requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed.

II. SITE DESCRIPTION

A. PROJECT NAME AND LOCATION

The JERRY SMITH BATTERY ENERGY STORAGE SYSTEM PROJECT site is geographically situated at Latitude N 42° 35' 35", Longitude W 76° 33' 50" in the TOWN OF LANSING, TOMPKINS COUNTY, NEW YORK. The site is located on the south side of JERRY SMITH ROAD. The project site is comprised of 56.87 +/- acres of land. The overall disturbance area is 1.67 +/- acres. The project is bounded on the north, south, east and west by PRIVATE FORESTED. Access to the project will be from JERRY SMITH ROAD. The entire parcel will remain privately owned and maintained. Approximately 0.60 +/- acres of impervious surfaces, including travel surfaces will be constructed. On-going reclamation during construction will consist of all activities listed in Section 1.III.A.1 for temporary actions. Permanent reclamation activities for the laydown area and other compacted areas shall follow the NYSDEC Deep-Ripping and Decompaction JUNE 2008 guidance. Final stabilization is defined as the completion of all soil disturbance activities with the phase area having perennial vegetative cover with a density of eighty (80) percent, or other equivalent stabilization measures such as permanent landscape mulches, rock rip-rap or washed/crushed stone.

B. NOI PERMITTEE'S NAME AND ADDRESS

JERRY SMITH LLC
101 SUMMER STREET, SECOND FLOOR
BOSTON, MA 02110

C. PROJECT DESCRIPTION

The project will involve the installation of a 5-MWac battery energy storage system on an approximately 57-acre site. The design will include a fenced battery storage development footprint of under 1 acres. The installation will also include associated infrastructure such as a concrete equipment pad, a wooden "knot farm fence" and improved site access via a new gravel access road. Soil disturbing activities will include:

1. Construction of stabilized construction access points
2. Clearing and grubbing
3. Installation of batteries
4. Construction of stormwater areas
5. Construction of utilities on site
6. Construction of landscaped areas
7. Final grading

D. RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The site consists of hydrologic soil types (HSG) B and D. The predevelopment Curve Number (CN) for meadow areas was determined to be 58 for B, and 78 for D; farmland area was 78; and wooded areas were determined to be 60 and 79. Soil within the project area varies from silt loam to gravelly silt loam with areas of well draining soils and poor draining soils, as described by the Soil Conservation Service. The post development CN for all disturbed areas was modeled to be the same as predevelopment. A CN of 98 was used for all post-development impervious surface areas.

E. NAME OF RECEIVING WATERS

Drainage will be directed via an on-site vegetated filter strip or bioretention area with emergency overflow swales directed to existing drainage ways, and eventually into the Riley Brook.

F. INDIAN COUNTRY LANDS

The site is not located on any known current or previously designated Indian Country lands.

G. ENDANGERED OR THREATENED SPECIES

A review of the New York State Department of Environmental Conservation's (NYSDEC) Environmental Resource Mapper (http://www.dec.ny.gov/imsmaps/ERM/viewer.htm) indicated no known State regulated rare plants, rare animals or significant natural communities on-site. A letter has been received from the NYSDEC New York Natural Heritage Program stating that the project is likely to have no impact on endangered or threatened species. This letter is included within Section 6 of the SWPPP.

H. HISTORIC PLACES

A review of the New York State Historic Preservation Office (OPRHP) Geographic Information System Mapper (http://www.oprhp.state.ny.us/nr/main.asp) indicated that the site is not located in an archeo sensitive area.

I. CLIMATE CHANGE RESILIENCY PLANNING

With the Community Risk and Resiliency Act (CRRA) being adopted in New York State, JERRY SMITH LLC has demonstrated consideration of several future risks due to the effects of climate change.

Increasing Temperature: When developing the battery layout, JERRY SMITH LLC is only proposing to develop approximately 1.67 +/- acres of land. The roadway and equipment pads include only 0.60 +/- acres of impervious surfaces to reduce material heat absorption (Urban Heat Island Effect) to the maximum extent possible. The stormwater management area on site is a vegetated filter strip and bioretention area which will prevent runoff from entering heat-vulnerable environments.

Increasing Precipitation: The use of a vegetated filter strip and bioretention area will allow infiltration on-site which will minimize the amount of runoff and water quality pollution from leaving the site JERRY SMITH LLC will provide the proper long-term operation/maintenance procedures to ensure conveyance systems will not be overwhelmed during large and more frequent storm events. In the event of drought, there will be no physical or ecological risks due to the vegetated filter strip not retaining water.

Rising Sea Level: According to the FEMA Flood Insurance Rate Map (Map No. 36019C0470E) the project area is located within Zone X (unshaded), which is considered to be outside of the 500-year floodplain, see Section 6 if a map was available. As such, there will also be no increase in storm surge within the project limits.

Shifting Ecology: As stated in part G of this section, there are known State regulated rare plants, rare animals or significant natural communities on-site, but will remain unaffected by the development. The predominant wildlife species that might occupy the project site include squirrels, birds, and deer. The development of this project site will promote sustainable development and should not have any impact on the local ecosystem.

III. CONTROLS

A. EROSION AND SEDIMENT CONTROLS

The following section describes the anticipated Erosion and Sediment Controls required for use during construction of the proposed site. These controls represent the **MINIMUM** erosion and sediment control measures that will be required to protect the site during construction. **Additional erosion and sediment control measures will be necessary during construction.** It will be the responsibility of the NOI permittee to authorize the CONTRACTOR to implement all additional erosion and sediment control measures necessary to protect the site during construction.

1. Stabilization practices include (but not limited to):
   a) Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed
   b) Frequent watering of excavation and fill areas to minimize wind erosion during construction.
   c) Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.
   d) Seeding and planting of all unpaved areas
      - Temporary seedings should be made within 24 hours of construction or disturbance. If not, the soil must be scarified prior to seeding.
      - Broadcasting or hydroseeding JUNE be used as seeding methods.
      - Seeding mixtures should be as follows
        a) Ryegrass (annual or perennial) applied at 30 lbs. per acre (0.7 lbs./1000 sq. ft.)
        b) Certified "Aroostook" winter rye (cereal rye) applied at 100 lbs. per acre (2.5 lbs./1000 sq. ft.) *Winter rye shall be used if seeding in October/November.
   e) Topsoiling
      - Scarify all compact, slowly permeable, medium and fine textured subsoil areas. Scarify at approximately right angles to the slope direction in soil areas that are steeper than 5 percent.
      - Remove refuse, woody plant parts, stones over 3 inches in diameter, and other liter.
      - Topsoil material shall have at least 2 percent by weight of fine textured stable organic material, and no greater than 6 percent.
      - Topsoil shall have no less than 20 percent fine textured material (passing the No. 200 sieve) and not more than 15 percent clay.
      - Topsoil shall not be placed when it is partly frozen, muddy, or on frozen slopes or over ice, snow, or standing water.
   f) Mulching
      - For grass / legume establishment apply straw mulch applied at 2 ton/acre (90 lbs./1000 sq. ft.) and anchor with wood fiber mulch (hydromulch) at 500-750 lbs./acre (11 – 17 lbs./1000 sq. ft.)
   g) Protecting Vegetation During Construction
      - Limit soil placement over existing tree and shrub roots to a maximum of 3 inches.
      - Use retaining walls and terraces to protect roots of trees and shrubs when grades are lowered. Lowered grades should start no closer than the dripline of the tree.
      - Avoid trenching within the dripline of the tree.
      - Construction limits should be identified and clearly marked to exclude equipment.

2. Structural practices include (but not limited to):

a) Perimeter protection using silt fences
b) Sediment basin(s)
c) Stabilized construction exit points
   - Aggregate size shall be 2 inch stone or reclaimed / recycled concrete equivalent
   - Thickness shall be not less than 6 inches
   - Width to be the full width of the access point, but not less than 12 ft
   - Length shall be as required, but not less than 50 ft.
   - Filter cloth shall be applied over the entire area to be covered with aggregate
   - The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way.
d) Stormwater detention ponds (which JUNE also serve as a temporary sediment basin)
e) Stone Check Dam
   - Use graded stone 2 to 15 inches in size
   - Sediment accumulated behind the check dam shall be removed as needed to allow drainage through the check dam and prevent large flows from carrying sediment over the dam.

3. Sequence of Major Activities

The CONTRACTOR will be responsible for implementing erosion and sediment control measures outlined in the SWPPP and any additional erosion and sediment control measures required to stabilize the site. The CONTRACTOR JUNE designate these tasks to certain subcontractors as appropriate, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the CONTRACTOR. The order of activities will be as follows (refer to Stormwater Pollution Prevention Plan Sheet contained in this SWPPP for additional details):

a) Construct temporary construction exits at locations shown on the SWPPP plan sheet.

b) Install perimeter silt fences.

c) Begin clearing and grubbing operations. Clearing and grubbing shall be done only in areas where earthwork will be performed and only in areas where building is planned to commence within 7 days after clearing and grubbing.

d) Frequent watering of the excavation and fill areas shall be done to minimize wind erosion.

e) Commence site grading and battery construction.

f) Disturbed areas of the site where construction activity has ceased for more than 7 days should be temporarily seeded and watered.

g) Finalize access road subgrade preparation.

h) Install base material as required for pavement.

i) Carry out final grading and seeding and planting, including stormwater management areas.

j) Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.

k) Remove temporary construction exits only prior to pavement construction in these areas (These areas are to be paved last).

4. Stormwater Management

The proposed stormwater management system was designed by The Environmental Design Partnership, Clifton Park, NY. The following paragraphs summarize the stormwater management measures to be incorporated on the site to control pollutants in stormwater discharges after construction is completed. A copy of the Stormwater Management Report is enclosed under Section 6 – Supplemental Information.

Two (2) stormwater management areas, constructed as a vegetated filter strip and a bioretention area, will be constructed to provide sufficient water quality treatment and allow the water to recharge into the ground.

5. Post-Construction Maintenance of the Stormwater Management System

Post construction maintenance and protection of the Stormwater Management System shall be performed in accordance with Section VI. LONG TERM OPERATION AND MAINTENANCE PROCEDURES of the SWPPP.

B. OTHER CONTROLS

1. Waste Disposal

All waste materials will be collected and stored in a securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York State. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as often as necessary, and the trash will be hauled to a landfill approved by New York State and the local government authority. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal. Notices stating these practices will be posted in the job site construction office trailer, and the job site superintendent will be responsible for seeing that these procedures are followed.

2. Sanitary Waste

All sanitary waste will be collected from the portable units a minimum of two times per week by a licensed portable facility provider in complete compliance with local and state regulations.

3. Off-Site Vehicle Tracking

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. The paved streets adjacent to the site entrance will be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

4. Concrete Waste From Concrete Trucks

a) Emptying of excess concrete and/or washout from concrete delivery trucks will be allowed on the job site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or washout and stormwater which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

b) The hardened residue from the concrete washout diked areas will be disposed of in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations. The job site superintendent will be responsible for seeing that these procedures are followed.

5. Hazardous Substances and Hazardous Waste

a) All hazardous waste materials will be disposed of by the CONTRACTOR in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that JUNE result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

b) The CONTRACTOR will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with stormwater discharges. If such contact occurs, the stormwater discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated stormwater. It shall be the responsibility of the job site superintendent to properly train all personnel in the use of the SPCC plan.

c) Any spills of hazardous materials which are in quantities in excess of Reportable Quantities as defined by EPA regulations shall be immediately reported to the EPA National Response Center 1-800-424-8802.

d) In order to minimize the potential for a spill of hazardous materials to come into contact with stormwater, the following steps will be implemented:

- All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use. All such materials shall have secondary containment to prevent contamination of soil and runoff.

- The minimum practical quantity of all such materials will be kept on the job site.

- A spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

- All of the product in a container will be used before the container is disposed of. All such containers will be triple-rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with stormwater discharges.

- All products will be stored in and used from the original container with the original product label.

- All products will be used in strict compliance with instructions on the product label.
- The disposal of excess or used products will be in strict compliance with instructions on the product label.

6. Contaminated Soils

a) Any contaminated soils (resulting from spills of materials with hazardous properties) which JUNE result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

b) The job site superintendent will be responsible for seeing that these procedures are followed.

IV. COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

A. The CONTRACTOR will obtain copies of any and all local and state regulations that are applicable to stormwater management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The CONTRACTOR will submit written evidence of such compliance if requested by any agent of a regulatory body. The CONTRACTOR will comply with all conditions of the New York State Department of Environmental Conservation SPDES General Permit for Construction Activities, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

V. MAINTENANCE/INSPECTION PROCEDURES DURING CONSTRUCTION

A. Erosion and Sediment Control and Stabilization Measures Maintenance and Inspection Practices

1. The following is a list of erosion and sediment controls to be used on this site during construction practice.

a) Stabilization practices for this site include:
- Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed
- Frequent watering of excavation and fill areas to minimize wind erosion during construction.
- Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.
- Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

b) Structural practices for this site include:
- Perimeter protection using silt fences
- Stabilized construction exit points
- Stormwater detention ponds (which JUNE also serve as a temporary sediment basin)

2. The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

a) All control measures will be inspected once every seven (7) days at a minimum. Sites that have a waiver to disturb greater than five (5) acres require two (2) inspections every seven (7) days with at least two (2) days between inspections.
b) All measures will be maintained in good working order; if repairs are found to be necessary, they will be initiated within 24 hours of report.
c) Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.

d) Silt fences will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.
e) The sediment basins will be inspected for depth of sediment, and built up sediment will be removed when it reaches 50 percent of the capacity.
f) Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.
g) A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.
h) The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.
i) Personnel selected for the inspection and maintenance responsibilities will receive appropriate instruction from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.
j) Disturbed areas and material storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.
k) Report to the NYS Department of Environmental Conservation within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event.

B. Inspection and Maintenance Report Forms

Once installation of any required or optional erosion control device or measure has been implemented, weekly inspections of each measure shall be performed by the CONTRACTOR'S inspection personnel. The Inspection and Maintenance Reports found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the NOI Permittee's Engineer, and the NOI Permittee for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the NOI Permittee for five years following the final stabilization of the site.

C. Other Record-Keeping Requirements

The CONTRACTOR shall keep the following records related to construction activities at the site:
- Dates when major grading activities occur and the areas that were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when areas are stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

D. Winter Operations

The following is a list of erosion and sediment controls and inspection and maintenance practices for winter operations for this site.

a) **Prior to November 1st of any given year all exposed soil areas must be covered with:**
   - Mulch

- Seed and mulch
- Geotextile
- Erosion control matting
- Rock or
- Other approved mulch to prevent soil from eroding

b) Install sediment barriers (silt fence or drop inlet protection) at ALL necessary perimeter and sensitive locations BEFORE SOIL FREEZES.

c) Slopes and Stockpiles:
   - Protect slopes and stockpiles with anchored straw or mulch, rolled erosion control product or other durable covering.
   - Sediment barrier must be installed around piles and at slope toes to prevent soil transport from the pile or slope.
   - Stabilize exposed areas BEFORE snow covers them.

d) All entrance/exit locations must be properly stabilized and maintained to accommodate snow management.

e) Inspections:
   - If soil disturbance is COMPLETELY suspended AND site is PROPERLY STABILIZED, qualified inspection frequency JUNE be reduced with written notification to NYSDEC or MS4.
   - Confirmation must be received from NYSDEC prior to reducing inspection frequency.
   - Monthly inspections must be performed at a minimum.
   - Sediment control measures should be checked after rain or snowmelt events.
   - Regular inspections must resume by March 15th.

VI. LONG TERM OPERATION AND MAINTENANCE PROCEDURES

The proposed JERRY SMITH BATTERY ENERGY STORAGE SYSTEM project will be PRIVATELY OWNED and the operation and maintenance requirements will be the responsibility of the private owner. The entire Stormwater Management System shall be inspected on a yearly basis to ensure that the system operates in the manner originally intended. Specific components of the system shall require additional attention as described below.

1. Vegetated Filter Strip
   a. Vegetated Filter Strips shall be inspected annually and following major storm events to ensure the system operates in the manner originally intended.
   b. Debris and litter shall be removed from the filter strop and gravel diaphragm as necessary.
   c. Accumulated sand, grit and/pr debris shall be removed from the filter strip and gravel diaphragm if present.
   d. If rill erosion is present, fill in areas with native soil and reseed as required. Gravel diaphragm shall be increased in width above rill erosion locations to ensure sheet flow onto the vegetated filter strip.

2. Bioretention Areas
   a. Bioretention Areas shall be inspected annually and following major storm events to ensure the system operates in the manner originally intended. The inspection should include, but not be limited to, the following components; all outlet orifices, embankment, emergency spillway, drain, accumulation of sediment, and general erosion control measures.
   b. Re-grading and re-vegetation shall be performed as necessary and rip-rap shall be replaced as necessary.

c. Embankments shall be mowed a minimum of twice per year to discourage woody growth and control weeds.
d. Debris and litter shall be removed from basins during regular mowing operations or more frequently as necessary.
e. Accumulated sediment shall be removed from the wet pond area when 10 percent of the basin capacity has been lost due to sedimentation or at a minimum of every 10 to 20 years.

3. Closed Drainage System
    a. Pipes shall be inspected annually and following major storm events to ensure the system operates in the manner originally intended.

STORMWATER POLLUTION PREVENTION PLAN
SUMMARY OF EROSION AND SEDIMENT CONTROL AND STABILIZATION MEASURES
MAINTENANCE/INSPECTION PROCEDURES

All control measures will be inspected at least once every seven (7) days. Sites that have a waiver to disturb greater than five (5) acres require two (2) inspections every seven (7) days with at least two (2) days between inspections.

☐ All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.

☐ Built-up sediment will be removed from silt fences when it has reached one-third the height of the fence.

☐ Silt fences will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.

☐ Sediment basins, if present, will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50% of the design capacity or at the end of the job.

☐ Diversion dikes, if present, will be inspected and any breaches promptly repaired.

☐ Temporary and permanent seeding and planting and other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

☐ A maintenance inspection report will be made after each inspection. Copies of the report forms to be used are included in this SWPPP.

☐ The site job superintendent will select the individuals who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance reports.

☐ Personnel selected for inspection and maintenance responsibilities will receive training from the site job superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

☐ Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

☐ Report to The Department of Environmental Conservation within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event.

STORMWATER POLLUTION PREVENTION PLAN

CONSTRUCTION/IMPLEMENTATION CHECKLIST

1. Maintain Records (Project Manager) of Construction Activities, including:

   ☐ Dates when major grading activities occur

   ☐ Dates when construction activities temporarily cease on a portion of the site

   ☐ Dates when construction activities permanently cease on a portion of the site

   ☐ Dates when stabilization measures are initiated on the site

   ☐ Dates of rainfall and the amount of rainfall

   ☐ Dates and descriptions of the character and amount of any spills of hazardous materials

   ☐ Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

2. Prepare Inspection Reports (Qualified Inspector) summarizing:

   ☐ Name of inspector

   ☐ Qualifications of inspector

   ☐ Measures/areas inspected

   ☐ Observed conditions

   ☐ Changes necessary to the SWPPP

3. Report Releases of Reportable Quantities of Oil or Hazardous Materials (Project Manager, if they occur):

   ☐ Notify National Response Center (1-800-424-8802) immediately

   ☐ Notify permitting authority in writing within 14 days

   ☐ Modify the pollution prevention plan to include:

   - the date of release
   - circumstances leading to the release
   - steps taken to prevent reoccurrence of the release

4. Modify Pollution Prevention Plan (per Qualified Inspector) as necessary to:

   ☐ Comply with the minimum permit requirements when notified by The Department of Environmental Conservation that the plan does not comply

   ☐ Address a change in design, construction operation, or maintenance that has an effect on the potential for discharge of pollutants

   ☐ Prevent reoccurrence of reportable quantity releases of a hazardous material or oil

VII. SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

A. MATERIALS COVERED

The following materials or substances with known hazardous properties are expected to be present onsite during construction:

Concrete	Cleaning solvents
Detergents	Petroleum based products
Paints	Pesticides
Paint solvents	Acids
Fertilizers	Concrete additives
Soil stabilization additives	

B. MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

1. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

a) An effort will be made to store only enough product required to do the job.

b) All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or other enclosure.

c) Products will be kept in their original containers with the original manufacturer's label in legible condition.

d) Substances will not be mixed with one another unless recommended by the manufacturer.

e) Whenever possible, all of a product will be used up before disposing of the container.

f) Manufacturer's recommendations for proper use and disposal will be followed.

g) The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

2. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials.

a) Products will be kept in original containers with the original labels in legible condition.

b) Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

c) If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

d) A spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

e) All of the product in a container will be used before the container is disposed of. All such containers will be triple-rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with stormwater discharges.

3. Product Specific Practices

The following product specific practices will be followed on the job site.

a) Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks used onsite will have a dike or berm containment structure constructed around it to contain any spills that JUNE occur. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

b) Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

c) Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

d) Concrete Trucks

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or washout and stormwater which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete washout diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or JUNE be broken up and used on site as deemed appropriate by the CONTRACTOR. The job site superintendent will be responsible for seeing that these procedures are followed.

4. Spill Prevention Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup.

a) Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

b) Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite in spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.).

c) All spills will be cleaned up immediately after discovery.

d) The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

e) Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 302 list and oil) will be immediately reported to the EPA National Response Center, telephone 1-800-424-8802. Reportable Quantities of some substances which JUNE be used at the job site are as follows:

oil - appearance of a film or sheen on water

pesticides - usually 1 lb.

acids - 5000 lb.

solvents, flammable - 100 lb.

f) The SPCC plan will be adjusted to include measures to prevent this type of spill from recurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included. If the spill exceeds a Reportable Quantity, all federal regulations regarding reports of the incident will be complied with.

g) The job site superintendent will be the spill prevention and cleanup coordinator. He will designate the individuals who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

VIII. CONTROL OF ALLOWABLE NON-STORMWATER DISCHARGES

A. Certain types of discharges are allowable under the NYS Department of Environmental Conservation SPDES General Permit for Construction Activity, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures, which have been outlined previously in this SWPPP, will be strictly followed to ensure that no contamination of these non-stormwater discharges takes place. The following allowable non-stormwater discharges that JUNE occur from the job site include:

a) Discharges from fire fighting activities

b) Fire hydrant flushings (see note below)

c) Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking

d) Potable water sources such as waterline flushings (see note below), irrigation drainage from watering vegetation, routine exterior building washdown (without detergents present) (See Note below)

e) Pavement washwaters where spills or leaks of hazardous materials have not occurred or detergents have not been used

f) Springs and other uncontaminated groundwater, including dewatering ground water infiltration

g) Foundation or footing drains where no contamination with process materials such as solvents is present

NOTE: CONTRACTOR shall neutralize any super-chlorinated water from water distribution pipes before releasing it into the environment. Neutralization techniques are available from the Operator's Engineer.

IX. CERTIFICATION AND NOTIFICATION

A. The NYS Department of Environmental Conservation requires that certifications of knowledge of the contents of this SWPPP and agreement to follow the SWPPP be made by the NOI Permittee and the CONTRACTOR. The terms of the General Permit also require that each CONTRACTOR sign the SWPPP plan, (Form 3) thereby making them co-permittees and acknowledging their responsibility for certain operational aspects of the plan. These certifications should be signed before the CONTRACTOR begins activities and should be filed with the site's SWPPP at the jobsite. These certifications are provided within this document, see Table of Contents for location.

SECTION 2

Erosion and Sedimentation Control Plan

Site Map and General Location Map

NOT TO SCALE

Site Location Map
Jerry Smith BESS

Town of Lansing

Source: Google Earth

Tompkins County, NY

June 2026

Figure: 1

EROSION AND SEDIMENT CONTROL NOTES:

1. ALL AREAS TO BE REVEGETATED SHALL HAVE A MINIMUM OF FOUR INCHES OF TOPSOIL.
2. AREAS USED FOR TEMPORARY LAYDOWN DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS INCLUDING, BUT NOT LIMITS TO, DECOMPACTION, REGRADING, LOAMING, AND SEEDING. IN NO CASE SHALL PARKING AREAS, LAYDOWN AREAS, CONSTRUCTION TRAILERS, AND PORTABLE TOILETS BE LOCATED WITHIN A WETLAND RESOUCE AREA AND/OR ANY BUFFER ZONES.
3. WETLANDS NEAR THE SOLAR ARRAY SHALL BE PROTECTED WITH FILTREXX SILTSOXX OR SILT FENCE. EROSION AND SEDIMENT CONTROL FEATURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF SOIL DISTURBING ACTIVITIES.
4. AREAS DESIGNATED FOR CUTTING SHALL BE CUT, ONLY. NO GRUBBING OR STRIPPING OF TOPSOIL IS NECESSARY, EXCEPT FOR THOSE AREAS SHOWN ON THE SITE PLANS.
5. PERMANENT STABILIZATION SHALL BE ESTABLISHED AS SOON AS FEASIBLE GIVEN THE GROWING SEASON.

GRAPHIC SCALE

30 20 20 15 10 5 0 15 30 120

(IN FEET)

1 INCH = 30 FT.

EROSION AND SEDIMENT CONTROL PLAN LEGEND

- DENOTES EXISTING GRADE
- DENOTES TEMPORARY GRAVEL ACCESS ROAD
- DENOTES STABILIZED CONSTRUCTION ENTRANCE
- DENOTES EROSION CONTROL BLANKET
- DENOTES IMPERVIOUS GRAVEL ACCESS ROAD
- DENOTES FIXED KNOT FARM FENCE
- DENOTES MEDIUM VOLTAGE TRENCH (SEE ELECTRICAL PLANS FOR DETAILS)
- DENOTES PROPOSED CONTOUR
- DENOTES PROPOSED SILT FENCE/SOCK

30' SIDE SETBACK
60' FRONT SETBACK
STONE WALL
WET AREA
STANDING WATER
STREAM
STS & SS
TPED
18" HDPE INV = 1078.4
SWALE
STABILIZED CONSTRUCTION ENTRANCE (TYP.)
SILT FENCE OR SILT SOCK (TYP.)
EROSION CONTROL BLANKET
CONCRETE WASHOUT
SOIL STOCKPILE
8' HIGH BOWMIE FENCE
RUBBLE AREA
RUBBLE DRIVE
BUILDING
BLDG
HOUSE
GARAGE
CHAIN LINK GATE

nexamp
101 Summer Street, Boston, MA 02110
Tel: (617) 431-1440 Fax: (978) 416-2525 Web: nexamp.com

ENVIRONMENTAL DESIGN PARTNERSHIP, LLP.
900 Route 146 Clifton Park, New York 12065
(518) 371-7421 edpllp.com

Rev	Issued For	Date
A	INTERNAL REVIEW	5/27/26

P.E. seal/Consultant:

NOT FOR CONSTRUCTION

Project:

JERRY SMITH , LLC

JERRY SMITH ROAD,
LANSING, NY

Drawing Title:

EROSION AND SEDIMENT CONTROL PLAN

Drawn by: BMW Scale: AS SHOWN Approved by: TJM

Dwg No: C-400 Size: D Sheet Rev: A

SECTION 3

Federal, State or Local Notice of Intent (NOI)

NYSDEC NOI Acknowledgement Letter - Pending

NYSDEC MS4 SWPPP Acceptance Form

SECTION 4

Federal, State or Local NPDES General Permit

SECTION 5

Certifications, Forms, Reports, and Daily Logs

STORMWATER POLLUTION PREVENTION PLAN
NOI PERMITTEE'S CERTIFICATION

FORM 1

Construction Site
JERRY SMITH BATTERY ENERGY STORAGE SYSTEM
JERRY SMITH LLC, TOMPKINS County, New York

STORMWATER POLLUTION PREVENTION PLAN DATED JUNE 2026

NOI PERMITTEE'S CERTIFICATION:

> "I certify under penalty of law that this document was prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a class A misdemeanor pursuant to Section 210.45 of the Penal Law."

NOI Permittee's
Designated Project Manager: _____

Signed: _____

Printed Name: _____

Position: _____

Date: _____

STORMWATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION LOG

FORM 2

Construction Site

JERRY SMITH BATTERY ENERGY STORAGE SYSTEM

JERRY SMITH LLC, TOMPKINS County, New York

Company Name	
Address	
Contact Name	
Telephone Number	
Cell Phone/Pager	
Scope of Services	
Certification Date	

Company Name	
Address	
Contact Name	
Telephone Number	
Cell Phone/Pager	
Scope of Services	
Certification Date	

Company Name	
Address	
Contact Name	
Telephone Number	
Cell Phone/Pager	
Scope of Services	
Certification Date	

Designated Project Manager____________________

STORMWATER POLLUTION PREVENTION PLAN
CONTRACTOR'S/SUBCONTRACTOR'S CERTIFICATION
FORM 3

This form to be completed for each contractor listed on Form 2. Reproduce as needed

Construction Site

JERRY SMITH BATTERY ENERGY STORAGE SYSTEM
JERRY SMITH LLC, TOMPKINS County, New York
CONSTRUCTION POLLUTION PREVENTION PROGRAM
DATED JUNE 2026

CONTRACTOR'S CERTIFICATION:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."

The Contractor/Subcontractor further understands that the SWPPP and associated Erosion and Sediment Control Plans represent the **MINIMUM** erosion and sediment control measures that will be required to protect the site during construction. Additional erosion and sediment control measures will be necessary during construction. It will be the responsibility of Contractor/Subcontractor to implement all additional erosion and sediment control measures necessary to protect the site during construction.

CONTRACTOR:	**SUB**CONTRACTOR:
Name (Print): _____	Name (Print): _____
Signature: _____	Signature: _____
Date: _____	Date: _____
Title: _____	Title: _____
Company Name: _____	Company Name: _____
Address: _____	Address: _____
_____	_____
Phone: _____	Phone: _____

Elements of SWPPP Contractor/Subcontractor responsible for: _____

Name of Trained Contractor Responsible for SWPPP Implementation: _____

Title of Trained Contractor Responsible for SWPPP Implementation: _____

FORM 4
JERRY SMITH BATTERY ENERGY STORAGE SYSTEM
SWPPP # _____
This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

SWPPP INSPECTION REPORTS

Date _____

Weather and Soil Conditions
Weather Conditions: _____
Soil Conditions: Dry [ ] Wet [ ] Saturated [ ] Snow Covered [ ] Frozen [ ]

Maintaining Water Quality

Yes	No	NA	
[ ]	[ ]	[ ]	Is there an increase in turbidity causing a substantial visible contrast to natural conditions?
[ ]	[ ]	[ ]	Is there residue from oil and floating substances, visible oil film, or globules or grease?
[ ]	[ ]	[ ]	All disturbance is within the limits of the approved plans.
[ ]	[ ]	[ ]	Have receiving lake/bay, stream, and/or wetland been impacted by silt from project?

Housekeeping
1. General Site Conditions

Yes	No	NA	
[ ]	[ ]	[ ]	Is construction site litter and debris appropriately managed?
[ ]	[ ]	[ ]	Are facilities and equipment necessary for implementation of erosion and sediment control in working order and/or properly maintained?
[ ]	[ ]	[ ]	Is construction impacting the adjacent property?
[ ]	[ ]	[ ]	Is dust adequately controlled?

2. Temporary Stream Crossing

Yes	No	NA	
[ ]	[ ]	[ ]	Maximum diameter pipes necessary to span creek without dredging are installed.
[ ]	[ ]	[ ]	Installed non-woven geotextile fabric beneath approaches.
[ ]	[ ]	[ ]	Is fill composed of aggregate (no earth or soil)?
[ ]	[ ]	[ ]	Rock on approaches is clean enough to remove mud from vehicles and prevent sediment from entering stream during high flow.

Runoff Control Practices
1. Excavation Dewatering

Yes	No	NA	
[ ]	[ ]	[ ]	Upstream and downstream berms (sandbags, inflatable dams, etc.) are installed per plan.
[ ]	[ ]	[ ]	Clean water from upstream pool is being pumped to the downstream pool.
[ ]	[ ]	[ ]	Sediment-laden water from work area is being discharged to a silt-trapping device.
[ ]	[ ]	[ ]	Constructed upstream berm with one-foot minimum freeboard.

2. Water Bar

Yes	No	NA	
[ ]	[ ]	[ ]	Installed per plan with vehicle crossings stabilized with gravel.
[ ]	[ ]	[ ]	Outlet located on undisturbed soil or lined with riprap.
[ ]	[ ]	[ ]	Bar height is 12-inch minimum from bottom of channel with minimum base width of 6-foot.

3. Interceptor Dikes and Swales

Yes	No	NA	
[ ]	[ ]	[ ]	Installed per plan with minimum side slopes 1V:3H or flatter.
[ ]	[ ]	[ ]	Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ]	[ ]	[ ]	Sediment-laden runoff directed to sediment trapping structure.

SWPPP INSPECTION REPORT Page 2 of _____
Date _____

4. Stone Check Dam

Yes	No	NA	
[ ]	[ ]	[ ]	Is channel stable? (flow is not eroding soil underneath or around the structure).
[ ]	[ ]	[ ]	Check is in good condition (rocks in place and no permanent pools behind the structure).
[ ]	[ ]	[ ]	Has accumulated sediment been removed?

5. Rock Outlet Protection

Yes	No	NA	
[ ]	[ ]	[ ]	Installed per plan.
[ ]	[ ]	[ ]	Installed concurrently with pipe installation.

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes	No	NA	
[ ]	[ ]	[ ]	Stockpiles are stabilized with vegetation and/or mulch.
[ ]	[ ]	[ ]	Sediment control is installed at the toe of the slope.

2. Revegetation

Yes	No	NA	
[ ]	[ ]	[ ]	Temporary seedings and mulch have been applied to idle areas.
[ ]	[ ]	[ ]	Four inches minimum of topsoil has been applied under permanent seedings.

Sediment Control Practices

1. Stabilized Construction Entrance

Yes	No	NA	
[ ]	[ ]	[ ]	Stone is clean enough to effectively remove mud from vehicles.
[ ]	[ ]	[ ]	Installed per standards and specifications?
[ ]	[ ]	[ ]	Does all traffic use the stabilized entrance to enter and leave site?
[ ]	[ ]	[ ]	Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes	No	NA	
[ ]	[ ]	[ ]	Installed on Contour, ten feet from toe of slope (not across conveyance channels).
[ ]	[ ]	[ ]	Joints constructed by wrapping the two ends together for continuous support.
[ ]	[ ]	[ ]	Fabric buried six inches minimum.
[ ]	[ ]	[ ]	Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation is _____% of design capacity.

3. Storm Drain Inlet Protection (Use for Stone & Block; Filter Fabric; Curb; or, Excavated practices)

Yes	No	NA	
[ ]	[ ]	[ ]	Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ]	[ ]	[ ]	Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ]	[ ]	[ ]	Drainage area is one acre or less.
[ ]	[ ]	[ ]	Excavated area is 900 cubic feet.
[ ]	[ ]	[ ]	Excavated side slopes should be 2:1.
[ ]	[ ]	[ ]	2" x 4" frame is constructed and structurally sound.
[ ]	[ ]	[ ]	Posts three-foot maximum spacing between posts.
[ ]	[ ]	[ ]	Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at maximum eight inch spacing.
[ ]	[ ]	[ ]	Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation _____% of design capacity.

SWPPP INSPECTION REPORT Page 3 of _____
Date _____

4. Temporary Sediment Trap

Yes	No	NA	
[ ]	[ ]	[ ]	Outlet structure is constructed per the approved plan or drawing.
[ ]	[ ]	[ ]	Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is _____% of design capacity.

5. Temporary Sediment Basin

Yes	No	NA	
[ ]	[ ]	[ ]	Basin and outlet structure constructed per the approved plan.
[ ]	[ ]	[ ]	Basin side slopes are stabilized with seed/mulch.
[ ]	[ ]	[ ]	Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is _____% of design capacity.

Dust Control Practices

1. Haul Road and Current Work Areas

Yes	No	NA	
[ ]	[ ]	[ ]	Are all traffic surface areas sufficiently treated to prevent fugitive dust?
[ ]	[ ]	[ ]	Are any areas of site's non-traffic and work area experiencing wind erosion?
[ ]	[ ]	[ ]	Are there any disturbed areas in need of temporary seed and mulch to protect surface from wind erosion?
[ ]	[ ]	[ ]	Is watering truck on-site?
[ ]	[ ]	[ ]	Is dust visible in air at any location of the site?

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site-specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

Description of condition of runoff at all points of discharge from the construction site. (This shall include identification of discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow.) _____

_____

_____

_____

Description of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection (see Page 5 for Sketch). _____

_____

_____

_____

FORM 4
JERRY SMITH BATTERY ENERGY STORAGE SYSTEM
SWPPP # _____
This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

SWPPP INSPECTION REPORT

Date _____

ADDITIONAL COMMENTS*:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ _____
Inspector (print name and title) Date and Time of Inspection

_____ _____
Qualified Professional (print name) Qualified Professional Signature

The above signed acknowledges that, to the best of his/her knowledge, all information provided on the forms is accurate and complete.

***Attach photographs of practices identified as needing corrective actions.**

NOTE: IN ACCORDANCE WITH PART IV.C.4 OF THE SPDES GENERAL PERMIT (GP-0-20-001), THE QUALIFIED INSPECTOR MUST NOTIFY THE OWNER OR OPERATOR AND APPROPRIATE CONTRACTOR OF ANY CORRECTIVE ACTIONS THAT NEED TO BE TAKEN. THE CONTRACTOR SHALL BEGIN IMPLEMENTING THE CORRECTIVE ACTIONS WITHIN ONE (1) BUSINESS DAY OF THIS NOTIFICATION AND SHALL COMPLETE THE CORRECTIVE ACTIONS IN A REASONABLE TIME FRAME.

STORMWATER POLLUTION PREVENTION PLAN
MODIFICATION REPORT
FORM 5

This form to be used only when Contractor's designated inspector believes changes to the SWPPP and/or Erosion and Sediment control plans is warranted. For example, additional erosion control measures needed or removal of specific control measures can be done without adverse impact. This form must be approved by Designated Project Manager prior to implementation.

Construction Site

JERRY SMITH BATTERY ENERGY STORAGE SYSTEM

JERRY SMITH LLC, TOMPKINS County, New York

CHANGES REQUIRED FOR STORMWATER POLLUTION PREVENTION PLAN

To:	**Designated Project Manager**	**Date:**	
Address:			
Telephone:			
Facsimile:			
Sent Via:	☐ **Facsimile**	☐ **E-mail**	☐ **US Mail**

INSPECTOR: _____ DATE: _____
(Print)

_____
(Signature)

QUALIFICATIONS OF INSPECTOR: _____

CHANGES REQUIRED TO THE STORMWATER POLLUTION PREVENTION PLAN: _____

_____

_____

REASONS FOR CHANGES: _____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

APPROVED BY DESIGNATED PROJECT MANAGER _____ DATE: _____

STORMWATER POLLUTION PREVENTION PLAN
RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITIES
FORM 6

Construction Site

JERRY SMITH BATTERY ENERGY STORAGE SYSTEM

JERRY SMITH LLC, TOMPKINS County, New York

A record of dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be maintained until final site stabilization is achieved and the Notice of Termination is filed. *Reproduce copies of this form as needed.*

MAJOR GRADING, CONSTRUCTION, OR STABILIZATION ACTIVITIES

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Designated Project Manager_____

STORMWATER POLLUTION PREVENTION PLAN
RECORD OF TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES
FORM 6A

Construction Site

JERRY SMITH BATTERY ENERGY STORAGE SYSTEM

JERRY SMITH LLC, TOMPKINS County, New York

A record of the timing of temporary erosion and sediment control practices to be implemented, including the timing of initial placement and the duration that each practice should remain in place. The record JUNE reflect the actual date of planned installation or the specific construction activity with which it will be associated. The timing of removal JUNE reflect an actual date or the length of time over which the practice will be implemented.

TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Designated Project Manager______________________

PROJECT RAINFALL LOG (to be completed by Contractor)

Month	Jan	Feb	Mar	Apr	JUNE	June	July	Aug	Sep	Oct	Nov	Dec
Day												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
PM Initials												

STORMWATER POLLUTION PREVENTION PLAN

FINAL STABILIZATION CERTIFICATION /NOTICE OF TERMINATION CHECKLIST

FORM 8

This form is to be completed by Contractor and submitted to Designated Project Manager for approval only afterContractor believes all work regulated by SWPPP is complete.

Construction Site
JERRY SMITH BATTERY ENERGY STORAGE SYSTEM
JERRY SMITH LLC, TOMPKINS County, New York

1. ☐ **All soil disturbing activities are complete.**

2. ☐ **Temporary Erosion and Sediment Control Measures have been removed or will be removed at the appropriate time.**

3. ☐ **All areas of the Construction Site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 85% or equivalent measures have been employed.**

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that all storm water discharges associated with industrial activity from the identified project that are authorized by NPDES general permit have been eliminated and that all disturbed areas and soils at the construction site have achieved Final Stabilization and all temporary erosion and sediment control measures have been removed or will be removed at the appropriate time."

Company Name _____

Name (Print) _____

Signature _____

Date _____

APPROVED BY DESIGNATED PROJECT MANAGER_____ DATE: _____

SECTION 6

Supplemental Information

1. **Stormwater Management Narrative**
2. **Soil Mapper**
3. **SHPO Correspondence**
4. **Endangered and Threatened Species Correspondence**

Stormwater Management Narrative

Jerry Smith
BESS Project

Jerry Smith Road

Town of Lansing

Tompkins County, New York

Applicant:

Jerry Smith, LLC

101 Summer Street, 2nd Floor

Boston, MA 02110

JUNE 2026

Revised: JUNE 2026

Prepared By:

The Environmental Design Partnership, LLP

900 Route 146

Clifton Park, NY 12065

TABLE OF CONTENTS

Contents

Figures

Attachments

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

1.0 Introduction

Jerry Smith, LLC is proposing the development of a Battery Energy Storage System (BESS) for on an existing parcel of land totaling approximately 57+/- acres located on Jerry Smith Road in the Town of Lansing, New York. The proposed site development includes a BESS which consists of approximately 620 +/- linear feet (LF) of access road, equipment pads, stormwater management areas, and ten-foot-high perimeter fencing. The total area of proposed disturbance is approximately 1.67 +/- acres and 0.60 +/- acres of new impervious area will be associated with the project.

A stormwater management system has been developed to provide pollutant removal, reduce channel erosion, prevent overbank flooding, and safely control extreme flood events in accordance with the NYS Stormwater Management Design Manual (Design Manual). The temporary erosion control measures and post-construction stormwater management systems for this project have been designed in accordance with those guidelines and subsequent discussions with the NYSDEC relative to their guidelines. Section 7.0 of this report addresses specific BESS panel application guidance.

The proposed stormwater management system for the project will include the use of a vegetated filter strip and bioretention area designed to convey runoff from the gravel access road and concrete equipment pads. Runoff from the impervious access road is directed into the vegetated filter strip or bioretention area prior to discharging offsite.

This narrative presents a review of the design concepts and parameters of the stormwater management system for the proposed increased impervious areas, in accordance with NYSDEC application guidance, including the access roads and the equipment pads. The purpose of the stormwater management narrative is to ensure that changes in the surface runoff characteristics, as a result of the proposed construction, will not adversely impact adjacent or downstream properties. On-site stormwater management will be implemented in accordance with the Design Manual and NYSDEC application guidance to accommodate both additional stormwater runoff and to provide water quality treatment according to the green infrastructure standards.

2.0 Existing Conditions

The site consists of mostly wooded and field areas with residential development on the northern side of the parcel. The topography of the land consists of drainage from a highpoint in the middle of the site out to all directions. The typical slopes within the area of the proposed development range from 1% to 10% Elevations at the site vary between 1086 and 1078 feet above sea level.

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

2.1 Soil and Groundwater Conditions

The USDA Natural Resources Conservation Service Soil Survey identifies the soils on the site, in the proposed development, consist of a variety of soil types from silt loam to a gravelly silt loam. These soils vary as Hydrologic Soil Groups (HSG) B and D. The results from the USDA Natural Resources Conservation Soil Survey (NRCS Soil Survey) are included in Section 6 of the SWPPP.

3.0 Predevelopment Stormwater Analysis

The existing hydrologic conditions, in the area to be disturbed as a result of the proposed construction, were analyzed using Applied Microcomputer Systems' "HydroCAD" computer modeling program. The HydroCAD stormwater modeling program employs the United States Department of Agriculture's Soil Conservation Service (SCS) Technical Release 20 (TR-20) method for stormwater analysis. Using this modeling technique, the site is divided into "subcatchments" that represent specific areas contributing stormwater runoff to an existing, or proposed drainage feature. The subcatchments typically flow through "reaches" (i.e., swales, channels, or pipes) that convey the stormwater to storm basins or discharge areas.

A hydrologic model of the existing site was prepared using the Hydrocad program. Three (3) large sub catchments were used to represent the existing drainage condition, see Figure 2.

The existing parameters of topography, vegetation, slope and soil type are all incorporated into the predevelopment model.

Table 1 presents a summary of the pre-development stormwater peak discharge for the 1 year, 10 year and 100-year design storm events at the respective Design Point. As will be discussed in subsequent sections, the post development stormwater discharge rate has been limited to the predevelopment discharge rate for the 1-year, 10-year, and 100-year storm events.

Table 1: Pre-Development Runoff Rates

Storm Event	Total Discharge (cfs)
1-Year (1.97")	0.65
10-Year (3.36")	6.89
100-Year (5.73")	26.36

The pre-development Curve Numbers (CN) for the existing ground covers are listed in Table 2.

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

Table 2: Pre-Development Ground Cover

Pre-Development Ground Cover Description	Curve Number
Meadow, Non-grazed, HSG B	58
Meadow, Non-grazed, HSG D	78
Row Crops, Straight Row, Good, HSG B	78
Woods, Fair, HSG B	60
Woods, Fair, HSG D	79
Impervious	98

The weighted CN for the pre-development conditions for the site is approximately 66. The HydroCAD model results for the pre-development conditions are included within Attachment B.

4.0 Stormwater Management Planning and Practice Selection

The site layout and stormwater design for this project was completed while taking into consideration the potential impacts on the existing site and downstream hydrology. Stormwater runoff from the existing site predominately sheet flows to low areas. The stormwater management system will replicate similar practices.

Stormwater from impervious areas on the site is designed to be treated with a vegetated filter strip and a bioretention area. This design method was chosen on this site due to the minor amount of impervious surface and the uniform grade of the access road. Vegetated filter strips are considered standard stormwater management practices with runoff reduction volume capacity.

The total disturbance for the project will be on the order of 1.67± acres. The proposed development will result in an increase of impervious cover by 0.60± acres.

5.0 Post-Development Stormwater Analysis

The post-development conditions were analyzed using the HydroCAD computer modeling program.

Six (6) subcatchments were used to represent the post development drainage conditions of the site in the areas of the proposed BESS development. Site improvements to the property will consist of approximately 620 +/- LF of access road, a BESS equipment pad, and perimeter fencing. Also included, as permanent elements of the development, is the on-site stormwater

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

management area depicted as a vegetated filter strip and a bioretention area. This vegetated filter strip and bioretention area have been designed to provide treatment and attenuation of stormwater runoff from the proposed impervious surfaces on the site.

Runoff from the undeveloped portion of the project site, outside of the stormwater management areas, will sheet flow off site, which is similar to predevelopment drainage patterns.

The post-development ground cover Curve Numbers (CN) are listed in Table 3.

Table 3: Post-Development Ground Cover

Post-Development Ground Cover Description	Curve Number
Meadow, Non-grazed, HSG B	58
Meadow, Non-grazed, HSG D	78
Row Crops, Straight Row, Good, HSG B	78
Woods, Fair, HSG B	60
Woods, Fair, HSG D	79
Impervious	98

The weighted CN for the post-development conditions for the site is approximately 67. The HydroCAD model results for the post-development conditions are included within Attachment B. The contributing area to each stormwater management area is identified in Figure 3.

Table 4 presents a summary of the post-development stormwater peak discharge for the 1 year, 10 year and 100-year design storm events at the respective Design Points. The 1-Year design storm for the post development conditions is greater than the pre development conditions by 0.07 cfs and is not a significant increase and should not cause any flooding or additional soil erosion.

Table 4: Post-Development Runoff Rates

Storm Event	Total Discharge (cfs)
1-Year (1.97")	0.72
10-Year (3.36")	6.82
100-Year (5.73")	25.49

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

5.1 Stormwater Management Area #1 – Vegetated Filter Strip

Stormwater Management Area #1 is designed as a vegetated filter strip with a gravel diaphragm. The filter strip and diaphragm will provide treatment and attenuation of stormwater runoff from the impervious access road and concrete equipment pad. Runoff contributing to SMA #1 will be conveyed via shallow concentrated flow and sheet flow.

5.2 Stormwater Management Area #2 – Bioretention Area

Stormwater Management Area #2 is designed as a bioretention area. The vegetated swale and bioretention area will provide treatment and attenuation of stormwater runoff from the impervious access road and concrete equipment pad. Runoff contributing to SMA #2 will be conveyed via vegetated swale.

5.3 NYS Unified Stormwater Sizing Criteria

The area to be disturbed as a result of the proposed development was modeled in HydroCAD under the post-development conditions using two subcatchments (Figure 3) routed into the stormwater management areas. The contributing area of each stormwater management area is identified in Figure 3. The post-development stormwater management system has been designed based on the Unified Stormwater Sizing Criteria as described in the following sections.

5.3.1 Water Quality (WQ_v)

In general, small storm events and the initial runoff from larger storm events are an environmental concern as this stormwater runoff typically contains roadway pollutants and thermal energy stored by the asphalt. In accordance with the Design Manual, this initial runoff is designated as the Water Quality Volume (WQ_v) and special attention is given to this volume of runoff to meet water quality objectives.

The Design Manual identifies several standard practices, such as the proposed infiltration basins which are acceptable for water quality treatment. These acceptable Stormwater Management Practices (SMPs) can capture and treat the full water quality volume (WQ_v), are capable of 80% TSS removal and 40% TP removal, have acceptable longevity in the field, and have pretreatment mechanism.

The water quality storage volume, WQ_v, is calculated as follows:

$$WQ_v = \frac{P \cdot R_v \cdot A}{12}$$

Where: WQ_v = water quality volume (acre-feet)

P = 90% rainfall event number

R_v = 0.05+0.009(I), where I is percent impervious cover

A = site area (acres), impervious area used with I = 100%

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

Table 5: Required Water Quality Volume

Drainage Area	P	R_v	A (Acres)	Required WQ_v (cf)	Provided WQ_v (cf)
SMA #1	1.00	0.95	0.19	655	655
SMA #2	1.00	0.95	0.66	1,133	1,133

5.3.2 Runoff Reduction Volume (RRv)

The Design Manual specifies that runoff shall be reduced by 100% of the site WQv using standard SMPs with RRv capacity and green infrastructure techniques. The proposed project area on the site is approximately 1.67 acres. The total watershed area contributing to the SMA for analysis is approximately 0.85 acres, with a total post-development impervious area on the order of 0.60 acres. The resulting RRv for these site coverages is computed as 697 CF. Runoff reduction will be provided by standard SMP's with RRv capacity. (See Appendix A for summary of calculations)

5.3.2.1 Stormwater Management Practices (SMP's)

A bioretention area has been proposed to collect and treat the stormwater runoff from the site. The bioretention area is considered a standard stormwater treatment practice with RRv capabilities. The WQv provided by the wet swale is 1,167 CF.

5.3.2.2 Green Infrastructure Practices

The vegetated filter strip is considered a green infrastructure practice. The RRv provided by the practice is on the order of 655 CF. Greater than the minimum RRv required.

The following Table provides a summary of the Runoff Reduction provided for the proposed development, based on each management practice and technique.

Table 6: Runoff Reduction Volume Summary

Runoff Reduction Technique	RRv (cf)
Vegetated Filter Strip	655
Bioretention Area	1,133
Total Site Reduction	1788
% WQv. Reduction	**>100%**

Many of the green infrastructure practices recommended in the Design Manual were not applied to the stormwater management design on this site due to either site restrictions or the use of more feasible green infrastructure in place of the more restrictive and/or maintenance

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

intensive practices. The following table discusses why the unused green infrastructure practices were not feasible.

Table 7: Non-Feasible Green Infrastructure Practices

Green Infrastructure Practice	Reason use is not feasible
Vegetated Swales	There are no swales proposed to receive runoff from impervious areas onsite
Tree Planting/Tree Pit	Trees will be saved on the site to the greatest extent possible. Trees will also be planted to maintain a buffer from the surrounding properties to the proposed site, though the resulting runoff reduction value for adding additional trees is minimal.
Conservation of Natural Areas	Natural areas will be conserved on site as much as possible, but the resulting runoff reduction value is minimal.
Stream Daylighting	No existing piped streams are located on the site.
Green Roofs	There is no building construction proposed as part of the project
Stormwater Planters	The proposed practices were deemed more economically feasible and effective as opposed to stormwater planters. Additionally, they require less maintenance.
Rain Barrels/Cisterns	Rain Barrels/Cisterns would require the ability to use the water between storm events which is not feasible for this project type.
Rain Gardens	Rain gardens are not recommended for commercial applications as well as not economically feasible.
Disconnection of Rooftop Runoff	There is no building construction proposed as part of the project

5.3.3 Channel Protection (Cp_v)

In accordance with the Design Manual, stream channel protection, designed to protect stream channels from erosion, is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event. The Cp_v requirement is typically satisfied by providing additional storage above the water quality (WQ_v) volume.

According to Chapter 4 of the Design Manual, the stream channel protection requirement does not apply when the entire channel protection volume is reduced through green infrastructure or infiltration systems. The stormwater management practice onsite is designed as a green infrastructure practice; additionally, stormwater modelling indicates the proposed stormwater management areas designed to fully attenuate and infiltrate the contributing stormwater runoff for stormwater events up to the 100-Year design storm.

5.3.4 Overbank Flood (Q_p)

Overbank Flood Control Criteria has been established to limit the frequency and magnitude of out-of-bank flooding generated through changes in runoff characteristics as a result of

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

increased impervious surface area. In accordance with the Design Manual, providing sufficient storage volume to attenuate the post development 10-year, 24-hour peak discharge rate to the equivalent pre-development discharge rate controls overbank flooding.

The 10-year design storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post-development drainage conditions shown on Figure 3. Using a 10-year, 24-hour design storm of 3.36 inches, the stormwater management area was designed with sufficient storage volume to limit the post-development 10-year, 24-hour peak discharge rate to the pre-development discharge rate. The following table presents the pre- and post-development discharge rates for the offsite discharge. As indicated, the post-development discharge rate is less than the pre-development rate as required.

Table 8: Overbank Flow Runoff Summary

	10-year (3.36") runoff rate (cfs)	
	Predevelopment	Post-Development
DP-1	6.89	6.82

5.3.5 Extreme Storm (Q_f)

In accordance with the Design Manual, the stormwater management system must attenuate the post development 100-year, 24-hour peak discharge rate to the predevelopment rate while providing safe passage of this storm event.

The 100-year storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post-development drainage conditions shown in Figure 3. Using a 100-year, 24-hour design storm of 5.73 inches, the stormwater management areas were designed with sufficient storage volume to limit the post-development 100-year, 24-hour peak discharge rate to the predevelopment discharge rate. The following table presents the pre and post development discharge rates for the offsite discharge. As indicated, the post-development discharge rate is less than the predevelopment rate as required.

Table 9: Extreme Storm Runoff Summary

	100-year (5.73") runoff rate (cfs)	
	Predevelopment	Post-Development
DP-1	26.36	25.49

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

6.0 Summary

Development of the proposed project site will alter the stormwater drainage characteristics of the site; impervious area will be added in the form of an improved compacted gravel or paved access road, BESS, and a equipment pad. Changes to the stormwater drainage characteristics of the site have been evaluated in accordance with the Design Manual. The proposed stormwater management system has been designed to comply with the recommendations in the Design Manual and the NYSDEC SPCG as it relates to maintaining sheet flow, providing water quality/runoff reduction/channel protection volume, overbank flood control and extreme flood control for new development projects.

The proposed stormwater management system has been designed to attenuate and treat the stormwater runoff generated from the contributing areas for storm events to the pre-development rates, up to and including the 100-Year design storm event. The proposed stormwater management design includes the use of a vegetated filter strip. Stormwater modeling results indicate the ability to reduce the overall post-development discharge rate from the site as summarized in Table 10.

Table 10: Reduction in Peak Discharge Rates

Peak Discharge Rates in cfs	1-Year Storm	10-Year Storm	100-Year Storm
Pre-Development	0.65	6.89	26.36
Post-Development	0.72	6.82	25.49
Overall Reduction (cfs)	-0.07	0.07	0.87

Through the implementation of acceptable stormwater management practices, recommended by the NYS Stormwater Management Design Manual, the proposed project will not adversely affect adjacent or downstream properties.

Prepared by:

Benjamin Willson, Project Engineer

The Environmental Design Partnership, LLP

Reviewed by:

Travis Mitchell, P.E.

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

REFERENCES

HydroCAD version 10.2, Applied Microcomputer Systems, Chocura, New Hampshire.

NYSDEC, 1990. "Technical and Operational Guidance Series (5.1.8) Stormwater Management Guidelines for New Development", New York State Department of Environmental Conservation, Division of Water.

NYSDEC, 1992. "Reducing the Impacts of Stormwater Runoff from New Development", New York State Department of Environmental Conservation, Division of Water.

NYSDEC, 2015. "New York State Stormwater Management Design Manual", Center for Watershed Protection, Ellicott City, MD.

Rawls, W.J., Brakensiek, D.L., and Saxton, K. E., 1982. "Estimation of Soil Properties", Transactions of the American Society of Agricultural Engineers, Vol. 25, No. J, pp. 1316-1320.

S.C.S., 1982. "TR-20 Project Formulation-Hydrology, Technical Release No. 20", U.S. Department of Agriculture, Soil Conservation Service, Hydrology Unit Division of Engineering.

United States Department of Agriculture, Web Soil Survey. Retrieved from https://websoilsurvey.sc.egov.usda.gov

NYSDEC, 2018. "BESS Panel Construction Stormwater Permitting/ SWPPP Guidance", New York State Department of Environmental Conservation, Division of Water.

MDE,2000. "2000 Maryland Stormwater Design Manual, Volumes I and II". Maryland Department of the Environment

MDE. "Stormwater Design Guidance- BESS Panel Installations". Maryland Department of the Environment

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

Figures

1. Site Location map
2. Pre-Development Drainage Map
3. Post Development Drainage Map

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

Figure 1: Site Location Map

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

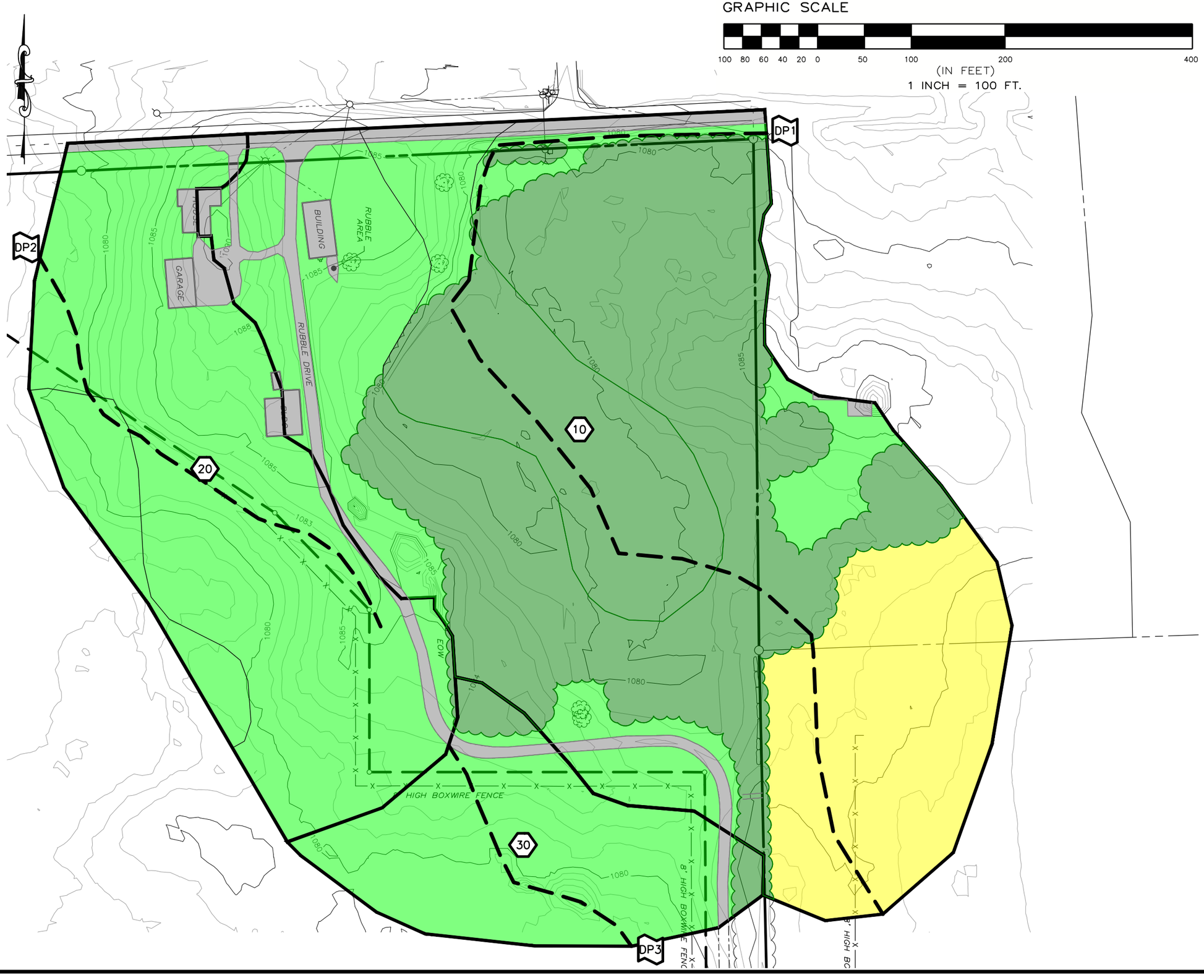
MAP KEY	
	SUBCATCHMENT BOUNDARY
S1	SUBCATCHMENT I.D.
4P	STORMWATER DEVICE
DP	DESIGN POINT
	TC PATH

GRAPHIC SCALE

100 80 60 40 20 0 50 100 200 400

(IN FEET)

1 INCH = 100 FT.



edp
ENVIRONMENTAL DESIGN PARTNERSHIP, LLP.
900 Route 146 Clifton Park, New York 12065
(518) 371-7621 edplip.com

STORMWATER ANALYSIS FOR
JERRY SMITH, LLC

JERRY SMITH ROAD
TOWN OF LANSING
TOMPKINS COUNTY, NEW YORK

JUNE 1, 2026

REVISION	DATE	BY

SCALE: 1" = 100'

SHEET TITLE: PRE DEVELOPMENT

SHEET NO. FIGURE 1

H:\TOMPKINS\Lansing\Jerry Smith Rd\05-dwg\Detailed\FIGURES\STORMWATER.dwg Jun 01, 2026 01:48:48PM

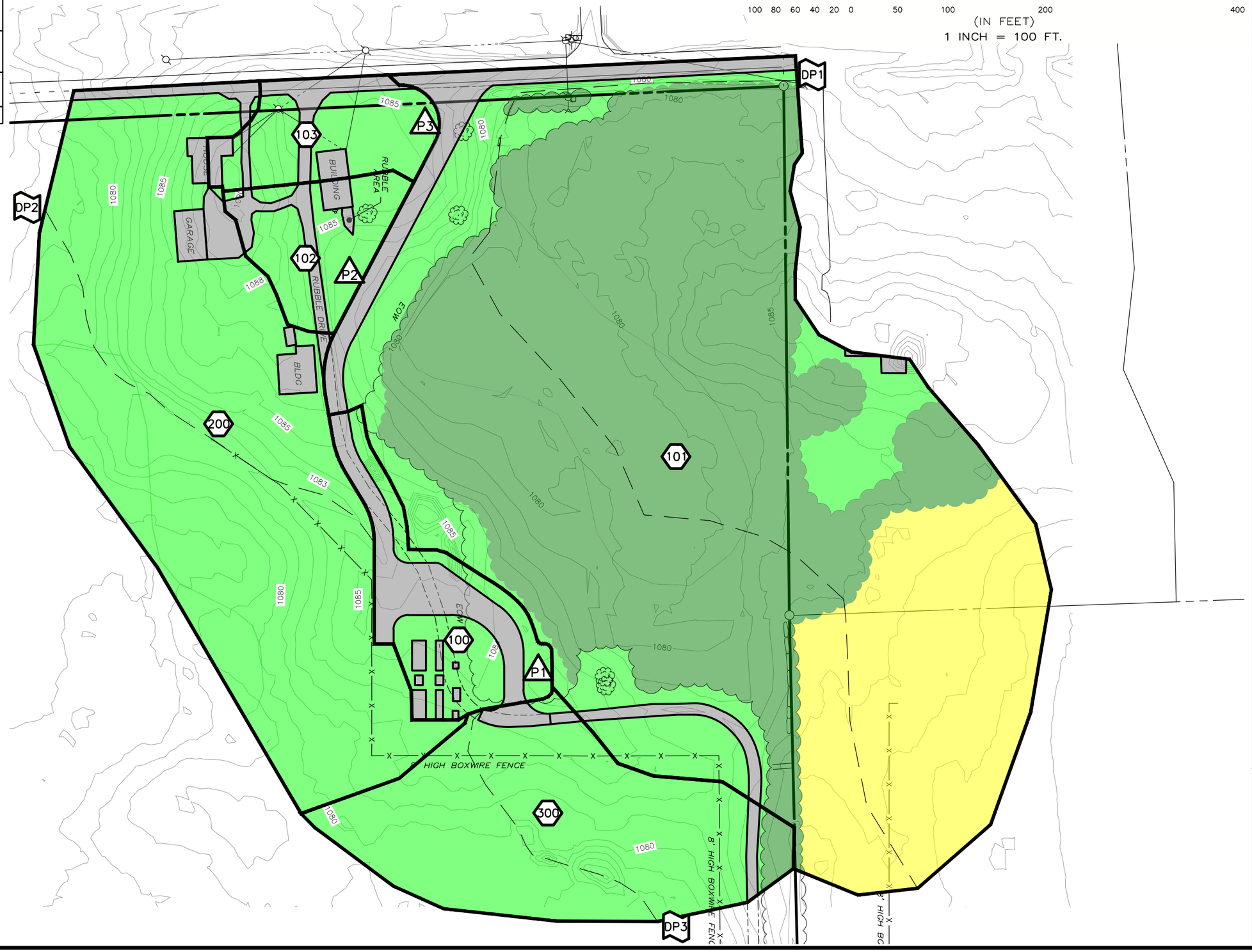
MAP KEY	
	SUBCATCHMENT BOUNDARY
S1	SUBCATCHMENT I.D.
P4	STORMWATER DEVICE
DP	DESIGN POINT
	TC PATH

GRAPHIC SCALE

100 80 60 40 20 0 50 100 200 400

(IN FEET)

1 INCH = 100 FT.



edp
ENVIRONMENTAL DESIGN PARTNERSHIP, LLP.
900 Route 146 Clifton Park, New York 12065
(518) 371-7621 edpllp.com

STORMWATER ANALYSIS FOR
JERRY SMITH, LLC

JERRY SMITH ROAD
TOWN OF LANSING
TOMPKINS COUNTY, NEW YORK

JUNE 1, 2026

REVISION	DATE	BY

SCALE: 1" = 100'

SHEET TITLE: POST DEVELOPMENT

SHEET NO. FIGURE 2

H:\TOMPKINS\Lansing\Jerry Smith Rd\05-dwg\Detailed\FIGURES\STORMWATER.dwg Jun 01, 2026 01:49:12PM

Attachment A

Water Quality Calculation

Runoff Reduction Calculation

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No
What is the nature of this construction project?	New Construction

Design Point:		
P=	1.00	inches

Enter 90% Rainfall Event as P

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	0.19	0.19	100	0.95	655	Sheet Flow to Grass Filter Strip
2	0.66	0.31	47	0.47	1,133	Infiltration Bioretention
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	0.85	0.50	59	0.58	**1788**	**Required WQv**

Steps 3 and 5 - Apply RR Techniques and Standard SMPs

Runoff Reduction Volume and Treated Volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**(cf)**	**(cf)**
RR Techniques	Conservation of Natural Areas	RR-1	0.19		0	
	Sheet Flow to Riparian Buffer/Filter Strip	RR-2	0.19	0.19	655	
	Tree Planting/Tree Pit/Tree Trench	RR-3	0.00	0.00	0	
	Disconnection of Rooftop Runoff	RR-4		0.00	0	
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rainwater Harvesting Systems	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Extensive & Intensive)	RR-10	0.00	0.00	0	
	Stream Daylighting	RR-11				
Standard SMPs w/ RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Infiltration Bioretention	F-4	0.66	0.31	1,133	0
	Filtration Bioretention	F-5	0.00	0.00	0	0
	Bioslope	F-6	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention	P-1	0.00	0.00		0
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention	P-3	0.00	0.00		0
	Multiple Pond System	P-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Gravel Wetland	W-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Wet Swale	O-2	0.66	0.31		0
Alt. SMPs	Flow Based Alternative Practice	-	0.00	0.00		0
	Volume Based Alternative Practice	-				
	Totals by RR Technique	→	0.38	0.19	655	
	Totals by Standard SMP w/RRV	→	0.66	0.31	1,133	0
	Totals by Standard SMP	→	0.66	0.31		0
	Totals by Alternative SMP	→	0.00	0.00		0
	Totals (RR Techniques + all SMPs)	→	1.70	0.81	1,788	0

Step 4 - Calcuate Minimum RRv Required

Enter the Soils Data for the entire site		
Hydrologic Soil Group	Acres	S
A		55%
B	0.85	40%
C		30%
D		20%
Total Area	0.85	

Calculate the Minimum RRv		
S =	**0.40**	
Impervious =	0.50	*acres*
Precipitation	1.00	*inches*
Rv	0.95	
Minimum RRv	**0.016**	***af***
	697	cf

Sheet Flow to Grass Filter Strip (RR-3)

Design Point:	

Enter Site Data For Drainage Area to be Reduced							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	0.19	0.19	100	0.95	655	1.00	Sheet Flow to Grass Filter Strip

Design Criteria		
Is the riparian buffer delineated and permanently protected through establishment of a legal conservation easement?	Yes	
Is the contributing area a designated hotspot?	No	
Is a pretreatment pea gravel diaphragm proposed along the upgradient edge of the buffer?	Yes	
Is runoff entering the buffer as overland sheet flow or a flow spreader proposed upgradient of the buffer?	Yes	
Enter the total length of contributing flow path (ft)	20	
Enter the length of contributing flow path from impervious surfaces (ft)	20	
Enter the slope of contributing flow path (%)	2	
Minimum buffer length based on contriuting flow path slope (ft)	35	
Enter the slope for the first 10 ft of the buffer (%)	2	

Sizing Criteria				
		Value	Units	Notes
Enter Travel Time through Buffer	*T*	6	min	
Enter 2-yr 24-hr Rainfall Depth	*P*	2.17	inch	
Enter Overall Buffer Slope	*S*	0.04	ft/ft	
Enter Manning's Coefficient for Buffer	*n*	0.40		
Calculated Minimum Length of Buffer	*L*	23	ft	
Minimum Length of Buffer	*L*	35	ft	
Is the buffer within HSG C or D soils?		Yes		
Required Length of Buffer	*L*	40	ft	
Enter Provided Length of Buffer	*L*	40	ft	

Calculate Runoff Reduction		
RRv Provided	**655**	**cf**

Infiltration Bioretention (F-4)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
2	0.66	0.31	47	0.47	1,133	1.00	Infiltration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0.75	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft) (4 ft min separation in sole source aquifer)	2	
Enter depth to bedrock (ft)	10	
Is pretreatment provided, in conformance with Section 6.4.3.1?	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	6	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	20	

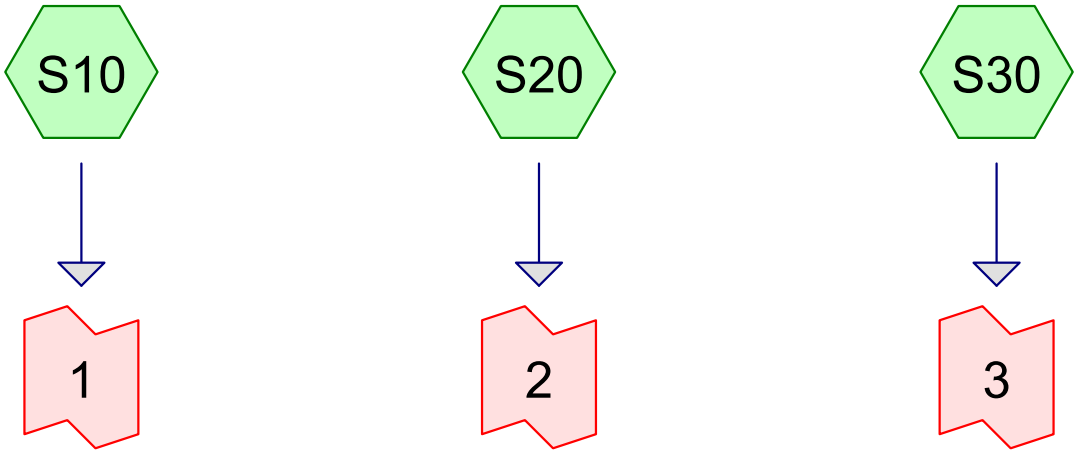
Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	473	sf	
Enter Provided Filter Area	Af	800	sf	

Calculate Runoff Reduction		
RRv Provided	**1,133**	***cf***

Attachment B

Stormwater Modeling Calculations

900 Route 146, Clifton Park, New York 12065
phone (518) 371-7621



Subcat Reach Pond Link

Routing Diagram for 2026-06-01 Predevelopment
Prepared by Environmental Design Partnership, Printed 6/1/2026

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-YR	Type II 24-hr		Default	24.00	1	1.97	2
2	10-YR	Type II 24-hr		Default	24.00	1	3.36	2
3	100-YR	Type II 24-hr		Default	24.00	1	5.73	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.748	58	Meadow, non-grazed, HSG B (S10, S20, S30)
0.733	78	Meadow, non-grazed, HSG D (S10, S20)
0.856	98	Paved parking, HSG D (S10, S20, S30)
1.861	78	Row crops, straight row, Good, HSG B (S10)
4.332	60	Woods, Fair, HSG B (S10, S20, S30)
1.437	79	Woods, Fair, HSG D (S10)
15.966	**66**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
12.940	HSG B	S10, S20, S30
0.000	HSG C	
3.026	HSG D	S10, S20, S30
0.000	Other	
15.966		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	6.748	0.000	0.733	0.000	7.481	Meadow, non-grazed	S10, S20, S30
0.000	0.000	0.000	0.856	0.000	0.856	Paved parking	S10, S20, S30
0.000	1.861	0.000	0.000	0.000	1.861	Row crops, straight row, Good	S10
0.000	4.332	0.000	1.437	0.000	5.769	Woods, Fair	S10, S20, S30
0.000	**12.940**	**0.000**	**3.026**	**0.000**	**15.966**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=446,233 sf 5.37% Impervious Runoff Depth>0.15"
Flow Length=1,335' Tc=49.5 min CN=68 Runoff=0.56 cfs 0.127 af

SubcatchmentS20: Runoff Area=173,284 sf 6.24% Impervious Runoff Depth>0.07"
Flow Length=565' Tc=20.6 min CN=63 Runoff=0.08 cfs 0.024 af

SubcatchmentS30: Runoff Area=75,979 sf 3.29% Impervious Runoff Depth>0.03"
Flow Length=400' Slope=0.0200 '/' Tc=16.6 min CN=59 Runoff=0.01 cfs 0.004 af

Link 1: Inflow=0.56 cfs 0.127 af
Primary=0.56 cfs 0.127 af

Link 2: Inflow=0.08 cfs 0.024 af
Primary=0.08 cfs 0.024 af

Link 3: Inflow=0.01 cfs 0.004 af
Primary=0.01 cfs 0.004 af

Total Runoff Area = 15.966 ac Runoff Volume = 0.156 af Average Runoff Depth = 0.12"
94.64% Pervious = 15.111 ac 5.36% Impervious = 0.856 ac

Summary for Subcatchment S10:

Runoff = 0.56 cfs @ 12.70 hrs, Volume= 0.127 af, Depth> 0.15"
Routed to Link 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
23,956	98	Paved parking, HSG D
84,111	58	Meadow, non-grazed, HSG B
12,046	78	Meadow, non-grazed, HSG D
182,431	60	Woods, Fair, HSG B
62,617	79	Woods, Fair, HSG D
81,072	78	Row crops, straight row, Good, HSG B
446,233	68	Weighted Average
422,277		94.63% Pervious Area
23,956		5.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.0100	0.23		**Sheet Flow, SF - FARM** Cultivated: Residue<=20% n= 0.060 P2= 2.32"
3.8	205	0.0100	0.90		**Shallow Concentrated Flow, SCF - FARM** Cultivated Straight Rows Kv= 9.0 fps
23.9	600	0.0070	0.42		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
14.5	430	0.0050	0.49		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
49.5	1,335	Total			

Summary for Subcatchment S20:

Runoff = 0.08 cfs @ 12.49 hrs, Volume= 0.024 af, Depth> 0.07"
Routed to Link 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
10,811	98	Paved parking, HSG D
141,959	58	Meadow, non-grazed, HSG B
19,882	78	Meadow, non-grazed, HSG D
632	60	Woods, Fair, HSG B
173,284	63	Weighted Average
162,473		93.76% Pervious Area
10,811		6.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0250	0.16		**Sheet Flow, SF- GRASS**
					Grass: Short n= 0.150 P2= 2.32"
10.1	465	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS**
					Short Grass Pasture Kv= 7.0 fps
20.6	565	Total			

Summary for Subcatchment S30:

Runoff = 0.01 cfs @ 13.77 hrs, Volume= 0.004 af, Depth> 0.03"
Routed to Link 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG D
67,857	58	Meadow, non-grazed, HSG B
5,622	60	Woods, Fair, HSG B
75,979	59	Weighted Average
73,479		96.71% Pervious Area
2,500		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0200	0.14		**Sheet Flow, SF - GRASS**
					Grass: Short n= 0.150 P2= 2.32"
5.1	300	0.0200	0.99		**Shallow Concentrated Flow, SCF - GRASS**
					Short Grass Pasture Kv= 7.0 fps
16.6	400	Total			

Summary for Link 1:

Inflow Area = 10.244 ac, 5.37% Impervious, Inflow Depth > 0.15" for 1-YR event
Inflow = 0.56 cfs @ 12.70 hrs, Volume= 0.127 af
Primary = 0.56 cfs @ 12.70 hrs, Volume= 0.127 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2:

Inflow Area = 3.978 ac, 6.24% Impervious, Inflow Depth > 0.07" for 1-YR event
Inflow = 0.08 cfs @ 12.49 hrs, Volume= 0.024 af
Primary = 0.08 cfs @ 12.49 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3:

Inflow Area = 1.744 ac, 3.29% Impervious, Inflow Depth > 0.03" for 1-YR event
Inflow = 0.01 cfs @ 13.77 hrs, Volume= 0.004 af
Primary = 0.01 cfs @ 13.77 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=446,233 sf 5.37% Impervious Runoff Depth>0.71"
Flow Length=1,335' Tc=49.5 min CN=68 Runoff=4.33 cfs 0.609 af

SubcatchmentS20: Runoff Area=173,284 sf 6.24% Impervious Runoff Depth>0.51"
Flow Length=565' Tc=20.6 min CN=63 Runoff=1.96 cfs 0.170 af

SubcatchmentS30: Runoff Area=75,979 sf 3.29% Impervious Runoff Depth>0.37"
Flow Length=400' Slope=0.0200 '/' Tc=16.6 min CN=59 Runoff=0.60 cfs 0.054 af

Link 1: Inflow=4.33 cfs 0.609 af
Primary=4.33 cfs 0.609 af

Link 2: Inflow=1.96 cfs 0.170 af
Primary=1.96 cfs 0.170 af

Link 3: Inflow=0.60 cfs 0.054 af
Primary=0.60 cfs 0.054 af

Total Runoff Area = 15.966 ac Runoff Volume = 0.832 af Average Runoff Depth = 0.63"
94.64% Pervious = 15.111 ac 5.36% Impervious = 0.856 ac

Summary for Subcatchment S10:

Runoff = 4.33 cfs @ 12.56 hrs, Volume= 0.609 af, Depth> 0.71"
Routed to Link 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
23,956	98	Paved parking, HSG D
84,111	58	Meadow, non-grazed, HSG B
12,046	78	Meadow, non-grazed, HSG D
182,431	60	Woods, Fair, HSG B
62,617	79	Woods, Fair, HSG D
81,072	78	Row crops, straight row, Good, HSG B
446,233	68	Weighted Average
422,277		94.63% Pervious Area
23,956		5.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.0100	0.23		**Sheet Flow, SF - FARM** Cultivated: Residue<=20% n= 0.060 P2= 2.32"
3.8	205	0.0100	0.90		**Shallow Concentrated Flow, SCF - FARM** Cultivated Straight Rows Kv= 9.0 fps
23.9	600	0.0070	0.42		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
14.5	430	0.0050	0.49		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
49.5	1,335	Total			

Summary for Subcatchment S20:

Runoff = 1.96 cfs @ 12.17 hrs, Volume= 0.170 af, Depth> 0.51"
Routed to Link 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
10,811	98	Paved parking, HSG D
141,959	58	Meadow, non-grazed, HSG B
19,882	78	Meadow, non-grazed, HSG D
632	60	Woods, Fair, HSG B
173,284	63	Weighted Average
162,473		93.76% Pervious Area
10,811		6.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0250	0.16		**Sheet Flow, SF- GRASS**
					Grass: Short n= 0.150 P2= 2.32"
10.1	465	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS**
					Short Grass Pasture Kv= 7.0 fps
20.6	565	Total			

Summary for Subcatchment S30:

Runoff = 0.60 cfs @ 12.14 hrs, Volume= 0.054 af, Depth> 0.37"
Routed to Link 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG D
67,857	58	Meadow, non-grazed, HSG B
5,622	60	Woods, Fair, HSG B
75,979	59	Weighted Average
73,479		96.71% Pervious Area
2,500		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0200	0.14		**Sheet Flow, SF - GRASS**
					Grass: Short n= 0.150 P2= 2.32"
5.1	300	0.0200	0.99		**Shallow Concentrated Flow, SCF - GRASS**
					Short Grass Pasture Kv= 7.0 fps
16.6	400	Total			

Summary for Link 1:

Inflow Area = 10.244 ac, 5.37% Impervious, Inflow Depth > 0.71" for 10-YR event
Inflow = 4.33 cfs @ 12.56 hrs, Volume= 0.609 af
Primary = 4.33 cfs @ 12.56 hrs, Volume= 0.609 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2:

Inflow Area = 3.978 ac, 6.24% Impervious, Inflow Depth > 0.51" for 10-YR event
Inflow = 1.96 cfs @ 12.17 hrs, Volume= 0.170 af
Primary = 1.96 cfs @ 12.17 hrs, Volume= 0.170 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3:

Inflow Area = 1.744 ac, 3.29% Impervious, Inflow Depth > 0.37" for 10-YR event
Inflow = 0.60 cfs @ 12.14 hrs, Volume= 0.054 af
Primary = 0.60 cfs @ 12.14 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=446,233 sf 5.37% Impervious Runoff Depth>2.17"
Flow Length=1,335' Tc=49.5 min CN=68 Runoff=14.75 cfs 1.849 af

SubcatchmentS20: Runoff Area=173,284 sf 6.24% Impervious Runoff Depth>1.79"
Flow Length=565' Tc=20.6 min CN=63 Runoff=8.27 cfs 0.593 af

SubcatchmentS30: Runoff Area=75,979 sf 3.29% Impervious Runoff Depth>1.49"
Flow Length=400' Slope=0.0200 '/' Tc=16.6 min CN=59 Runoff=3.34 cfs 0.217 af

Link 1: Inflow=14.75 cfs 1.849 af
Primary=14.75 cfs 1.849 af

Link 2: Inflow=8.27 cfs 0.593 af
Primary=8.27 cfs 0.593 af

Link 3: Inflow=3.34 cfs 0.217 af
Primary=3.34 cfs 0.217 af

Total Runoff Area = 15.966 ac Runoff Volume = 2.658 af Average Runoff Depth = 2.00"
94.64% Pervious = 15.111 ac 5.36% Impervious = 0.856 ac

Summary for Subcatchment S10:

Runoff = 14.75 cfs @ 12.51 hrs, Volume= 1.849 af, Depth> 2.17"
Routed to Link 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
23,956	98	Paved parking, HSG D
84,111	58	Meadow, non-grazed, HSG B
12,046	78	Meadow, non-grazed, HSG D
182,431	60	Woods, Fair, HSG B
62,617	79	Woods, Fair, HSG D
81,072	78	Row crops, straight row, Good, HSG B
446,233	68	Weighted Average
422,277		94.63% Pervious Area
23,956		5.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.0100	0.23		**Sheet Flow, SF - FARM** Cultivated: Residue<=20% n= 0.060 P2= 2.32"
3.8	205	0.0100	0.90		**Shallow Concentrated Flow, SCF - FARM** Cultivated Straight Rows Kv= 9.0 fps
23.9	600	0.0070	0.42		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
14.5	430	0.0050	0.49		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
49.5	1,335	Total			

Summary for Subcatchment S20:

Runoff = 8.27 cfs @ 12.15 hrs, Volume= 0.593 af, Depth> 1.79"
Routed to Link 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
10,811	98	Paved parking, HSG D
141,959	58	Meadow, non-grazed, HSG B
19,882	78	Meadow, non-grazed, HSG D
632	60	Woods, Fair, HSG B
173,284	63	Weighted Average
162,473		93.76% Pervious Area
10,811		6.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0250	0.16		**Sheet Flow, SF- GRASS**
					Grass: Short n= 0.150 P2= 2.32"
10.1	465	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS**
					Short Grass Pasture Kv= 7.0 fps
20.6	565	Total			

Summary for Subcatchment S30:

Runoff = 3.34 cfs @ 12.10 hrs, Volume= 0.217 af, Depth> 1.49"
Routed to Link 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
2,500	98	Paved parking, HSG D
67,857	58	Meadow, non-grazed, HSG B
5,622	60	Woods, Fair, HSG B
75,979	59	Weighted Average
73,479		96.71% Pervious Area
2,500		3.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	100	0.0200	0.14		**Sheet Flow, SF - GRASS**
					Grass: Short n= 0.150 P2= 2.32"
5.1	300	0.0200	0.99		**Shallow Concentrated Flow, SCF - GRASS**
					Short Grass Pasture Kv= 7.0 fps
16.6	400	Total			

Summary for Link 1:

Inflow Area = 10.244 ac, 5.37% Impervious, Inflow Depth > 2.17" for 100-YR event
Inflow = 14.75 cfs @ 12.51 hrs, Volume= 1.849 af
Primary = 14.75 cfs @ 12.51 hrs, Volume= 1.849 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2:

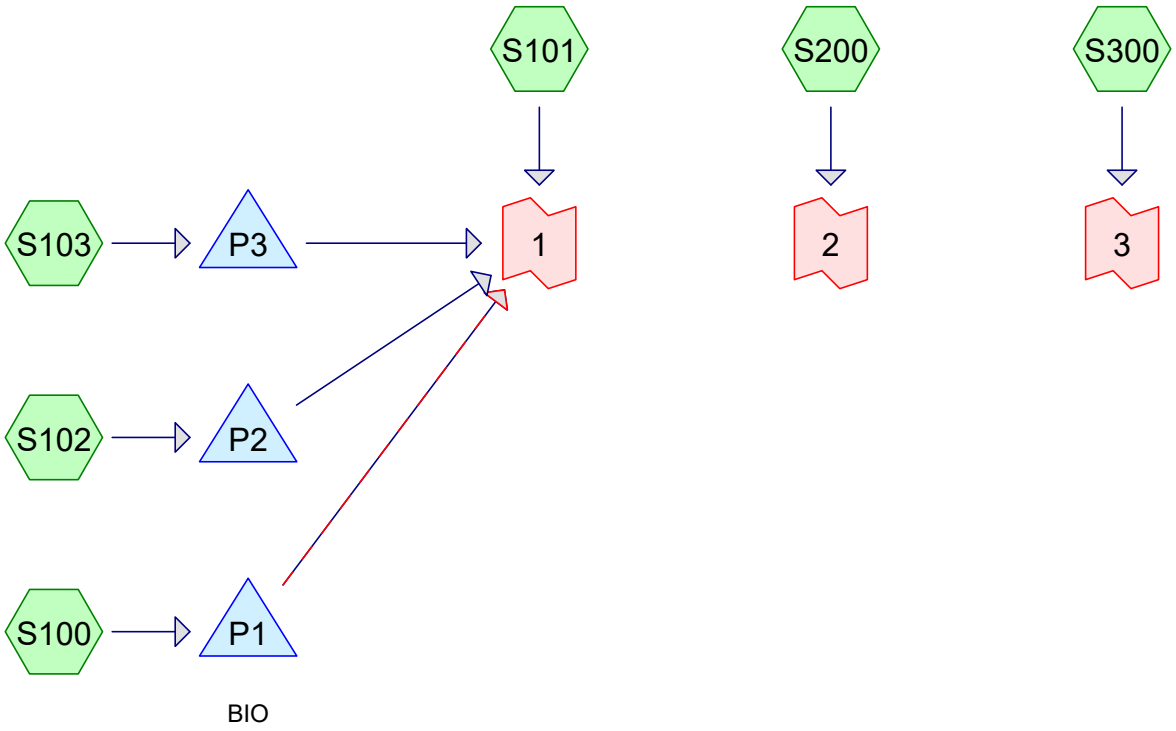
Inflow Area = 3.978 ac, 6.24% Impervious, Inflow Depth > 1.79" for 100-YR event
Inflow = 8.27 cfs @ 12.15 hrs, Volume= 0.593 af
Primary = 8.27 cfs @ 12.15 hrs, Volume= 0.593 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3:

Inflow Area = 1.744 ac, 3.29% Impervious, Inflow Depth > 1.49" for 100-YR event
Inflow = 3.34 cfs @ 12.10 hrs, Volume= 0.217 af
Primary = 3.34 cfs @ 12.10 hrs, Volume= 0.217 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 2026-06-01 Postdevelopment
Prepared by Environmental Design Partnership, Printed 6/1/2026

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-YR	Type II 24-hr		Default	24.00	1	1.97	2
2	10-YR	Type II 24-hr		Default	24.00	1	3.36	2
3	100-YR	Type II 24-hr		Default	24.00	1	5.73	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
6.719	58	Meadow, non-grazed, HSG B (S100, S101, S102, S103, S200, S300)
0.667	78	Meadow, non-grazed, HSG D (S101, S103, S200)
1.253	98	Paved parking, HSG D (S100, S101, S102, S103, S200, S300)
1.861	78	Row crops, straight row, Good, HSG B (S101)
4.031	60	Woods, Fair, HSG B (S101, S300)
1.437	79	Woods, Fair, HSG D (S101)
15.969	**67**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
12.612	HSG B	S100, S101, S102, S103, S200, S300
0.000	HSG C	
3.357	HSG D	S100, S101, S102, S103, S200, S300
0.000	Other	
15.969		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	6.719	0.000	0.667	0.000	7.386	Meadow, non-grazed	S100, S101, S102, S103, S200, S300
0.000	0.000	0.000	1.253	0.000	1.253	Paved parking	S100, S101, S102, S103, S200, S300
0.000	1.861	0.000	0.000	0.000	1.861	Row crops, straight row, Good	S101
0.000	4.031	0.000	1.437	0.000	5.469	Woods, Fair	S101, S300
0.000	**12.612**	**0.000**	**3.357**	**0.000**	**15.969**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	P2	1,080.75	1,080.40	70.0	0.0050	0.013	0.0	12.0	0.0
2	P3	1,081.25	1,080.00	67.0	0.0187	0.013	0.0	12.0	0.0

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=28,717 sf 47.53% Impervious Runoff Depth>0.38"
Tc=6.0 min CN=77 Runoff=0.46 cfs 0.021 af

SubcatchmentS101: Runoff Area=393,734 sf 4.61% Impervious Runoff Depth>0.17"
Flow Length=1,335' Tc=49.5 min CN=69 Runoff=0.60 cfs 0.126 af

SubcatchmentS102: Runoff Area=19,363 sf 24.08% Impervious Runoff Depth>0.15"
Tc=6.0 min CN=68 Runoff=0.08 cfs 0.006 af

SubcatchmentS103: Runoff Area=21,314 sf 28.45% Impervious Runoff Depth>0.24"
Tc=6.0 min CN=72 Runoff=0.19 cfs 0.010 af

SubcatchmentS200: Runoff Area=160,176 sf 5.78% Impervious Runoff Depth>0.07"
Flow Length=515' Tc=19.5 min CN=63 Runoff=0.07 cfs 0.022 af

SubcatchmentS300: Runoff Area=72,287 sf 3.85% Impervious Runoff Depth>0.04"
Flow Length=310' Tc=16.9 min CN=60 Runoff=0.01 cfs 0.006 af

Pond P1: BIO Peak Elev=1,081.60' Storage=501 cf Inflow=0.46 cfs 0.021 af
Discarded=0.02 cfs 0.011 af Secondary=0.00 cfs 0.000 af Outflow=0.02 cfs 0.011 af

Pond P2: Peak Elev=1,080.91' Storage=7 cf Inflow=0.08 cfs 0.006 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=0.08 cfs 0.006 af

Pond P3: Peak Elev=1,081.46' Storage=5 cf Inflow=0.19 cfs 0.010 af
12.0" Round Culvert n=0.013 L=67.0' S=0.0187 '/' Outflow=0.19 cfs 0.010 af

Link 1: Inflow=0.64 cfs 0.142 af
Primary=0.64 cfs 0.142 af

Link 2: Inflow=0.07 cfs 0.022 af
Primary=0.07 cfs 0.022 af

Link 3: Inflow=0.01 cfs 0.006 af
Primary=0.01 cfs 0.006 af

Total Runoff Area = 15.969 ac Runoff Volume = 0.191 af Average Runoff Depth = 0.14"
92.16% Pervious = 14.716 ac 7.84% Impervious = 1.253 ac

Summary for Subcatchment S100:

Runoff = 0.46 cfs @ 11.99 hrs, Volume= 0.021 af, Depth> 0.38"
Routed to Pond P1 : BIO

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
13,650	98	Paved parking, HSG D
15,067	58	Meadow, non-grazed, HSG B
28,717	77	Weighted Average
15,067		52.47% Pervious Area
13,650		47.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S101:

Runoff = 0.60 cfs @ 12.68 hrs, Volume= 0.126 af, Depth> 0.17"
Routed to Link 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
18,153	98	Paved parking, HSG D
51,717	58	Meadow, non-grazed, HSG B
6,667	78	Meadow, non-grazed, HSG D
173,508	60	Woods, Fair, HSG B
62,617	79	Woods, Fair, HSG D
81,072	78	Row crops, straight row, Good, HSG B
393,734	69	Weighted Average
375,581		95.39% Pervious Area
18,153		4.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.0100	0.23		**Sheet Flow, SF - FARM** Cultivated: Residue<=20% n= 0.060 P2= 2.32"
3.8	205	0.0100	0.90		**Shallow Concentrated Flow, SCF - FARM** Cultivated Straight Rows Kv= 9.0 fps
23.9	600	0.0070	0.42		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
14.5	430	0.0050	0.49		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
49.5	1,335	Total			

Summary for Subcatchment S102:

Runoff = 0.08 cfs @ 12.01 hrs, Volume= 0.006 af, Depth> 0.15"
Routed to Pond P2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
4,663	98	Paved parking, HSG D
14,700	58	Meadow, non-grazed, HSG B
19,363	68	Weighted Average
14,700		75.92% Pervious Area
4,663		24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S103:

Runoff = 0.19 cfs @ 12.00 hrs, Volume= 0.010 af, Depth> 0.24"
Routed to Pond P3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
6,064	98	Paved parking, HSG D
12,750	58	Meadow, non-grazed, HSG B
2,500	78	Meadow, non-grazed, HSG D
21,314	72	Weighted Average
15,250		71.55% Pervious Area
6,064		28.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S200:

Runoff = 0.07 cfs @ 12.47 hrs, Volume= 0.022 af, Depth> 0.07"
Routed to Link 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
9,254	98	Paved parking, HSG D
131,040	58	Meadow, non-grazed, HSG B
19,882	78	Meadow, non-grazed, HSG D
160,176	63	Weighted Average
150,922		94.22% Pervious Area
9,254		5.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0250	0.16		**Sheet Flow, SF- GRASS** Grass: Short n= 0.150 P2= 2.32"
9.0	415	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
19.5	515	Total			

Summary for Subcatchment S300:

Runoff = 0.01 cfs @ 13.41 hrs, Volume= 0.006 af, Depth> 0.04"
Routed to Link 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-YR Rainfall=1.97"

Area (sf)	CN	Description
2,782	98	Paved parking, HSG D
67,418	58	Meadow, non-grazed, HSG B
2,087	60	Woods, Fair, HSG B
72,287	60	Weighted Average
69,505		96.15% Pervious Area
2,782		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0170	0.14		**Sheet Flow, SF - GRASS** Grass: Short n= 0.150 P2= 2.32"
4.6	210	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
16.9	310	Total			

Summary for Pond P1: BIO

Inflow Area = 0.659 ac, 47.53% Impervious, Inflow Depth > 0.38" for 1-YR event
Inflow = 0.46 cfs @ 11.99 hrs, Volume= 0.021 af
Outflow = 0.02 cfs @ 11.85 hrs, Volume= 0.011 af, Atten= 97%, Lag= 0.0 min
Discarded = 0.02 cfs @ 11.85 hrs, Volume= 0.011 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,081.60' @ 15.65 hrs Surf.Area= 925 sf Storage= 501 cf

Plug-Flow detention time= 227.2 min calculated for 0.011 af (52% of inflow)
Center-of-Mass det. time= 128.3 min (953.8 - 825.5)

Volume	Invert	Avail.Storage	Storage Description
#1	1,080.25'	925 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 2,313 cf Overall x 40.0% Voids
#2	1,082.75'	2,743 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		3,668 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,080.25	925	125.0	0	0	925
1,082.75	925	125.0	2,313	2,313	1,238

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,082.75	925	125.0	0	0	925
1,083.00	1,740	465.0	328	328	16,888
1,084.00	3,160	480.0	2,415	2,743	18,111

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,080.25'	**0.750 in/hr Exfiltration over Surface area**
#2	Secondary	1,083.25'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.02 cfs @ 11.85 hrs HW=1,080.32' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,080.25' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P2:

Inflow Area = 0.445 ac, 24.08% Impervious, Inflow Depth > 0.15" for 1-YR event
Inflow = 0.08 cfs @ 12.01 hrs, Volume= 0.006 af
Outflow = 0.08 cfs @ 12.04 hrs, Volume= 0.006 af, Atten= 9%, Lag= 1.8 min
Primary = 0.08 cfs @ 12.04 hrs, Volume= 0.006 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,080.91' @ 12.04 hrs Surf.Area= 84 sf Storage= 7 cf

Plug-Flow detention time= 1.7 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 1.2 min (868.9 - 867.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,080.75'	454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,080.75	1	0	0
1,081.00	130	16	16
1,082.00	745	438	454

Device	Routing	Invert	Outlet Devices
#1	Primary	1,080.75'	**12.0" Round Culvert** L= 70.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,080.75' / 1,080.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.07 cfs @ 12.04 hrs HW=1,080.91' (Free Discharge)
1=Culvert (Barrel Controls 0.07 cfs @ 1.42 fps)

Summary for Pond P3:

Inflow Area = 0.489 ac, 28.45% Impervious, Inflow Depth > 0.24" for 1-YR event
Inflow = 0.19 cfs @ 12.00 hrs, Volume= 0.010 af
Outflow = 0.19 cfs @ 12.00 hrs, Volume= 0.010 af, Atten= 1%, Lag= 0.4 min
Primary = 0.19 cfs @ 12.00 hrs, Volume= 0.010 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,081.46' @ 12.00 hrs Surf.Area= 43 sf Storage= 5 cf

Plug-Flow detention time= 0.4 min calculated for 0.010 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (846.1 - 845.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,081.25'	432 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,081.25	1	0	0
1,082.00	150	57	57
1,083.00	600	375	432

Device	Routing	Invert	Outlet Devices
#1	Primary	1,081.25'	**12.0" Round Culvert** L= 67.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,081.25' / 1,080.00' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.19 cfs @ 12.00 hrs HW=1,081.46' (Free Discharge)
1=Culvert (Inlet Controls 0.19 cfs @ 1.56 fps)

Summary for Link 1:

Inflow Area = 10.632 ac, 9.18% Impervious, Inflow Depth > 0.16" for 1-YR event
Inflow = 0.64 cfs @ 12.67 hrs, Volume= 0.142 af
Primary = 0.64 cfs @ 12.67 hrs, Volume= 0.142 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2:

Inflow Area = 3.677 ac, 5.78% Impervious, Inflow Depth > 0.07" for 1-YR event
Inflow = 0.07 cfs @ 12.47 hrs, Volume= 0.022 af
Primary = 0.07 cfs @ 12.47 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3:

Inflow Area = 1.659 ac, 3.85% Impervious, Inflow Depth > 0.04" for 1-YR event
Inflow = 0.01 cfs @ 13.41 hrs, Volume= 0.006 af
Primary = 0.01 cfs @ 13.41 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=28,717 sf 47.53% Impervious Runoff Depth>1.21"
Tc=6.0 min CN=77 Runoff=1.52 cfs 0.066 af

SubcatchmentS101: Runoff Area=393,734 sf 4.61% Impervious Runoff Depth>0.76"
Flow Length=1,335' Tc=49.5 min CN=69 Runoff=4.14 cfs 0.572 af

SubcatchmentS102: Runoff Area=19,363 sf 24.08% Impervious Runoff Depth>0.73"
Tc=6.0 min CN=68 Runoff=0.61 cfs 0.027 af

SubcatchmentS103: Runoff Area=21,314 sf 28.45% Impervious Runoff Depth>0.93"
Tc=6.0 min CN=72 Runoff=0.86 cfs 0.038 af

SubcatchmentS200: Runoff Area=160,176 sf 5.78% Impervious Runoff Depth>0.51"
Flow Length=515' Tc=19.5 min CN=63 Runoff=1.88 cfs 0.157 af

SubcatchmentS300: Runoff Area=72,287 sf 3.85% Impervious Runoff Depth>0.40"
Flow Length=310' Tc=16.9 min CN=60 Runoff=0.65 cfs 0.056 af

Pond P1: BIO Peak Elev=1,083.25' Storage=1,721 cf Inflow=1.52 cfs 0.066 af
Discarded=0.05 cfs 0.035 af Secondary=0.00 cfs 0.000 af Outflow=0.05 cfs 0.035 af

Pond P2: Peak Elev=1,081.19' Storage=53 cf Inflow=0.61 cfs 0.027 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=0.57 cfs 0.027 af

Pond P3: Peak Elev=1,081.72' Storage=23 cf Inflow=0.86 cfs 0.038 af
12.0" Round Culvert n=0.013 L=67.0' S=0.0187 '/' Outflow=0.86 cfs 0.038 af

Link 1: Inflow=4.29 cfs 0.637 af
Primary=4.29 cfs 0.637 af

Link 2: Inflow=1.88 cfs 0.157 af
Primary=1.88 cfs 0.157 af

Link 3: Inflow=0.65 cfs 0.056 af
Primary=0.65 cfs 0.056 af

Total Runoff Area = 15.969 ac Runoff Volume = 0.916 af Average Runoff Depth = 0.69"
92.16% Pervious = 14.716 ac 7.84% Impervious = 1.253 ac

Summary for Subcatchment S100:

Runoff = 1.52 cfs @ 11.98 hrs, Volume= 0.066 af, Depth> 1.21"
Routed to Pond P1 : BIO

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
13,650	98	Paved parking, HSG D
15,067	58	Meadow, non-grazed, HSG B
28,717	77	Weighted Average
15,067		52.47% Pervious Area
13,650		47.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S101:

Runoff = 4.14 cfs @ 12.55 hrs, Volume= 0.572 af, Depth> 0.76"
Routed to Link 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
18,153	98	Paved parking, HSG D
51,717	58	Meadow, non-grazed, HSG B
6,667	78	Meadow, non-grazed, HSG D
173,508	60	Woods, Fair, HSG B
62,617	79	Woods, Fair, HSG D
81,072	78	Row crops, straight row, Good, HSG B
393,734	69	Weighted Average
375,581		95.39% Pervious Area
18,153		4.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.0100	0.23		**Sheet Flow, SF - FARM** Cultivated: Residue<=20% n= 0.060 P2= 2.32"
3.8	205	0.0100	0.90		**Shallow Concentrated Flow, SCF - FARM** Cultivated Straight Rows Kv= 9.0 fps
23.9	600	0.0070	0.42		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
14.5	430	0.0050	0.49		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
49.5	1,335	Total			

Summary for Subcatchment S102:

Runoff = 0.61 cfs @ 11.99 hrs, Volume= 0.027 af, Depth> 0.73"
Routed to Pond P2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
4,663	98	Paved parking, HSG D
14,700	58	Meadow, non-grazed, HSG B
19,363	68	Weighted Average
14,700		75.92% Pervious Area
4,663		24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S103:

Runoff = 0.86 cfs @ 11.98 hrs, Volume= 0.038 af, Depth> 0.93"
Routed to Pond P3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
6,064	98	Paved parking, HSG D
12,750	58	Meadow, non-grazed, HSG B
2,500	78	Meadow, non-grazed, HSG D
21,314	72	Weighted Average
15,250		71.55% Pervious Area
6,064		28.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S200:

Runoff = 1.88 cfs @ 12.16 hrs, Volume= 0.157 af, Depth> 0.51"
Routed to Link 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
9,254	98	Paved parking, HSG D
131,040	58	Meadow, non-grazed, HSG B
19,882	78	Meadow, non-grazed, HSG D
160,176	63	Weighted Average
150,922		94.22% Pervious Area
9,254		5.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0250	0.16		**Sheet Flow, SF- GRASS** Grass: Short n= 0.150 P2= 2.32"
9.0	415	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
19.5	515	Total			

Summary for Subcatchment S300:

Runoff = 0.65 cfs @ 12.14 hrs, Volume= 0.056 af, Depth> 0.40"
Routed to Link 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-YR Rainfall=3.36"

Area (sf)	CN	Description
2,782	98	Paved parking, HSG D
67,418	58	Meadow, non-grazed, HSG B
2,087	60	Woods, Fair, HSG B
72,287	60	Weighted Average
69,505		96.15% Pervious Area
2,782		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0170	0.14		**Sheet Flow, SF - GRASS** Grass: Short n= 0.150 P2= 2.32"
4.6	210	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
16.9	310	Total			

Summary for Pond P1: BIO

Inflow Area = 0.659 ac, 47.53% Impervious, Inflow Depth > 1.21" for 10-YR event
Inflow = 1.52 cfs @ 11.98 hrs, Volume= 0.066 af
Outflow = 0.05 cfs @ 14.43 hrs, Volume= 0.035 af, Atten= 97%, Lag= 147.3 min
Discarded = 0.05 cfs @ 14.43 hrs, Volume= 0.035 af
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,083.25' @ 14.43 hrs Surf.Area= 2,977 sf Storage= 1,721 cf

Plug-Flow detention time= 231.3 min calculated for 0.035 af (52% of inflow)
Center-of-Mass det. time= 147.0 min (946.8 - 799.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,080.25'	925 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 2,313 cf Overall x 40.0% Voids
#2	1,082.75'	2,743 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		3,668 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,080.25	925	125.0	0	0	925
1,082.75	925	125.0	2,313	2,313	1,238

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,082.75	925	125.0	0	0	925
1,083.00	1,740	465.0	328	328	16,888
1,084.00	3,160	480.0	2,415	2,743	18,111

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,080.25'	**0.750 in/hr Exfiltration over Surface area**
#2	Secondary	1,083.25'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.05 cfs @ 14.43 hrs HW=1,083.25' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.05 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=1,080.25' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond P2:

Inflow Area = 0.445 ac, 24.08% Impervious, Inflow Depth > 0.73" for 10-YR event
Inflow = 0.61 cfs @ 11.99 hrs, Volume= 0.027 af
Outflow = 0.57 cfs @ 12.01 hrs, Volume= 0.027 af, Atten= 7%, Lag= 1.4 min
Primary = 0.57 cfs @ 12.01 hrs, Volume= 0.027 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,081.19' @ 12.01 hrs Surf.Area= 248 sf Storage= 53 cf

Plug-Flow detention time= 1.5 min calculated for 0.027 af (100% of inflow)
Center-of-Mass det. time= 1.2 min (822.0 - 820.8)

Volume	Invert	Avail.Storage	Storage Description
#1	1,080.75'	454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,080.75	1	0	0
1,081.00	130	16	16
1,082.00	745	438	454

Device	Routing	Invert	Outlet Devices
#1	Primary	1,080.75'	**12.0" Round Culvert** L= 70.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,080.75' / 1,080.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.55 cfs @ 12.01 hrs HW=1,081.19' (Free Discharge)
1=Culvert (Barrel Controls 0.55 cfs @ 2.48 fps)

Summary for Pond P3:

Inflow Area = 0.489 ac, 28.45% Impervious, Inflow Depth > 0.93" for 10-YR event
Inflow = 0.86 cfs @ 11.98 hrs, Volume= 0.038 af
Outflow = 0.86 cfs @ 11.99 hrs, Volume= 0.038 af, Atten= 0%, Lag= 0.5 min
Primary = 0.86 cfs @ 11.99 hrs, Volume= 0.038 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,081.72' @ 11.99 hrs Surf.Area= 95 sf Storage= 23 cf

Plug-Flow detention time= 0.4 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (811.4 - 811.0)

Volume	Invert	Avail.Storage	Storage Description
#1	1,081.25'	432 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,081.25	1	0	0
1,082.00	150	57	57
1,083.00	600	375	432

Device	Routing	Invert	Outlet Devices
#1	Primary	1,081.25'	**12.0" Round Culvert** L= 67.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,081.25' / 1,080.00' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=0.83 cfs @ 11.99 hrs HW=1,081.72' (Free Discharge)
1=Culvert (Inlet Controls 0.83 cfs @ 2.32 fps)

Summary for Link 1:

Inflow Area = 10.632 ac, 9.18% Impervious, Inflow Depth > 0.72" for 10-YR event
Inflow = 4.29 cfs @ 12.54 hrs, Volume= 0.637 af
Primary = 4.29 cfs @ 12.54 hrs, Volume= 0.637 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2:

Inflow Area = 3.677 ac, 5.78% Impervious, Inflow Depth > 0.51" for 10-YR event
Inflow = 1.88 cfs @ 12.16 hrs, Volume= 0.157 af
Primary = 1.88 cfs @ 12.16 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3:

Inflow Area = 1.659 ac, 3.85% Impervious, Inflow Depth > 0.40" for 10-YR event
Inflow = 0.65 cfs @ 12.14 hrs, Volume= 0.056 af
Primary = 0.65 cfs @ 12.14 hrs, Volume= 0.056 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=28,717 sf 47.53% Impervious Runoff Depth>3.00"
Tc=6.0 min CN=77 Runoff=3.66 cfs 0.165 af

SubcatchmentS101: Runoff Area=393,734 sf 4.61% Impervious Runoff Depth>2.25"
Flow Length=1,335' Tc=49.5 min CN=69 Runoff=13.56 cfs 1.694 af

SubcatchmentS102: Runoff Area=19,363 sf 24.08% Impervious Runoff Depth>2.21"
Tc=6.0 min CN=68 Runoff=1.87 cfs 0.082 af

SubcatchmentS103: Runoff Area=21,314 sf 28.45% Impervious Runoff Depth>2.55"
Tc=6.0 min CN=72 Runoff=2.34 cfs 0.104 af

SubcatchmentS200: Runoff Area=160,176 sf 5.78% Impervious Runoff Depth>1.79"
Flow Length=515' Tc=19.5 min CN=63 Runoff=7.88 cfs 0.549 af

SubcatchmentS300: Runoff Area=72,287 sf 3.85% Impervious Runoff Depth>1.56"
Flow Length=310' Tc=16.9 min CN=60 Runoff=3.32 cfs 0.216 af

Pond P1: BIO Peak Elev=1,083.51' Storage=2,306 cf Inflow=3.66 cfs 0.165 af
Discarded=0.06 cfs 0.040 af Secondary=3.18 cfs 0.086 af Outflow=3.24 cfs 0.126 af

Pond P2: Peak Elev=1,081.59' Storage=199 cf Inflow=1.87 cfs 0.082 af
12.0" Round Culvert n=0.013 L=70.0' S=0.0050 '/' Outflow=1.70 cfs 0.082 af

Pond P3: Peak Elev=1,082.13' Storage=79 cf Inflow=2.34 cfs 0.104 af
12.0" Round Culvert n=0.013 L=67.0' S=0.0187 '/' Outflow=2.32 cfs 0.104 af

Link 1: Inflow=14.29 cfs 1.966 af
Primary=14.29 cfs 1.966 af

Link 2: Inflow=7.88 cfs 0.549 af
Primary=7.88 cfs 0.549 af

Link 3: Inflow=3.32 cfs 0.216 af
Primary=3.32 cfs 0.216 af

Total Runoff Area = 15.969 ac Runoff Volume = 2.810 af Average Runoff Depth = 2.11"
92.16% Pervious = 14.716 ac 7.84% Impervious = 1.253 ac

Summary for Subcatchment S100:

Runoff = 3.66 cfs @ 11.97 hrs, Volume= 0.165 af, Depth> 3.00"
Routed to Pond P1 : BIO

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
13,650	98	Paved parking, HSG D
15,067	58	Meadow, non-grazed, HSG B
28,717	77	Weighted Average
15,067		52.47% Pervious Area
13,650		47.53% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S101:

Runoff = 13.56 cfs @ 12.50 hrs, Volume= 1.694 af, Depth> 2.25"
Routed to Link 1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
18,153	98	Paved parking, HSG D
51,717	58	Meadow, non-grazed, HSG B
6,667	78	Meadow, non-grazed, HSG D
173,508	60	Woods, Fair, HSG B
62,617	79	Woods, Fair, HSG D
81,072	78	Row crops, straight row, Good, HSG B
393,734	69	Weighted Average
375,581		95.39% Pervious Area
18,153		4.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	100	0.0100	0.23		**Sheet Flow, SF - FARM** Cultivated: Residue<=20% n= 0.060 P2= 2.32"
3.8	205	0.0100	0.90		**Shallow Concentrated Flow, SCF - FARM** Cultivated Straight Rows Kv= 9.0 fps
23.9	600	0.0070	0.42		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
14.5	430	0.0050	0.49		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
49.5	1,335	Total			

Summary for Subcatchment S102:

Runoff = 1.87 cfs @ 11.98 hrs, Volume= 0.082 af, Depth> 2.21"
Routed to Pond P2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
4,663	98	Paved parking, HSG D
14,700	58	Meadow, non-grazed, HSG B
19,363	68	Weighted Average
14,700		75.92% Pervious Area
4,663		24.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S103:

Runoff = 2.34 cfs @ 11.97 hrs, Volume= 0.104 af, Depth> 2.55"
Routed to Pond P3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
6,064	98	Paved parking, HSG D
12,750	58	Meadow, non-grazed, HSG B
2,500	78	Meadow, non-grazed, HSG D
21,314	72	Weighted Average
15,250		71.55% Pervious Area
6,064		28.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry, DIRECT**

Summary for Subcatchment S200:

Runoff = 7.88 cfs @ 12.13 hrs, Volume= 0.549 af, Depth> 1.79"
Routed to Link 2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
9,254	98	Paved parking, HSG D
131,040	58	Meadow, non-grazed, HSG B
19,882	78	Meadow, non-grazed, HSG D
160,176	63	Weighted Average
150,922		94.22% Pervious Area
9,254		5.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	100	0.0250	0.16		**Sheet Flow, SF- GRASS** Grass: Short n= 0.150 P2= 2.32"
9.0	415	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
19.5	515	Total			

Summary for Subcatchment S300:

Runoff = 3.32 cfs @ 12.11 hrs, Volume= 0.216 af, Depth> 1.56"
Routed to Link 3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-YR Rainfall=5.73"

Area (sf)	CN	Description
2,782	98	Paved parking, HSG D
67,418	58	Meadow, non-grazed, HSG B
2,087	60	Woods, Fair, HSG B
72,287	60	Weighted Average
69,505		96.15% Pervious Area
2,782		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.3	100	0.0170	0.14		**Sheet Flow, SF - GRASS** Grass: Short n= 0.150 P2= 2.32"
4.6	210	0.0120	0.77		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
16.9	310	Total			

Summary for Pond P1: BIO

Inflow Area = 0.659 ac, 47.53% Impervious, Inflow Depth > 3.00" for 100-YR event
Inflow = 3.66 cfs @ 11.97 hrs, Volume= 0.165 af
Outflow = 3.24 cfs @ 12.02 hrs, Volume= 0.126 af, Atten= 11%, Lag= 2.9 min
Discarded = 0.06 cfs @ 12.02 hrs, Volume= 0.040 af
Secondary = 3.18 cfs @ 12.02 hrs, Volume= 0.086 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Peak Elev= 1,083.51' @ 12.02 hrs Surf.Area= 3,336 sf Storage= 2,306 cf

Plug-Flow detention time= 92.9 min calculated for 0.126 af (76% of inflow)
Center-of-Mass det. time= 31.8 min (812.2 - 780.4)

Volume	Invert	Avail.Storage	Storage Description
#1	1,080.25'	925 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 2,313 cf Overall x 40.0% Voids
#2	1,082.75'	2,743 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		3,668 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,080.25	925	125.0	0	0	925
1,082.75	925	125.0	2,313	2,313	1,238

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
1,082.75	925	125.0	0	0	925
1,083.00	1,740	465.0	328	328	16,888
1,084.00	3,160	480.0	2,415	2,743	18,111

Device	Routing	Invert	Outlet Devices
#1	Discarded	1,080.25'	**0.750 in/hr Exfiltration over Surface area**
#2	Secondary	1,083.25'	**10.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Discarded OutFlow Max=0.06 cfs @ 12.02 hrs HW=1,083.50' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.06 cfs)

Secondary OutFlow Max=2.97 cfs @ 12.02 hrs HW=1,083.50' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 2.97 cfs @ 1.20 fps)

Summary for Pond P2:

Inflow Area = 0.445 ac, 24.08% Impervious, Inflow Depth > 2.21" for 100-YR event
Inflow = 1.87 cfs @ 11.98 hrs, Volume= 0.082 af
Outflow = 1.70 cfs @ 12.01 hrs, Volume= 0.082 af, Atten= 9%, Lag= 1.8 min
Primary = 1.70 cfs @ 12.01 hrs, Volume= 0.082 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,081.59' @ 12.01 hrs Surf.Area= 492 sf Storage= 199 cf

Plug-Flow detention time= 1.6 min calculated for 0.082 af (100% of inflow)
Center-of-Mass det. time= 1.3 min (798.0 - 796.7)

Volume	Invert	Avail.Storage	Storage Description
#1	1,080.75'	454 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,080.75	1	0	0
1,081.00	130	16	16
1,082.00	745	438	454

Device	Routing	Invert	Outlet Devices
#1	Primary	1,080.75'	**12.0" Round Culvert** L= 70.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,080.75' / 1,080.40' S= 0.0050 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=1.68 cfs @ 12.01 hrs HW=1,081.58' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 1.68 cfs @ 3.27 fps)

Summary for Pond P3:

Inflow Area = 0.489 ac, 28.45% Impervious, Inflow Depth > 2.55" for 100-YR event
Inflow = 2.34 cfs @ 11.97 hrs, Volume= 0.104 af
Outflow = 2.32 cfs @ 11.99 hrs, Volume= 0.104 af, Atten= 1%, Lag= 0.8 min
Primary = 2.32 cfs @ 11.99 hrs, Volume= 0.104 af
Routed to Link 1 :

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 1,082.13' @ 11.99 hrs Surf.Area= 206 sf Storage= 79 cf

Plug-Flow detention time= 0.4 min calculated for 0.104 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (790.0 - 789.6)

Volume	Invert	Avail.Storage	Storage Description
#1	1,081.25'	432 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,081.25	1	0	0
1,082.00	150	57	57
1,083.00	600	375	432

Device	Routing	Invert	Outlet Devices
#1	Primary	1,081.25'	**12.0" Round Culvert** L= 67.0' CPP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 1,081.25' / 1,080.00' S= 0.0187 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf

Primary OutFlow Max=2.25 cfs @ 11.99 hrs HW=1,082.10' (Free Discharge)
↑—**1=Culvert** (Inlet Controls 2.25 cfs @ 3.15 fps)

Summary for Link 1:

Inflow Area = 10.632 ac, 9.18% Impervious, Inflow Depth > 2.22" for 100-YR event
Inflow = 14.29 cfs @ 12.49 hrs, Volume= 1.966 af
Primary = 14.29 cfs @ 12.49 hrs, Volume= 1.966 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 2:

Inflow Area = 3.677 ac, 5.78% Impervious, Inflow Depth > 1.79" for 100-YR event
Inflow = 7.88 cfs @ 12.13 hrs, Volume= 0.549 af
Primary = 7.88 cfs @ 12.13 hrs, Volume= 0.549 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link 3:

Inflow Area = 1.659 ac, 3.85% Impervious, Inflow Depth > 1.56" for 100-YR event
Inflow = 3.32 cfs @ 12.11 hrs, Volume= 0.216 af
Primary = 3.32 cfs @ 12.11 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

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 Tompkins County, New York

May 29, 2026

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).

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.

Contents

How Soil Surveys Are Made

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

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.

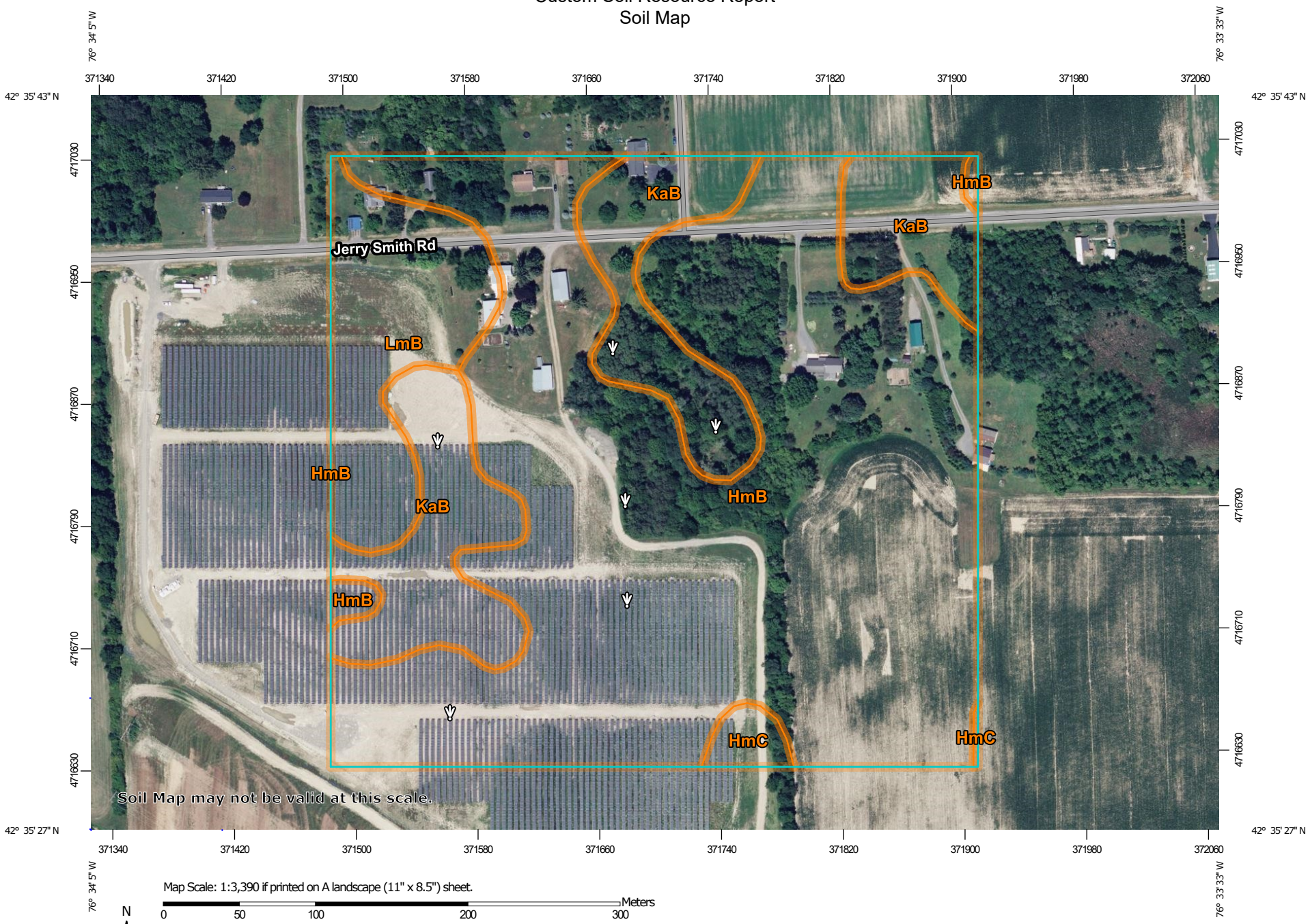
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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

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.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,390 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

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
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Tompkins County, New York
Survey Area Data: Version 21, Sep 2, 2025

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

Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020

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
HmB	Honeoye gravelly silt loam, 2 to 8 percent slopes	29.2	69.2%
HmC	Honeoye gravelly silt loam, 8 to 15 percent slopes	0.5	1.1%
KaB	Kendaia silt loam, 3 to 8 percent slopes	8.2	19.5%
LmB	Lima silt loam, 3 to 8 percent slopes	4.3	10.2%
Totals for Area of Interest		**42.2**	**100.0%**

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.

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.

Tompkins County, New York

HmB—Honeoye gravelly silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3p1
Landscape: Till plains
Elevation: 260 to 1,780 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Honeoye

Setting

Landscape: Till plains
Landform: Ridges, Till plains, Drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
E - 8 to 10 inches: silt loam
Bt/E - 10 to 14 inches: loam
Bt1 - 14 to 23 inches: loam
Bt2 - 23 to 29 inches: gravelly loam
C - 29 to 79 inches: gravelly loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B

Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Lima
Percent of map unit: 5 percent
Landscape: Till plains
Landform: Drumlins, Till plains, Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Lansing
Percent of map unit: 4 percent
Landscape: Till plains
Landform: Till plains, Hills, Drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton
Percent of map unit: 4 percent
Landscape: Till plains
Landform: Till plains, Ridges, Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Wassaic
Percent of map unit: 2 percent
Landscape: Till plains
Landform: Till plains, Ridges, Benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

HmC—Honeoye gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 2w3p3
Landscape: Till plains
Elevation: 380 to 1,840 feet

Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Honeoye

Setting

Landscape: Till plains
Landform: Ridges, Till plains, Drumlins
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: gravelly silt loam
E - 8 to 10 inches: silt loam
Bt/E - 10 to 14 inches: loam
Bt1 - 14 to 23 inches: loam
Bt2 - 23 to 29 inches: gravelly loam
C - 29 to 79 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Lima

Percent of map unit: 5 percent
Landscape: Till plains
Landform: Drumlins, Till plains, Ridges
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 4 percent
Landscape: Till plains
Landform: Till plains, Ridges, Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lansing

Percent of map unit: 4 percent
Landscape: Till plains
Landform: Till plains, Hills, Drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Wassaic

Percent of map unit: 2 percent
Landscape: Till plains
Landform: Till plains, Ridges, Benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

KaB—Kendaia silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w5j4
Landscape: Till plains
Elevation: 430 to 1,610 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Kendaia

Setting

Landscape: Till plains
Landform: Till plains, Ridges, Drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 8 inches: silt loam
Bw - 8 to 15 inches: silt loam
Bg - 15 to 20 inches: gravelly silt loam
BCg - 20 to 24 inches: gravelly loam
C - 24 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Lima

Percent of map unit: 7 percent
Landscape: Till plains
Landform: Till plains, Drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Lyons

Percent of map unit: 4 percent
Landscape: Till plains
Landform: Drainageways, Depressions
Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Churchville

Percent of map unit: 2 percent
Landscape: Till plains
Landform: Till plains, Proglacial lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope, rise, talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ovid

Percent of map unit: 2 percent
Landscape: Till plains
Landform: Till plains, Reworked lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

LmB—Lima silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3kk
Landscape: Till plains
Elevation: 380 to 1,680 feet
Mean annual precipitation: 31 to 57 inches
Mean annual air temperature: 41 to 50 degrees F
Frost-free period: 100 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Lima

Setting

Landscape: Till plains
Landform: Till plains, Ridges, Drumlins
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Calcareous loamy lodgment till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 9 inches: silt loam
Bt/E - 9 to 12 inches: loam
Bt1 - 12 to 16 inches: loam
Bt2 - 16 to 25 inches: gravelly loam
C - 25 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 7.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Honeoye

Percent of map unit: 6 percent
Landscape: Till plains
Landform: Ridges, Till plains, Drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 3 percent
Landscape: Till plains
Landform: Ridges, Drumlins, Till plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landscape: Till plains
Landform: Ridges, Till plains, Drumlins
Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cazenovia

Percent of map unit: 2 percent
Landscape: Till plains
Landform: Reworked lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Lyons

Percent of map unit: 1 percent
Landscape: Till plains
Landform: Drainageways, Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 03/11/2026 14:53:48 UTC
Project code: 2026-0061029
Project Name: Jerry Smith BESS

Federal Nexus: no
Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for 'Jerry Smith BESS'

Dear Bailey Godson:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on March 11, 2026, for 'Jerry Smith BESS' (here forward, Project). This project has been assigned Project Code 2026-0061029 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the **Northern Long-eared Bat and Tricolored Bat Range-wide Determination Key (Dkey)**, invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat and/or Tricolored Bat

Based upon your IPaC submission and a standing analysis, your project has reached the following effect determinations:

Species	Listing Status	Determination
Northern Long-eared Bat (*Myotis septentrionalis*)	Endangered	No effect

To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination key for the northern long-eared bat and tricolored bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Proposed Threatened

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

If there are no updates on listed species, no further consultation/coordination for this project is required with respect to the species covered by this key. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New York Ecological Services Field Office and reference Project Code 2026-0061029 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

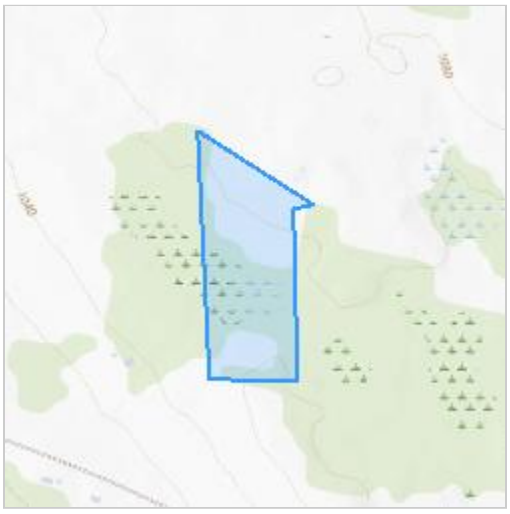
Jerry Smith BESS

2. Description

The following description was provided for the project 'Jerry Smith BESS':

> The client is proposing the construction of a Battery Energy Storage System (BESS) located off of Jerry Smith Road in the Town of Lansing, Tompkins County, NY. The project site will to limited to the northern half of the 14± acre property where active agriculture practices are currently occurring.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.58896325,-76.56704481962775,14z



DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the species covered by this determination key. Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of listed bats or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. Is the action area wholly within Zone 2 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

3. Does the action area intersect Zone 1 of the year-round active area for northern long-eared bat and/or tricolored bat?

   Automatically answered
   No

4. Does any component of the action involve leasing, construction or operation of wind turbines? Answer 'yes' if the activities considered are conducted with the intention of gathering survey information to inform the leasing, construction, or operation of wind turbines.

   No

5. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Note for projects in Pennsylvania: Projects requiring authorization under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act would be considered as having a federal nexus. Since the U.S. Army Corps of Engineers (Corps) has issued the Pennsylvania State Programmatic General Permit (PASPGP), which may be verified by the PA Department of Environmental Protection or certain Conservation Districts, the need to receive a Corps authorization to perform the work under the PASPGP serves as a federal nexus. As such, if proposing to use the PASPGP, you would answer ‘yes’ to this question.

   No

6. [Semantic] Is the action area located within 0.5 miles of a known bat hibernaculum or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your state wildlife agency.

   Automatically answered

   No

7. Does the action area contain any winter roosts or caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating bats?

   No

8. Will the action cause effects to a bridge?

   Note: Covered bridges should be considered as bridges in this question.

   No

9. Will the action result in effects to a culvert or tunnel at any time of year?

   No

10. Are trees present within 1000 feet of the action area?

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

11. Does the action include the intentional exclusion of bats from a building or building-like structure? **Note:** Exclusion is conducted to deny bats' entry or reentry into a building. To be effective and to avoid harming bats, it should be done according to established standards. If your action includes bat exclusion and you are unsure whether northern long-eared bats or tricolored bats are present, answer "Yes." Answer "No" if there are no signs of bat use in the building/structure. If unsure, contact your local Ecological Services Field Office to help assess whether northern long-eared bats or tricolored bats may be present. Contact a Nuisance Wildlife Control Operator (NWCO) for help in how to exclude bats from a structure safely without causing harm to the bats (to find a NWCO certified in bat standards, search the Internet using the search term "National Wildlife Control Operators Association bats"). Also see the White-Nose Syndrome Response Team's guide for bat control in structures.

    No

12. Does the action involve removal, modification, or maintenance of a human-made building-like structure (barn, house, or other building) **known or suspected to contain roosting bats?**

    No

13. Will the action cause construction of one or more new roads open to the public?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

14. Will the action include or cause any construction or other activity that is reasonably certain to increase average night-time traffic permanently or temporarily on one or more existing roads? **Note:** For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.). .

    No

15. Will the action include or cause any construction or other activity that is reasonably certain to increase the number of travel lanes on an existing thoroughfare?

    For federal actions, answer ‘yes’ when the construction or operation of these facilities is either (1) part of the federal action or (2) would not occur but for an action taken by a federal agency (federal permit, funding, etc.).

    No

16. Will the proposed Action involve the creation of a new water-borne contaminant source (e.g., leachate pond, pits containing chemicals that are not NSF/ANSI 60 compliant)?

    Note: For information regarding NSF/ANSI 60 please visit https://www.nsf.org/knowledge-library/nsf-ansi-standard-60-drinking-water-treatment-chemicals-health-effects

    No

17. Will the proposed action involve the creation of a new point source discharge from a facility other than a water treatment plant or storm water system?

    No

18. Will the proposed action involve blasting or drilling?

    No

19. Will the action involve military training (e.g., smoke operations, obscurant operations, exploding munitions, artillery fire, range use, helicopter or fixed wing aircraft use at night)?

    No

20. Will the proposed action involve the use of herbicides or pesticides (e.g., fungicides, insecticides, or rodenticides)?

    No

21. Will the action include or cause activities that are reasonably certain to cause chronic or intense nighttime noise (above current levels of ambient noise in the area) in suitable summer habitat for the northern long-eared bat or tricolored bat during the active season?

    Chronic noise is noise that is continuous or occurs repeatedly again and again for a long time. Sources of chronic or intense noise that could cause adverse effects to bats may include, but are not limited to: road traffic; trains; aircraft; industrial activities; gas compressor stations; loud music; crowds; oil and gas extraction; construction; and mining.

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

22. Does the action include, or is it reasonably certain to cause, the use of permanent or temporary artificial lighting within 1000 feet of suitable northern long-eared bat or tricolored bat roosting habitat?

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    No

23. Will the action include tree cutting or other means of knocking down or bringing down trees, tree topping, or tree trimming?

    No

24. Will the proposed action result in the use of prescribed fire?

    Note: If the prescribed fire action includes other activities than application of fire (e.g., tree cutting, fire line preparation) please consider impacts from those activities within the previous representative questions in the key. This set of questions only considers impacts from flame and smoke.

    No

25. Does the action area intersect the northern long-eared bat species list area?

    Automatically answered
    Yes

26. [Semantic] Is the action area located within 0.5 miles of radius of an entrance/opening to any known NLEB hibernacula or winter roost? Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

27. [Semantic] Is the action area located within 0.25 miles of a culvert that is known to be occupied by northern long-eared or tricolored bats? **Note:** The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

28. [Semantic] Is the action area located within 150 feet of a documented northern long-eared bat roost site?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.Have you contacted the appropriate agency to determine if your action is within 150 feet of any documented northern long-eared bat roosts?

    Note: A document with links to Natural Heritage Inventory databases and other state-specific sources of information on the locations of northern long-eared bat roosts is available here. Location information for northern long-eared bat roosts is generally kept in state natural heritage inventory databases – the availability of this data varies by state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited.

    Automatically answered
    No

29. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    If unsure, answer "Yes."

    Note: Additional information defining suitable summer habitat for the northern long-eared bat and tricolored bat can be found in Appendix A of the USFWS' Range-wide Indiana Bat and Northern long-eared bat Survey Guidelines at: https://www.fws.gov/media/range-wide-indiana-bat-and-northern-long-eared-bat-survey-guidelines.

    Yes

30. Has a presence/probable absence summer bat survey targeting the northern long-eared bat following the Service's Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines been conducted within the project area?

    No

31. Do you have any documents that you want to include with this submission?

    No

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Environmental Design Partnership, LLP (EDP)
Name: Bailey Godson
Address: 900 Route 146
City: Clifton Park
State: NY
Zip: 12065
Email bgodson@edpllp.com
Phone: 8382514798

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 05/06/2026 18:23:06 UTC
Project Code: 2026-0086469
Project Name: Jerry Smith BESS

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

PROJECT SUMMARY

Project Code: 2026-0086469
Project Name: Jerry Smith BESS
Project Type: Battery Energy Storage Systems
Project Description: The client is proposing the construction of a 5 Megawatt Battery Energy Storage System (BESS) south of Jerry Smith Road in the Town of Lansing, Tompkins County, NY. The project area consists of vacant woodlands located on a previously developed parcel of land (solar). The surrounding land use consists of agricultural land, industrial development, residential development, and vacant woodlands.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@42.5938683,-76.56366245682952,14z

Counties: Tompkins County, New York

ENDANGERED SPECIES ACT SPECIES

There is a total of 2 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. 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.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Environmental Design Partnership, LLP (EDP)
Name: Bailey Godson
Address: 900 Route 146
City: Clifton Park
State: NY
Zip: 12065
Email bgodson@edpllp.com
Phone: 8382514798

SECTION 7

Completed Inspection Reports