PRELIMINARY STORMWATER POLLUTION PREVENTION PLAN

Hoffman Falls Wind Project

Madison County, New York

MAY 28, 2024

PREPARED FOR:

Hoffman Falls Wind LLC

PREPARED BY:

Westwood

Stormwater Pollution Prevention Plan (SWPPP) Narrative

Hoffman Falls Wind Project

Madison County, New York

Prepared For:

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Project Number: R0042618.01
Date: May 28, 2024

Westwood

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1.0 Introduction and Purpose

This Stormwater Pollution Prevention Plan (SWPPP) is prepared in accordance with the New York State Operating Permit for the National Pollutant Discharge Elimination System (NPDES) regulations as established by the Clean Water Act and guided by the State of New York. The New York Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activity (GP) GP-0-20-001 (Expiration date: January 28, 2025) provides the framework of requirements for compliance to discharge stormwater from a construction site disturbing one (1) or more acres at a time. A copy of the GP is provided in Appendix A. The purpose of the SWPPP is to ensure the design, implementation, management, and maintenance of Best Management Practices (BMPs) in order to prevent or minimize sediment and other pollutants in stormwater discharges associated with the land disturbance activities; compliance with the New York Water Quality Standards; and compliance with the terms and conditions of the GP.

This SWPPP is for implementation by the Owner and Operator, as listed in Section 3.5 of this SWPPP, at the Hoffman Falls Wind Project ("Project"), with the project location as defined in Section 3.1 of this SWPPP. This report shall be on the site at all times during construction.

The following are outlined in this site specific SWPPP:

- Control measures for stormwater pollution prevention during each phase of construction,
- Control measures for stormwater pollution prevention after construction,
- Sources of stormwater and non-stormwater pollution, and
- Inspection and maintenance procedures.

2.0 SWPPP Certifications and Signatures

2.1 Qualified Professional Certification

All components of this SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), including the associated post-construction stormwater management practice component, were prepared by me or under my direct supervision in accordance with the GP.

Signature	Title	Date
Printed Name	Contact Number	Company

Engineer Stamp

2.2 Subcontractor Certification and Signatures

As a subcontractor, you are required to comply with the SWPPP for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer. Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the certification statement in Appendix G.

3.0 Site Information and Description

3.1 Site Location and Vicinity Map

The Hoffman Fall Wind Project Site ("Project Site") is proposed across approximately 13 square miles in Madison County, New York. The Project Site is located approximately 20 miles southeast of Syracuse, New York between the towns of Cazenovia and Morrisville. Refer to Appendix D of this SWPPP for the full vicinity map.

Table 1: Project Location

Latitude and Longitude Points (Decimal) #	
Latitude	42.948022
Longitude	-75.765833

3.2 Existing Conditions

The Project is on a localized high area that slopes in all directions. The northwestern portion and eastern-most portion of the Site drains northeast toward Oneida Creek. The western-most portion of the Site drains southwest to the Chittenango Creek. Most of the eastern portion of the Site drains southeast to the Chenango River. The overall Site receives minimal offsite flows. The Site also features some ponding in low-lying areas. In general, the Site has slopes between 3% and 10%, although there are some locations with slopes as low as <1% and as high as 25%

3.2.1 Non-vegetative Cover

Prior to construction, non-vegetative cover at the site included existing roadways, residences, and buildings used for agriculture.

3.2.2 Vegetative Cover

Prior to construction, approximately half the site area was used for agricultural production, while the remainder consists of deciduous forest and woody wetlands.

3.2.3 Land Use

Prior to construction the site area was primarily used for agriculture purposes.

A Phase I Environmental Site Assessment was prepared for the Site by Ambient Environmental with a report dated September 28, 2023. No recognized environmental conditions were found in the report.

3.3 Project Type and Proposed Conditions

The proposed wind energy facility will consist of turbines, turbine pads, access roads, and associated facilities. To prevent erosion and to maintain access during wet conditions, culvert or low water crossing (LWC) locations have been identified and sized. Please refer to the Civil Plans in Appendix E for the proposed project components and associated civil work.

3.3.1 Non-vegetative Cover

Following construction, non-vegetative cover will include gravel/aggregate base on access roads, around the turbine pedestals, and at the substation and operations and maintenance (O&M) facility. Additional non-vegetative cover includes the actual turbine pedestals and the O&M building.

3.3.2 Vegetative Cover

Following construction, temporarily disturbed areas will be revegetated with an approved seed mix. Please refer to Section 9.3 for additional information on potential seed mixes.

3.3.3 Land Use

Following construction, the site will be used as a wind energy generation facility.

3.4 Project Estimates

Table 2: Project Area Estimates

Project Area	Disturbed Area	Existing Impervious Area	Post-Construction Impervious Area
3896.6 Acres	302.0 Acres	54.40 Acres	82.2 Acres

Please refer to Appendix E for the engineering plan set for the project, which depict the tree clearing areas, areas of disturbance and non-disturbance, and existing site contours, water features, and vegetation.

3.5 Owner and Operator(s) Information

Owner Contact Information		Operator Contact Information	
Company:	Hoffman Falls Wind LLC	Company:	TBD
Contact Name:	Andy MacCallum	Contact Name:	TBD
Title:	President	Title:	TBD
Address:	90 State Street Albany, NY 12207	Address:	TBD
Contact Phone Number:	902-877-5622	Contact Phone Number:	TBD
Contact Email:	amaccallum@liberty-renewables.com	Contact Email:	TBD

3.5.1 The Owner or Operator (i.e. permittee) Responsibilities

The permittee responsibilities include.

- Developing a SWPPP prior to submittal of the Notice of Intent (NOI).
- Ensuring the Project specifications allow, or provide for the selection, design, installation, implementation, and maintenance of adequate BMPs in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (New York Standards and Specifications). Any deviations from the New York Standards and Specifications or alternative control devices should be explained in the SWPPP.
- Ensuring the provisions of the SWPPP are implemented from the commencement of construction activity until all areas of disturbance have achieved final stabilization and the Notice of Termination (NOT) has been submitted to DEC.
- Submitting a complete and accurate NOI. A copy of the NOI is provided in Appendix B of this SWPPP.
- Maintaining a copy of the GP, NOI, NOI acknowledgement letter, SWPPP, inspection reports, contractor certification statement(s), and other documentation needed to demonstrate eligibility with the GP at the construction site until all disturbed areas have achieved final stabilization and an NOT has been submitted to DEC. The documents shall be in a secure location and accessible to inspectors during normal business hours.
- Ensuring that construction activity will not disturb greater than 5 acres of soil at any one time without prior written authorization from DEC or, in areas under the jurisdiction of a regulated, traditional land use control MS4 (provided the regulated, traditional land use control MS4 is not the Owner or Operator of the construction activity). At a minimum, the Owner or Operator must comply with the following requirements to be authorized to disturb for than 5 acres of soil at any one time::
    - Ensuring a qualified trained inspector has performed at least two (2) site inspections in accordance with Part IV.C. of the GP every seven (7) calendar days

as long as greater than five (5) acres remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
    - In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures (in conformance with the New York Standards and Specifications) must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased.
    - A phasing plan has been prepared defining the maximum disturbed area per phase and showing required cut and fill activity.
    - Any additional state specific practices have been installed to protect water quality.
    - The above requirements have been included in the SWPPP.
- Keeping the SWPPP current so that it accurately documents the erosion and sediment control practices that are used or will be used during construction, and all post-construction stormwater management practices that will be constructed at the Project Area. At a minimum, the Owner or Operator shall amend the SWPPP, including construction drawings:
    - Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharges from the site;
    - Whenever there is a change in design, construction, or operation at the construction site that has or could have an effect on the discharge of pollutants;
    - To address issues or deficiencies identified during an inspection by the Qualified Inspector, the Department or other regulatory authority; and
    - To document the final construction conditions.
- Ensuring other contractors affected by modifications in Project specifications are notified in a timely manner to modify their BMPs as necessary for SWPPP compliance, obtaining a contractor certification statement, and making a copy of the SWPPP available.

4.0 Receiving Waters

The table below summarizes the receiving waters from the site. Where necessary, the receiving waters has been designated immediate (for the first surface water receiving drainage from the site) and ultimate (for the surface water receiving runoff from site after the immediate receiving waters).

The Project area generally slopes to the northeast in the northern portion and south in the southern portion. The modeled watershed area features many moderately-sized perennial streams that exit the watershed area at varying locations. Oneida Creek is in the northern portion of the modeled watershed area and flows to the east before meeting Blue Creek in the northeast. Blue Creek is located east of the Site and flows south to north, exiting the modeled watershed area in the northeast after joining Oneida Creek. The southeastern portion of the modeled watershed area features the Chenango River and its tributaries: the Electric Light Stream and Callahan Brook. The Chenango River flows west to east and exits the modeled watershed area in the southeast. The western portion of the modeled watershed area features the headwaters of Canaseraga Creek, Munger Brook, and Chittenango Creek that flow north, west, and south, respectively.

Refer to Appendix D for drainage maps, which depict on-site and adjacent surface waters, wetlands, drainage basin boundaries, and discharge locations.

Table 3: Receiving Waters

Name of Receiving Waterbody	Immediate (I) or Ultimate (U)	Type (wetland, lake, stream, ditch)	Impaired? Y/N	Approved TMDL?	Is the Waterbody On or Off Site	If Wetland, is it in State or Federal Jurisdiction?
Morrisville Swamp	I	Swamp	N	N	On	NA
Callahan Brook	I	Brook	N	N	On	NA
Blue Creek	U	Creek	N	N	Off	NA
Oneida Creek	U	Creek	N	N	Off	NA
Unnamed Tributaries to Blue Creek	U	Creek	N	N	On	NA
Unnamed Tributaries to Oneida Creek	I	Creek	N	N	On	NA
Chittenango Creek	I	Creek	N	N	Off	NA
Unnamed Tributaries to Callahan Brook	I	Creek	N	N	On	NA
Unnamed Tributaries to Chittenango Creek	I	Brook	N	N	On	NA
Unnamed Tributaries to Morrisville Swamp	I	Creek	N	N	On	NA

4.1 Impaired and/or TMDL Waters

There are no impaired waterbodies included within the Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy which receive stormwater discharge from the site disturbed area according to the DEC website: https://gisservices.dec.ny.gov/gis/stormwater/ and (accessed 10/20/2023).

4.2 404/401 Permit Applicability

The Project will involve the placement of material and fill into jurisdictional waters of the United State (WOTUS). Therefore, Section 401 and 404 permit compliance will be required.

5.0 Soil Information

The majority of soils in the project area are listed as moderate B/D for erosivity, with severe erodibility associated with Honeoye silt loam, 15-25% slopes accounting for 2.6% of the project overall area.

Soil information and soil maps from the following web site (accessed 10/20/2023):

http://websoilsurvey.nrcs.usda.gov/app/

Note: the tables below include soils making up at least 2% of the site area. An inclusive list of soils can be reviewed in Appendix C.

Table 4: Soil K Factors and Erosivity Hazards

Soil Name / Type	Hydrologic Soil Group	K Factor	Erosivity Hazard				Reason(s) for Erosivity Rating
			Slight	Moderate	Severe	Very Severe	
Appleton loam, 3-8% slopes	B/D	0.28		X			Surface kw times slope times R index (0.43)
Conesus silt loam, 3-8% slopes	B/D	0.32		X			Surface kw times slope times R index (0.12)
Honeoye silt loam, 3-8% slopes	B	0.37		X			Surface kw times slope times R index (0.36)
Honeoye silt loam, 8-15% slopes	B	0.37		X			Surface kw times slope times R index (0.64)
Honeoye silt loam, 15-25% slopes	B	0.37			X		Surface kw times slope times R index (0.76)
Lansing gravelly silt loam, 3-8% slopes	B	0.32	X				Low slope and K factor
Lansing gravelly silt loam, 8-15% slopes	B	0.32		X			Surface kw times slope times R index (0.56)
Lansing gravelly silt loam, 15-25% slopes	B	0.32		X			Surface kw times slope times R index (0.69)
Lima silt loam, 3-8% slopes	B/D	0.32		X			Surface kw times slope times R index (0.22)
Mardin channery silt loam, 3-8% slopes	D	0.32	X				Low slope and K factor
Mardin channery silt loam, 8-15% slopes	D	0.32		X			Surface kw times slope times R index (0.62)
Volusia channery silt loam, 3-8% slopes	D	0.37		X			Surface kw times slope times R index (0.42)
Volusia channery silt loam, 8-15% slopes	D	0.37		X			Surface kw times slope times R index (0.62)
Wayland soils complex, 0-3% slopes, frequently flooded	B/D	0.32	X				Low slope and K factor

Table 5: Soil Particle Sizes

Soil Type	% Sand	% Clay	% Silt	% Site Area
Appleton loam, 3-8% slopes	41.0	42.0	17.0	2.7
Conesus silt loam, 3-8% slopes	26.0	55.0	19.0	2.4
Honeoye silt loam, 3-8% slopes	26.0	55.0	19.0	4.0
Honeoye silt loam, 8-15% slopes	26.0	55.0	19.0	6.9
Honeoye silt loam, 15-25% slopes	26.0	55.0	19.0	2.4
Lansing gravelly silt loam, 3-8% slopes	26.0	55.0	19.0	8.8
Lansing gravelly silt loam, 8-15% slopes	26.0	55.0	19.0	16.6
Lansing gravelly silt loam, 15-25% slopes	26.0	55.0	19.0	3.4
Lima silt loam, 3-8% slopes	26.0	55.0	19.0	2.1
Mardin channery silt loam, 3-8% slopes	26.0	61.0	14.0	5.4
Mardin channery silt loam, 8-15% slopes	26.0	61.0	14.0	10.6
Volusia channery silt loam, 3-8% slopes	22.0	60.0	18.0	3.3
Volusia channery silt loam, 8-15% slopes	22.0	60.0	18.0	2.3
Wayland soils complex, 0-3% slopes, frequently flooded	10.0	68.0	22.0	2.4

6.0 Construction Information

6.1 Construction Overview

Construction activity will include installation of up to 24 wind turbines. Construction of the wind turbines requires, but is not limited to, the installation of one (1) substation, one (1) point-of-interconnection switchyard, one (1) O&M facility, one (1) meteorological tower, one (1) ADLS tower, 26 acres of temporary laydown and one (1) temporary concrete batch plant, underground electrical collection, and 16-foot wide gravel access roads with temporary 36 foot wide disturbance due to temporary compacted shoulders (10 feet on each side) for truck transport of materials and crane walking paths. Minor construction activity will be necessary for some existing road and radii. The crane paths are specifically designed to follow access roads to limit disturbance of streams and other sensitive areas such as steep slopes. All temporary crane paths will be restored to preconstruction conditions after the use of the paths. The SWPPP shall be amended to show locations and disturbance areas as necessary should locations change during construction.

6.2 Project Activity Description

NOTE: All sensitive areas shall be marked prior to start of earth disturbance activities. If any subsurface drainage features (tile drains, culverts, etc.) and/or surface drainage features (ditches, etc.) are altered during construction, they will be restored to pre-construction conditions and drainage patterns. Restoration work will be coordinated with the landowner.

1. Access road construction activity and phasing:
    a. Install perimeter sediment controls and strip and stockpile topsoil along one or both sides of the road in a linear berm.
    b. Apply temporary stabilization of ditches (erosion control blanket or turf reinforcement mat).
    c. Compact subgrade.
    d. Place geotextile underlayment and apply gravel base.
    e. Decompact soils following turbine erection.
    f. Apply topsoil for non-aggregate areas during final grade.
    g. Apply final gravel cap to road.
    h. Maintain pre-construction drainage patterns and runoff.
    i. If any subsurface and/or surface drainage features are altered during construction, restore to pre-construction condition and drainage patterns.
    j. Return disturbed areas not part of the final road to pre-construction condition.

2. Turning radii and temporary intersections construction activity and phasing:
    a. Strip and stockpile topsoil.
    b. Install culvert as called for in plan.
    c. Apply perimeter sediment controls and temporary stabilization of ditch and banks of road (erosion control blanket or turf reinforcement mat).
    d. Fill with native material to grade.
    e. Apply gravel base.

f. Remove turning radii improvements following turbine component delivery or turbine erection by removing gravel and fill soils.
g. Remove any extra culvert lengths.
h. Reapply topsoil and final grade.
i. Apply seed and erosion control blanket, TRM, or mulch cover for restoration to pre-construction condition.

3. Turbine Area construction activity and phasing:

a. Install silt fence at the perimeter as necessary and as shown on the plans.
b. Strip and segregate topsoil; apply topsoil in a soil berm around the down grade perimeter of the turbine pad area.
c. Excavate areas required for the foundation and stockpile the subsoils.
d. Dewater accumulated ground water or stormwater via pump as necessary, dewatering bag and ensure discharged water does not contribute sedimentation to receiving waters.
e. Provide temporary stabilization measures (mulch, erosion control blanket and turf re-enforcement mat).
f. Temporarily cover the stockpiles with hydromulch or other temporary cover BMP for water and wind erosion protection.
g. Construct concrete washout area or use a common concrete washout during concrete work of mud mat and foundation work.
h. Backfill subsoils and topsoil with a rough grade.
i. Grade crane pad turbine erection.
j. Erect the turbine.
k. Return disturbed areas not part of the final road to pre-construction condition.

4. Electrical Underground construction activity and phasing:

a. Open trench or plow collection line across fields; if drain tile is encountered, locate and repair/restore as necessary.
b. Segregate topsoil from subsoils unless otherwise agreed upon by the landowner.
c. If required, dewater accumulated ground water or stormwater via pump and dewatering bag, and ensure discharged water does not contribute sedimentation to receiving waters.
d. If open trenching or plowing through a waterway or conveyance, install perimeter control such as logs, silt fence or rock check.
e. Apply seed and erosion control blanket or mulch to restore grass waterway to pre-construction condition.

5. Horizontal directional drilling and jack boring:

a. Call 811 to verify dig location for safety compliance.
b. Generate traffic control plan, flagging operations and confirm points of entry and egress.

c. Contractor should submit an accidental release/frac out plan to site safety manager for review to include all SDS information and excess drilling fluid/ contaminated material disposal.
d. Walk area to verify bore entry and exit points.
e. Contractor to verify all soil conditions and regulations pertaining to waters of the state, apply all mitigation measures i.e. buffer zones etc.
f. Install silt fence and other sediment controls as necessary along downgradient perimeter as detailed in the plans.
g. Implement track out controls and mitigation as needed throughout boring operations to maintain pedestrian right of ways, if applicable.
h. Verify spill prevention control and countermeasures prior to commencement of boring operations.
i. Remove topsoil layer, stockpile, and stabilize soils in accordance with project plan details within secured area.
j. Excavate bore pit, stockpile subsoils, and stabilize in accordance with project plan details within secured area separated from topsoil pile.
k. Utilize drip trays under drilling equipment.
l. Install delineations/barricades at the end of each shift to prevent pedestrian and animal access.
m. Upon completion of bore, stabilize the area as shown on the project plans.
n. Perform general housekeeping to remove all excess materials and refuse.
o. BMPs should be inspected, maintained, and remain in place until final stabilization is achieved.
p. Upon achieving final stabilization, remove all temporary BMPs.

6. Laydown Yard construction activity and phasing:

a. Provide stable accesses to area; install culverts as necessary and according to the plans for the accesses.
b. Install silt fence and other sediment controls as necessary and as detailed in the plan.
c. Strip and stockpile topsoil around the up-gradient perimeter of the lay down yard for a diversion of water or downgrade perimeter of the yard for runoff control.
d. Apply rock base to designed thickness.
e. Temporarily cover the stockpiles with hydromulch or wood after seeding with temporary seed mix.
f. Provide necessary secondary containment, secure storage and maintenance activities during operation.
g. Remove rock; decompact and reapply topsoil to the area after the lay down yard is no longer needed.
h. Return disturbed areas to preconstruction condition which may include applying seed and mulch cover for restoration.

7. Batch Plant construction activity and phasing:

    a. Provide stable accesses to area; install culverts as necessary and according to the plans for the accesses.
    b. Install silt fence and other sediment controls as necessary and as detailed in the plan.
    c. Strip and stockpile topsoil around the up-gradient perimeter of the plant yard for a diversion of water or downgrade perimeter of the yard for runoff control.
    d. Apply rock base to designed thickness.
    e. Temporarily cover the stockpiles with hydromulch or wood mulch after seeding with temporary seed mix.
    f. Provide necessary secondary containment, secure storage and maintenance activities during operation.
    g. Provide a designated and contained concrete washout area as per detail and SWPPP specifications; properly dispose of washout water or recycle as needed.
    h. Sample all discharges from concrete batch plant area.
    i. Provide dust control and material control as required.
    j. Remove rock; decompact and reapply topsoil to the area after the batch plant is no longer needed.
    k. Return disturbed areas to preconstruction condition which may include applying seed and mulch cover for restoration.

8. Met Tower / ADLS construction activity and phasing:

    a. Strip and stockpile topsoil along one or both sides of the access road and tower area in a linear berm.
    b. Apply perimeter sediment controls.
    c. Compact subgrade.
    d. Apply gravel base to tower access.
    e. Following tower erection the soils should be decompacted.
    f. Apply topsoil during final grade.
    g. Apply final gravel cap to tower access.
    h. Maintain pre-construction drainage patterns and runoff.
    i. Return disturbed areas not part of the final road or tower area by applying seed and mulch cover for restoration to pre-construction condition.

9. Collector Substation / Switch Yard construction activity and phasing:

    a. Provide stable accesses to area; install culverts as necessary and according to the plans for the accesses.
    b. Install silt fence and other sediment controls as necessary and as detailed in the plan.
    c. Strip and stockpile topsoil around the up-gradient perimeter for a diversion of water or downgrade perimeter of the substation for runoff control.
    d. Apply rock base to designed thickness.
    e. Temporarily cover the stockpiles with hydromulch or wood mulch after seeding with temporary seed mix.
    f. Concrete washout area needed prior to concrete work.

g. Construction of electrical components and fencing.
h. Return disturbed areas not part of the final gravel pad to agricultural condition or apply seed and mulch cover for restoration to preconstruction condition.

10. Operation and Maintenance Facility construction activity and phasing:

a. Provide stable accesses to area; install culverts as necessary and according to the plans for the accesses.
b. Install silt fence and other sediment controls as necessary and as detailed in the plan.
c. Strip and stockpile topsoil around the up-gradient perimeter for a diversion of water or downgradient perimeter of the area for runoff control.
d. Temporarily cover the stockpiles with hydromulch or straw mulch after seeding with temporary seed mix.
e. Install concrete washout area prior to concrete work.
f. Concrete work and building construction.
g. Apply rock base to designed thickness.
h. Apply rock base for parking areas as designed.
i. Provide mulch and seed or blanket and seed following final grade.

6.3 Construction Activity Sequence and Estimated Dates

Table 6: Project Schedule

Activity	Start Date	End Date
Overall Project	09/01/2025	12/01/2026
Installation of Stormwater Controls / BMPs	TBD	TBD
Temporary Laydown / Staging and Batch Plant	TBD	TBD
Grading Activity	TBD	TBD
Access Roads	TBD	TBD
Turbine Pads / Turbine Erection	TBD	TBD
Underground Collection (Electrical)	TBD	TBD
Crane Walk Paths	TBD	TBD
Meteorological Towers	TBD	TBD
Interconnect / Substation	TBD	TBD
Overhead Collection / Electrical	TBD	TBD

Erosion/sedimentation control BMPs are installed prior to or concurrent with disturbance activities. BMPs will be installed and maintained throughout the project as needed. First, laydown areas will be graded and stabilized with aggregate base. Excavations and foundations will then begin. Roads and turning radius will be graded and constructed. Underground collections will be installed. Crane paths and turbine erection will follow. Safety and site cleanliness will be emphasized through the entirety of the project, while site cleanup and restoration of disturbances will be ensured once construction is complete.

6.4 Stormwater Team and Project Contacts

Table 7: Stormwater Team and Project Contacts

Company*	Name or Position	Responsibility	Contact Number
Hoffman Falls Wind LLC	Andy MacCallum	Site Development	TBD
TBD	TBD	Tree Clearing	TBD
TBD	TBD	Temporary Laydown / Staging and Batch Plant	TBD
TBD	TBD	Access Roads	TBD
TBD	TBD	Turbine Pads / Turbine Erection	TBD
TBD	TBD	Underground Collection and Directional Boring (Electrical)	TBD
TBD	TBD	Meteorological /ADLS Towers	TBD
TBD	TBD	Interconnect / Substation	TBD
TBD	TBD	Operation and Maintenance Facility	TBD
TBD	TBD	Project Environmental Contact	TBD
TBD	TBD	Routine SWPPP Inspections	TBD
Westwood Surveying and Engineering, P.C.	Aaron Mlynek, CPESC	SWPPP development	952-697-5710
TBD	TBD	Restoration	TBD
TBD	TBD	BMP installation	TBD
TBD	TBD	BMP Maintenance	TBD

***All contractors and subcontractors identified above should sign a copy of the Certification Statement in Appendix G.**

The owner or operator shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the trained contractor. The owner or operator shall ensure that at least one trained contractor is on site daily when soil disturbance activities are being performed.

7.0 Additional Site or Project Considerations

7.1 Chemical Treatments

No polymer or other chemicals may be used without written approval from the DEC.

At the time of SWPPP completion the use of chemical additives or polymers for purposes of sediment flocculation are not anticipated for this project. If, during construction, flocculation treatments become needed based on construction sequencing, construction methods or weather conditions the following table shall be updated for documentation and written approval from DEC shall be attached to the SWPPP. Additionally, the plan sets shall be updated to reflect the locations of flocculation use. Document the changes as an amendment in this narrative.

Table 8: Flocculation Plan Summary

Flocculation Chemical	Application Location	Primary Soil Types	Settling BMPs Used	Application Method	Receiving Water	Mfr Dosing Rate

7.2 Endangered or Threatened Species

Potential endangered and threated species within the project area were reviewed and summarized for the site by EDR. The results of these surveys were reviewed during preparation of this SWPPP, and any recommendations were considered. Construction activities, including implementation of stormwater control measures, are not anticipated to affect identified species of concern.

If relevant to stormwater BMP design, implementation, inspection, or maintenance, the reports summarizing findings for endangered and threatened species may be included in Appendix H.

7.3 Cultural Resources

Archaeological and cultural resources surveys were completed for the site by EDR. The results of these surveys were reviewed during preparation of this SWPPP, and avoidance areas were incorporated into the project design. Construction activities, including implementation of stormwater control measures, will not take place within the avoidance areas.

If relevant to stormwater BMP design, implementation, inspection, or maintenance, the reports summarizing findings for cultural resources may be included in Appendix H.

7.4 Invasive Species Control Plan

Construction activities will result in soil disturbance which has the potential to spread or introduce invasive species to the Project Area. An Invasive Species Management and Control Plan (ISMCP) will be developed to prevent the spread of invasive species throughout the Project Area. The ISMCP would include the proposed control procedures for current and introduced invasive populations, locating and identification of target species, construction equipment and material

inspection protocols, equipment cleaning operations, invasive monitoring, and Project Area restoration activities.

Contractors should be cognizant not to transport soils off site due to the potential spread of invasive species. Spoil placement from excavations should be discussed with the Qualified SWPPP Inspector/Environmental Monitor during the pre-construction look ahead to avoid the potential spread of invasive species, and wetland fills. Excavated soils in wetlands are required to be kept on tarps or have a barrier. The contractor shall review and familiarize oneself with the ISMCP prior to construction to ensure their activities comply with the best management practices (BMPs) outlined in the ISMCP. Refer to Section 8 and Appendix H of the Tree Clearing and Grading Filing for additional ISMCP information.

Post-construction monitoring for invasive will be conducted over a period of at least five years following the completion of construction and restoration activities.

8.0 Stormwater Management

8.1 Temporary Practices

It is not anticipated that temporary stormwater management practices, such as sediment basins, will be required during construction. Please note that all contiguous disturbances draining to a common point should be less than 5 acres at any given time to avoid the need for temporary practices. For larger disturbed areas, such as the laydown yards or batch plant, stabilization of exposed areas with aggregate shall be staged so that total contiguous exposed areas are under the 5-acre threshold.

8.1.1 Calculations

Calculations are not applicable to this project as there are no temporary stormwater management practices requiring calculations. If temporary practices are required as part of the project, this section will be updated to summarize the calculations used to develop those practices.

8.2 Permanent Practices

The New York State Department of Environmental Conservation, Division of Water (DOW) guidance was used for finding the required water quality volume for the site. This project meets the requirements in the document with the exception of Item 5, there is proposed impervious on the site. These impervious areas will need to be treated per the New York water quality equation.

In accordance with Part I.C.2 of the GP, the post-construction stormwater management practices proposed for the project meet the sizing Criteria for New Development and are in conformance with the New York State Stormwater Management Design Manual, dated January 2015.

The 90*th* percentile rainfall event for the project site is 1.0 inches. The New York water quality equation was used to calculate the required water quality volume (WQv) for the proposed facilities. The channel protection volume (CPv) is based off the 1-year 24-hour runoff and is required to be detained in addition to the WQv. Table below has summarized the required volumes for each permanent facility.

Detention Basin Location	Provided Storage (af)	Water Quality Volume (af)	Channel Protection Volume (af)	Total Required Volume (af)
Substation	0.53	0.17	0.36	0.53
O&M Pad	0.12	0.04	0.07	0.11
Roadside Basin	0.35	0.04	0.07	0.11

8.2.1 Calculations

At the time of this SWPPP development there are permanent stormwater practices anticipated as there is an increase of one acre of new impervious surface for the project activity.

Three (3) detention basins are proposed to manage impervious surface runoff associated with the Substation, O&M Facility, and a section of road that does not have sufficient space for a filtration

basin. The Detention Basins will be implemented after the facilities are constructed to permanent conditions.

Refer to the hydrological memorandum prepared by Westwood Surveying and Engineering, P.C., dated 01/31/24 in Appendix I.

8.3 Post Construction Operation and Maintenance Procedures

Required Water Quality Treatment Summary

The owner or operator of a construction activity that requires post-construction stormwater management practices must select, design, install, and maintain the practices to meet the performance criteria in the New York State Stormwater Management Design Manual, dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices (SMPs) are not designed in conformance with the performance criteria in the Design Manual, the owner or operator must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is equivalent to the technical standard.

The following person, company or entity is responsible for the long-term operation and maintenance of the permanent stormwater facilities for the project.

Entity or Organization: ____TBD_____

Name: ____TBD _____

Street address: ____TBD _____

Email: _____ TBD _____

In accordance with the SPDES General Permit, the SWPPP shall include a maintenance schedule to achieve continuous and effective operation of each post-construction erosion and sediment control practice and stormwater control practice. The Owner/Operator shall at all times properly operate and maintain stormwater controls. Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures as well as operation and maintenance of all facilities, systems of treatment, systems of control, and related appurtenances that were installed as a requirement of the SWPPP. The following procedures, which include the maintenance requirements found in the New York State Stormwater Management Design Manual (SMDM) for the proposed facilities, constitute the post-construction operation and maintenance plan for the facility:

1. Inspect the proposed erosion and sediment control practices at the end of each spring and during dry times of the year, as summarized below:

- Vegetation- Observe areas for bare spots, washouts, and healthy growth. Apply topsoil, seed, and mulch to areas, as necessary. Water as required to reestablish vegetation as quickly as possible. In highly erodible areas, install sod or an approved energy dissipating device until re-establishment is achieved.
- Plantings- Observe for weak and unhealthy species. Prune and replace as necessary.
- Mulch- Observe areas for bare and thin spots. Re-apply mulch, as necessary, to obtain a minimum depth of 4 inches over the entire area.
- Consistent mowing and monitoring should control any unwanted vegetation such as trees and woody shrubs on embankments or the floor of the basin.
- Grass Clippings should be gathered and removed or directed away from the basin to minimize clogging of the pipe.
- Litter and debris should be removed prior to mowing.

2. Inspect the proposed stormwater control practices at least once per month during the spring, summer, and fall and after each 6-inch snow-melt event, as summarized in Sections 8.3.1 and 8.3.2 below.

8.3.1 Pond/Basins

- Inspect the proposed stormwater control practices as indicated in the Operation, Maintenance and Management Inspection Checklist included as part of Appendix F.
- Inspect for breaches and bare spots and repair as necessary.
- Remove built-up sediment prior to it exceeding a depth greater than 6 inches and dispose in accordance with all applicable waste disposal regulations.
- Limit vegetation growth to a maximum height of 18 inches.
- Remove all trash and debris as necessary and dispose in accordance with all applicable regulations.
- Note that these devices can be used for snow storage.

8.3.2 Inspection Frequency

Inspections should occur monthly for the first three months after construction is completed and the coverage under the GP is terminated. After three monthly inspections, the subsequent inspections should be completed annually. It is recommended to perform the annual inspection during late spring (Month of May or June). Additionally, inspections should be performed after large rain events to observe any deficiencies or needed improvements of the basin.

Operation, maintenance, and management reports should be made by the owner/operator after each inspection and filed with the SWPPP. Copies of an example report form which could be used for the proposed practices are included in Appendix F.

Note that this plan shall be updated, as necessary, to include all permanent stormwater management structures listed on the NOT and that the plan shall include the operation and maintenance procedures necessary for the structures to function as designed after final stabilization, as described in the GP.

9.0 Temporary and Permanent BMPS

9.1 Soil Management and Compaction Minimization

After clearing and grubbing, the operator(s) should strip and stockpile topsoil material for reapplication on all future permanent pervious surface areas. During development, grading and utility construction the subsoils will be compacted as necessary for construction using typical excavation and backfill techniques. During final grade, reapplication of the preserved topsoil should be completed by a wide-pad dozer and other equipment to minimize compaction of the topsoil material. The operator(s) should restrict vehicle and equipment use to avoid soil compaction where feasible; or techniques such as ripping the soil for decompaction should be completed following topsoil placement and prior to reseeding or other restoration activity. Additional deep ripping and decompaction information can be referenced in Appendix E in the "Deep Ripping and Decompaction" guidance dated April 2008 (as updated) drafted by New York State Department of Environmental Conservation.

9.2 Natural Buffers and No Soil Disturbance Areas

9.2.1 Natural Buffers

An undisturbed buffer zone should be preserved for site perimeters or around surface waters contained within the site areas to the extent practicable. The use of linear sediment controls will be installed upgradient to provide sediment control and delineate the buffer. Refer to the site erosion and sediment control plans for the location of the buffer. Typical buffer widths are summarized below in the table. The following activities are prohibited from taking place within the buffer area:

- Placing stockpiles and/or sediment basins;
- Disturbing vegetation;
- Placing construction material; and
- Storing gas, oils, and other potential polluting material.

Table 9: Buffer Widths

Land Slopes (%)	Minimum Filter Strip Width (Feet)
Less than or equal to 10	50
20	60
30	85
40	105
50	125
60	145
70	165

9.2.2 No Soil Disturbance Areas

Environmentally Sensitive Areas are identified in the site plans. No ground disturbing activities (e.g., grading, excavation, grubbing, or incidental disturbance from vehicle traffic, etc) are allowed in these areas.

9.3 Erosion Prevention Practices

The following controls are anticipated to minimize soil loss from the construction site area. The controls should help to minimize soil from being transported from water and wind as well as aide in establishment of temporary and permanent vegetation. Prior to grading and during clearing and grubbing, the areas of vegetation preservation, buffers and other areas of no-disturbance should be flagged, staked or otherwise delineated.

9.3.1 Soil Stabilization Timing

Soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) /seven (7) days from the date the current soil disturbance activity ceased.

Table 10: Erosion Controls

Potential BMPs	Construction Phase or Activity								Application Notes
	Temp Laydown/ Batch Plant	Access Roads	Turbine Pads / Erection	UG Collection	Temp Crane Paths	Met Towers	Collector Substation	O&M Facility	
Construction Phasing	T	T	T	T	T	T	T	T	Minimize soil disturbance, as feasible, per phase. Stake/flag areas that are to be left undisturbed.
Protecting Vegetation (buffers)	P	P	P	P	P	P	P	P	
Surface Roughing	T	T	T	T	T	T	T	T	Use tracked equipment perpendicular to contour on steep slopes for temp/short term erosion control.
Mulching	T	T	T	T	T	T	T	T	Apply at two tons / acre. Crimp or otherwise secure to soil. Weed Free mulch should be used.
Anchored Stabilization Matting	T	T	T	T	T	T	T	T	Blanket material and netting shall be adequate for slope steepness as well as velocity and shear stress anticipated for concentrated flow areas. Install per manufacturer's recommendations.
Serrated Cut Slope	P	P	P	P	P	P	P	P	See civil plan set details
Hydroseed	T	T	T	T	T	T	T	T	Apply at a rate recommended from the material or product supplier for the specific application from two directions to prevent shadowing. Could use in lieu of mulch.

Temporary Seed Mix	T	T	T	T	T	T	T	T	Application Rate = See below	Prepare soil prior to seeding. Broadcast and rake seed into soil prior to mulch or blanket.
Permanent Seed Mix	P	P	P	P	P	P	P	P	Application Rate = See below	
Topsoiling	P	P	P	P	P	P	P	P		
Dust Control	T	T	T	T	T	T	T	T		

T= Temporary BMPs which will be removed following construction completion and final stabilization.

P= Permanent BMPs which will provide vegetative, non-vegetative stabilization or will not be removed following completion of construction.

For temporary and permanent vegetation of the site, the following approved General Seed Mix from the New York Standards and Specifications may be used:

Seed Mixture	Variety	Rate in lbs/acre (PLS)	Rate in lbs/1,000 ft²
Mix #1			
Creeping red fescue	Ensylva, Penlawn, Boreal	10	0.25
Perennial ryegrass	Pennfine, Linn	10	0.25
*This mix is used extensively for shaded areas.			
Mix #6			
Creeping red fescue	Ensylva, Penlawn, Boreal	20	0.45
Chewings Fescue	Common	20	0.45
Perennial ryegrass	Pennfine, Linn	5	0.10
Red Clover	Common	10	0.45
*General purpose erosion control mix. Not to be used for a turf planning or playgrounds.			

Alternative seed mixes may be selected for specific site features for the New York Standards and Specifications, pages 4.42-4.47.

9.4 Soil Restoration Practices

Following construction activities, disturbed soils will be restored in accordance with Table 4.6 of the New York Standards and Specifications, shown below.

Table 4.6
Soil Restoration Requirements

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
No soil disturbance	Restoration not permitted		Preservation of Natural Features
Minimal soil disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped only - no change in grade	HSG A&B	HSG C&D	Protect area from any ongoing construction activities.
	Apply 6 inches of topsoil	Aerate* and apply 6 inches of topsoil	
Areas of cut or fill	HSG A&B	HSG C&D	
	Aerate* and apply 6 inches of topsoil	Apply full Soil Restoration**	
Heavy traffic areas on site (especially in a zone 5-25 feet around buildings but not within a 5 foot perimeter around foundation walls)	Apply full Soil Restoration (decompaction and compost enhancement)		
Areas where Runoff Reduction and/or Infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices.		Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities construct a single phase operation fence area
Redevelopment projects	Soil Restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious area.		

* Aeration includes the use of machines such as tractor-drawn implements with coulters making a narrow slit in the soil, a roller with many spikes making indentations in the soil, or prongs which function like a mini-subsoiler.
** Per "Deep Ripping and De-compaction, DEC 2008".

9.5 Sediment Control Practices

The following controls are anticipated to minimize sediment discharge, capture sediment in suspension and minimize sedimentation off site.

Table 11: Sediment Controls

Potential BMPs	Construction Phase or Activity								Application Notes
	Temp Laydown/ Batch Plant	Access Roads	Turbine Pads / Erection	UG Collection	Temp Crane Paths	Met Towers	Collector Substation	O&M Facility	
Silt fence	T	T	T	T	T	T	T	T	Machine sliced install w/ wood posts at six foot spacing. Install perimeter silt fence prior to downgradient soil disturbance
Fiber rolls	T	T	T	T	T	T	T	T	Install on contour, minimum of nine-inch roll, wood or straw fiber. Secure with two inch posts every two feet on center.
Topsoil Berms	T	T	T	T	T	T	T	T	Side slopes of 3:1 with at least one foot height. Use temporary erosion control to stabilize berm.
Buffer Filter Strips	P	P	P	P	P	P	P	P	
Rock Checks (Rock Dam)	T	T	T	T	T	T	T	T	
Straw Bale Dike	T	T	T	T	T	T	T	T	

T= Temporary BMPs which will be removed following construction completion and final stabilization.

P= Permanent BMPs which will provide vegetative, non-vegetative stabilization or will not be removed following completion of construction.

9.6 Run-on and Runoff Controls

The following controls are anticipated to minimize scour, transport water across or down steep slopes or critical areas, divert clean water, and / or provide temporary conveyances to maintain drainage.

Table 12: Run-on and Runoff Controls

Potential BMPs	Construction Phase or Activity								Application Notes
	Temp Laydown/ Batch Plant	Access Roads	Turbine Pads / Erection	UG Collection	Temp Crane Paths	Met/ADLS Towers	Collector Substation	O&M Facility	
Riprap Apron / Energy Dissipation	T	T/P	T/P	T/P	T	T	T/P	T/P	See detail in plans. Install within twenty-four hours of connection to surface waters.
Earth Dike (diversion berm)	T	T/P	T/P	T/P	T	T	T/P	T/P	See detail, use temp erosion control to stabilize berm. Install prior to disturbing down gradient areas.
Culvert Protection	T	T/P	T/P		T	T	T/P	T/P	See details in plan set. Install within twenty-four hours of installation of culverts.
Rock Overflow Structure (SF)	T	T	T	T	T	T	T	T	See civil plan set details
Permanent Detention Basin							P	P	See Section 8.1 of this SWPPP
Water Bars	T	P	P	P	T	T	T	T	See civil plan set details
Temporary Swale	T	T	T	T	T	T	T	T	See civil plan set details
Temporary Access Waterway Crossing	T	T	T	T	T	T	T	T	See civil plan set details
Streambank Protection	P	P	P	P	P	P	P	P	See civil plan set details
Grassed Waterway	P	P	P	P	P	P	P	P	See civil plan set details
Vegetating Waterways	P	P	P	P	P	P	P	P	See civil plan set details
Rock-Lined Waterway	T	T/P	T	T	T	T	T/P	T/P	See civil plan set details
Riprap Slope	T	T/P	T/P	T/P	T	T	T/P	T/P	See civil plan set details
Flow Diffuser	T	T/P	T/P	T/P	T	T	T/P	T/P	See civil plan set details
Perimeter Dike / Swale	T	T	T	T	T	T	T	T	See civil plan set details
Trench Breaker Detail				P		T/P	P	P	

T= Temporary BMPs which will be removed following construction completion and final stabilization.

P= Permanent BMPs which will provide vegetative, non-vegetative stabilization or will not be removed following completion of construction.

9.7 Tracking Controls

The following controls are anticipated to minimize or prevent sediment track-out from construction site exits to paved surfaces or to retrieve material tracked onto paved surfaces to minimize or prevent the material from being washed into surface waters or stormwater inlets.

Table 13: Tracking Controls

Potential BMPs	Construction Phase or Activity								Application Notes
	Temp Laydown/ Batch Plant	Access Roads	Turbine Pads / Erection	UG Collection	Temp Crane Paths	Met/ADLS Towers	Collector Substation	O&M Facility	
Rock Pad (stabilized construction entrance)	**T**	**T/P**			**T**	**T**	**T/P**	**T/P**	See detail in plans. Install at all site exits prior to grading. Maintain for duration of project.
Construction Road Stabilization	**T**	**P**	**P**	**T**	**T**	**T**	**P**	**P**	See detail and notes in plans.
Street Scraping	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	Scrape large clumps/amounts of material with soft tracked or wheeled equipment prior to sweeping.
Street Sweeping	**T**	**T**	**T**	**T**	**T**	**T**	**T**	**T**	Sweep paved surfaces within twenty-four hours of discovery.

T= Temporary BMPs which will be removed following construction completion and final stabilization.

P= Permanent BMPs which will provide vegetative, non-vegetative stabilization or will not be removed following completion of construction.

9.8 Dewatering and Basin Draining Practices

Dewatering of turbid water (water that is visibly cloudy or brown in color) should be discharged via pump and hose or overland flow (via temporary ditch or grade cuts) to a temporary sediment basin for pretreatment. The use of riprap apron (energy dissipation) should be used for the discharge location. If riprap is not used, an alternative form of energy dissipation should be used to prevent scour and re-suspension of soil at the discharge point of the hose. If discharge to a temporary sediment basin is not feasible, the use of dewatering dumpsters, dewatering bags or other prefabricated product should be used. The use of rock checks, erosion control blanket and sumps or traps shall be considered for overland flow dewatering. After the use of BMPs, the water could be discharged through a vegetated buffer and energy dissipation. The inspector or contractor should complete the table below for documentation during construction. The discharge of water from the site should be visibly clear in appearance.

The discharge of accumulated water should not:

- Contain oil, grease, a sheen, odor, or concrete washout (use an oil-water separator or suitable filtration device is material is found);
- Adversely impact adjacent properties with water or sediment;
- Adversely impact surface waters;
- Cause erosion of slopes and channels;
- Cause nuisance conditions; or
- Contribute to inundation of wetlands which negatively impact the wetlands.

9.9 Alternative Design Elements

The stormwater control measures proposed in this SWPPP have been selected and designed, and will be implemented, in accordance with the New York Standards and Specifications. No alternative controls or other deviations from the standards are proposed to be implemented during construction activities.

9.10 Soil Decompaction and Restoration

9.10.1 Soil Restoration in Non-Agricultural Areas

In accordance with the New York State Stormwater Management Design Manual, Section 5.1.6, soil restoration is a required practice in areas of development where soils have been compacted and will be vegetated. Soil restoration requirements for non-agricultural areas are summarized below. If soil restoration practices are not implemented as required, the post-construction runoff curve number must be modified to reflect the addition of impervious surfaces.

Table 14: Soil Restoration Requirements – Non-Agricultural Areas

Type of Soil Disturbance	Soil Restoration Requirement		Comments/Examples
Minimal Soil Disturbance	Restoration not required		Clearing and grubbing
Areas where topsoil is stripped but no grading occurs	**HSG A&B**	**HSG C&D**	
	Apply 6 inches of topsoil	Aerate (see definition below) and apply 6 inches of topsoil	
Areas of cut or fill	**HSG A&B**	**HSG C&D**	Side slopes of 3:1 with at least one foot height. Use temporary erosion control to stabilize berm.
	Aerate (see definition below) and apply 6 inches of topsoil	Apply full soil restoration (see definition below)	
Heavy traffic areas on site	Apply full soil restoration (see definition below)		

Areas where runoff reduction and/or infiltration practices are applied	Restoration not required, but may be applied to enhance the reduction specified for appropriate practices	Keep construction equipment from crossing these areas. To protect newly installed practice from any ongoing construction activities, construct a single-phase operation fence area.
Redevelopment areas	Soil restoration is required on redevelopment projects in areas where existing impervious area will be converted to pervious.	

Source: New York State Stormwater Management Design Manual, Table 5.3

Aeration is the use of machines, such as tractor-drawn implements with coulters, rollers with spikes, or prongs which function like a mini-subsoiler.

Full Soil Restoration entails the following process:

1. Apply 3 inches of compost over soil;
2. Till compost into subsoil to a depth of at least 12 inches. Note that tilling should not be performed within the drip line of any existing trees or over utility installation withing 24 inches of the surface;
3. Remove stone/rock materials that are 4 inches or larger;
4. Apply topsoil to a depth of 6 inches;
5. Vegetate as approved.
6. At the end of restoration, an inspector should be able to push a 3/8" metal bar 12 inches into the soil using body weight.

9.10.2 Soil Restoration in Agricultural Areas

In active agricultural areas, restoration must occur in accordance with the "New York State Agriculture and Markets 2018 Guidelines for Agricultural Mitigations for Wind Power Projects." General restoration requirements are summarized below; please refer to Appendix E for the full guidelines.

- Disturbed agricultural areas will be decompacted to a depth of 18 inches with a deep ripper or heavy-duty chisel plow.
- Following decompaction, all rocks 4 inches and larger will be removed from the surface of the subsoil.
- Topsoil will be replaced to original depth and original contours will be re-established where possible.
- Subsoil decompaction and topsoil replacement must be avoided after October 1, unless approved by landowner in consultation with Ag. and Markets.

10.0 Inspection, Maintenance and Corrective Actions

Construction activity and all support activities must be inspected (using the inspection form found in Appendix G or an alternative form) within the parameters of the schedules below. The inspector shall be a "qualified inspector" with the requirements of this SWPPP and the GP, as well as familiar with the construction site. This person is delegated by the owner and listed in Section 6.4 is the "qualified inspector". Additionally, there is a requirement for a "trained contractor" to conduct daily inspections in the active work area as detailed below.

Trained Contractor - means an employee from the contracting (construction) company, identified in Part II.A.6., that has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the trained contractor shall receive four (4) hours of training every three (3) years. It can also mean an employee from the contracting (construction) company, identified in Part III.A.6, that meets the qualified inspector qualifications (e.g). licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other department endorsed entity). The trained contractor is responsible for the day-to-day implementation of the SWPPP.

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, CPESC, Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s). It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

Table 15: Qualified Inspectors

Company Name	Inspector Name	Phone Number	Qualifications	Trained Contractor or Qualified Inspector?

10.1 Scope of Inspections

Site stormwater inspection reports shall include the following elements:

- Date and time of inspections;
- Inspector name and title;
- Description of the weather and soil conditions at time of inspection;
- Description of the condition of the runoff at all points of discharge;
- Identification of any discharges of sediment from the construction site;
- Description of the condition of all natural surface waterbodies location within or immediately adjacent to the property boundaries of the construction site;
- Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance or weren't installed properly;
- Description and sketch of areas with active soil disturbance activity;
- Description and sketch of areas that have been disturbed but are inactive at the time of inspection;
- Description and sketch of area that have been stabilized since last inspection;
- Current phase of construction and all post construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
- Corrective actions that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures and to correct deficiencies identified within the construction of the post construction stormwater management practices;
- Identification and status of all corrective actions required by previous inspection;
- Digital photos with date stamp, clearly showing the condition of all practices that have been identified as needing corrective actions; and
- Signature of the inspector.

All inspections should be documented within twenty-four hours after completing the field inspection and available in paper or electronic form on site. If the inspection does not have incidents of non-compliance the report should contain a certification that the site is in compliance with the SWPPP and GP.

The qualified inspector shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The qualified inspector shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

Within one business day of the completion of an inspection, the qualified inspector shall notify the owner or operator and appropriate contractor or subcontractor of the GP of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions per the maintenance schedule table below.

10.2 Inspection Schedule

Table 16: Inspection Schedule

If the site is:	Then an inspection is needed:	Performed by:	Notes and Information
Active	Within the active work area on a daily basis	Trained Contractor	Inspections for all erosion and sediment control practices and pollution prevention measures to ensure they are maintained in effective operating conditions at all times.
Active and less than 5 acres disturbed	Once every seven (7) calendar days	Qualified inspector or their qualified delegate	
Active and more than 5 acres disturbed and /or directly discharging to impaired water bodies	Twice within a seven (7)-calendar day period.	Qualified inspector or their qualified delegate	The two inspections within the seven (7)-calendar day period must be separated by a minimum of two (2) full calendar days. Please note that disturbance of 5 or more acres is only allowed with pre-authorization from NYSDEC. At the time this draft SWPPP was prepared, the project does not yet have authorization for disturbance of 5 or more acres.
Temporarily suspended (e.g. winter shutdown)	At least once every 30 calendar days	Qualified Inspector	Temporary stabilization measures must be applied to exposed soils and the permittee shall notify the NYSDEC DOW Water Program contact at the Regional Office in writing prior to reducing the inspections.
Shut down with partial project completion	No inspections needed	N/A	For construction sites where soil disturbance activities have been shut down with partial project completion, the Trained Contractor can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved final stabilization AND all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The Owner or Operator shall notify the NYSDEC DOW Water Program contact at the Regional Office in writing prior to the shutdown. If soil disturbance activities are not resumed within two (2) years from the date of shutdown, the Owner or Operator shall have the qualified inspector perform a final inspection and certify that all disturbed areas have achieved final stabilization, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "Final Stabilization" and "Post-Construction Stormwater Management Practice" certification statements on the NOT.

10.3 Maintenance Schedule

Within one business day of the completion of an inspection, the qualified inspector shall notify the owner or operator and contractor of any corrective actions that need to be taken. The

contractor shall begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame (within 7 calendar days or prior to the next forecasted rain event – whichever is soonest).

10.4 SWPPP Amendments

This plan and the attachments must be updated or kept current at all times. The owner or operator shall amend the SWPPP within seven (7) days of a routine inspection results or upon notification from the DEC to include additional requirements or modified requirements which take place during construction if one or more of the following occur: Amendments to the SWPPP should be documented on the SWPPP Amendment Log provided in Appendix G.

- There is a change in design, construction, or operation at the construction site that has, or could have, an effect on the discharge of pollutants.
- There is a need to address issues or deficiencies identified during an inspection by the qualified inspector, the Department, or other regulatory authority. Response is needed to the agency within fourteen days or as otherwise directed by the agency.
- There is a significant change in design, construction, operation, or maintenance which may have a significant effect on the potential for the discharge of pollutants to the waters of the United States and which has not otherwise been addressed in the SWPPP.
- The SWPPP proves to be ineffective in:
    - Eliminating or significantly minimizing pollutants from sources identified in the SWPPP and as required by the GP; or
    - Achieving the general objectives of controlling pollutants in stormwater discharges from permitted construction activity,
- A new contractor or subcontractor is added that will implement any measure of the SWPPP.

11.0 Pollution Prevention Management

Potential pollutant sources including construction and waste materials that are used or stored at the site are described below. Upon proper implementation of the BMPs potential pollutant sources are not reasonably expected to affect the stormwater discharges from the site. Construction materials and chemicals used or stored on site should be kept in small quantities whenever possible. Materials shall only be stored in non-sensitive areas and not in close proximity to watercourses, wetlands or floodplains.

A Spill Prevention, Control and Countermeasure plan (SPCC) will be needed if materials or tanks present on site contain more than, or have the ability to contain more than, 1,320 gallons of petroleum products. When not in use, petroleum products should be stored in sealed containers and out of contact with the elements to prevent direct contact with stormwater. Inadvertent spills should be cleaned up immediately upon discovery and the materials should be disposed of in accordance with local, state and federal requirements. Contractors should have spill kits available on site for rapid deployment to contain and cleanup spills.

Table 17: Potential Pollutants List

Potential Pollutant	Location	Control Measure*
Antifreeze	Vehicle/Equipment	S.C./Drip pan
Diesel Fuel	Vehicle/Equipment/Fuel Tank	S.C./Drip pan
Gasoline	Vehicle/Equipment/Fuel Tank	S.C./Drip pan
Hydraulic Oils/Fluids	Vehicle/Equipment	S.C./Drip pan
Grease	Vehicle/Equipment	S.C./Drip pan
Sanitary Waste Restrooms	Portable	Service Provider To Secure Units From Tipping
Trash And Construction Debris	Various	Covered and Closed Dumpster
Paints	Contractor	S.C. and secure/covered storage.
Glue/Adhesives/Curing Compounds	Contractor	S.C. and secure/covered storage.
Soil Amendments	Various	S.C. and secure/covered storage.
Landscaping Materials Fertilizer	Various	S.C. and secure/covered storage.
Concrete Mortar	Mobile Mixer/Concrete Batch Plant	S.C./Washout Area and secure/covered storage
Concrete	Trucks/Washout/Turbine Sites/Concrete Batch Plant	Washout Area/S.C.
Bentonite	Directional Boring Pits/Utility Contractor	S.C./Sump area
Sediment	Exposed Soils/Disturbed Areas	Sediment, Erosion, Tracking, and Runoff Controls

*S.C. refers to secure secondary containment unit or area.

11.1 Storage, Handling and Disposal of Construction Materials

11.1.1 Storage and Handling

- All products shall be kept in their original container, with original labels still attached, unless the container is not re-sealable.
- Hazardous materials shall be returned to the hazardous material storage area at the end of each day.
- An effort should be made to store only enough products to do the required job.
- The contractor shall provide tanks or barrels to collect liquid byproducts that pose a pollution hazard.
- The pollutants shall be removed from the site on a weekly basis and disposed of in accordance with federal, state and local regulations.
- All spills shall be cleaned up immediately after discovery, in accordance with the manufacture's recommended methods.
- Hazardous materials shall be properly stored to prevent vandalism or unauthorized access.
- Containment units shall be installed in accordance with federal, state, and local regulations.
- No hazardous material shall be stored within 200 feet of an identified critical area.
- If building materials, chemicals, or general refuse is being used, stored, disposed of, or otherwise managed inappropriately, the contractor shall correct such defects within twenty-four hours of detection or notification.

11.1.2 Disposal (Dumpsters)

- Locate dumpsters away from watercourses, streams, creeks and other surface waters or conveyances.
- Site inspector shall regularly observe for and report excess litter and solid waste and request pickup and retrieval of wastes.
- Wastes, litter, debris shall be deposited into dumpsters in a central location and / or in various satellite locations where work is active.
- Dumpsters should be supplied by and regularly maintained, emptied and removed by a waste management company.
- Dumpsters shall be covered and closed at all times when not actively depositing water in the dumpster.

11.2 Fueling and Maintenance of Equipment and Vehicles

- Routine maintenance of vehicles shall occur in staging areas only if necessary.
- Maintenance of equipment and vehicles should be avoided and done off site where feasible.
- If fueling is done by mobile tank and dispenser, the transfer of fuel should be done under close supervision and there should be drip pans and spill containment and cleanup materials readily available. The mobile tank must be double-walled and anchored securely to transport.

- Refueling, equipment and fuel storage shall not occur within 300 feet from resources.
- If fueling is done via temporary tank, the tank should be stored within a bermed area and away from surface waters.
- Spill kits with absorbent materials shall be available on site and in close proximity to where any chemicals or petroleum products are being stored, handled, transferred, and/or used for use in cleaning up small spills. Small kits should include the following materials:
  - Water Resistant nylon zip totes
  - 1-gallon jugs of ENSORB®
  - Brooms
  - Dustpans
  - Disposal Bags
  - Goggles
  - Nitrile Gloves
- Large spill kits with absorbent and containment material shall be available on site for use in cleaning up larger spills. The materials available will likely include plastic sheeting to create a containment during large spill events. An effective way to clean up large spills in the field is to line a tracked dump vehicle, with plastic, and load the contaminated material (after a hydraulic line leak for example) into temporary containment. A dedicated waste dumpster, (fully enclosed) should be located at the contractor's laydown yard. Additional material for large spill kits should include the following:
  - Wheeled drum
  - 1.5 cubic foot bags of sorbent
  - 4-foot socks
  - 8-foot socks
  - Pads
  - Scoops
  - Brooms
  - Dustpans Disposal Bags

11.3 Spill Response

In the event of a spill or discharge of hazardous material of reportable quantity, contact the State of New York Spill-Reporting Hotline at 1-800-457-7362 within two hours. If the hazardous condition involves the release of an EPA regulated material or an oil as defined by the EPA, the release may also need to be reported to the National Response Center. Federal Reporting is required within 15 minutes of event occurrence or discovery. Contact the National Response Center at (800) 424-8802. The NRC is staffed twenty-four hours a day. For more information reference the following websites:

- http://www.dec.ny.gov/chemical/8692.html
- http://www.dec.ny.gov/docs/remediation_hudson_pdf/1x1.pdf
- http://www.dec.ny.gov/chemical/8428.html, and

- https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release.

All petroleum spills that occur within New York State (NYS) must be reported to the NYS Spill Hotline (1-800-457-7362) within two hours of discovery, except spills which meet all of the following criteria:

- The quantity is known to be less than 5 gallons;
- The spill is contained and under the control of the spiller;
- The spill has not and will not reach the State's water or any land; and
- The spill is cleaned up within two hours of discovery.

A spill is considered to have not impacted land if it occurs on a paved surface such as asphalt or concrete. A spill in a dirt or gravel parking lot is considered to have impacted land and is reportable.

Table 18: Reportable Spill Quantities

Material	Where Discharged	Reportable Spill Quantities
Petroleum Material	Land (surface)	Greater than 5 Gallons
Petroleum Material	Land (subsurface)	Greater than 5 Gallons
Petroleum Material	Water	Enough to create a sheen on water
Other Material that will cause pollution if discharged to waters	Water	Any amount

11.4 Vehicle and Equipment Washing

If necessary, the contractor shall develop a designated wash area with basin containment to prevent the untreated water from discharging from the site to surface waters. BMPs include, temporary basins, inspecting the vehicles and equipment for leaks prior to washing and prohibiting washing activity until discovered leaks are repaired and maintenance is completed of the equipment or vehicle. The area shall be noted on the site plan. The water shall be contained and pumped from the site into a truck for proper disposal at a wastewater facility. No engine degreasing shall be done on site.

11.5 Concrete Washout and Other Washout

The direct discharge of concrete truck washout water to surface waters in the state, including storm sewers and other stormwater treatment facilities shall not occur. The following categories provide potential BMPs for the operator(s) to implement to avoid washout waters from impacting receiving waters.

11.5.1 Mobile Concrete and Mortar Mixers

- Use the following BMPs and guidance with the use of mortar or concrete mixers.
- Store bags of concrete and mortar in dry storage.
- Position mixers a minimum of 100 feet from the nearest watercourse or conveyance.
- If mixers must be positioned closer than 100 feet from a conveyance, install a temporary berm to prevent runoff from the mixer from flowing into the conveyance.
- Use tarp or plastic sheeting as a liner to prevent concrete or mortar from contacting the soil.
- Use buckets to contain washout / rinse water when cleaning the mobile mixer.
- Dump buckets of washout water in a designated concrete washout area.

11.5.2 Concrete Washout

- Follow the guidelines below for the installation of BMPs concrete washout areas.
- Contain washout water from the tools, equipment, and the chutes of concrete trucks, mobile mixers, or other containers with concrete material, and do not allow it to discharge into waters of the state or drain onto adjacent properties.
- Define the washout area with signage notifying the contactors of the location and use.
- The washout area should be a sufficient size to contain the expected washout material. 10'x10'x3' area should suffice for most activities.
- Multiple washout areas may be needed. Locations of the washouts should be shown on the construction plans by the contractor.
- When documenting the location of the concrete washout areas, include the date of install, date of last maintenance, and date of removal.
- Minimum of 6-millimeter-thick poly sheeting to prevent contamination of the soil and infiltration of the washout material.

Once the material is hardened it can be disposed of in a dumpster. If the material is liquid or not hardened, vacuum up the material, and haul off site to properly dispose of, or recycled at an approved facility. Some sites will not need the separate washout area if a truck chute washout is available from the concrete supplier.

11.5.3 Truck Chute Washout

Where available, all trucks with self-contained washout and water recycle systems must be used for every truck chute, tool and equipment rinse and washout. The truck should be positioned in a flat area away from inlets and surface waters where feasible. The washout of trucks during rain events should be minimized.

11.6 Portable Sanitary Facilities

All temporary portable sanitary facilities should be managed and maintained with at least the following items considered.

- Locate facilities away from watercourses, streams, creeks and other surface waters or conveyances.
- Place facilities upgradient from perimeter sediment controls and not on paved or other impervious surfaces.
- Secure facilities to the soil with stakes or tether to other non-movable structure to prevent tipping from wind or other factors. If staking or tethering is not feasible; position facilities in a secure location to prevent tipping or from being knocked over by equipment, people or wind.
- Schedule routine and regular cleanout and maintenance of facility from a reliable company.

11.7 Potential Non-stormwater Pollutant Sources and BMPs

Non-stormwater discharges shall be eliminated or reduced to the extent feasible, with the exception of those necessary for the completion of certain construction activities. A list of allowable non-stormwater discharges include the items below.

Table 19: Non-stormwater Discharges and Potential BMPs

Type of Allowable Non-Stormwater Discharge	Likely to be Present at Site?
Discharges from emergency fire-fighting activities	☐ YES ☒ NO
Fire hydrant flushing (uncontaminated and not hyperchlorinated)	☐ YES ☒ NO
Waters used to wash vehicles, buildings, structures (turbines) and pavement (Detergents and cleansers are not allowed) to remove mud, dirt or dust.	☒ YES ☐ NO
Water used to control dust	☒ YES ☐ NO
Potable water including uncontaminated waterline flushing (not hyperchlorinated)	☐ YES ☒ NO
Uncontaminated air conditioning or compressor condensate	☐ YES ☒ NO
Uncontaminated, non-turbid discharges of ground water, spring water, or foundation or footing drains	☒ YES ☐ NO
Pavement wash waters(no spills or leaks or detergent use)	☐ YES ☒ NO
Uncontaminated flows from excavation dewatering activities if operational and structural controls are used.	☒ YES ☐ NO

These authorized non-stormwater discharges should be conducted in accordance with the requirements of the GP, and every effort should be made to minimize non-stormwater runoff from these site activities.

The operators are responsible to implement the following BMPs and management for non-stormwater discharges.

- **Waters Used to Wash Vehicles, Buildings, Structures and Pavement (without detergents):** Should washing be necessary to remove soil, mud, dirt and / or dust, high powered sprayers with water could be used to clean off accumulated soil and earth materials.. The washing should take place

within a defined area. Existing BMPs and infiltration will likely control associated water and runoff due to the washing activity. If existing BMPs are overloaded or not functional maintenance or additional perimeter controls (such as silt fence) may be needed at the discretion of the inspector.

- **Water used for Dust Control:** This is not anticipated to be a contamination / pollution issue. During the dry times when dust control is needed the minimal amount of water is anticipated to be absorbed into the soil. If any runoff does occur, the standard BMPs (such as silt fence, mulch and erosion control blanket, inlet controls and stormwater traps) should adequately control the runoff from reaching off-site surface waters.
- **Uncontaminated Excavation Dewatering:** Clean water should be discharged to a vegetated area, ditches (non-surface waters) or other non-surface water conveyance via hose. Energy dissipation should be applied to the discharge location to minimize scour. Alternatively, uncontaminated water could be discharged to receiving waters as allowed by local permits and regulations or as long as positive drainage is provided, the water could be discharged into the surrounding areas and allowed to infiltrate or drain along existing drainage patterns provided that the water does not cause flooding, prolonged or damaging inundation, or vegetation damage.
- **Uncontaminated flows from excavation** dewatering activities if operational and structural controls are used: See SWPPP Section 9.7 for BMPs and dewatering methods.

12.0 Temporary Concrete Batch Plant

The site has a temporary, dedicated concrete batch plant to supply concrete material for use during construction. The following information relates to the operation of the temporary concrete batch plant.

12.1 Management of Runoff

See Appendix E for the batch plant map with location, layout and controls. The batch plant should be located on higher ground where feasible with a gravel or aggregate base. Where necessary, the base should have a geotextile liner to minimize potential for infiltration of washout waters or material into the subsoils. Where the batch plant cannot be located on higher ground topsoil or earthen diversions should be constructed to divert any run-on water from adjacent areas around the batch plant operation. As necessary in areas where potential contamination is a low risk, the use of a temporary sediment trap, temporary containment berm from the internal water may be used. Industry standard erosion and sediment control practices should be used to minimize runoff into adjacent surface waters or neighboring property.

12.2 Material List

The operator of the batch plant should have a list of materials which are on site and exposed to the elements.

12.3 Routine Inspections

A qualified person should inspect the batch plant area at least once per month during the batch plant operation. The inspector shall inspect the following:

- Material handling areas,
- Above ground storage tanks,
- Hoppers and silos,
- Dust collection and containment systems, and
- Truck wash down and equipment cleaning areas

The inspector should document where action items, maintenance, and installation of controls is needed with follow-up documentation on when the action items were addressed, and what was done to correct the items noted. A description of spills and leaks should be included in the reports or as an incident statement with the next inspection report. Insert completed inspections in Appendix G of this binder.

12.4 Training

An employee training program must be developed to educate personnel responsible for implementing any component of the SWPPP at the temporary batch plant. The frequency of the training must be at a minimum one training prior to the initiation of the operation of the concrete

batch plant. Documentation of the training shall be inserted into Appendix F of this training / meeting with a list of attendees, topics discussed, duration of the training and signatures of those in attendance.

12.5 Spill Prevention and Response Procedures

Refer to Section 11.3 of this SWPPP.

12.6 Comprehensive Inspection

At least once during the project batch plant activity an alternative person from the routine inspector should provide an additional inspection (which may be used for one of the monthly routine inspections) including the following:

A visual examination of areas draining storm water associated with the batch plant. Observe the following areas for effectiveness:

- Cleaning areas;
- Material handling areas;
- Above ground storage tanks;
- Hoppers and silos;
- Dust collection/containment systems;
- Run-on, runoff, and erosion/sediment controls in place;
- Spill response equipment and management; and
- Material on site and the list of expected materials.

Within two weeks of inspection if deficiencies are observed:

- Revise lists of potential sources and materials;
- Revise BMPs listed on the plan sheets and SWPPP where necessary; and
- Implement revisions and changes to lists, documentation and BMPs.

The inspection report should include:

- Name of person completing the inspection,
- Date(s) of the evaluation,
- Observations,
- Findings of deficiencies, and
- Corrective Actions recommended.

13.0 Final Stabilization

Final stabilization is achieved for the project when permanent erosion control BMPs are applied and functioning on the site. The permanent erosion control BMPs may be a combination of vegetative and non-vegetative cover types. Vegetative cover type must be a perennial vegetative cover with a density of 80% over the entire pervious surface. Additional requirements to achieving final stabilization include:

- All soil disturbing activity is complete;
- Permanent stormwater treatment system (if required) is constructed and functional, and accumulated sediment from construction activity has been removed;
- All temporary, synthetic BMPs have been removed from the site; and
- In agricultural areas (as applicable), the construction activity area has been restored to the preconstruction agricultural use.

14.0 Notice of Termination

14.1 Permit Termination Scenarios

Coverage under the GP may be terminated in one of the following scenarios.

1. Total project completion - All construction activity identified in the SWPPP has been completed; and all areas of disturbance have achieved final stabilization; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational.
2. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved final stabilization; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.
3. A new owner or operator has obtained coverage under the GP in accordance with Part II.F.
4. The owner or operator obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

14.2 Qualified Inspector NOT Certification

Where scenario 1 or 2 are met in Section 14.1 above, the owner or operator shall have the qualified inspector perform a final site inspection prior to submitting the NOT. The qualified inspector shall sign the "Final Stabilization" and "Post-Construction Stormwater Management" practice certification statements on the NOT.

14.3 NOT Requirements for Post Construction Stormwater Management BMPs

Prior to submitting the NOT, the owner or operator must ensure one of the following:

1. The post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located;
2. An executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s);
3. For post-construction stormwater management practices that are privately owned, the owner or operator has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record; or
4. For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the owner or operator has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

15.0 Record Retention

15.1 During Construction

This report, amendments and attachments, inspection reports, and maintenance records will be kept on site for the duration of construction until the NOT has been filed. The records will be kept by the Owner or Operator listed on the NOI. The records should be maintained in a secure location on-site such as in a locked mailbox, job trailer, or in an on-site construction office from the start of construction until the NOT is approved.

15.2 Post Construction / Notice of Termination (NOT)

The site operator must retain all the following records for a period of at least five (5) years after the submittal of the NOT.

- Copy of the NOI
- NOI Acknowledgment Letter
- SWPPP Narrative
- Plan sets
- MS4 Acceptance Form (if applicable)
- Inspection Reports and Maintenance Records

Appendix A

GP-0-20-001 New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activity

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

Issued Pursuant to Article 17, Titles 7, 8 and Article 70

of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator

1-23-20

Authorized Signature

Date

Address: NYS DEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act ("CWA"), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System ("NPDES")* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of "*construction activity*", as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES

Table of Contents

Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

This permit authorizes stormwater *discharges* to *surface waters of the State* from the following *construction activities* identified within 40 CFR Parts 122.26(b)(14)(x), 122.26(b)(15)(i) and 122.26(b)(15)(ii), provided all of the eligibility provisions of this permit are met:

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;

2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State.*

3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

*Discharge*s authorized by this permit must achieve, at a minimum, the effluent limitations in Part I.B.1. (a) – (f) of this permit. These limitations represent the degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:

   (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharge*s;

   (ii) Control stormwater *discharge*s, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;

   (iii) *Minimize* the amount of soil exposed during *construction activity*;

   (iv) *Minimize* the disturbance of *steep slopes*;

   (v) *Minimize* sediment *discharge*s from the site;

   (vi) Provide and maintain *natural buffer*s around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharge*s, unless *infeasible*;

   (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;

   (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and

   (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.

b. **Soil Stabilization**. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

listed in Appendix E or is located in one of the watersheds listed in Appendix C, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. See Appendix A for definition of *Temporarily Ceased*.

c. **Dewatering**. *Discharge*s from *dewatering* activities, including *discharge*s from *dewatering* of trenches and excavations, must be managed by appropriate control measures.

d. **Pollution Prevention Measures**. Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:

(i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

(ii) *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation and to stormwater. Minimization of exposure is not required in cases where the exposure to precipitation and to stormwater will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of stormwater contamination (such as final products and materials intended for outdoor use) ; and

(iii) Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

e. **Prohibited *Discharges*.** The following *discharge*s are prohibited:

(i) Wastewater from washout of concrete;

(ii) Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials;

(iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;

(iv) Soaps or solvents used in vehicle and equipment washing; and

(v) Toxic or hazardous substances from a spill or other release.

f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices ("SMPs") are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. The *owner or operator* of a *construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

(i) Runoff Reduction Volume ("RRv"): Reduce the total Water Quality Volume ("WQv") by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

For each impervious area that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered infeasible.

In no case shall the runoff reduction achieved from the newly constructed impervious areas be less than the Minimum RRv as calculated using the criteria in Section 4.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume ("Cpv"): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site discharges directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria ("Qp"): Requires storage to attenuate the post-development 10-year, 24-hour peak discharge rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria ("Qf"): Requires storage to attenuate the post-development 100-year, 24-hour peak discharge rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site discharges directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

b. *Sizing Criteria* for *New Development* in Enhanced Phosphorus Removal Watershed

(i) Runoff Reduction Volume (RRv): Reduce the total Water Quality Volume (WQv) by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24 hour design storm over the post-developed watershed and shall be

calculated in accordance with the criteria in Section 10.3 of the Design Manual.

(ii) Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part I.C.2.b.(i) of this permit due to *site limitations* shall direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv shall be documented in the SWPPP. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the SWPPP must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible.*

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 10.3 of the Design Manual. The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

(iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
(1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
(2) The site *discharge*s directly to tidal waters, or fifth order or larger streams.

(iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

(v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
(1) the site *discharge*s directly to tidal waters or fifth order or larger streams, or
(2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

(i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.

(1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or

(2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or

(3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or

(4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

If there is an existing post-construction stormwater management practice located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 – 4 above.

(ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.

(iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

d. Sizing Criteria for Combination of Redevelopment Activity and New Development

Construction projects that include both New Development and Redevelopment Activity shall provide post-construction stormwater management controls that meet the sizing criteria calculated as an aggregate of the Sizing Criteria in Part I.C.2.a. or b. of this permit for the New Development portion of the project and Part I.C.2.c of this permit for Redevelopment Activity portion of the project.

D. Maintaining Water Quality

The Department expects that compliance with the conditions of this permit will control *discharge*s necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any discharge to either cause or contribute to a violation of *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York, such as:

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;

2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and

3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the stormwater *discharge*s authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standards*; the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this general permit and document in accordance with Part IV.C.4. of this general permit. To address the *water quality standard* violation the *owner or operator* may need to provide additional information, include and implement appropriate controls in the SWPPP to correct the problem, or obtain an individual SPDES permit.

If there is evidence indicating that despite compliance with the terms and conditions of this general permit it is demonstrated that the stormwater *discharge*s authorized by this permit are causing or contributing to a violation of *water quality standards*, or if the Department determines that a modification of the permit is necessary to prevent a violation of *water quality standards*, the authorized *discharge*s will no longer be eligible for coverage under this permit. The Department may require the *owner or operator* to obtain an individual SPDES permit to continue discharging.

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity* to *surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.

2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharge*s; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.

3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: "Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned"; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharge*s from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.

4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

F. Activities Which Are Ineligible for Coverage Under This General Permit

All of the following are **not** authorized by this permit:

1. *Discharge*s after *construction activities* have been completed and the site has undergone *final stabilization*;

2. *Discharge*s that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;

3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;

4. *Construction activities* or *discharges* from *construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

operator has obtained a permit issued pursuant to 6 NYCRR Part 182 for the project or the Department has issued a letter of non-jurisdiction for the project. All documentation necessary to demonstrate eligibility shall be maintained on site in accordance with Part II.D.2 of this permit;

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;

6. *Construction activities* for residential, commercial and institutional projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

7. *Construction activities* for linear transportation projects and linear utility projects:

   a. Where the *discharge*s from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and

   b. Which are undertaken on land with no existing *impervious cover*; and

   c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase "D" (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase "E" or "F" (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:

   a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.

      - 1-5 acres of disturbance - 20 feet
      - 5-20 acres of disturbance - 50 feet
      - 20+ acres of disturbance - 100 feet, or

   b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
      (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
      (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
      (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
      (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or

   c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

(i) No Affect
(ii) No Adverse Affect
(iii) Executed Memorandum of Agreement, or

d. Documentation that:

(i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.

9. *Discharge*s from *construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.

2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.

3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of *Owner or Operator*) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

1. Prior to December 21, 2020, an owner or operator shall use either the electronic (eNOI) or paper version of the NOI that the Department prepared. Both versions of the NOI are located on the Department's website (http://www.dec.ny.gov/). The paper version of the NOI shall be signed in accordance with Part VII.H. of this permit and submitted to the following address:

   NOTICE OF INTENT
   NYS DEC, Bureau of Water Permits
   625 Broadway, 4th Floor
   Albany, New York 12233-3505

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.

3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.

4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.

2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:

   a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (http://www.dec.ny.gov/) for more information,

   b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators* of *construction activities* that are required to obtain *UPA* permits

must submit a preliminary SWPPP to the appropriate DEC Permit Administrator at the Regional Office listed in Appendix F at the time all other necessary *UPA* permit applications are submitted. The preliminary SWPPP must include sufficient information to demonstrate that the *construction activity* qualifies for authorization under this permit,

c. the final SWPPP has been prepared, and

d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.

3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:

   a. For *construction activities* that are <u>not</u> subject to the requirements of a *regulated, traditional land use control MS4*:

      (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or

      (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has <u>not</u> been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;

      (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:

(i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed "*MS4* SWPPP Acceptance" form, or

(ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed "MS4 SWPPP Acceptance" form.

4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination ("NOT") has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.

2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor's or subcontractor's certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.

3. The *owner or operator* of a *construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

use control MS4, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*). At a minimum, the *owner or operator* must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:

a. The *owner or operator* shall have a *qualified inspector* conduct **at least** two (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.

c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.

d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.

e. The *owner or operator* shall include the requirements above in their SWPPP.

4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..

5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.

6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

regulated, traditional land use control MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP required by Part III.A. 4. and 5. of this permit. Unless otherwise notified by the *regulated, traditional land use control MS4*, the *owner or operator* shall have the SWPPP amendments or modifications reviewed and accepted by the *regulated, traditional land use control MS4* prior to commencing construction of the post-construction stormwater management practice.

E. Permit Coverage for Discharges Authorized Under GP-0-15-002

1. Upon renewal of SPDES General Permit for Stormwater Discharges from *Construction Activity* (Permit No. GP-0-15-002), an *owner or operator* of *a construction activity* with coverage under GP-0-15-002, as of the effective date of GP- 0-20-001, shall be authorized to *discharge* in accordance with GP- 0-20-001, unless otherwise notified by the Department.

   An *owner or operator* may continue to implement the technical/design components of the post-construction stormwater management controls provided that such design was done in conformance with the technical standards in place at the time of initial project authorization. However, they must comply with the other, non-design provisions of GP-0-20-001.

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4,* the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.

2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.

3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

operator was not subject to a sixty (60) business day authorization period that has not expired as of the date the Department receives the NOI from the new *owner or operator*.

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.

2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.

3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.

4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:

    a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;

c. to address issues or deficiencies identified during an inspection by the *qualified inspector,* the Department or other regulatory authority; and

d. to document the final construction conditions.

5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.

6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor.* The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

   The *owner or operator* shall have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before they commence any *construction activity*:

   "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 *discharge*s 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"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the SWPPP that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for SWPPP implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* shall attach the certification statement(s) to the copy of the SWPPP that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the SWPPP after construction has commenced, they must also sign the certification statement and provide the information listed above.

7. For projects where the Department requests a copy of the SWPPP or inspection reports, the *owner or operator* shall submit the documents in both electronic (PDF only) and paper format within five (5) business days, unless otherwise notified by the Department.

B. Required SWPPP Contents

1. Erosion and sediment control component - All SWPPPs prepared pursuant to this permit shall include erosion and sediment control practices designed in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Where erosion and sediment control practices are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must demonstrate *equivalence* to the technical standard. At a minimum, the erosion and sediment control component of the SWPPP shall include the following:

    a. Background information about the scope of the project, including the location, type and size of project

b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge*(s);

c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);

d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;

e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;

f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;

g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;

h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;

i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

schedule shall be in accordance with the requirements in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016;

j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;

k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and

l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

   Where post-construction stormwater management practices are not designed in conformance with the *performance criteria* in the technical standard, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.

   The post-construction stormwater management practice component of the SWPPP shall include the following:

   a. Identification of all post-construction stormwater management practices to be constructed as part of the project. Include the dimensions, material specifications and installation details for each post-construction stormwater management practice;

b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;

c. A Stormwater Modeling and Analysis Report that includes:
   (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;

   (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;

   (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;

   (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;

   (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and

   (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;

d. Soil testing results and locations (test pits, borings);

e. Infiltration test results, when required; and

f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

3. Enhanced Phosphorus Removal Standards - All construction projects identified in Table 2 of Appendix B that are located in the watersheds identified in Appendix C shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the applicable *sizing criteria* in Part I.C.2. b., c. or d. of this permit and the *performance criteria,* Enhanced Phosphorus Removal Standards included in the Design Manual. At a minimum, the post-construction stormwater management practice component of the SWPPP shall include items 2.a - 2.f. above.

C. Required SWPPP Components by Project Type

Unless otherwise notified by the Department, *owners or operators* of *construction activities* identified in Table 1 of Appendix B are required to prepare a SWPPP that only includes erosion and sediment control practices designed in conformance with Part III.B.1 of this permit. *Owners or operators* of the *construction activities* identified in Table 2 of Appendix B shall prepare a SWPPP that also includes post-construction stormwater management practices designed in conformance with Part III.B.2 or 3 of this permit.

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.

2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity* identified in Tables 1 and 2 of Appendix B shall have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor shall

begin implementing corrective actions within one business day and shall complete the corrective actions in a reasonable time frame.

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.

3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

The *owner or operator* shall have a *qualified inspector* conduct site inspections in conformance with the following requirements:

[Note: The *trained contractor* identified in Part III.A.6. and IV.B. of this permit **cannot** conduct the *qualified inspector* site inspections unless they meet the *qualified inspector* qualifications included in Appendix A. In order to perform these inspections, the *trained contractor* would have to be a:

- licensed Professional Engineer,
- Certified Professional in Erosion and Sediment Control (CPESC),
- New York State Erosion and Sediment Control Certificate Program holder
- Registered Landscape Architect, or
- someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].

1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:

   a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;

c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and

d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:

a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.

b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4,* the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization,* and all temporary, structural erosion and sediment control measures have been removed*;* and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice" certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.

e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.

3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization,* all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.

4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

a. Date and time of inspection;

b. Name and title of person(s) performing inspection;

c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;

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

e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;

f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;

g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;

h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;

i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;

j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);

k. Identification and status of all corrective actions that were required by previous inspection; and

l. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.

6. All inspection reports shall be signed by the *qualified inspector.* Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.

2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:

   a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;

c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.

d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.

3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the "*Final Stabilization*" and "Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.

4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the "MS4 Acceptance" statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector*'s final site inspection certification(s) required in Part V.A.3. of this permit.

5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:

   a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),

c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,

d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

The *owner or operator* shall retain a copy of the NOI, NOI Acknowledgment Letter, SWPPP, MS4 SWPPP Acceptance form and any inspection reports that were prepared in conjunction with this permit for a period of at least five (5) years from the date that the Department receives a complete NOT submitted in accordance with Part V. of this general permit.

B. Addresses

With the exception of the NOI, NOT, and MS4 SWPPP Acceptance form (which must be submitted to the address referenced in Part II.B.1 of this permit), all written correspondence requested by the Department, including individual permit applications, shall be sent to the address of the appropriate DOW Water (SPDES) Program contact at the Regional Office listed in Appendix F.

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

The *owner or operator* must comply with all conditions of this permit. All contractors and subcontractors associated with the project must comply with the terms of the SWPPP. Any non-compliance with this permit constitutes a violation of the Clean Water

Act (CWA) and the ECL and is grounds for an enforcement action against the *owner or operator* and/or the contractor/subcontractor; permit revocation, suspension or modification; or denial of a permit renewal application. Upon a finding of significant non-compliance with this permit or the applicable SWPPP, the Department may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order shall be in writing, shall describe the non-compliance in detail, and shall be sent to the *owner or operator*.

If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE). *Construction activity* shall not resume until written permission to do so has been received from the RWE.

B. Continuation of the Expired General Permit

This permit expires five (5) years from the effective date. If a new general permit is not issued prior to the expiration of this general permit, an *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the terms and conditions of this general permit, if it is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, until a new general permit is issued.

C. Enforcement

Failure of the *owner or operator,* its contractors, subcontractors, agents and/or assigns to strictly adhere to any of the permit requirements contained herein shall constitute a violation of this permit. There are substantial criminal, civil, and administrative penalties associated with violating the provisions of this permit. Fines of up to $37,500 per day for each violation and imprisonment for up to fifteen (15) years may be assessed depending upon the nature and degree of the offense.

D. Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for an *owner or operator* in an enforcement action that it would have been necessary to halt or reduce the *construction activity* in order to maintain compliance with the conditions of this permit.

E. Duty to Mitigate

The *owner or operator* and its contractors and subcontractors shall take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

F. Duty to Provide Information

The *owner or operator* shall furnish to the Department, within a reasonable specified time period of a written request, all documentation necessary to demonstrate eligibility and any information to determine compliance with this permit or to determine whether cause exists for modifying or revoking this permit, or suspending or denying coverage under this permit, in accordance with the terms and conditions of this permit. The NOI, SWPPP and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five (5) business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

G. Other Information

When the *owner or operator* becomes aware that they failed to submit any relevant facts, or submitted incorrect information in the NOI or in any of the documents required by this permit , or have made substantive revisions to the SWPPP (e.g. the scope of the project changes significantly, the type of post-construction stormwater management practice(s) changes, there is a reduction in the sizing of the post-construction stormwater management practice, or there is an increase in the disturbance area or *impervious area*), which were not reflected in the original NOI submitted to the Department, they shall promptly submit such facts or information to the Department using the contact information in Part II.A. of this permit. Failure of the *owner or operator* to correct or supplement any relevant facts within five (5) business days of becoming aware of the deficiency shall constitute a violation of this permit.

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:

    a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

(i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

(ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:

(i) the chief executive officer of the agency, or

(ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).

2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:

a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;

b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

superintendent, position of *equivalent* responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position) and,

c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.

3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.

4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4,* or by a duly authorized representative of that person.

   It shall constitute a permit violation if an incorrect and/or improper signatory authorizes any required forms, SWPPP and/or inspection reports.

I. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. *Owners or operators* must obtain any applicable conveyances, easements, licenses and/or access to real property prior to *commencing construction activity*.

J. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Requirement to Obtain Coverage Under an Alternative Permit

1. The Department may require any owner or operator authorized by this permit to apply for and/or obtain either an individual SPDES permit or another SPDES general permit. When the Department requires any discharger authorized by a general permit to apply for an individual SPDES permit, it shall notify the discharger in writing that a permit application is required. This notice shall

include a brief statement of the reasons for this decision, an application form, a statement setting a time frame for the owner or operator to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from owner or operator receipt of the notification letter, whereby the authorization to discharge under this general permit shall be terminated. Applications must be submitted to the appropriate Permit Administrator at the Regional Office. The Department may grant additional time upon demonstration, to the satisfaction of the Department, that additional time to apply for an alternative authorization is necessary or where the Department has not provided a permit determination in accordance with Part 621 of this Title.

2. When an individual SPDES permit is issued to a discharger authorized to *discharge* under a general SPDES permit for the same *discharge*(s), the general permit authorization for outfalls authorized under the individual SPDES permit is automatically terminated on the effective date of the individual permit unless termination is earlier in accordance with 6 NYCRR Part 750.

L. Proper Operation and Maintenance

The *owner or operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *owner or operator* to achieve compliance with the conditions of this permit and with the requirements of the SWPPP.

M. Inspection and Entry

The *owner or operator* shall allow an authorized representative of the Department, EPA, applicable county health department, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the discharge, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the owner’s or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.

4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

This permit may, at any time, be modified, suspended, revoked, or renewed by the Department in accordance with 6 NYCRR Part 621. The filing of a request by the *owner or operator* for a permit modification, revocation and reissuance, termination, a notification of planned changes or anticipated noncompliance does not limit, diminish and/or stay compliance with any terms of this permit.

O. Definitions

Definitions of key terms are included in Appendix A of this permit.

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.

2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

In accordance with 6NYCRR Part 750-2.4 and 750-2.5, any person who knowingly makes any false material statement, representation, or certification in any application, record, report or other document filed or required to be maintained under this permit, including reports of compliance or noncompliance shall, upon conviction, be punished in accordance with ECL §71-1933 and or Articles 175 and 210 of the New York State Penal Law.

R. Other Permits

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
Cpv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DOW – Division of Water
EAF – Environmental Assessment Form
ECL - Environmental Conservation Law
EPA – U. S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review
SEQRA - State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property –means the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" prepared by the Department in cooperation with agencies of New York Nonpoint Source Coordinating Committee (dated June 2007).

Alter Hydrology from Pre to Post-Development Conditions - means the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer - means a sewer that is designed to collect and convey both "sewage" and "stormwater".

Commence (Commencement of) Construction Activities - means the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the SWPPP. See definition for "*Construction Activity(ies)*" also.

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal. Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility.

Construction Site – means the land area where *construction activity(ies)* will occur. See definition for "*Commence (Commencement of) Construction Activities"* and "*Larger Common Plan of Development or Sale" also.*

Dewatering – means the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Direct Discharge (to a specific surface waterbody) - means that runoff flows from a *construction site* by overland flow and the first point of discharge is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system

and the first point of discharge from the separate storm sewer system is the specific surface waterbody.

Discharge(s) - means any addition of any pollutant to waters of the State through an outlet or *point source*.

Embankment –means an earthen or rock slope that supports a road/highway.

Endangered or Threatened Species – see 6 NYCRR Part 182 of the Department's rules and regulations for definition of terms and requirements.

Environmental Conservation Law (ECL) - means chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law.

Equivalent (Equivalence) – means that the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization - means that all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other equivalent stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

General SPDES permit - means a SPDES permit issued pursuant to 6 NYCRR Part 750-1.21 and Section 70-0117 of the ECL authorizing a category of discharges.

Groundwater(s) - means waters in the saturated zone. The saturated zone is a subsurface zone in which all the interstices are filled with water under pressure greater than that of the atmosphere. Although the zone may contain gas-filled interstices or interstices filled with fluids other than water, it is still considered saturated.

Historic Property – means any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) - means all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – means not technologically possible, or not economically practicable and achievable in light of best industry practices.

Larger Common Plan of Development or Sale - means a contiguous area where multiple separate and distinct *construction activities* are occurring, or will occur, under one plan. The term “plan” in “larger common plan of development or sale” is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQRA) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating that *construction activities* may occur on a specific plot.

For discrete construction projects that are located within a larger common plan of development or sale that are at least 1/4 mile apart, each project can be treated as a separate plan of development or sale provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Minimize – means reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to surface waters of the State*;*
(ii) Designed or used for collecting or conveying stormwater;
(iii) Which is not a *combined sewer*; and
(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

National Pollutant Discharge Elimination System (NPDES) - means the national system for the issuance of wastewater and stormwater permits under the Federal Water Pollution Control Act (Clean Water Act).

Natural Buffer –means an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

NOI Acknowledgment Letter - means the letter that the Department sends to an owner or operator to acknowledge the Department's receipt and acceptance of a complete Notice of Intent. This letter documents the owner's or operator's authorization to discharge in accordance with the general permit for stormwater discharges from *construction activity*.

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank –means flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

Performance Criteria – means the design criteria listed under the "Required Elements" sections in Chapters 5, 6 and 10 of the technical standard, New York State Stormwater Management Design Manual, dated January 2015. It does not include the Sizing Criteria (i.e. WQv, RRv, Cpv, Qp and Qf) in Part I.C.2. of the permit.

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

Pollutant - means dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast discharged into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq .

Qualified Inspector - means a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder or other Department endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any post-construction stormwater management practices that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional - means a person that is knowledgeable in the principles and practices of stormwater management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the SWPPP that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – means the disturbance and reconstruction of existing impervious area, including impervious areas that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Routine Maintenance Activity - means *construction activity* that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, including, but not limited to:

- Re-grading of gravel roads or parking lots,
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and hydraulic capacity of the ditch,
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch),
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*,
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material,
- Long-term use of equipment storage areas at or near highway maintenance facilities,
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*,
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts.

Site limitations – means site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical site limitations include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of site limitations shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – means the criteria included in Part I.C.2 of the permit that are used to size post-construction stormwater management control practices. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank* Flood (Qp), and Extreme Flood (Qf).

State Pollutant Discharge Elimination System (SPDES) - means the system established pursuant to Article 17 of the ECL and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Steep Slope – means land area designated on the current United States Department of Agriculture ("USDA") Soil Survey as Soil Slope Phase "D", (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

Surface Waters of the State - shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – means that an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization - means that exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Loads (TMDLs) - A TMDL is the sum of the allowable loads of a single pollutant from all contributing point and *nonpoint source*s. It is a calculation of the maximum amount of a pollutant that a waterbody can receive on a daily basis and still meet *water quality standards*, and an allocation of that amount to the pollutant's sources. A TMDL stipulates wasteload allocations (WLAs) for *point source* discharges, load allocations (LAs) for *nonpoint source*s, and a margin of safety (MOS).

Trained Contractor - means an employee from the contracting (construction) company, identified in Part III.A.6., that has received four (4) hours of Department endorsed

training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.6., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, New York State Erosion and Sediment Control Certificate Program holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity).

The *trained contractor* is responsible for the day to day implementation of the SWPPP.

Uniform Procedures Act (UPA) Permit - means a permit required under 6 NYCRR Part 621 of the Environmental Conservation Law (ECL), Article 70.

Water Quality Standard - means such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
Construction Activities that Require the Preparation of a SWPPP That Only Includes Erosion and Sediment Controls

The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single family home not located in one of the watersheds listed in Appendix C or not *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions with 25% or less impervious cover at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.

The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover
- Cross-country ski trails and walking/hiking trails
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.
- Slope stabilization projects
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

Table 1 (Continued) CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Spoil areas that will be covered with vegetation
- Vegetated open space projects (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) excluding projects that *alter hydrology from pre to post development* conditions,
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre to post development* conditions
- Demolition project where vegetation will be established, and no redevelopment is planned
- Overhead electric transmission line project that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*
- Structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State", excluding projects that involve soil disturbances of greater than five acres and construction activities that include the construction or reconstruction of impervious area
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary impervious areas that will be restored to pre-construction conditions once the construction activity is complete

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Single family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family home that disturbs five (5) or more acres of land
- Single family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix E
- Single family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% impervious cover at total site build-out
- Single family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a larger common plan of development or sale that will ultimately disturb five or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) and structural practices as identified in Table II in the "Agricultural Management Practices Catalog for Nonpoint Source Pollution in New York State" that include the construction or reconstruction of *impervious area*, excluding projects that involve soil disturbances of less than five acres.
- Golf courses
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTW's, water treatment plants, and water storage tanks
- Office complexes
- Playgrounds that include the construction or reconstruction of impervious area
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surface
- Road construction or reconstruction, including roads constructed as part of the construction activities listed in Table 1

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

The following construction activities that involve soil disturbances of one (1) or more acres of land:

- Parking lot construction or reconstruction, including parking lots constructed as part of the construction activities listed in Table 1
- Athletic fields (natural grass) that include the construction or reconstruction of impervious area (>5% of disturbed area) or *alter the hydrology from pre to post development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations and well drilling pads, surfaced with *impervious cover,* and constructed as part of an over-head electric transmission line project, wind-power project, cell tower project, oil or gas well drilling project, sewer or water main project or other linear utility project
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a residential, commercial or institutional development
- Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are part of a highway construction or reconstruction project
- All other construction activities that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre to post development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators* of construction activities identified in Table 2 of Appendix B must prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the Enhanced Phosphorus Removal Standards included in the technical standard, New York State Stormwater Management Design Manual ("Design Manual").

- Entire New York City Watershed located east of the Hudson River **-** Figure 1
- Onondaga Lake Watershed **-** Figure 2
- Greenwood Lake Watershed **-**Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

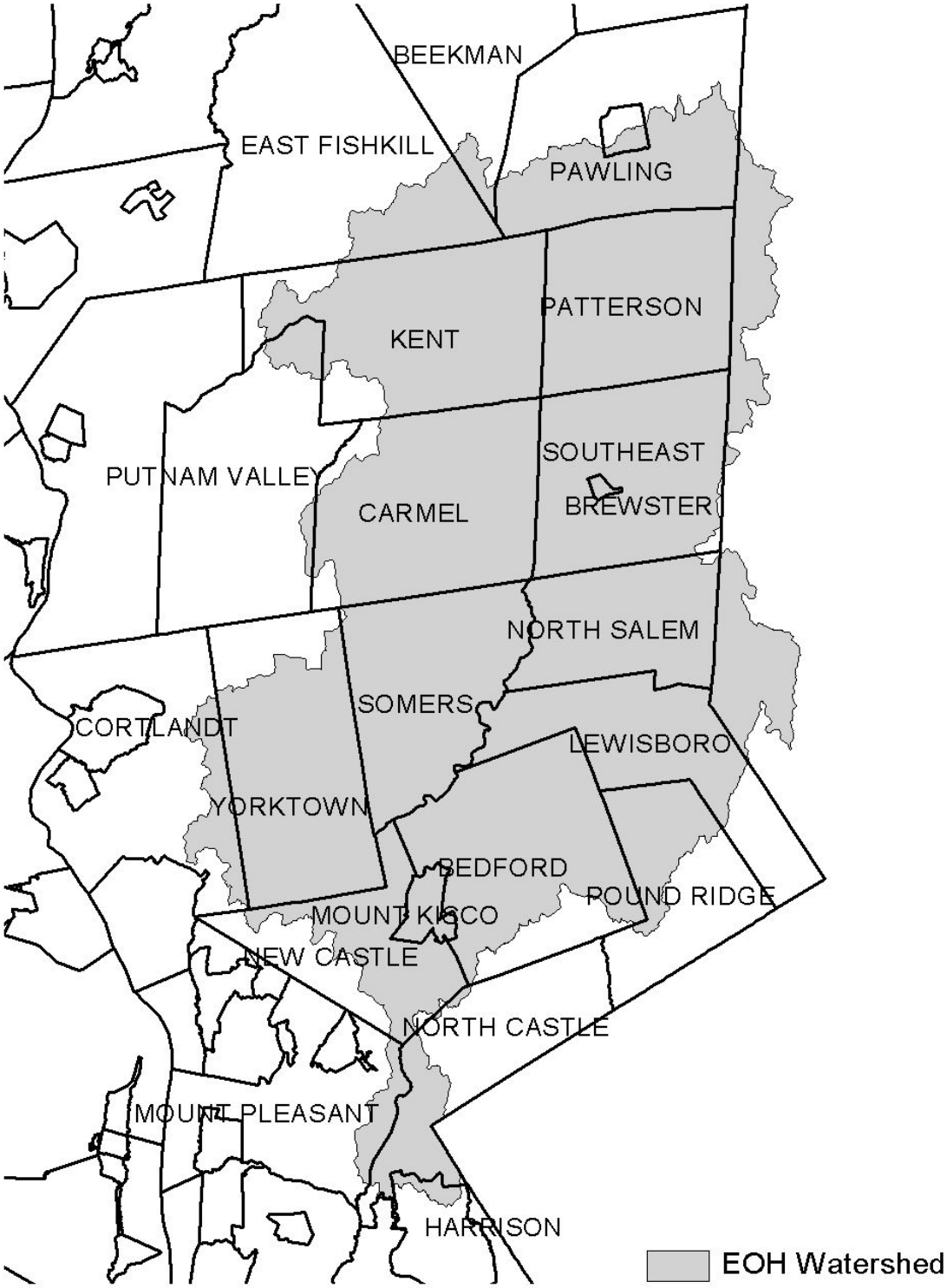


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

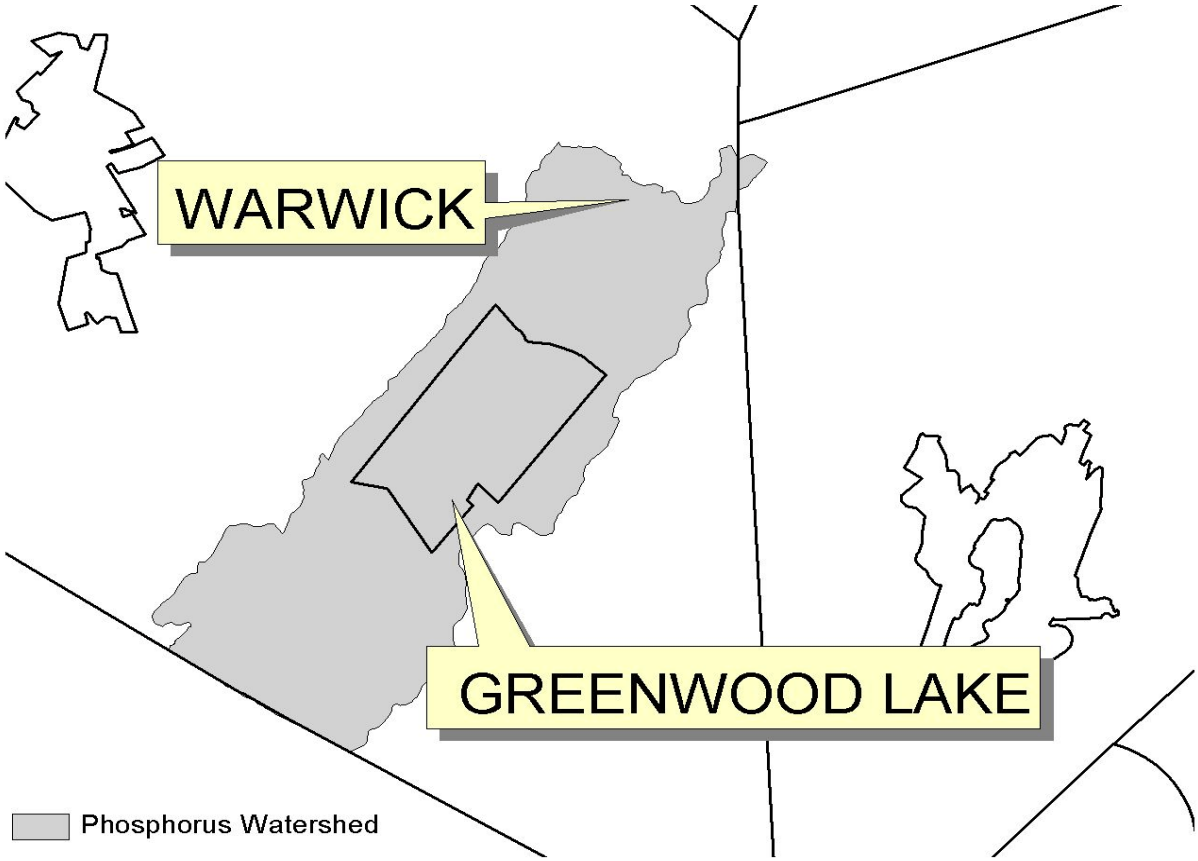


Figure 4 - Oscawana Lake Watershed

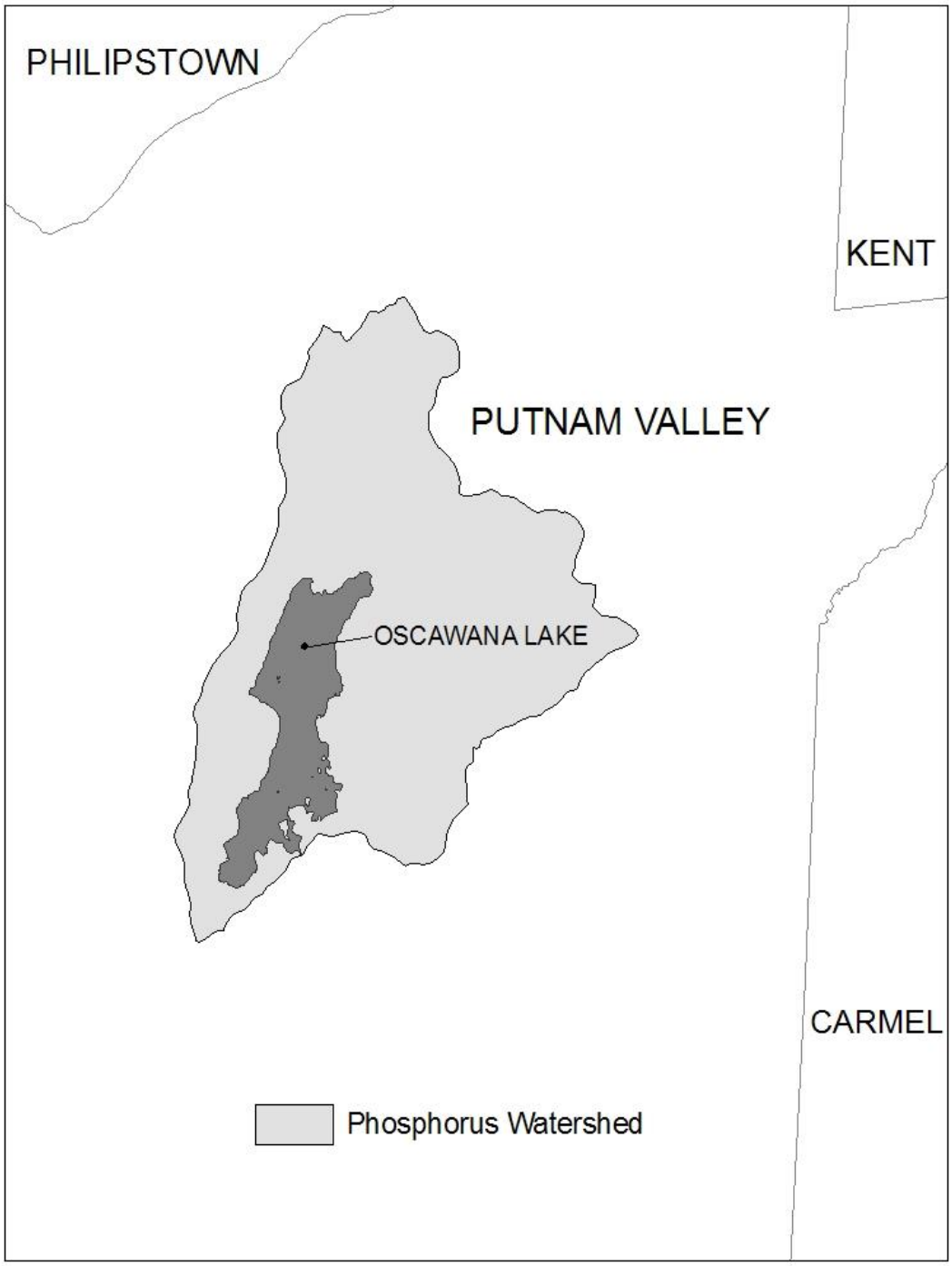
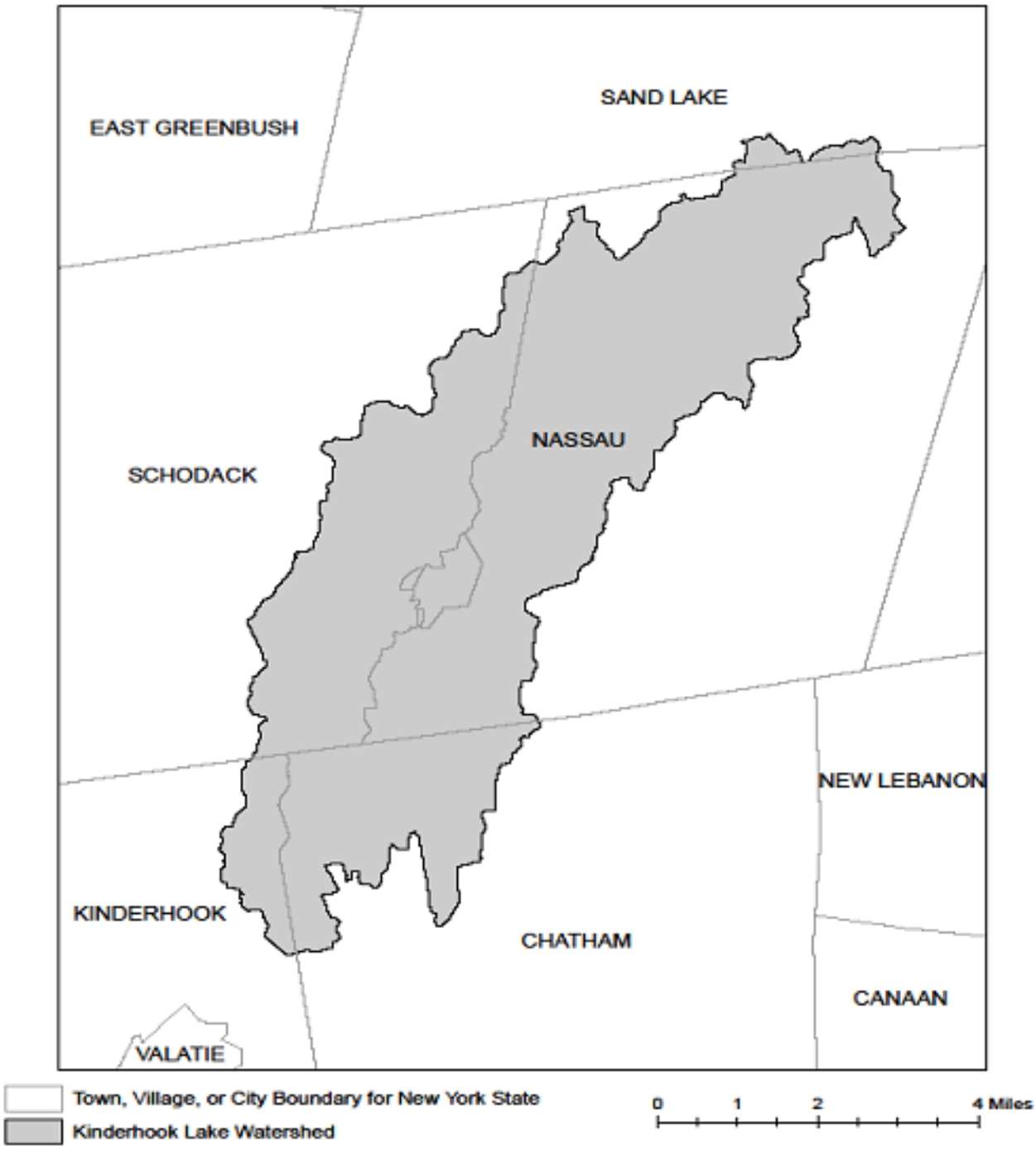


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

Watersheds where *owners or operators* of construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land must obtain coverage under this permit.

Entire New York City Watershed that is located east of the Hudson River **-** See Figure 1 in Appendix C

APPENDIX E – 303(d) Segments Impaired by Construction Related Pollutant(s)

List of 303(d) segments impaired by pollutants related to *construction activity* (e.g. silt, sediment or nutrients). The list was developed using "The Final New York State 2016 Section 303(d) List of Impaired Waters Requiring a TMDL/Other Strategy" dated November 2016. *Owners or operators* of single family home and single family residential subdivisions with 25% or less total impervious cover at total site build-out that involve soil disturbances of one or more acres of land, but less than 5 acres, and *directly discharge* to one of the listed segments below shall prepare a SWPPP that includes post-construction stormwater management practices designed in conformance with the New York State Stormwater Management Design Manual ("Design Manual"), dated January 2015.

COUNTY	WATERBODY	POLLUTANT
Albany	Ann Lee (Shakers) Pond, Stump Pond	Nutrients
Albany	Basic Creek Reservoir	Nutrients
Allegany	Amity Lake, Saunders Pond	Nutrients
Bronx	Long Island Sound, Bronx	Nutrients
Bronx	Van Cortlandt Lake	Nutrients
Broome	Fly Pond, Deer Lake, Sky Lake	Nutrients
Broome	Minor Tribs to Lower Susquehanna (north)	Nutrients
Broome	Whitney Point Lake/Reservoir	Nutrients
Cattaraugus	Allegheny River/Reservoir	Nutrients
Cattaraugus	Beaver (Alma) Lake	Nutrients
Cattaraugus	Case Lake	Nutrients
Cattaraugus	Linlyco/Club Pond	Nutrients
Cayuga	Duck Lake	Nutrients
Cayuga	Little Sodus Bay	Nutrients
Chautauqua	Bear Lake	Nutrients
Chautauqua	Chadakoin River and tribs	Nutrients
Chautauqua	Chautauqua Lake, North	Nutrients
Chautauqua	Chautauqua Lake, South	Nutrients
Chautauqua	Findley Lake	Nutrients
Chautauqua	Hulburt/Clymer Pond	Nutrients
Clinton	Great Chazy River, Lower, Main Stem	Silt/Sediment
Clinton	Lake Champlain, Main Lake, Middle	Nutrients
Clinton	Lake Champlain, Main Lake, North	Nutrients
Columbia	Kinderhook Lake	Nutrients
Columbia	Robinson Pond	Nutrients
Cortland	Dean Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Dutchess	Fall Kill and tribs	Nutrients
Dutchess	Hillside Lake	Nutrients
Dutchess	Wappingers Lake	Nutrients
Dutchess	Wappingers Lake	Silt/Sediment
Erie	Beeman Creek and tribs	Nutrients
Erie	Ellicott Creek, Lower, and tribs	Silt/Sediment
Erie	Ellicott Creek, Lower, and tribs	Nutrients
Erie	Green Lake	Nutrients
Erie	Little Sister Creek, Lower, and tribs	Nutrients
Erie	Murder Creek, Lower, and tribs	Nutrients
Erie	Rush Creek and tribs	Nutrients
Erie	Scajaquada Creek, Lower, and tribs	Nutrients
Erie	Scajaquada Creek, Middle, and tribs	Nutrients
Erie	Scajaquada Creek, Upper, and tribs	Nutrients
Erie	South Branch Smoke Cr, Lower, and tribs	Silt/Sediment
Erie	South Branch Smoke Cr, Lower, and tribs	Nutrients
Essex	Lake Champlain, Main Lake, South	Nutrients
Essex	Lake Champlain, South Lake	Nutrients
Essex	Willsboro Bay	Nutrients
Genesee	Bigelow Creek and tribs	Nutrients
Genesee	Black Creek, Middle, and minor tribs	Nutrients
Genesee	Black Creek, Upper, and minor tribs	Nutrients
Genesee	Bowen Brook and tribs	Nutrients
Genesee	LeRoy Reservoir	Nutrients
Genesee	Oak Orchard Cr, Upper, and tribs	Nutrients
Genesee	Tonawanda Creek, Middle, Main Stem	Nutrients
Greene	Schoharie Reservoir	Silt/Sediment
Greene	Sleepy Hollow Lake	Silt/Sediment
Herkimer	Steele Creek tribs	Silt/Sediment
Herkimer	Steele Creek tribs	Nutrients
Jefferson	Moon Lake	Nutrients
Kings	Hendrix Creek	Nutrients
Kings	Prospect Park Lake	Nutrients
Lewis	Mill Creek/South Branch, and tribs	Nutrients
Livingston	Christie Creek and tribs	Nutrients
Livingston	Conesus Lake	Nutrients
Livingston	Mill Creek and minor tribs	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs	Nutrients
Monroe	Buck Pond	Nutrients
Monroe	Cranberry Pond	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Monroe	Lake Ontario Shoreline, Western	Nutrients
Monroe	Long Pond	Nutrients
Monroe	Mill Creek and tribs	Nutrients
Monroe	Mill Creek/Blue Pond Outlet and tribs	Nutrients
Monroe	Minor Tribs to Irondequoit Bay	Nutrients
Monroe	Rochester Embayment - East	Nutrients
Monroe	Rochester Embayment - West	Nutrients
Monroe	Shipbuilders Creek and tribs	Nutrients
Monroe	Thomas Creek/White Brook and tribs	Nutrients
Nassau	Beaver Lake	Nutrients
Nassau	Camaans Pond	Nutrients
Nassau	East Meadow Brook, Upper, and tribs	Silt/Sediment
Nassau	East Rockaway Channel	Nutrients
Nassau	Grant Park Pond	Nutrients
Nassau	Hempstead Bay	Nutrients
Nassau	Hempstead Lake	Nutrients
Nassau	Hewlett Bay	Nutrients
Nassau	Hog Island Channel	Nutrients
Nassau	Long Island Sound, Nassau County Waters	Nutrients
Nassau	Massapequa Creek and tribs	Nutrients
Nassau	Milburn/Parsonage Creeks, Upp, and tribs	Nutrients
Nassau	Reynolds Channel, west	Nutrients
Nassau	Tidal Tribs to Hempstead Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Nutrients
Nassau	Tribs (fresh) to East Bay	Silt/Sediment
Nassau	Tribs to Smith/Halls Ponds	Nutrients
Nassau	Woodmere Channel	Nutrients
New York	Harlem Meer	Nutrients
New York	The Lake in Central Park	Nutrients
Niagara	Bergholtz Creek and tribs	Nutrients
Niagara	Hyde Park Lake	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Niagara	Lake Ontario Shoreline, Western	Nutrients
Oneida	Ballou, Nail Creeks and tribs	Nutrients
Onondaga	Harbor Brook, Lower, and tribs	Nutrients
Onondaga	Ley Creek and tribs	Nutrients
Onondaga	Minor Tribs to Onondaga Lake	Nutrients
Onondaga	Ninemile Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Lower, and tribs	Nutrients
Onondaga	Onondaga Creek, Middle, and tribs	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Onondaga	Onondaga Lake, northern end	Nutrients
Onondaga	Onondaga Lake, southern end	Nutrients
Ontario	Great Brook and minor tribs	Silt/Sediment
Ontario	Great Brook and minor tribs	Nutrients
Ontario	Hemlock Lake Outlet and minor tribs	Nutrients
Ontario	Honeoye Lake	Nutrients
Orange	Greenwood Lake	Nutrients
Orange	Monhagen Brook and tribs	Nutrients
Orange	Orange Lake	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Orleans	Lake Ontario Shoreline, Western	Nutrients
Oswego	Lake Neatahwanta	Nutrients
Oswego	Pleasant Lake	Nutrients
Putnam	Bog Brook Reservoir	Nutrients
Putnam	Boyd Corners Reservoir	Nutrients
Putnam	Croton Falls Reservoir	Nutrients
Putnam	Diverting Reservoir	Nutrients
Putnam	East Branch Reservoir	Nutrients
Putnam	Lake Carmel	Nutrients
Putnam	Middle Branch Reservoir	Nutrients
Putnam	Oscawana Lake	Nutrients
Putnam	Palmer Lake	Nutrients
Putnam	West Branch Reservoir	Nutrients
Queens	Bergen Basin	Nutrients
Queens	Flushing Creek/Bay	Nutrients
Queens	Jamaica Bay, Eastern, and tribs (Queens)	Nutrients
Queens	Kissena Lake	Nutrients
Queens	Meadow Lake	Nutrients
Queens	Willow Lake	Nutrients
Rensselaer	Nassau Lake	Nutrients
Rensselaer	Snyders Lake	Nutrients
Richmond	Grasmere Lake/Bradys Pond	Nutrients
Rockland	Congers Lake, Swartout Lake	Nutrients
Rockland	Rockland Lake	Nutrients
Saratoga	Ballston Lake	Nutrients
Saratoga	Dwaas Kill and tribs	Silt/Sediment
Saratoga	Dwaas Kill and tribs	Nutrients
Saratoga	Lake Lonely	Nutrients
Saratoga	Round Lake	Nutrients
Saratoga	Tribs to Lake Lonely	Nutrients

303(d) Segments Impaired by Construction Related Pollutant(s)

Schenectady	Collins Lake	Nutrients
Schenectady	Duane Lake	Nutrients
Schenectady	Mariaville Lake	Nutrients
Schoharie	Engleville Pond	Nutrients
Schoharie	Summit Lake	Nutrients
Seneca	Reeder Creek and tribs	Nutrients
St.Lawrence	Black Lake Outlet/Black Lake	Nutrients
St.Lawrence	Fish Creek and minor tribs	Nutrients
Steuben	Smith Pond	Nutrients
Suffolk	Agawam Lake	Nutrients
Suffolk	Big/Little Fresh Ponds	Nutrients
Suffolk	Canaan Lake	Silt/Sediment
Suffolk	Canaan Lake	Nutrients
Suffolk	Flanders Bay, West/Lower Sawmill Creek	Nutrients
Suffolk	Fresh Pond	Nutrients
Suffolk	Great South Bay, East	Nutrients
Suffolk	Great South Bay, Middle	Nutrients
Suffolk	Great South Bay, West	Nutrients
Suffolk	Lake Ronkonkoma	Nutrients
Suffolk	Long Island Sound, Suffolk County, West	Nutrients
Suffolk	Mattituck (Marratooka) Pond	Nutrients
Suffolk	Meetinghouse/Terrys Creeks and tribs	Nutrients
Suffolk	Mill and Seven Ponds	Nutrients
Suffolk	Millers Pond	Nutrients
Suffolk	Moriches Bay, East	Nutrients
Suffolk	Moriches Bay, West	Nutrients
Suffolk	Peconic River, Lower, and tidal tribs	Nutrients
Suffolk	Quantuck Bay	Nutrients
Suffolk	Shinnecock Bay and Inlet	Nutrients
Suffolk	Tidal tribs to West Moriches Bay	Nutrients
Sullivan	Bodine, Montgomery Lakes	Nutrients
Sullivan	Davies Lake	Nutrients
Sullivan	Evens Lake	Nutrients
Sullivan	Pleasure Lake	Nutrients
Tompkins	Cayuga Lake, Southern End	Nutrients
Tompkins	Cayuga Lake, Southern End	Silt/Sediment
Tompkins	Owasco Inlet, Upper, and tribs	Nutrients
Ulster	Ashokan Reservoir	Silt/Sediment
Ulster	Esopus Creek, Upper, and minor tribs	Silt/Sediment
Warren	Hague Brook and tribs	Silt/Sediment

303(d) Segments Impaired by Construction Related Pollutant(s)

Warren	Huddle/Finkle Brooks and tribs	Silt/Sediment
Warren	Indian Brook and tribs	Silt/Sediment
Warren	Lake George	Silt/Sediment
Warren	Tribs to L.George, Village of L George	Silt/Sediment
Washington	Cossayuna Lake	Nutrients
Washington	Lake Champlain, South Bay	Nutrients
Washington	Tribs to L.George, East Shore	Silt/Sediment
Washington	Wood Cr/Champlain Canal and minor tribs	Nutrients
Wayne	Port Bay	Nutrients
Westchester	Amawalk Reservoir	Nutrients
Westchester	Blind Brook, Upper, and tribs	Silt/Sediment
Westchester	Cross River Reservoir	Nutrients
Westchester	Lake Katonah	Nutrients
Westchester	Lake Lincolndale	Nutrients
Westchester	Lake Meahagh	Nutrients
Westchester	Lake Mohegan	Nutrients
Westchester	Lake Shenorock	Nutrients
Westchester	Long Island Sound, Westchester (East)	Nutrients
Westchester	Mamaroneck River, Lower	Silt/Sediment
Westchester	Mamaroneck River, Upper, and minor tribs	Silt/Sediment
Westchester	Muscoot/Upper New Croton Reservoir	Nutrients
Westchester	New Croton Reservoir	Nutrients
Westchester	Peach Lake	Nutrients
Westchester	Reservoir No.1 (Lake Isle)	Nutrients
Westchester	Saw Mill River, Lower, and tribs	Nutrients
Westchester	Saw Mill River, Middle, and tribs	Nutrients
Westchester	Sheldrake River and tribs	Silt/Sediment
Westchester	Sheldrake River and tribs	Nutrients
Westchester	Silver Lake	Nutrients
Westchester	Teatown Lake	Nutrients
Westchester	Titicus Reservoir	Nutrients
Westchester	Truesdale Lake	Nutrients
Westchester	Wallace Pond	Nutrients
Wyoming	Java Lake	Nutrients
Wyoming	Silver Lake	Nutrients

APPENDIX F – List of NYS DEC Regional Offices

Region	Covering the following counties:	DIVISION OF ENVIRONMENTAL PERMITS (DEP) Permit Administrators	DIVISION OF WATER (DOW) Water (SPDES) Program
1	Nassau and Suffolk	50 Circle Road Stony Brook, NY 11790 Tel. (631) 444-0365	50 Circle Road Stony Brook, NY 11790-3409 Tel. (631) 444-0405
2	Bronx, Kings, New York, Queens and Richmond	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4997	1 Hunters Point Plaza, 47-40 21st St. Long Island City, NY 11101-5407 Tel. (718) 482-4933
3	Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster and Westchester	21 South Putt Corners Road New Paltz, NY 12561-1696 Tel. (845) 256-3059	100 Hillside Avenue, Suite 1w White Plains, NY 10603 Tel. (914) 428 - 2505
4	Albany, Columbia, Delaware, Greene, Montgomery, Otsego, Rensselaer, Schenectady and Schoharie	1150 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2069	1130 North Westcott Road Schenectady, NY 12306-2014 Tel. (518) 357-2045
5	Clinton, Essex, Franklin, Fulton, Hamilton, Saratoga, Warren and Washington	1115 State Route 86, Po Box 296 Ray Brook, NY 12977-0296 Tel. (518) 897-1234	232 Golf Course Road Warrensburg, NY 12885-1172 Tel. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7438	615 ERIE BLVD. WEST SYRACUSE, NY 13204-2400 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7165	270 MICHIGAN AVENUE BUFFALO, NY 14203-2999 TEL. (716) 851-7070

Appendix B

Permitting Documentation (NOI, Permit Authorization, Site Certifications)

Appendix C

Soil Maps

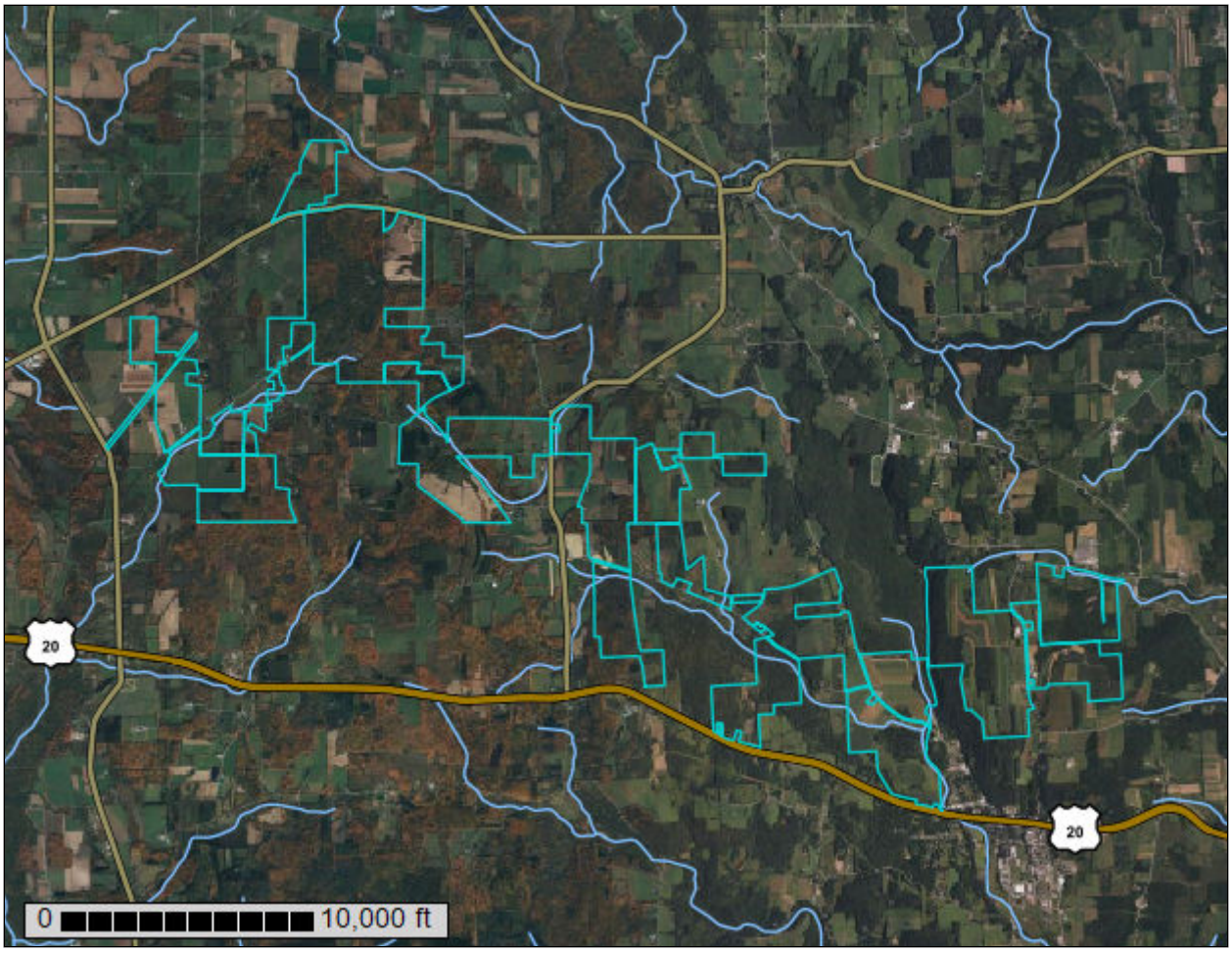
United States Department of Agriculture

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 Madison County, New York



October 18, 2023

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.

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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.

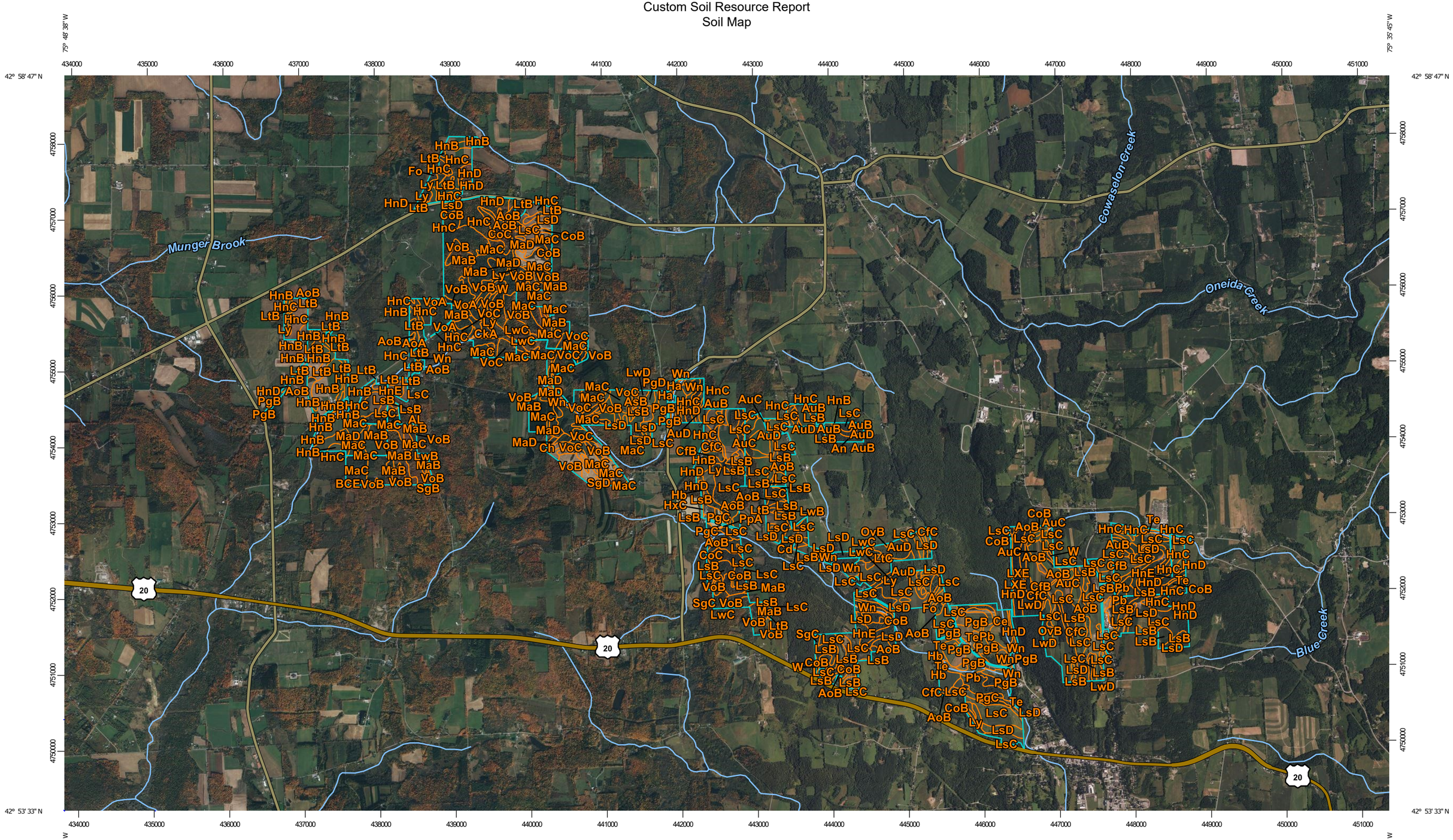
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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: 1:47,200 if printed on B landscape (17" x 11") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

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 1:15,800.

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: Madison County, New York
Survey Area Data: Version 22, Sep 5, 2023

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

Date(s) aerial images were photographed: Jul 26, 2020—Oct 28, 2022

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
Ad	Alden mucky silt loam	2.4	0.1%
AL	Alluvial land	25.9	0.6%
An	Angola silt loam	26.7	0.7%
AoA	Appleton loam, 0 to 3 percent slopes	4.2	0.1%
AoB	Appleton loam, 3 to 8 percent slopes	110.8	2.7%
AsB	Arnot channery silt loam, 3 to 8 percent slopes	2.2	0.1%
AuB	Aurora silt loam, 3 to 8 percent slopes	36.0	0.9%
AuC	Aurora silt loam, 8 to 15 percent slopes	73.8	1.8%
AuD	Aurora silt loam, 15 to 25 percent slopes	39.8	1.0%
BCE	Bath soils, steep	0.6	0.0%
Cd	Canandaigua silt loam	0.3	0.0%
Ce	Carlisle muck	28.3	0.7%
CfB	Cazenovia silt loam, 3 to 8 percent slopes	72.2	1.8%
CfC	Cazenovia silt loam, 8 to 15 percent slopes	23.3	0.6%
Ch	Chippewa silt loam, 0 to 3 percent slopes	35.5	0.9%
CkA	Collamer silt loam, 0 to 3 percent slopes	5.6	0.1%
CoB	Conesus silt loam, 3 to 8 percent slopes	98.3	2.4%
CoC	Conesus silt loam, 8 to 15 percent slopes	44.5	1.1%
Fo	Fonda mucky silt loam	7.6	0.2%
Fr	Fredon silt loam	3.0	0.1%
GP	Gravel pits	5.9	0.1%
Ha	Halsey silt loam	3.4	0.1%
Hb	Hamlin silt loam	12.0	0.3%
HnB	Honeoye silt loam, 3 to 8 percent slopes	162.0	4.0%
HnC	Honeoye silt loam, 8 to 15 percent slopes	280.8	6.9%
HnD	Honeoye silt loam, 15 to 25 percent slopes	96.5	2.4%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
HnE	Honeoye silt loam, 25 to 50 percent slopes	63.1	1.6%
HOE	Honeoye-Farmington complex, 25 to 65 percent slopes, rocky	4.6	0.1%
HxC	Howard gravelly silt loam, rolling	0.8	0.0%
LsB	Lansing gravelly silt loam, 3 to 8 percent slopes	357.0	8.8%
LsC	Lansing gravelly silt loam, 8 to 15 percent slopes	672.1	16.6%
LsD	Lansing gravelly silt loam, 15 to 25 percent slopes	135.8	3.4%
LtB	Lima silt loam, 3 to 8 percent slopes	83.6	2.1%
LtC	Lima silt loam, 8 to 15 percent slopes	6.4	0.2%
LwB	Lordstown channery silt loam, 3 to 8 percent slopes	18.1	0.4%
LwC	Lordstown channery silt loam, 8 to 15 percent slopes	27.1	0.7%
LwD	Lordstown channery silt loam, 15 to 25 percent slopes	57.6	1.4%
LXE	Lordstown-Arnot complex, steep, rocky	39.5	1.0%
Ly	Lyons soils, 0 to 3 percent slopes	71.5	1.8%
MaB	Mardin channery silt loam, 3 to 8 percent slopes	218.7	5.4%
MaC	Mardin channery silt loam, 8 to 15 percent slopes	430.8	10.6%
MaD	Mardin channery silt loam, 15 to 25 percent slopes	49.4	1.2%
Od	Odessa silt loam, 0 to 3 percent slopes	0.3	0.0%
OvB	Ovid silt loam, 3 to 8 percent slopes	2.5	0.1%
Pb	Palms muck	73.4	1.8%
PgA	Palmyra gravelly loam, 0 to 3 percent slopes	2.8	0.1%
PgB	Palmyra gravelly loam, undulating	68.9	1.7%
PgC	Palmyra gravelly loam, rolling	28.6	0.7%
PgD	Palmyra gravelly loam, hilly	8.3	0.2%
PpA	Phelps gravelly silt loam, 0 to 3 percent slopes	16.0	0.4%
SdC	Schoharie silty clay loam, 8 to 15 percent slopes	0.5	0.0%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SgB	Stockbridge channery silt loam, 3 to 8 percent slopes	4.5	0.1%
SgC	Stockbridge channery silt loam, 8 to 15 percent slopes	13.1	0.3%
SgD	Stockbridge channery silt loam, 15 to 25 percent slopes	1.2	0.0%
Te	Teel silt loam	59.2	1.5%
VoA	Volusia channery silt loam, 0 to 3 percent slopes	5.5	0.1%
VoB	Volusia channery silt loam, 3 to 8 percent slopes	134.6	3.3%
VoC	Volusia channery silt loam, 8 to 15 percent slopes	91.6	2.3%
W	Water	3.3	0.1%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	98.0	2.4%
Totals for Area of Interest		**4,050.2**	**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.

Madison County, New York

Ad—Alden mucky silt loam

Map Unit Setting

National map unit symbol: 9tct
Elevation: 300 to 1,500 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Alden

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: A silty mantle of local deposition overlying loamy till

Typical profile

Oa - 0 to 4 inches: muck
H1 - 4 to 7 inches: mucky silt loam
H2 - 7 to 19 inches: silt loam
H3 - 19 to 60 inches: gravelly loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F140XY016NY - Mineral Wetlands
Hydric soil rating: Yes

Minor Components

Chippewa

Percent of map unit: 5 percent

Landform: Depressions
Hydric soil rating: Yes

Lyons

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Palms

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

AL—Alluvial land

Map Unit Setting

National map unit symbol: 9tcv
Elevation: 100 to 3,000 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Fluvaquents and similar soils: 41 percent
Udifluvents and similar soils: 39 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fluvaquents

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Alluvium with highly variable texture

Typical profile

H1 - 0 to 5 inches: gravelly silt loam
H2 - 5 to 72 inches: very gravelly silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Ecological site: F101XY003NY - Low Floodplain Depression
Hydric soil rating: Yes

Description of Udifluvents

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium with a wide range of texture

Typical profile

H1 - 0 to 4 inches: gravelly loam
H2 - 4 to 70 inches: very gravelly loam

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to very high (0.06 to 19.98 in/hr)
Depth to water table: About 24 to 72 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A
Ecological site: F101XY002NY - Low Floodplain
Hydric soil rating: No

Minor Components

Teel

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

Wayland

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Wallkill

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Fredon

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

An—Angola silt loam

Map Unit Setting

National map unit symbol: 9tcw
Elevation: 390 to 1,770 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Angola

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived mainly from shale and siltstone

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 22 inches: silt loam
H3 - 22 to 26 inches: weathered bedrock

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

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

Minor Components

Aurora

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

Alden

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Appleton

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

Ovid

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

AoA—Appleton loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2w5hs
Elevation: 250 to 1,670 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

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

Description of Appleton

Setting

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: loam
E - 8 to 16 inches: loam
Bt - 16 to 30 inches: gravelly silt loam
C1 - 30 to 54 inches: gravelly loam
C2 - 54 to 79 inches: gravelly loam

Properties and qualities

Slope: 0 to 3 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): Moderately low to moderately high (0.01 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 8.2 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

Hilton

Percent of map unit: 5 percent
Landform: Till plains, drumlins
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: 4 percent
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: 3 percent
Landform: Till plains, 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

Darien

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

AoB—Appleton loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w5hz
Elevation: 110 to 1,790 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

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

Description of Appleton

Setting

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: loam
E - 8 to 16 inches: loam
Bt - 16 to 30 inches: gravelly silt loam
C1 - 30 to 54 inches: gravelly loam
C2 - 54 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): Moderately low to moderately high (0.01 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 8.2 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

Hilton

Percent of map unit: 5 percent
Landform: Till plains, drumlins
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: 4 percent
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: 3 percent
Landform: Lake plains, till 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

Darien

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

AsB—Arnot channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wbmc
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Arnot

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived mainly from acid sandstone, siltstone, and shale

Typical profile

Ap - 0 to 7 inches: channery silt loam
Bw1 - 7 to 12 inches: very channery silt loam
Bw2 - 12 to 17 inches: very channery silt loam
2R - 17 to 27 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: D
Ecological site: F140XY023NY - Shallow Till Uplands

Hydric soil rating: No

Minor Components

Lordstown

Percent of map unit: 10 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Mountaintop, nose slope, crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Tuller, somewhat poorly drained

Percent of map unit: 5 percent
Landform: Benches, ridges, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

AuB—Aurora silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9td5
Elevation: 1,000 to 1,300 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Aurora

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till derived mainly from calcareous shale, with some limestone and sandstone

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 28 inches: channery silty clay loam

C - 28 to 34 inches: channery silt loam
R - 34 to 41 inches: weathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

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

Minor Components

Lima

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

Wassaic

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

Cazenovia

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

Angola

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

AuC—Aurora silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9td6
Elevation: 1,000 to 1,300 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Aurora and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Aurora

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till derived mainly from calcareous shale, with some limestone and sandstone

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 28 inches: channery silty clay loam
C - 28 to 34 inches: channery silt loam
R - 34 to 41 inches: weathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

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

Minor Components

Cazenovia

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

Lima

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

Farmington

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

Angola

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

AuD—Aurora silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9td7
Elevation: 1,000 to 1,300 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Aurora

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till derived mainly from calcareous shale, with some limestone and sandstone

Typical profile

H1 - 0 to 9 inches: silt loam
H2 - 9 to 28 inches: channery silty clay loam
C - 28 to 34 inches: channery silt loam
R - 34 to 41 inches: weathered bedrock

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

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

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

Rock outcrop
Percent of map unit: 5 percent
Hydric soil rating: Unranked

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

BCE—Bath soils, steep

Map Unit Setting
National map unit symbol: 2v31f
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Bath and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bath

Setting
Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till derived mainly from gray and brown siltstone, sandstone, and shale

Typical profile
A - 0 to 4 inches: channery silt loam
Bw1 - 4 to 15 inches: channery silt loam
Bw2 - 15 to 25 inches: channery loam
E - 25 to 29 inches: channery loam
Bx - 29 to 52 inches: very channery silt loam
C - 52 to 72 inches: very channery silt loam

Properties and qualities

Slope: 25 to 50 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 26 to 38 inches to fragipan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 24 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: F140XY030NY - Well Drained Dense Till
Hydric soil rating: No

Minor Components

Cadosia, very stony

Percent of map unit: 10 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Lordstown

Percent of map unit: 10 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Mountainflank, base slope, crest
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Mardin

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cd—Canandaigua silt loam

Map Unit Setting

National map unit symbol: 9tdh
Elevation: 100 to 1,000 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canandaigua and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canandaigua

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 26 inches: silt loam
H3 - 26 to 62 inches: stratified very fine sandy loam to silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Ecological site: F101XY010NY - Wet Lake Plain Depression
Hydric soil rating: Yes

Minor Components

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

Lakemont
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lamson
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Alden
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Fonda
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Ce—Carlisle muck

Map Unit Setting
National map unit symbol: 9tdj
Elevation: 250 to 1,000 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition
Carlisle and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carlisle

Setting
Landform: Marshes, swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Deep organic material

Typical profile

H1 - 0 to 73 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Very high (about 23.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F101XY004NY - Mucky Depression
Hydric soil rating: Yes

Minor Components

Palms

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Alden

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Edwards

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Lamson

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

CfB—Cazenovia silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9tdk

Elevation: 410 to 1,660 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Cazenovia

Setting

Landform: Till plains, reworked lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 29 inches: silty clay loam
H3 - 29 to 52 inches: gravelly silt loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

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

Minor Components

Schoharie

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

Ovid

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

Odessa

Percent of map unit: 5 percent

Hydric soil rating: No

Honeoye

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

CfC—Cazenovia silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9tdl
Elevation: 410 to 1,660 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Cazenovia

Setting

Landform: Till plains, reworked lake plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till that contains limestone with an admixture of reddish lake-laid clays or reddish clay shale

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 29 inches: silty clay loam
H3 - 29 to 52 inches: gravelly silt loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

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

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

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

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

Ch—Chippewa silt loam, 0 to 3 percent slopes

Map Unit Setting
National map unit symbol: 2v32k
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

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

Description of Chippewa

Setting
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy till dominated by siltstone, sandstone, and shale fragments

Typical profile
Ap - 0 to 7 inches: silt loam
Eg - 7 to 15 inches: channery silt loam
Bxg - 15 to 45 inches: channery silt loam

C - 45 to 72 inches: channery silt loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 8 to 20 inches to fragipan
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: D
Ecological site: F140XY016NY - Mineral Wetlands
Hydric soil rating: Yes

Minor Components

Chippewa, very poorly drained

Percent of map unit: 10 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Volusia

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

CkA—Collamer silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9tds
Elevation: 380 to 1,720 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Collamer

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Silty and clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: silt loam
H2 - 7 to 16 inches: silt loam
H3 - 16 to 26 inches: silt loam
H4 - 26 to 60 inches: stratified silt loam to very fine sandy loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 10.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Niagara

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

Galen

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

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Schoharie

Percent of map unit: 5 percent

Hydric soil rating: No

CoB—Conesus silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3jl
Elevation: 390 to 1,970 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

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

Description of Conesus

Setting

Landform: Till plains, hills, 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
E/B - 9 to 14 inches: gravelly silt loam
Bt/E - 14 to 19 inches: gravelly silt loam
Bt1 - 19 to 25 inches: gravelly silt loam
Bt2 - 25 to 36 inches: gravelly silt loam
C - 36 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: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 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 7.6 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

Lansing

Percent of map unit: 7 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landform: 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

Nunda

Percent of map unit: 2 percent
Landform: Hills, drumlinoid ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 2 percent
Landform: 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

Lyons

Percent of map unit: 1 percent
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

CoC—Conesus silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w3jm
Elevation: 490 to 1,710 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

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

Description of Conesus

Setting

Landform: Till plains, hills, 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
E/B - 9 to 14 inches: gravelly silt loam
Bt/E - 14 to 19 inches: gravelly silt loam
Bt1 - 19 to 25 inches: gravelly silt loam
Bt2 - 25 to 36 inches: gravelly silt loam
C - 36 to 79 inches: gravelly loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.01 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 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Lansing
Percent of map unit: 8 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Kendaia
Percent of map unit: 3 percent
Landform: 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

Appleton
Percent of map unit: 2 percent
Landform: 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

Nunda
Percent of map unit: 2 percent
Landform: Hills, drumlinoid ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Fo—Fonda mucky silt loam

Map Unit Setting
National map unit symbol: 9tf8
Elevation: 50 to 650 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Fonda and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fonda

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Clayey glaciolacustrine deposits

Typical profile

H1 - 0 to 7 inches: mucky silt loam
H2 - 7 to 31 inches: silty clay
H3 - 31 to 60 inches: silty clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F101XY010NY - Wet Lake Plain Depression
Hydric soil rating: Yes

Minor Components

Lakemont

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canandaigua

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Odessa

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

Alden

Percent of map unit: 5 percent

Landform: Depressions
Hydric soil rating: Yes

Willette
Percent of map unit: 5 percent
Landform: Marshes, swamps
Hydric soil rating: Yes

Fr—Fredon silt loam

Map Unit Setting
National map unit symbol: 9tf9
Elevation: 250 to 1,200 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Fredon, somewhat poorly drained, and similar soils: 50 percent
Fredon, poorly drained, and similar soils: 30 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fredon, Somewhat Poorly Drained

Setting
Landform: Terraces, valley trains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile
H1 - 0 to 11 inches: silt loam
H2 - 11 to 28 inches: gravelly loam
H3 - 28 to 60 inches: very gravelly loamy sand

Properties and qualities
Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F101XY006NY - Moist Outwash
Hydric soil rating: No

Description of Fredon, Poorly Drained

Setting

Landform: Terraces, valley trains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy over sandy and gravelly glaciofluvial deposits

Typical profile

H1 - 0 to 11 inches: silt loam
H2 - 11 to 28 inches: gravelly loam
H3 - 28 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 6.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Ecological site: F101XY006NY - Moist Outwash, F101XY007NY - Wet Outwash
Hydric soil rating: Yes

Minor Components

Phelps

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

Minoa

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

Halsey

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lamson

Percent of map unit: 5 percent

Landform: Depressions
Hydric soil rating: Yes

GP—Gravel pits

Map Unit Setting

National map unit symbol: 9tfd
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Gravel pits: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Minor Components

Arkport

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

Palmyra

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

Halsey

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Lamson

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Phelps

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

Howard

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

Ha—Halsey silt loam

Map Unit Setting

National map unit symbol: 9tff
Elevation: 430 to 1,480 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Halsey

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 26 inches: gravelly fine sandy loam
H3 - 26 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F101XY007NY - Wet Outwash
Hydric soil rating: Yes

Minor Components

Lamson
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Canandaigua
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

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

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

Hb—Hamlin silt loam

Map Unit Setting
National map unit symbol: 9tfg
Elevation: 380 to 1,660 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Hamlin and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hamlin

Setting
Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Silty alluvium mainly from areas of siltstone, shale, and limestone

Typical profile
H1 - 0 to 11 inches: silt loam
H2 - 11 to 27 inches: silt loam
H3 - 27 to 35 inches: silt loam
H4 - 35 to 42 inches: very fine sandy loam
H5 - 42 to 62 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 36 to 72 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F101XY001NY - High Floodplain
Hydric soil rating: No

Minor Components

Middlebury

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

Palmyra

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

Herkimer

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

Teel

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

HnB—Honeoye silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3p2
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

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: 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: 3 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 7.6 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
Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 4 percent
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
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
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
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

HnC—Honeoye silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w3p6
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

Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
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: 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 7.6 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
Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Lansing

Percent of map unit: 4 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
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
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
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

HnD—Honeoye silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2w3p8
Elevation: 380 to 1,950 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: Not 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

Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Backslope, shoulder, 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: 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: 15 to 25 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 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Lima

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

Lansing

Percent of map unit: 4 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 4 percent
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
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

HnE—Honeoye silt loam, 25 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2w3pd

Elevation: 620 to 1,990 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: Not 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

Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Backslope, shoulder, 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: 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: 25 to 50 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: 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: 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 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Lima

Percent of map unit: 5 percent
Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest

Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Lansing

Percent of map unit: 4 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
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
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
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

HOE—Honeoye-Farmington complex, 25 to 65 percent slopes, rocky

Map Unit Setting

National map unit symbol: 2w3pc
Elevation: 360 to 1,990 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: Not prime farmland

Map Unit Composition

Honeoye, rocky, and similar soils: 45 percent
Farmington and similar soils: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Honeoye, Rocky

Setting

Landform: Ridges, till plains, drumlins

Landform position (two-dimensional): Backslope, summit, shoulder
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: 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: 25 to 65 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: 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: 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 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Description of Farmington

Setting

Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, 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

H1 - 0 to 7 inches: gravelly silt loam
H2 - 7 to 17 inches: gravelly silt loam
H3 - 17 to 21 inches: unweathered bedrock

Properties and qualities

Slope: 25 to 65 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: F101XY011NY - Shallow Till Upland
Hydric soil rating: No

Minor Components

Wassaic

Percent of map unit: 9 percent
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

Lima

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

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: Unranked

HxC—Howard gravelly silt loam, rolling

Map Unit Setting

National map unit symbol: 9tfw
Elevation: 1,080 to 1,720 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Howard

Setting

Landform: Terraces, valley trains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, containing significant amounts of limestone

Typical profile

H1 - 0 to 8 inches: gravelly silt loam
H2 - 8 to 17 inches: gravelly silt loam
H3 - 17 to 35 inches: very gravelly loam
H4 - 35 to 60 inches: stratified very gravelly fine sand to sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F140XY021NY - Dry Outwash
Hydric soil rating: No

Minor Components

Chenango

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

Phelps

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

Palmyra

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

Fredon

Percent of map unit: 5 percent

Hydric soil rating: No

LsB—Lansing gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w3mb
Elevation: 460 to 1,800 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

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

Description of Lansing

Setting

Landform: Till plains, drumlins, hills
Landform position (two-dimensional): Backslope, shoulder, 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 13 inches: gravelly silt loam
Bt/E - 13 to 21 inches: gravelly silt loam
Bt1 - 21 to 28 inches: gravelly silt loam
Bt2 - 28 to 39 inches: gravelly silt loam
C - 39 to 79 inches: gravelly loam

Properties and qualities

Slope: 3 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): Moderately low to moderately high (0.01 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 8.1 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

Conesus
Percent of map unit: 8 percent
Landform: Till plains, hills, drumlins
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Kendaia
Percent of map unit: 3 percent
Landform: 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

Appleton
Percent of map unit: 2 percent
Landform: 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

Danley
Percent of map unit: 1 percent
Landform: Till plains, hills, drumlinoid ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Palatine
Percent of map unit: 1 percent
Landform: Ridges, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

LsC—Lansing gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w3md
Elevation: 520 to 1,970 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

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

Description of Lansing

Setting

Landform: Till plains, drumlins, hills
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 13 inches: gravelly silt loam
Bt/E - 13 to 21 inches: gravelly silt loam
Bt1 - 21 to 28 inches: gravelly silt loam
Bt2 - 28 to 39 inches: gravelly silt loam
C - 39 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): Moderately low to moderately high (0.01 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 8.1 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

Conesus

Percent of map unit: 8 percent
Landform: Till plains, drumlins, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent
Landform: 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

Appleton

Percent of map unit: 2 percent
Landform: 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

Wassaic

Percent of map unit: 1 percent
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

Danley

Percent of map unit: 1 percent
Landform: Till plains, hills, drumlinoid ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

LsD—Lansing gravelly silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2w3my
Elevation: 660 to 1,740 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: Not prime farmland

Map Unit Composition

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

Description of Lansing

Setting

Landform: Till plains, drumlins, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): 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 13 inches: gravelly silt loam
Bt/E - 13 to 21 inches: gravelly silt loam
Bt1 - 21 to 28 inches: gravelly silt loam
Bt2 - 28 to 39 inches: gravelly silt loam
C - 39 to 79 inches: gravelly loam

Properties and qualities

Slope: 15 to 25 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): Moderately low to moderately high (0.01 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 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B
Ecological site: F101XY012NY - Till Upland
Hydric soil rating: No

Minor Components

Conesus
Percent of map unit: 9 percent
Landform: Till plains, drumlins, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Wassaic
Percent of map unit: 3 percent
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

Kendaia
Percent of map unit: 2 percent
Landform: 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

Appleton
Percent of map unit: 1 percent
Landform: 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

LtB—Lima silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2w3kk
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

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
Landform: Ridges, till plains, drumlins
Landform position (two-dimensional): Summit, backslope, shoulder
Landform position (three-dimensional): Crest, side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Kendaia

Percent of map unit: 3 percent

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

Appleton

Percent of map unit: 3 percent
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

Cazenovia

Percent of map unit: 2 percent
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
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

LtC—Lima silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w3km
Elevation: 480 to 1,790 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

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

Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope
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: 8 to 15 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): 3e
Hydrologic Soil Group: B/D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Honeoye

Percent of map unit: 7 percent
Landform: Ridges, drumlins, till plains
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Appleton

Percent of map unit: 4 percent
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

Mohawk

Percent of map unit: 3 percent
Landform: Hills, drumlinoid ridges
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: 1 percent
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

LwB—Lordstown channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2wzmn
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Lordstown and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lordstown

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till derived from sandstone and siltstone

Typical profile

Ap - 0 to 7 inches: channery silt loam
Bw1 - 7 to 17 inches: channery silt loam
Bw2 - 17 to 26 inches: channery silt loam
C - 26 to 30 inches: very channery silt loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F140XY027NY - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Mardin

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Arnot

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

LwC—Lordstown channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2wzmq
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Lordstown and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lordstown

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Mountainflank, crest, nose slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy till derived from sandstone and siltstone

Typical profile

Ap - 0 to 7 inches: channery silt loam
Bw1 - 7 to 17 inches: channery silt loam
Bw2 - 17 to 26 inches: channery silt loam
C - 26 to 30 inches: very channery silt loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F140XY027NY - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Arnot

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Mardin

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

LwD—Lordstown channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2wzmr
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Lordstown

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, nose slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till derived from sandstone and siltstone

Typical profile

Ap - 0 to 7 inches: channery silt loam
Bw1 - 7 to 17 inches: channery silt loam
Bw2 - 17 to 26 inches: channery silt loam
C - 26 to 30 inches: very channery silt loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 15 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F140XY027NY - Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Arnot
Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Mountaintop, mountainflank, interfluve, crest, nose slope, side slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

Mardin
Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Cadosia, very stony
Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

LXE—Lordstown-Arnot complex, steep, rocky

Map Unit Setting
National map unit symbol: 30jy0
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Lordstown and similar soils: 50 percent
Arnot and similar soils: 35 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lordstown

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till derived from sandstone and siltstone

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 5 inches: channery highly organic silt loam
Bw1 - 5 to 17 inches: channery silt loam
Bw2 - 17 to 26 inches: channery silt loam
C - 26 to 30 inches: very channery silt loam
2R - 30 to 40 inches: bedrock

Properties and qualities

Slope: 10 to 40 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 5.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F140XY027NY - Well Drained Till Uplands
Hydric soil rating: No

Description of Arnot

Setting

Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountaintop, mountainflank, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till derived mainly from acid sandstone, siltstone, and shale

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: channery silt loam
Bw1 - 3 to 12 inches: very channery silt loam
Bw2 - 12 to 17 inches: very channery silt loam
2R - 17 to 27 inches: bedrock

Properties and qualities

Slope: 10 to 40 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.14 to 1.42 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Very low (about 2.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Ecological site: F140XY023NY - Shallow Till Uplands
Hydric soil rating: No

Minor Components

Bath

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F140XY030NY - Well Drained Dense Till
Hydric soil rating: No

Mardin, very stony

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Shoulder, backslope, summit
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Tuller, very stony, somewhat poorly drained

Percent of map unit: 4 percent
Landform: Ridges, benches, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F140XY016NY - Mineral Wetlands
Hydric soil rating: No

Rock outcrop

Percent of map unit: 1 percent
Hydric soil rating: No

Ly—Lyons soils, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2spjy
Elevation: 250 to 1,900 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: Not prime farmland

Map Unit Composition

Lyons and similar soils: 75 percent
Lyons, frequently ponded, and similar soils: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Lyons

Setting

Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Calcareous loamy lodgment till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: silt loam
Bg1 - 10 to 19 inches: silt loam
Bg2 - 19 to 25 inches: silty clay loam
BCg - 25 to 34 inches: gravelly silt loam
C - 34 to 79 inches: gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Negligible
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 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: C/D
Ecological site: F101XY014NY - Wet Till Depression
Hydric soil rating: Yes

Description of Lyons, Frequently Ponded

Setting

Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Calcareous loamy lodgment till derived from limestone and shale

Typical profile

Ap - 0 to 10 inches: mucky silt loam
Bg1 - 10 to 19 inches: silt loam
Bg2 - 19 to 25 inches: silty clay loam
BCg - 25 to 34 inches: gravelly silt loam
C - 34 to 79 inches: gravelly loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Negligible
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 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 40 percent
Available water supply, 0 to 60 inches: High (about 9.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Ecological site: F101XY014NY - Wet Till Depression
Hydric soil rating: Yes

Minor Components

Canandaigua

Percent of map unit: 3 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Appleton

Percent of map unit: 3 percent
Landform: 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

Kendaia

Percent of map unit: 2 percent
Landform: Till plains, ridges, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Ilion

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

Palms, undrained

Percent of map unit: 1 percent
Landform: Marshes, swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

MaB—Mardin channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2srhb
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Mardin

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: channery silt loam
BE - 8 to 12 inches: channery silt loam
Bw1 - 12 to 16 inches: channery silt loam
Bw2 - 16 to 20 inches: channery silt loam
Bx1 - 20 to 36 inches: channery silt loam
Bx2 - 36 to 57 inches: channery silt loam
C - 57 to 72 inches: channery silt loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: D
Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Minor Components

Bath

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Volusia

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear

Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Mountaintop, interfluve, crest
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

MaC—Mardin channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2srhj
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Mardin and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mardin

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: channery silt loam
BE - 8 to 12 inches: channery silt loam
Bw1 - 12 to 16 inches: channery silt loam
Bw2 - 16 to 20 inches: channery silt loam
Bx1 - 20 to 36 inches: channery silt loam
Bx2 - 36 to 57 inches: channery silt loam
C - 57 to 72 inches: channery silt loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Minor Components

Volusia

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Bath

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Lordstown

Percent of map unit: 2 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountaintop, nose slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

MaD—Mardin channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2srh8
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days

Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Mardin

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, head slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: channery silt loam
BE - 8 to 12 inches: channery silt loam
Bw1 - 12 to 16 inches: channery silt loam
Bw2 - 16 to 20 inches: channery silt loam
Bx1 - 20 to 36 inches: channery silt loam
Bx2 - 36 to 57 inches: channery silt loam
C - 57 to 72 inches: channery silt loam

Properties and qualities

Slope: 15 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 14 to 26 inches to fragipan
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 13 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: D
Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Minor Components

Volusia

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Bath

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Lordstown

Percent of map unit: 5 percent
Landform: Hills, mountains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountaintop, side slope, nose slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Od—Odessa silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2wrd8
Elevation: 260 to 1,540 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

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

Description of Odessa

Setting

Landform: Lake terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Red clayey glaciolacustrine deposits derived from calcareous shale

Typical profile

Ap - 0 to 8 inches: silt loam
Bt/E - 8 to 10 inches: silty clay loam
Bt1 - 10 to 15 inches: silty clay
Bt2 - 15 to 25 inches: silty clay
C - 25 to 79 inches: silty clay

Properties and qualities

Slope: 0 to 3 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 low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: High (about 9.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Schoharie

Percent of map unit: 5 percent
Landform: Lake terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Lakemont

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Churchville

Percent of map unit: 3 percent
Landform: Drumlinoid ridges
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Rhinebeck

Percent of map unit: 2 percent
Landform: Lake plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear

Hydric soil rating: No

OvB—Ovid silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9th2
Elevation: 250 to 1,000 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Prime farmland if drained

Map Unit Composition

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

Description of Ovid

Setting

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
Parent material: Loamy till with a significant component of reddish shale or reddish glaciolacustrine clays, mixed with limestone and some sandstone

Typical profile

H1 - 0 to 14 inches: silt loam
H2 - 14 to 33 inches: silty clay loam
H3 - 33 to 60 inches: silty clay loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

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

Minor Components

Lakemont
Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

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

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

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

Pb—Palms muck

Map Unit Setting
National map unit symbol: 9th3
Elevation: 250 to 1,500 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition
Palms and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palms

Setting
Landform: Marshes, swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Organic material over loamy glacial drift

Typical profile
H1 - 0 to 8 inches: muck
H2 - 8 to 30 inches: muck
H3 - 30 to 72 inches: silt loam

Properties and qualities
Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 20 percent
Available water supply, 0 to 60 inches: Very high (about 17.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F101XY004NY - Mucky Depression
Hydric soil rating: Yes

Minor Components

Wallkill

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Carlisle

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Willette

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

Alden

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Edwards

Percent of map unit: 5 percent
Landform: Swamps, marshes
Hydric soil rating: Yes

PgA—Palmyra gravelly loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9th4
Elevation: 410 to 1,460 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days

Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Palmyra

Setting

Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 33 inches: gravelly loam
H3 - 33 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: A
Ecological site: F101XY005NY - Dry Outwash
Hydric soil rating: No

Minor Components

Phelps

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

Fredon

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

Howard

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

Minoa

Percent of map unit: 5 percent

Hydric soil rating: No

PgB—Palmyra gravelly loam, undulating

Map Unit Setting

National map unit symbol: 9th5
Elevation: 430 to 1,590 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Palmyra

Setting

Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 33 inches: gravelly loam
H3 - 33 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F101XY005NY - Dry Outwash
Hydric soil rating: No

Minor Components

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

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

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

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

PgC—Palmyra gravelly loam, rolling

Map Unit Setting
National map unit symbol: 9th6
Elevation: 430 to 1,620 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Palmyra and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Palmyra

Setting
Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks

Typical profile
H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 33 inches: gravelly loam
H3 - 33 to 60 inches: stratified very gravelly sand

Properties and qualities
Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Ecological site: F101XY005NY - Dry Outwash
Hydric soil rating: No

Minor Components

Phelps

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

Arkport

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

Fredon

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

Howard

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

PgD—Palmyra gravelly loam, hilly

Map Unit Setting

National map unit symbol: 9th7
Elevation: 430 to 1,640 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Palmyra

Setting

Landform: Terraces, outwash plains, deltas
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy and gravelly glaciofluvial deposits, derived mainly from limestone and other sedimentary rocks

Typical profile

H1 - 0 to 9 inches: gravelly loam
H2 - 9 to 33 inches: gravelly loam
H3 - 33 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F101XY005NY - Dry Outwash
Hydric soil rating: No

Minor Components

Fredon

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

Minoa

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

Howard

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

Arkport

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

PpA—Phelps gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9thg
Elevation: 390 to 1,740 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Phelps

Setting

Landform: Terraces, valley trains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, containing significant amounts of limestone

Typical profile

H1 - 0 to 11 inches: gravelly silt loam
H2 - 11 to 15 inches: gravelly loam
H3 - 15 to 23 inches: gravelly loam
H4 - 23 to 27 inches: gravelly loam
H5 - 27 to 60 inches: stratified extremely gravelly sand to loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 4.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F101XY006NY - Moist Outwash

Hydric soil rating: No

Minor Components

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

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

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

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

SdC—Schoharie silty clay loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 2xggn
Elevation: 390 to 1,690 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
Schoharie and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Schoharie

Setting
Landform: Lake terraces
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Red clayey glaciolacustrine deposits derived from calcareous shale

Typical profile
Ap - 0 to 8 inches: silty clay loam
E - 8 to 11 inches: silt loam
Bt/E - 11 to 18 inches: silty clay
Bt - 18 to 33 inches: clay
C1 - 33 to 52 inches: silty clay

C2 - 52 to 79 inches: silty clay

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 25 percent
Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Odessa

Percent of map unit: 5 percent
Landform: Lake terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Riser
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Cazenovia

Percent of map unit: 5 percent
Landform: Till plains, 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

Cayuga

Percent of map unit: 3 percent
Landform: Till plains, lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest, tread
Down-slope shape: Concave
Across-slope shape: Convex
Hydric soil rating: No

Collamer

Percent of map unit: 2 percent
Landform: Lake plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Concave

Across-slope shape: Convex
Hydric soil rating: No

SgB—Stockbridge channery silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9thq
Elevation: 1,130 to 1,870 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Stockbridge

Setting

Landform: Till plains, hills, drumlinoid ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 34 inches: channery loam
H3 - 34 to 47 inches: channery loam
H4 - 47 to 62 inches: channery loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F142XB012VT - Rich Till Upland

Hydric soil rating: No

Minor Components

Bath

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

Lansing

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

Howard

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

SgC—Stockbridge channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 9thr
Elevation: 1,120 to 1,920 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

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

Description of Stockbridge

Setting

Landform: Till plains, hills, drumlinoid ridges
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 34 inches: channery loam
H3 - 34 to 47 inches: channery loam
H4 - 47 to 62 inches: channery loam

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F142XB012VT - Rich Till Upland
Hydric soil rating: No

Minor Components

Bath

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

Howard

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

Lansing

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

SgD—Stockbridge channery silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 9ths
Elevation: 1,100 to 1,950 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Stockbridge

Setting

Landform: Till plains, hills, drumlinoid ridges
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex

Across-slope shape: Convex
Parent material: Calcareous loamy till

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 34 inches: channery loam
H3 - 34 to 47 inches: channery loam
H4 - 47 to 62 inches: channery loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F142XB012VT - Rich Till Upland
Hydric soil rating: No

Minor Components

Howard

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

Lansing

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

Bath

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

Te—Teel silt loam

Map Unit Setting

National map unit symbol: 9thy
Elevation: 600 to 1,800 feet
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: All areas are prime farmland

Map Unit Composition

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

Description of Teel

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Silty alluvium

Typical profile

H1 - 0 to 5 inches: silt loam
H2 - 5 to 38 inches: silt loam
H3 - 38 to 72 inches: silt loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 18 to 24 inches
Frequency of flooding: OccasionalNone
Frequency of ponding: None
Calcium carbonate, maximum content: 1 percent
Available water supply, 0 to 60 inches: High (about 10.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F101XY002NY - Low Floodplain
Hydric soil rating: No

Minor Components

Wayland

Percent of map unit: 5 percent
Landform: Flood plains
Hydric soil rating: Yes

Middlebury

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

Hamlin

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

VoA—Volusia channery silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2srfc
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Volusia and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Volusia

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Base slope, interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 9 inches: channery silt loam
Bw - 9 to 15 inches: channery silt loam
Eg - 15 to 17 inches: channery silt loam
Bx1 - 17 to 29 inches: channery loam
Bx2 - 29 to 54 inches: channery loam
C - 54 to 72 inches: channery silt loam

Properties and qualities

Slope: 0 to 3 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D

Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Minor Components

Chippewa
Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mardin
Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

VoB—Volusia channery silt loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2srfh
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches
Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Volusia and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Volusia

Setting
Landform: Mountains, hills
Landform position (two-dimensional): Footslope, summit
Landform position (three-dimensional): Interfluve, base slope, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile
Ap - 0 to 9 inches: channery silt loam
Bw - 9 to 15 inches: channery silt loam

Eg - 15 to 17 inches: channery silt loam
Bx1 - 17 to 29 inches: channery loam
Bx2 - 29 to 54 inches: channery loam
C - 54 to 72 inches: channery silt loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Minor Components

Chippewa

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Mardin

Percent of map unit: 5 percent
Landform: Mountains, hills
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

VoC—Volusia channery silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2srfj
Elevation: 330 to 2,460 feet
Mean annual precipitation: 31 to 70 inches

Mean annual air temperature: 39 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Volusia and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Volusia

Setting

Landform: Mountains, hills
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy till derived from interbedded sedimentary rock

Typical profile

Ap - 0 to 9 inches: channery silt loam
Bw - 9 to 15 inches: channery silt loam
Eg - 15 to 17 inches: channery silt loam
Bx1 - 17 to 29 inches: channery loam
Bx2 - 29 to 54 inches: channery loam
C - 54 to 72 inches: channery silt loam

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 22 inches to fragipan
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: D
Ecological site: F140XY024NY - Moist Dense Till
Hydric soil rating: No

Minor Components

Mardin

Percent of map unit: 6 percent
Landform: Mountains, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Chippewa

Percent of map unit: 4 percent
Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

W—Water

Map Unit Setting

National map unit symbol: 9tjg
Mean annual precipitation: 38 to 44 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 110 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Wn—Wayland soils complex, 0 to 3 percent slopes, frequently flooded

Map Unit Setting

National map unit symbol: 2srgv
Elevation: 160 to 1,970 feet
Mean annual precipitation: 31 to 68 inches
Mean annual air temperature: 43 to 52 degrees F
Frost-free period: 105 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Wayland and similar soils: 60 percent
Wayland, very poorly drained, and similar soils: 30 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wayland

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear

Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

A - 0 to 6 inches: silt loam
Bg1 - 6 to 12 inches: silt loam
Bg2 - 12 to 18 inches: silt loam
C1 - 18 to 46 inches: silt loam
C2 - 46 to 72 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F139XY009OH - Wet Floodplain
Hydric soil rating: Yes

Description of Wayland, Very Poorly Drained

Setting

Landform: Flood plains
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Silty and clayey alluvium derived from interbedded sedimentary rock

Typical profile

A - 0 to 6 inches: mucky silt loam
Bg1 - 6 to 12 inches: silt loam
Bg2 - 12 to 18 inches: silt loam
C1 - 18 to 46 inches: silt loam
C2 - 46 to 72 inches: silty clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: NoneFrequent
Frequency of ponding: Frequent
Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Very high (about 12.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Ecological site: F139XY009OH - Wet Floodplain
Hydric soil rating: Yes

Minor Components

Wakeville

Percent of map unit: 10 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Soil Information for All Uses

Suitabilities and Limitations for Use

The Suitabilities and Limitations for Use section includes various soil interpretations displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each interpretation.

Land Management

Land management interpretations are tools designed to guide the user in evaluating existing conditions in planning and predicting the soil response to various land management practices, for a variety of land uses, including cropland, forestland, hayland, pastureland, horticulture, and rangeland. Example interpretations include suitability for a variety of irrigation practices, log landings, haul roads and major skid trails, equipment operability, site preparation, suitability for hand and mechanical planting, potential erosion hazard associated with various practices, and ratings for fencing and waterline installation.

Erosion Hazard (Off-Road, Off-Trail)

FOR - Forestry

As of 9/30/2022, this rating is not working as intended. All components appear as not rated. This rating will be fixed on 10/01/2023.

The ratings in this interpretation indicate the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. The ratings are based on slope, soil erosion factor K, and an index of rainfall erosivity (R). The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance.

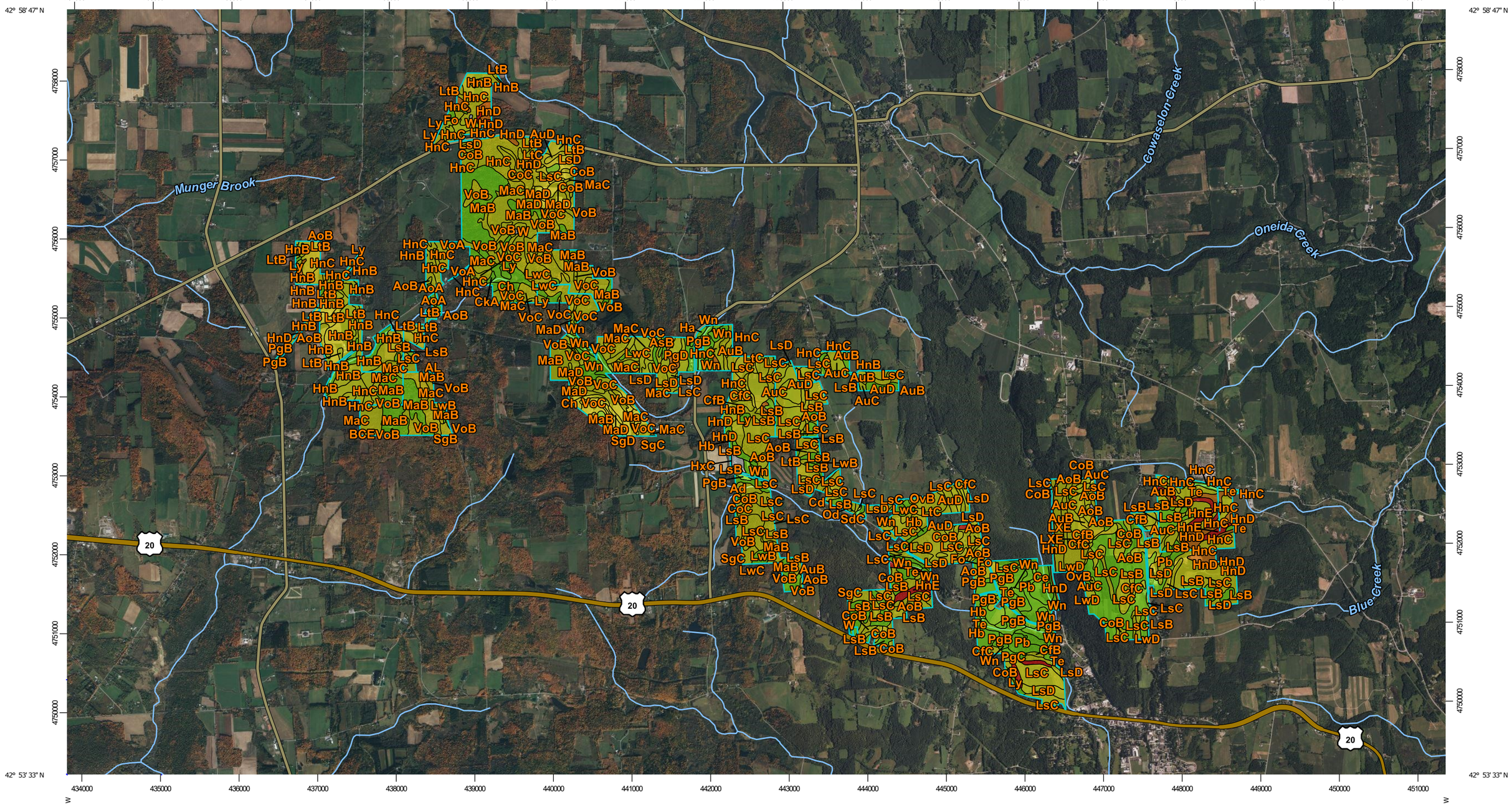
The ratings are both verbal and numerical. The hazard is described as "slight," "moderate," "severe," or "very severe." A rating of "slight" indicates that erosion is unlikely under ordinary climatic conditions; "moderate" indicates that some erosion

is likely and that erosion-control measures may be needed; "severe" indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and "very severe" indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Numerical ratings indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified aspect of forestland management (1.00) and the point at which the soil feature is not a limitation (0.00).

The map unit components listed for each map unit in the accompanying Summary by Map Unit table in Web Soil Survey or the Aggregation Report in Soil Data Viewer are determined by the aggregation method chosen. An aggregated rating class is shown for each map unit. The components listed for each map unit are only those that have the same rating class as listed for the map unit. The percent composition of each component in a particular map unit is presented to help the user better understand the percentage of each map unit that has the rating presented.

Other components with different ratings may be present in each map unit. The ratings for all components, regardless of the map unit aggregated rating, can be viewed by generating the equivalent report from the Soil Reports tab in Web Soil Survey or from the Soil Data Mart site. Onsite investigation may be needed to validate these interpretations and to confirm the identity of the soil on a given site.



Map Scale: 1:47,200 if printed on B landscape (17" x 11") sheet.

N

Meters
0 500 1000 2000 3000

Feet
0 2000 4000 8000 12000

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 Rating Polygons
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Lines
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

Soil Rating Points
- Very severe
- Severe
- Moderate
- Slight
- Not rated or not available

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 1:15,800.

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: Madison County, New York
Survey Area Data: Version 22, Sep 5, 2023

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

Date(s) aerial images were photographed: Jul 26, 2020—Oct 28, 2022

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.

Tables—Erosion Hazard (Off-Road, Off-Trail)

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Ad	Alden mucky silt loam	Slight	Alden (80%)		2.4	0.1%
AL	Alluvial land	Slight	Fluvaquents (41%)		25.9	0.6%
			Udifluvents (39%)			
An	Angola silt loam	Slight	Angola (80%)		26.7	0.7%
AoA	Appleton loam, 0 to 3 percent slopes	Slight	Appleton (85%)		4.2	0.1%
			Hilton (5%)			
			Lyons (4%)			
			Churchville (3%)			
			Darien (3%)			
AoB	Appleton loam, 3 to 8 percent slopes	Moderate	Appleton (85%)	Surface kw times slope times R index (0.03)	110.8	2.7%
			Lyons (4%)	Surface kw times slope times R index (0.03)		
			Churchville (3%)	Surface kw times slope times R index (0.43)		
			Darien (3%)	Surface kw times slope times R index (0.03)		
AsB	Arnot channery silt loam, 3 to 8 percent slopes	Slight	Arnot (85%)		2.2	0.1%
			Tuller, somewhat poorly drained (5%)			
AuB	Aurora silt loam, 3 to 8 percent slopes	Moderate	Aurora (80%)	Surface kw times slope times R index (0.25)	36.0	0.9%
AuC	Aurora silt loam, 8 to 15 percent slopes	Moderate	Aurora (80%)	Surface kw times slope times R index (0.61)	73.8	1.8%
AuD	Aurora silt loam, 15 to 25 percent slopes	Moderate	Aurora (80%)	Surface kw times slope times R index (0.72)	39.8	1.0%
BCE	Bath soils, steep	Severe	Bath (75%)	Surface kw times slope times R index (0.77)	0.6	0.0%
			Lordstown (10%)	Surface kw times slope times R index (0.77)		

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Cadosia, very stony (10%)	Surface kw times slope times R index (0.81)		
Cd	Canandaigua silt loam	Slight	Canandaigua (75%)		0.3	0.0%
Ce	Carlisle muck	Slight	Carlisle (75%)		28.3	0.7%
CfB	Cazenovia silt loam, 3 to 8 percent slopes	Moderate	Cazenovia (80%)	Surface kw times slope times R index (0.03)	72.2	1.8%
CfC	Cazenovia silt loam, 8 to 15 percent slopes	Moderate	Cazenovia (80%)	Surface kw times slope times R index (0.59)	23.3	0.6%
Ch	Chippewa silt loam, 0 to 3 percent slopes	Slight	Chippewa (85%)		35.5	0.9%
			Chippewa, very poorly drained (10%)			
CkA	Collamer silt loam, 0 to 3 percent slopes	Slight	Collamer (80%)		5.6	0.1%
CoB	Conesus silt loam, 3 to 8 percent slopes	Moderate	Conesus (85%)	Surface kw times slope times R index (0.12)	98.3	2.4%
			Lansing (7%)	Surface kw times slope times R index (0.12)		
			Nunda (2%)	Surface kw times slope times R index (0.12)		
			Appleton (2%)	Surface kw times slope times R index (0.03)		
CoC	Conesus silt loam, 8 to 15 percent slopes	Moderate	Conesus (85%)	Surface kw times slope times R index (0.60)	44.5	1.1%
			Lansing (8%)	Surface kw times slope times R index (0.60)		
			Kendaia (3%)	Surface kw times slope times R index (0.35)		
			Appleton (2%)	Surface kw times slope times R index (0.56)		
			Nunda (2%)	Surface kw times slope times R index (0.60)		
Fo	Fonda mucky silt loam	Slight	Fonda (75%)		7.6	0.2%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
Fr	Fredon silt loam	Slight	Fredon, somewhat poorly drained (50%)		3.0	0.1%
			Fredon, poorly drained (30%)			
GP	Gravel pits	Not rated	Gravel pits (70%)		5.9	0.1%
			Halsey (5%)			
			Lamson (5%)			
			Phelps (5%)			
			Howard (5%)			
			Arkport (5%)			
			Palmyra (5%)			
Ha	Halsey silt loam	Slight	Halsey (80%)		3.4	0.1%
Hb	Hamlin silt loam	Slight	Hamlin (80%)		12.0	0.3%
HnB	Honeoye silt loam, 3 to 8 percent slopes	Moderate	Honeoye (85%)	Surface kw times slope times R index (0.36)	162.0	4.0%
			Lima (5%)	Surface kw times slope times R index (0.25)		
			Appleton (4%)	Surface kw times slope times R index (0.25)		
			Lansing (4%)	Surface kw times slope times R index (0.15)		
			Wassaic (2%)	Surface kw times slope times R index (0.15)		
HnC	Honeoye silt loam, 8 to 15 percent slopes	Moderate	Honeoye (85%)	Surface kw times slope times R index (0.64)	280.8	6.9%
			Lima (5%)	Surface kw times slope times R index (0.61)		
			Lansing (4%)	Surface kw times slope times R index (0.59)		
			Appleton (4%)	Surface kw times slope times R index (0.61)		
			Wassaic (2%)	Surface kw times slope times R index (0.59)		
HnD	Honeoye silt loam, 15 to 25 percent slopes	Severe	Honeoye (85%)	Surface kw times slope times R index (0.76)	96.5	2.4%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
HnE	Honeoye silt loam, 25 to 50 percent slopes	Very Severe	Honeoye (85%)	Surface kw times slope times R index (1.00)	63.1	1.6%
HOE	Honeoye-Farmington complex, 25 to 65 percent slopes, rocky	Severe	Farmington (40%)	Surface kw times slope times R index (0.95)	4.6	0.1%
			Wassaic (9%)	Surface kw times slope times R index (0.94)		
HxC	Howard gravelly silt loam, rolling	Moderate	Howard (80%)	Surface kw times slope times R index (0.42)	0.8	0.0%
LsB	Lansing gravelly silt loam, 3 to 8 percent slopes	Slight	Lansing (85%)		357.0	8.8%
			Conesus (8%)			
			Kendaia (3%)			
LsC	Lansing gravelly silt loam, 8 to 15 percent slopes	Moderate	Lansing (85%)	Surface kw times slope times R index (0.48)	672.1	16.6%
			Conesus (8%)	Surface kw times slope times R index (0.35)		
			Kendaia (3%)	Surface kw times slope times R index (0.35)		
			Appleton (2%)	Surface kw times slope times R index (0.56)		
			Wassaic (1%)	Surface kw times slope times R index (0.56)		
			Danley (1%)	Surface kw times slope times R index (0.56)		
LsD	Lansing gravelly silt loam, 15 to 25 percent slopes	Moderate	Lansing (85%)	Surface kw times slope times R index (0.66)	135.8	3.4%
			Conesus (9%)	Surface kw times slope times R index (0.62)		
			Wassaic (3%)	Surface kw times slope times R index (0.69)		
			Kendaia (2%)	Surface kw times slope times R index (0.28)		
			Appleton (1%)	Surface kw times slope times R index (0.52)		
LtB	Lima silt loam, 3 to 8 percent slopes	Moderate	Lima (85%)	Surface kw times slope times R index (0.12)	83.6	2.1%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Honeoye (6%)	Surface kw times slope times R index (0.22)		
			Kendaia (3%)	Surface kw times slope times R index (0.03)		
			Appleton (3%)	Surface kw times slope times R index (0.12)		
			Cazenovia (2%)	Surface kw times slope times R index (0.12)		
			Lyons (1%)	Surface kw times slope times R index (0.03)		
LtC	Lima silt loam, 8 to 15 percent slopes	Moderate	Lima (85%)	Surface kw times slope times R index (0.60)	6.4	0.2%
			Honeoye (7%)	Surface kw times slope times R index (0.62)		
			Appleton (4%)	Surface kw times slope times R index (0.60)		
			Mohawk (3%)	Surface kw times slope times R index (0.48)		
LwB	Lordstown channery silt loam, 3 to 8 percent slopes	Slight	Lordstown (90%)		18.1	0.4%
			Mardin (5%)			
			Arnot (5%)			
LwC	Lordstown channery silt loam, 8 to 15 percent slopes	Moderate	Lordstown (90%)	Surface kw times slope times R index (0.42)	27.1	0.7%
LwD	Lordstown channery silt loam, 15 to 25 percent slopes	Moderate	Lordstown (85%)	Surface kw times slope times R index (0.62)	57.6	1.4%
			Arnot (5%)	Surface kw times slope times R index (0.01)		
			Mardin (5%)	Surface kw times slope times R index (0.42)		
			Cadosia, very stony (5%)	Surface kw times slope times R index (0.59)		
LXE	Lordstown-Arnot complex, steep, rocky	Moderate	Lordstown (50%)	Surface kw times slope times R index (0.64)	39.5	1.0%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Arnot (35%)	Surface kw times slope times R index (0.64)		
			Bath (5%)	Surface kw times slope times R index (0.42)		
			Mardin, very stony (5%)	Surface kw times slope times R index (0.42)		
Ly	Lyons soils, 0 to 3 percent slopes	Slight	Lyons (75%)		71.5	1.8%
			Lyons, frequently ponded (15%)			
			Appleton (3%)			
			Canandaigua (3%)			
			Kendaia (2%)			
			Palms, undrained (1%)			
			Ilion (1%)			
MaB	Mardin channery silt loam, 3 to 8 percent slopes	Slight	Mardin (85%)		218.7	5.4%
			Volusia (5%)			
			Lordstown (5%)			
MaC	Mardin channery silt loam, 8 to 15 percent slopes	Moderate	Mardin (88%)	Surface kw times slope times R index (0.42)	430.8	10.6%
			Volusia (5%)	Surface kw times slope times R index (0.03)		
			Bath (5%)	Surface kw times slope times R index (0.62)		
			Lordstown (2%)	Surface kw times slope times R index (0.59)		
MaD	Mardin channery silt loam, 15 to 25 percent slopes	Moderate	Mardin (85%)	Surface kw times slope times R index (0.62)	49.4	1.2%
			Volusia (5%)	Surface kw times slope times R index (0.59)		
			Bath (5%)	Surface kw times slope times R index (0.70)		
			Lordstown (5%)	Surface kw times slope times R index (0.67)		
Od	Odessa silt loam, 0 to 3 percent slopes	Slight	Odessa (85%)		0.3	0.0%
			Schoharie (5%)			

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
			Lakemont (5%)			
			Churchville (3%)			
			Rhinebeck (2%)			
OvB	Ovid silt loam, 3 to 8 percent slopes	Moderate	Ovid (80%)	Surface kw times slope times R index (0.03)	2.5	0.1%
Pb	Palms muck	Slight	Palms (75%)		73.4	1.8%
PgA	Palmyra gravelly loam, 0 to 3 percent slopes	Slight	Palmyra (80%)		2.8	0.1%
PgB	Palmyra gravelly loam, undulating	Slight	Palmyra (80%)		68.9	1.7%
PgC	Palmyra gravelly loam, rolling	Slight	Palmyra (80%)		28.6	0.7%
PgD	Palmyra gravelly loam, hilly	Moderate	Palmyra (80%)	Surface kw times slope times R index (0.28)	8.3	0.2%
PpA	Phelps gravelly silt loam, 0 to 3 percent slopes	Slight	Phelps (80%)		16.0	0.4%
SdC	Schoharie silty clay loam, 8 to 15 percent slopes	Moderate	Schoharie (85%)	Surface kw times slope times R index (0.68)	0.5	0.0%
			Cazenovia (5%)	Surface kw times slope times R index (0.56)		
			Odessa (5%)	Surface kw times slope times R index (0.68)		
			Cayuga (3%)	Surface kw times slope times R index (0.68)		
			Collamer (2%)	Surface kw times slope times R index (0.68)		
SgB	Stockbridge channery silt loam, 3 to 8 percent slopes	Moderate	Stockbridge (85%)	Surface kw times slope times R index (0.05)	4.5	0.1%
SgC	Stockbridge channery silt loam, 8 to 15 percent slopes	Moderate	Stockbridge (85%)	Surface kw times slope times R index (0.53)	13.1	0.3%
SgD	Stockbridge channery silt loam, 15 to 25 percent slopes	Moderate	Stockbridge (85%)	Surface kw times slope times R index (0.66)	1.2	0.0%
Te	Teel silt loam	Slight	Teel (85%)		59.2	1.5%
VoA	Volusia channery silt loam, 0 to 3	Slight	Volusia (90%)		5.5	0.1%

Map unit symbol	Map unit name	Rating	Component name (percent)	Rating reasons (numeric values)	Acres in AOI	Percent of AOI
	percent slopes		Mardin (5%)			
			Chippewa (5%)			
VoB	Volusia channery silt loam, 3 to 8 percent slopes	Moderate	Volusia (90%)	Surface kw times slope times R index (0.03)	134.6	3.3%
			Mardin (5%)	Surface kw times slope times R index (0.42)		
VoC	Volusia channery silt loam, 8 to 15 percent slopes	Moderate	Volusia (90%)	Surface kw times slope times R index (0.59)	91.6	2.3%
			Mardin (6%)	Surface kw times slope times R index (0.62)		
			Chippewa (4%)	Surface kw times slope times R index (0.12)		
W	Water	Not rated	Water (100%)		3.3	0.1%
Wn	Wayland soils complex, 0 to 3 percent slopes, frequently flooded	Slight	Wayland (60%)		98.0	2.4%
			Wayland, very poorly drained (30%)			
			Wakeville (10%)			
Totals for Area of Interest					**4,050.2**	**100.0%**

Rating	Acres in AOI	Percent of AOI
Moderate	2,701.2	66.7%
Slight	1,174.8	29.0%
Severe	101.6	2.5%
Very Severe	63.1	1.6%
Null or Not Rated	9.2	0.2%
Totals for Area of Interest	**4,050.2**	**100.0%**

Rating Options—Erosion Hazard (Off-Road, Off-Trail)

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Soil Reports

The Soil Reports section includes various formatted tabular and narrative reports (tables) containing data for each selected soil map unit and each component of each unit. No aggregation of data has occurred as is done in reports in the Soil Properties and Qualities and Suitabilities and Limitations sections.

The reports contain soil interpretive information as well as basic soil properties and qualities. A description of each report (table) is included.

Soil Erosion

This folder contains a collection of tabular reports that present soil erosion factors and groupings. The reports (tables) include all selected map units and components for each map unit. Soil erosion factors are soil properties and interpretations used in evaluating the soil for potential erosion. Example soil erosion factors can include K factor for the whole soil or on a rock free basis, T factor, wind erodibility group and wind erodibility index.

RUSLE2 Related Attributes

This report summarizes those soil attributes used by the Revised Universal Soil Loss Equation Version 2 (RUSLE2) for the map units in the selected area. The report includes the map unit symbol, the component name, and the percent of the component in the map unit. Soil property data for each map unit component include the hydrologic soil group, erosion factor Kf for the surface horizon, erosion factor T, and the representative percentage of sand, silt, and clay in the mineral surface horizon. Missing surface data may indicate the presence of an organic layer.

Report—RUSLE2 Related Attributes

Soil properties and interpretations for erosion runoff calculations. The surface mineral horizon properties are displayed or the first mineral horizon below an organic surface horizon. Organic horizons are not displayed.

RUSLE2 Related Attributes–Madison County, New York

Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
Ad—Alden mucky silt loam								
Alden	80	—	C/D	.37	5	26.3	51.7	22.0
AL—Alluvial land								
Fluvaquents	41	—	A/D	.37	5	29.5	58.5	12.0
Udifluvents	39	—	A	.32	5	43.5	44.5	12.0

RUSLE2 Related Attributes–Madison County, New York								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
An—Angola silt loam								
Angola	80	—	D	.32	2	27.0	55.0	18.0
AoA—Appleton loam, 0 to 3 percent slopes								
Appleton	85	298	B/D	.28	5	41.0	42.0	17.0
AoB—Appleton loam, 3 to 8 percent slopes								
Appleton	85	161	B/D	.28	5	41.0	42.0	17.0
AsB—Arnot channery silt loam, 3 to 8 percent slopes								
Arnot	85	161	D	.32	1	30.0	56.0	14.0
AuB—Aurora silt loam, 3 to 8 percent slopes								
Aurora	80	—	D	.32	2	27.1	54.9	18.0
AuC—Aurora silt loam, 8 to 15 percent slopes								
Aurora	80	—	D	.32	2	27.1	54.9	18.0
AuD—Aurora silt loam, 15 to 25 percent slopes								
Aurora	80	—	D	.32	2	27.1	54.9	18.0
BCE—Bath soils, steep								
Bath	75	49	C	.32	3	33.0	55.0	12.0
Cd—Canandaigua silt loam								
Canandaigua	75	—	C/D	.49	5	9.0	69.0	22.0
CfB—Cazenovia silt loam, 3 to 8 percent slopes								
Cazenovia	80	—	C	.28	5	24.0	54.0	22.0
CfC—Cazenovia silt loam, 8 to 15 percent slopes								
Cazenovia	80	—	C	.28	5	24.0	54.0	22.0
Ch—Chippewa silt loam, 0 to 3 percent slopes								
Chippewa	85	298	D	.32	3	24.0	53.0	23.0
CkA—Collamer silt loam, 0 to 3 percent slopes								
Collamer	80	—	C/D	.49	5	11.3	70.7	18.0
CoB—Conesus silt loam, 3 to 8 percent slopes								
Conesus	85	161	B/D	.32	5	26.0	55.0	19.0
CoC—Conesus silt loam, 8 to 15 percent slopes								
Conesus	85	112	B/D	.32	5	26.0	55.0	19.0

RUSLE2 Related Attributes–Madison County, New York								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
Fo—Fonda mucky silt loam								
Fonda	75	—	C/D	.49	5	20.0	58.0	22.0
Fr—Fredon silt loam								
Fredon, somewhat poorly drained	50	—	B/D	.32	3	28.0	60.0	12.0
Fredon, poorly drained	30	—	B/D	.32	3	28.0	60.0	12.0
Ha—Halsey silt loam								
Halsey	80	—	B/D	.32	3	28.0	60.0	12.0
Hb—Hamlin silt loam								
Hamlin	80	—	B	.37	4	14.3	73.7	12.0
HnB—Honeoye silt loam, 3 to 8 percent slopes								
Honeoye	85	151	B	.37	5	26.0	55.0	19.0
HnC—Honeoye silt loam, 8 to 15 percent slopes								
Honeoye	85	98	B	.37	5	26.0	55.0	19.0
HnD—Honeoye silt loam, 15 to 25 percent slopes								
Honeoye	85	49	B	.37	5	26.0	55.0	19.0
HnE—Honeoye silt loam, 25 to 50 percent slopes								
Honeoye	85	49	B	.37	5	26.0	55.0	19.0
HOE—Honeoye-Farmington complex, 25 to 65 percent slopes, rocky								
Honeoye, rocky	45	49	B	.37	5	26.0	55.0	19.0
Farmington	40	49	D	.43	1	27.1	60.9	12.0
HxC—Howard gravelly silt loam, rolling								
Howard	80	—	B	.32	3	28.0	60.0	12.0
LsB—Lansing gravelly silt loam, 3 to 8 percent slopes								
Lansing	85	161	B	.32	5	26.0	55.0	19.0
LsC—Lansing gravelly silt loam, 8 to 15 percent slopes								
Lansing	85	112	B	.32	5	26.0	55.0	19.0
LsD—Lansing gravelly silt loam, 15 to 25 percent slopes								
Lansing	85	49	B	.32	5	26.0	55.0	19.0
LtB—Lima silt loam, 3 to 8 percent slopes								
Lima	85	161	B/D	.32	5	26.0	55.0	19.0

RUSLE2 Related Attributes–Madison County, New York								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
LtC—Lima silt loam, 8 to 15 percent slopes								
Lima	85	112	B/D	.32	5	26.0	55.0	19.0
LwB—Lordstown channery silt loam, 3 to 8 percent slopes								
Lordstown	90	151	C	.32	2	30.0	56.0	14.0
LwC—Lordstown channery silt loam, 8 to 15 percent slopes								
Lordstown	90	98	C	.32	2	30.0	56.0	14.0
LwD—Lordstown channery silt loam, 15 to 25 percent slopes								
Lordstown	85	49	C	.32	2	30.0	56.0	14.0
LXE—Lordstown-Arnot complex, steep, rocky								
Lordstown	50	49	C	.32	2	30.0	56.0	14.0
Arnot	35	49	D	.32	1	30.0	56.0	14.0
Ly—Lyons soils, 0 to 3 percent slopes								
Lyons	75	200	C/D	.28	5	26.0	55.0	19.0
Lyons, frequently ponded	15	200	C/D	.28	5	26.0	55.0	19.0
MaB—Mardin channery silt loam, 3 to 8 percent slopes								
Mardin	85	157	D	.32	4	26.0	60.0	14.0
MaC—Mardin channery silt loam, 8 to 15 percent slopes								
Mardin	88	98	D	.32	4	26.0	60.0	14.0
MaD—Mardin channery silt loam, 15 to 25 percent slopes								
Mardin	85	49	D	.32	4	26.0	60.0	14.0
Od—Odessa silt loam, 0 to 3 percent slopes								
Odessa	85	200	D	.49	5	15.0	65.0	20.0
OvB—Ovid silt loam, 3 to 8 percent slopes								
Ovid	80	—	C/D	.28	5	24.0	54.0	22.0
Pb—Palms muck								
Palms	75	—	B/D	—	1	—	—	—
PgA—Palmyra gravelly loam, 0 to 3 percent slopes								
Palmyra	80	—	A	.20	3	43.0	39.0	18.0
PgB—Palmyra gravelly loam, undulating								
Palmyra	80	—	A	.20	3	43.0	39.0	18.0

RUSLE2 Related Attributes–Madison County, New York								
Map symbol and soil name	Pct. of map unit	Slope length (ft)	Hydrologic group	Kf	T factor	Representative value		
						% Sand	% Silt	% Clay
PgC—Palmyra gravelly loam, rolling								
Palmyra	80	—	A	.20	3	43.0	39.0	18.0
PgD—Palmyra gravelly loam, hilly								
Palmyra	80	—	A	.20	3	43.0	39.0	18.0
PpA—Phelps gravelly silt loam, 0 to 3 percent slopes								
Phelps	80	—	B/D	.28	3	27.0	55.0	18.0
SdC—Schoharie silty clay loam, 8 to 15 percent slopes								
Schoharie	85	112	D	.49	5	11.0	54.0	35.0
SgB—Stockbridge channery silt loam, 3 to 8 percent slopes								
Stockbridge	85	—	C	.32	5	32.3	55.7	12.0
SgC—Stockbridge channery silt loam, 8 to 15 percent slopes								
Stockbridge	85	—	C	.32	5	32.3	55.7	12.0
SgD—Stockbridge channery silt loam, 15 to 25 percent slopes								
Stockbridge	85	—	C	.32	5	32.3	55.7	12.0
Te—Teel silt loam								
Teel	85	—	B/D	.37	5	14.3	73.7	12.0
VoA—Volusia channery silt loam, 0 to 3 percent slopes								
Volusia	90	157	D	.37	3	22.0	60.0	18.0
VoB—Volusia channery silt loam, 3 to 8 percent slopes								
Volusia	90	157	D	.37	3	22.0	60.0	18.0
VoC—Volusia channery silt loam, 8 to 15 percent slopes								
Volusia	90	98	D	.37	3	22.0	60.0	18.0
Wn—Wayland soils complex, 0 to 3 percent slopes, frequently flooded								
Wayland	60	197	B/D	.32	5	10.0	68.0	22.0
Wayland, very poorly drained	30	197	B/D	.32	5	10.0	68.0	22.0

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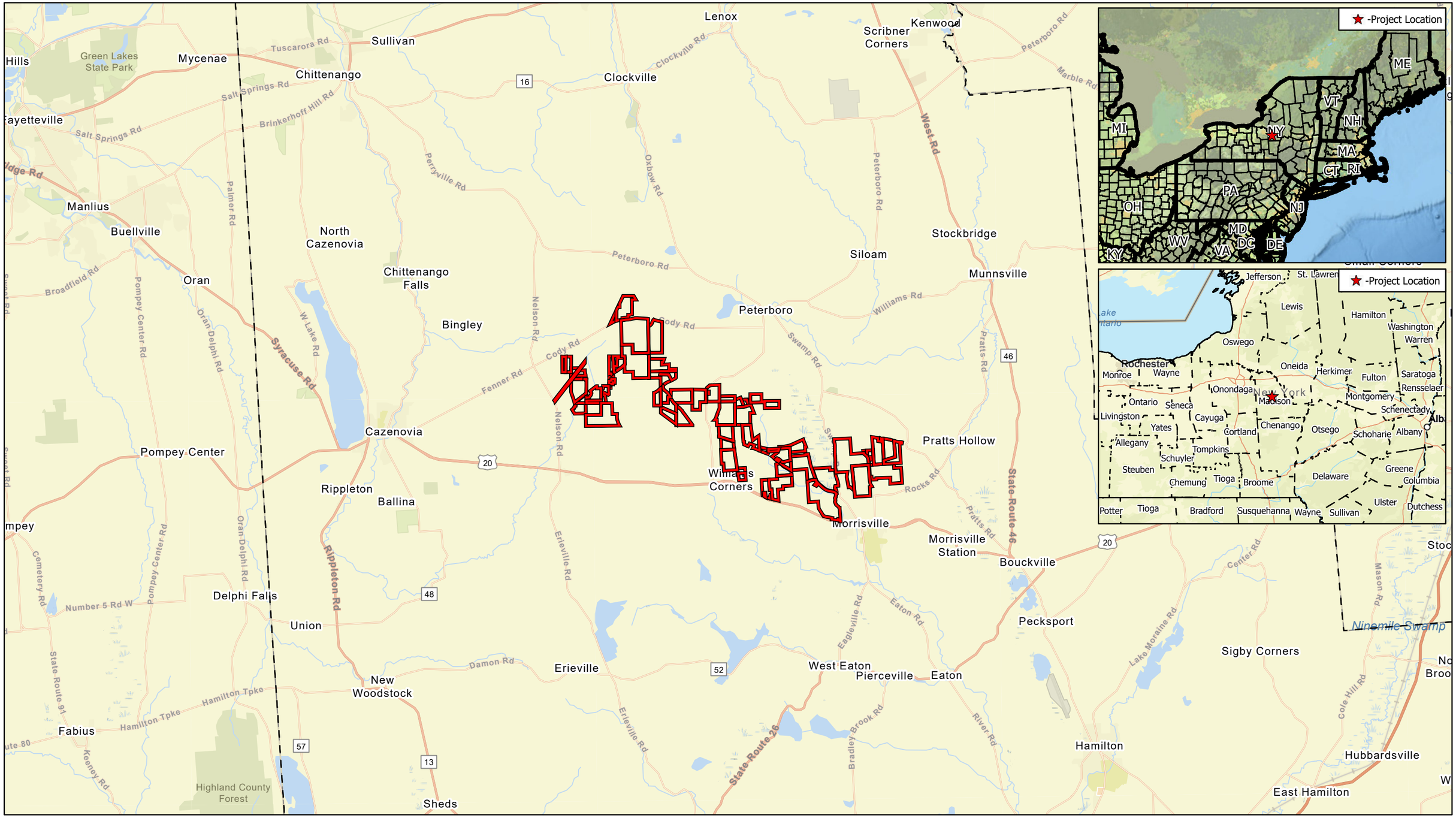
Appendix D

Vicinity Map, Pre and Post Drainage Maps, USGS Map and Impaired Water Map



Data Source(s): Westwood (2023); Esri WMS Basemap Imagery (Accessed 2023); USGS (2023); FEMA (2023); USDA (2023)

Legend

- Project Boundary
- County Boundary

N

0 1 2 Miles

Hoffman Falls Wind

Madison County, NY

Vicinity Map

October 20, 2023

Westwood
Toll Free (888) 937-5150 westwoodps.com

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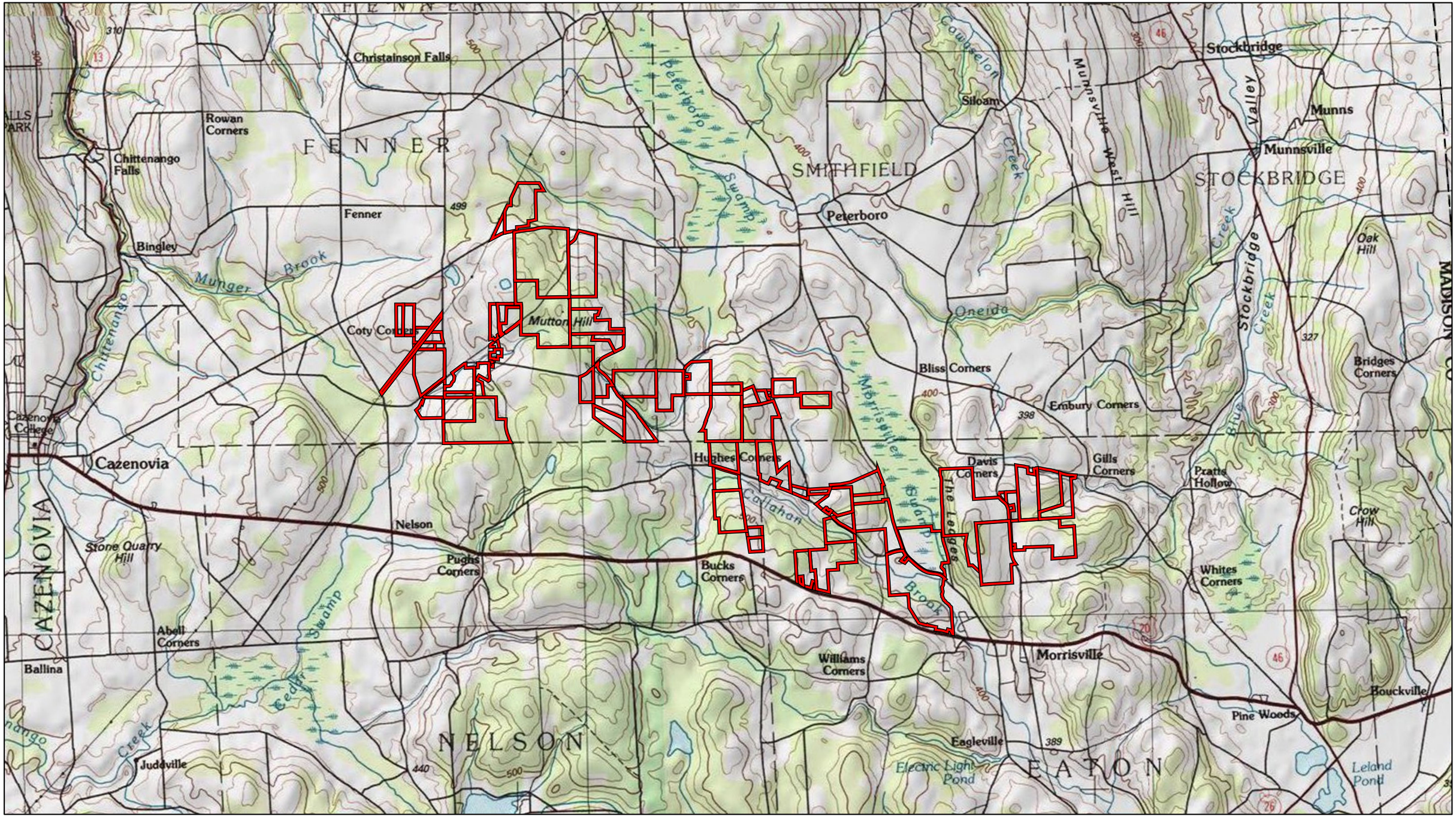
Vicinity Map - Vicinity Map | 10/20/2023 5:11 PM | CAF etl



Data Source(s): Westwood (2023); Esri WMS Basemap Imagery (Accessed 2023); USGS (2023); FEMA (2023); USDA (2023)

Legend

- Project Boundary
- County Boundary

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N

0 0.5 1 Miles

Hoffman Falls Wind

Madison County, NY

USGS Topographic Map

October 20, 2023

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USGS Topo Map - USGSTopoMap | 10/20/2023 5:12 PM | CAFell

ID	Lat	Long
1	42.948859	-75.769139
2	42.940324	-75.768101
3	42.939424	-75.767472
4	42.938016	-75.765103
5	42.939849	-75.761068
6	42.940137	-75.761121
7	42.942427	-75.759259
8	42.945648	-75.753758
9	42.948009	-75.753625
10	42.952833	-75.751749
11	42.949608	-75.743967
12	42.952181	-75.745263
13	42.954871	-75.744409
14	42.956062	-75.745833
15	42.96002	-75.746199
16	42.965431	-75.751946
17	42.964088	-75.746941
18	42.954232	-75.741045
19	42.948233	-75.73004
20	42.954983	-75.73706
21	42.950805	-75.738526
22	42.942701	-75.731964
23	42.939195	-75.730062
24	42.939061	-75.726281
25	42.937433	-75.731605
26	42.93702	-75.731562
27	42.936585	-75.731396
28	42.936242	-75.730963
29	42.934255	-75.728598
30	42.940094	-75.716413
31	42.940348	-75.713376
32	42.940289	-75.711877
33	42.940492	-75.710177
34	42.938719	-75.694548
35	42.939669	-75.69285
36	42.938324	-75.687943
37	42.938503	-75.683926
38	42.937503	-75.685175
39	42.937873	-75.686302
40	42.933611	-75.704699
41	42.933537	-75.700065
42	42.932421	-75.698435
43	42.9349	-75.701303
44	42.929989	-75.702056
45	42.925438	-75.701953
46	42.91739	-75.699765
47	42.914378	-75.69901
48	42.926038	-75.692472
49	42.928856	-75.695184
50	42.909669	-75.686461
51	42.912212	-75.684206
52	42.916656	-75.67803
53	42.916593	-75.676613
54	42.919954	-75.676166
55	42.920254	-75.676807
56	42.923271	-75.678894
57	42.923185	-75.681308
58	42.923162	-75.681961
59	42.916383	-75.668872
60	42.916251	-75.659219
61	42.916252	-75.658461
62	42.923389	-75.65142
63	42.917818	-75.645237
64	42.919571	-75.63556
65	42.918206	-75.635548

Name: Canaseraga Creek
HUC 12: 041402020504
Drains to: 041402020808

Name: Upper Cowaselon Creek
HUC 12: 041402020501
Drains to: 041402020502

Name: Cazenovia Lake-Chittenango Creek
HUC 12: 041402020702
Drains to: 041402020703

Name: Headwaters Oneida Creek
HUC 12: 041402020401
Drains to: 041402020403

Name: Headwaters Chittenango Creek
HUC 12: 041402020701
Drains to: 041402020702

Name: Callahan Brook-Chenango River
HUC 12: 020501020504
Drains to: 020501020506

Name: Payne Brook
HUC 12: 020501020505
Drains to: 020501020506

Data Source(s): Westwood (2023); Esri WMS Basemap Imagery (Accessed 2023); USGS (2023); FEMA (2023); USDA (2023)

Legend

- Discharge Locations
- Met Tower
- ADLS
- Turbines
- NHDFlowline
- Access Roads
- Collection Lines
- NHD Waterbodies
- Road Improvements
- Substation
- POI
- Laydown Yard
- Delineated Stream
- Delineated Wetlands
- Project Boundary
- HUC12 Boundary
- County Boundary

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N

0 0.5 1 Miles

Hoffman Falls Wind

Madison County, NY

Drainage Map

October 20, 2023

Appendix E

Site Plans, Erosion and Sediment Control Plans, Details, Soil Decompaction Guidance

Know what's below. Call before you dig.

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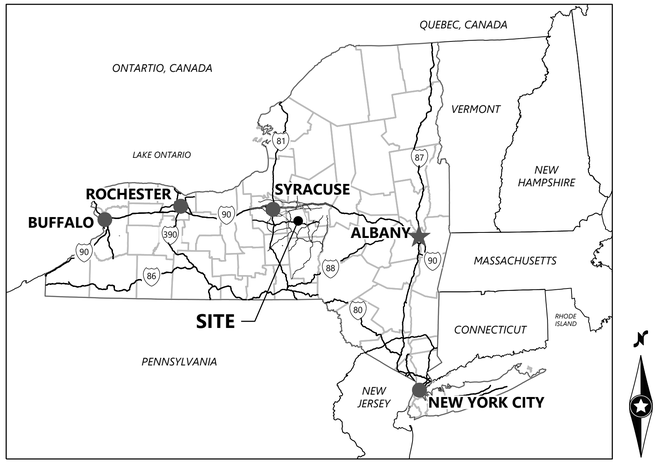
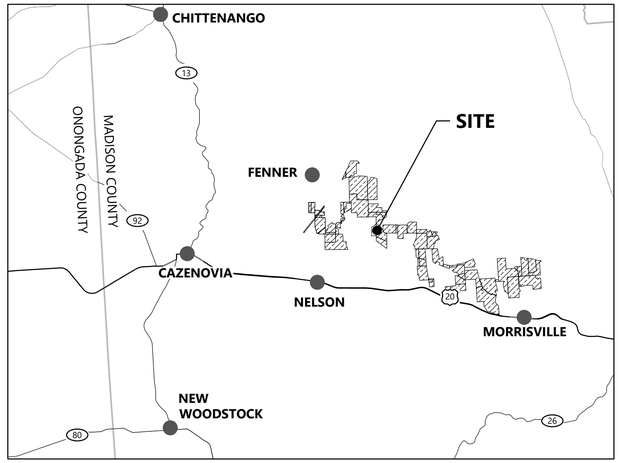
Civil Construction Plans

REGIONAL MAP



VICINITY MAP



DATA SET INFORMATION			
Coordinate System	New York Central NSRS11 (2011) SPCS US FEET		
BASE FILE	**FILE NAME / NOTES**	**PROVIDER**	**DATE**
AERIAL IMAGE	2023-06-13 Aerial Box	Westwood	6/13/2023
LAND CONTROL	Facility Site Parcels	Liberty	11/29/2023
BOUNDARY SURVEY	0042618.01V-SURV	Westwood	12/4/2023
TOPOGRAPHY	0042618V-DTM - 10m Public Data Placeholder	Westwood	5/16/2023
TURBINE ARRAY	2023-08-23_Wind Turbine	Liberty	8/15/2023
UNDERGROUND COLLECTION	0042618E-WIRE	Westwood	12/13/2023
GEN-TIE	*	*	*
STREAMS/WETLANDS	Delineated Wetland and Stream	EDR	12/22/2023
CULTURAL RESOURCES	*	*	*
BIOLOGICAL	*	*	*
FEMA INFORMATION	FEMA Mapped Flood Hazard Area	EDR	12/11/2023
TURBINE DELIVERY MANUAL	*	*	*
GEOTECHNICAL REPORT	Preliminary Geotechnical Investigation Report	Westwood	10/3/2023

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Daniel Zvirzdin	EDR	Environmental Project Manager	dzvirzdin@edrdpc.com	

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Hoffman Falls Wind Project
Madison County, New York

Cover

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C432	ROAD T-18 - Sta. -0+50.00 to 14+00.00
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EC308	Erosion Control - 4
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Hoffman Falls Wind Project

Madison County, New York

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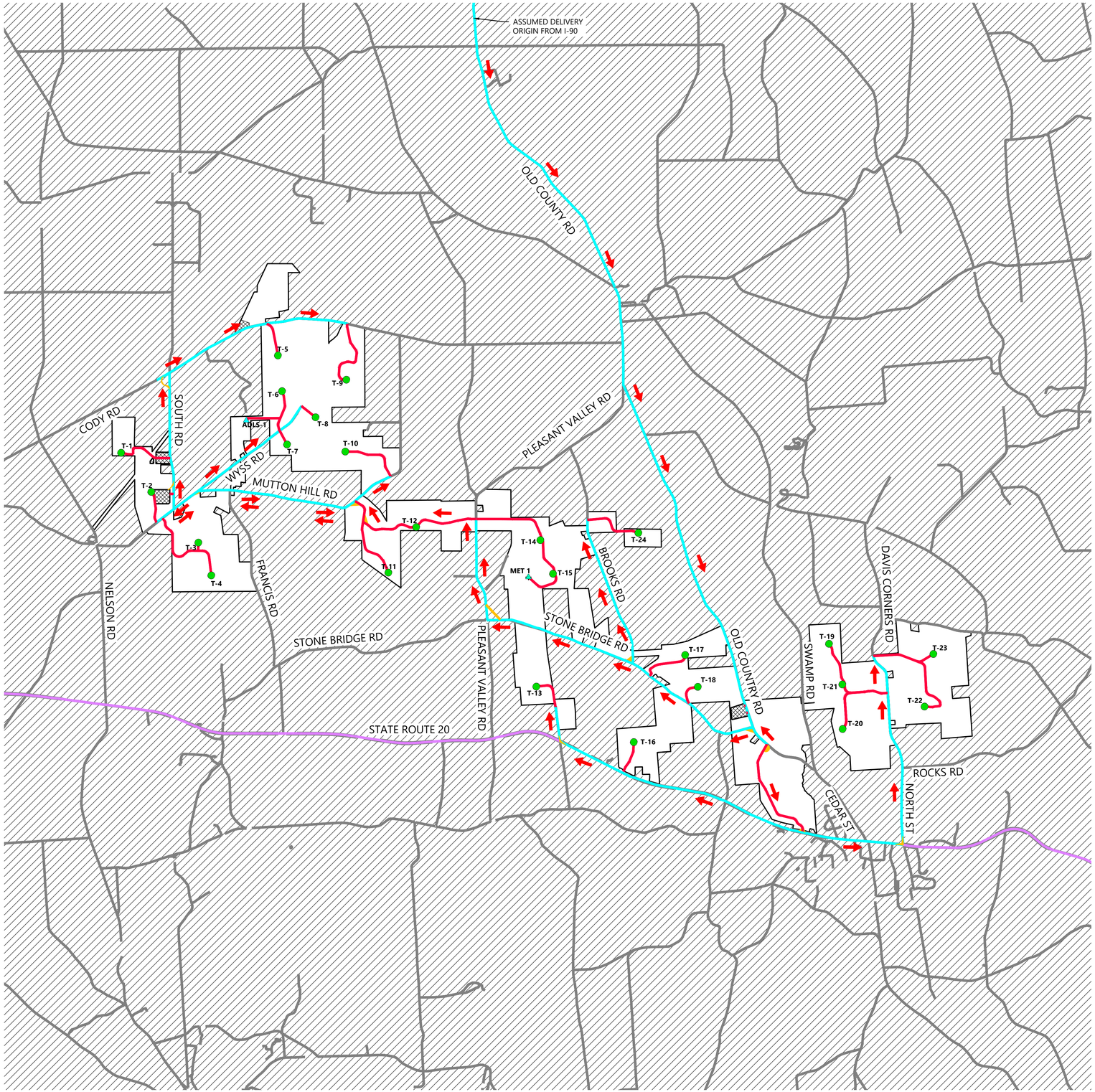

LEGEND:

- T-# — WIND TURBINE
- M-# — PERMANENT MET TOWER
- ADLS-# — ADLS TOWER
- PROJECT BOUNDARY
- PROPOSED ACCESS ROAD
- EXISTING ROAD
- DELIVERY ROUTE (INGRESS)
- EXISTING HIGHWAY
- EX. ASPHALT DELIVERY RD.
- TEMPORARY INTERSECTION IMPROVEMENT
- PROPOSED FACILITIES

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0' 2500' 5000' 7500'

Hoffman Falls Wind Project

Madison County, New York

Delivery Flow Plan

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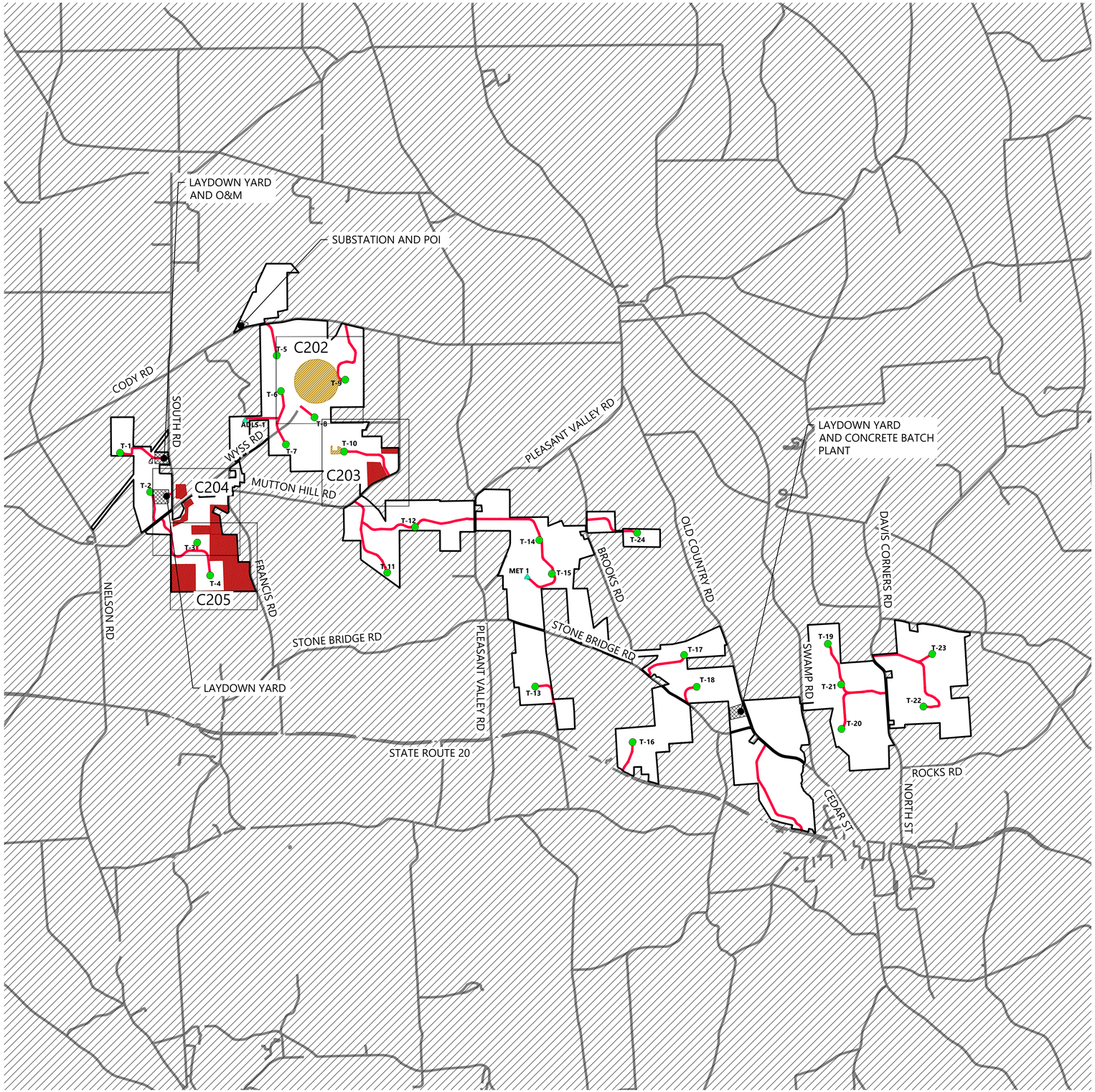

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- ADLS-# — ADLS TOWER
- PROJECT BOUNDARY
- PROPOSED ACCESS ROAD
- EXISTING ROAD
- PROJECT FACILITIES
- LAND OWNER AVOIDANCE AREA
- LAND OWNER EXCLUSION AREA
- CXXX — SHEET NUMBER REFERENCE

0' 2500' 5000' 7500'

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Hoffman Falls Wind Project

Madison County, New York

Land Owner Avoidance & Exclusion Area - Overall

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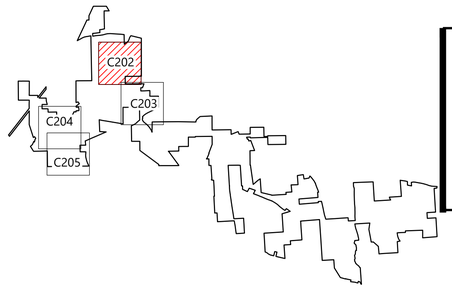
LEGEND:

- T-# — TURBINE LOCATION
- ADLS-# — ADLS TOWER
- M-# — PERMANENT MET TOWER
- PERMANENT ACCESS ROAD
- TEMPORARY INTERSECTION
- P-PUG — UNDERGROUND COLLECTION AND COMMUNICATION BORE LOCATION
- DL — DISTURBANCE LIMITS
- GL — GRADING LIMITS
- EXISTING ROADS
- PARCEL LINES (BOUNDARY SURVEY)
- NON-PARTICIPATING LAND
- PARTIALLY PARTICIPATING LAND
- LANDOWNER AVOIDANCE AREA
- LANDOWNER EXCLUSION AREA
- 900 — EX. INDEX CONTOUR
- EX. INTERVAL CONTOUR
- 900 — PROPOSED INDEX CONTOUR
- 902 — PROPOSED INTERVAL CONTOUR
- GAS — EX. GAS PIPELINE
- POH — EX. OVERHEAD POWER
- EX. UTILITY EASEMENT
- EX. RIGHT OF WAY
- EX. STREAM CHANNEL
- W — EX. WATER WELL
- EX. CULVERTS
- EX. WETLAND
- 50-FT BUFFER
- 75-FT BUFFER
- 100-FT BUFFER
- EX. ENVIROMENTALLY SENSITIVE AREA
- PROPOSED FACILITIES
- PROPOSED BLADE SWING AREA (OBSTACLE FREE AREA ONLY)

KEY MAP:



0' 200' 400' 600'

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Land Owner Avoidance & Exclusion Area - 1

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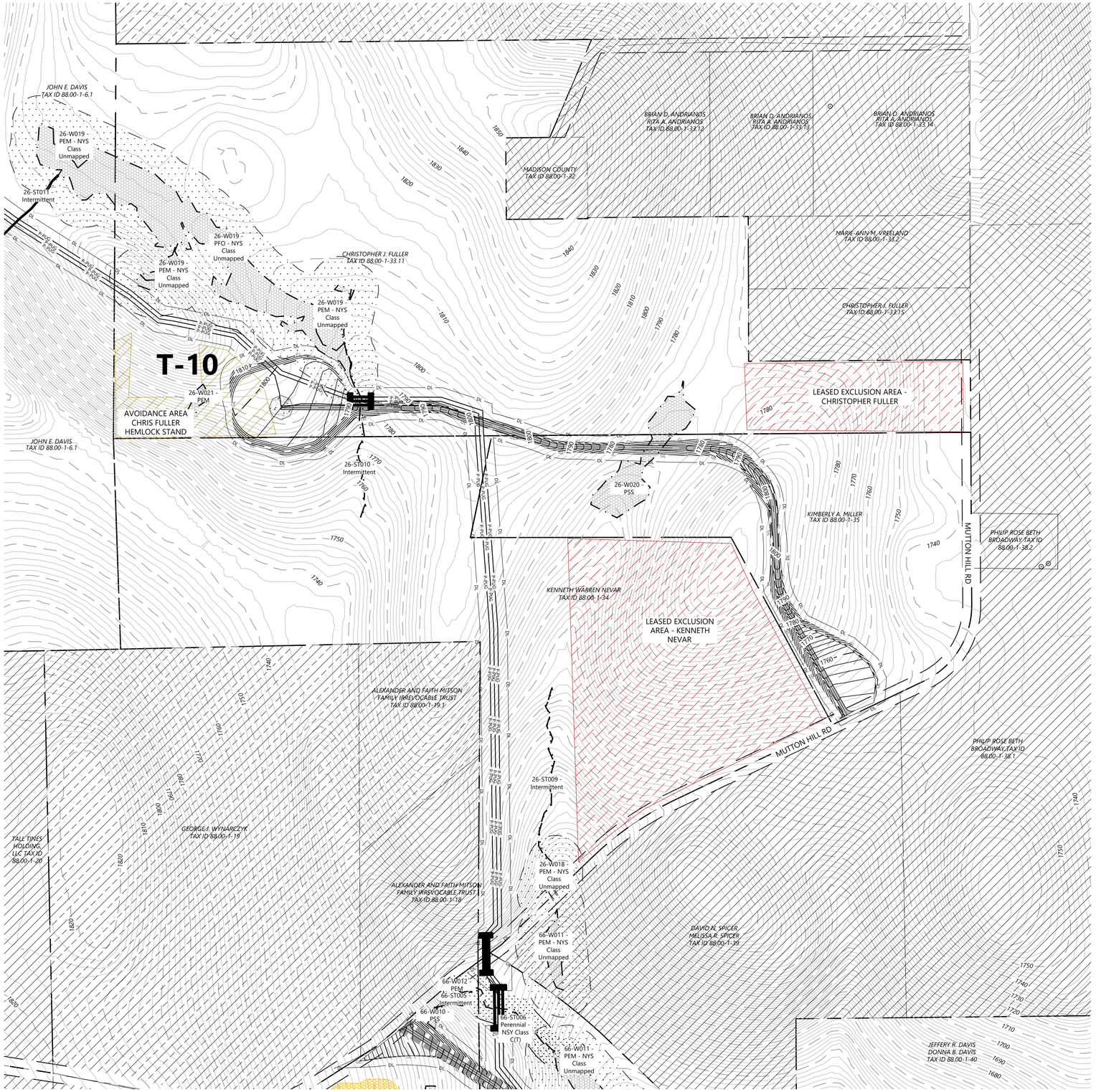

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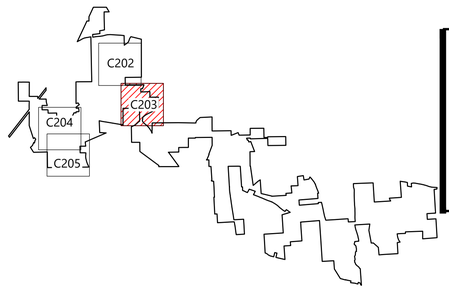
0' 200' 400' 600'

KEY MAP:



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Hoffman Falls Wind Project

Madison County, New York

Land Owner Avoidance & Exclusion Area - 2

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