



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 **Cayuga County, New York**

**Cherry Street Rd.**



# Preface

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

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

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

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

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

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

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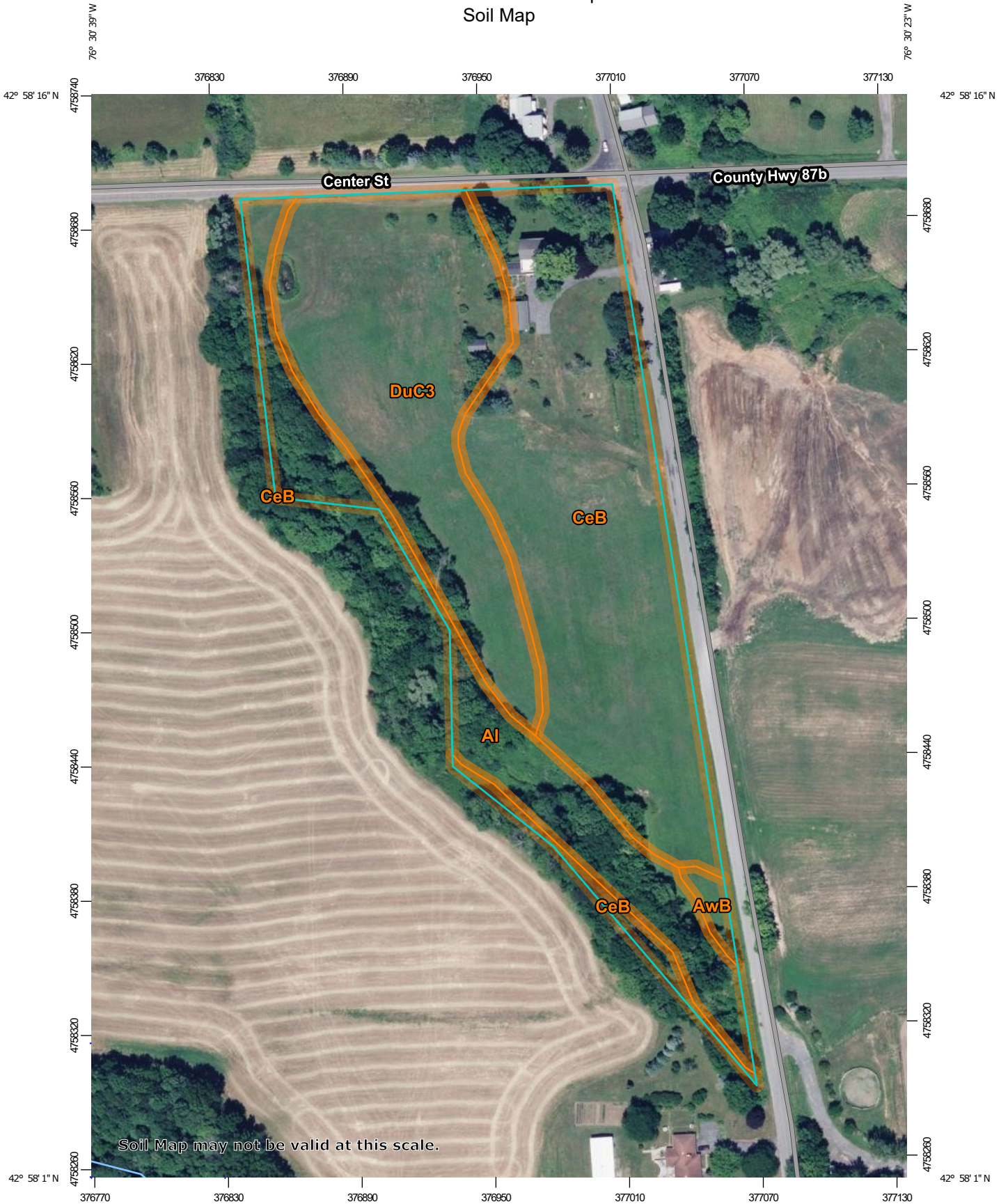
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# Soil Map

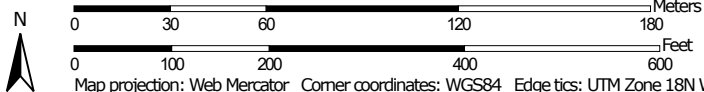
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The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce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

# Custom Soil Resource Report Soil Map




Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.



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.

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

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

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

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

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

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

Soil Survey Area: Cayuga County, New York  
 Survey Area Data: Version 18, Aug 29, 2021

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

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

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

## Map Unit Legend

| Map Unit Symbol                    | Map Unit Name                                     | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------------|----------------|
| AI                                 | Alluvial land                                     | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   | <b>11.0</b>  | <b>100.0%</b>  |

## Map Unit Descriptions

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

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

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

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



## Custom Soil Resource Report

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.

## Cayuga County, New York

### AI—Alluvial land

#### Map Unit Setting

*National map unit symbol:* 9q2n  
*Elevation:* 100 to 3,000 feet  
*Mean annual precipitation:* 32 to 41 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 145 to 185 days  
*Farmland classification:* Not prime farmland

#### Map Unit Composition

*Fluvaquents and similar soils:* 40 percent  
*Udifuvents and similar soils:* 35 percent  
*Minor components:* 25 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 70 inches:* very gravelly sand

##### Properties and qualities

*Slope:* 0 to 5 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 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  
*Hydric soil rating:* Yes

#### Description of Udifuvents

##### Setting

*Landform:* Flood plains  
*Landform position (two-dimensional):* Footslope  
*Landform position (three-dimensional):* Talf

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*Down-slope shape:* Concave  
*Across-slope shape:* Linear  
*Parent material:* Alluvium with a wide range of texture

### Typical profile

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

### Properties and qualities

*Slope:* 0 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 very high (0.06 to 19.98 in/hr)  
*Depth to water table:* About 18 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  
*Hydric soil rating:* No

### Minor Components

#### Hamlin

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

#### 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

#### Sloan

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

#### Canandaigua

*Percent of map unit:* 3 percent  
*Landform:* Depressions  
*Hydric soil rating:* Yes

#### Muck

*Percent of map unit:* 2 percent  
*Landform:* Marshes, swamps  
*Hydric soil rating:* Yes

## **AwB—Aurora silt loam, 2 to 6 percent slopes**

### **Map Unit Setting**

*National map unit symbol:* 9q34  
*Elevation:* 1,000 to 1,300 feet  
*Mean annual precipitation:* 32 to 41 inches  
*Mean annual air temperature:* 45 to 50 degrees F  
*Frost-free period:* 145 to 185 days  
*Farmland classification:* All areas are prime farmland

### **Map Unit Composition**

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

### **Description of Aurora**

#### **Setting**

*Landform:* Benches, ridges, till plains  
*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 13 inches:* silt loam  
*H2 - 13 to 32 inches:* silty clay loam  
*H3 - 32 to 36 inches:* weathered bedrock

#### **Properties and qualities**

*Slope:* 2 to 6 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**

**Farmington**

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

**Angola**

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

**Honeoye**

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

**Cazenovia**

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

**Lima**

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

**CeB—Cazenovia silt loam, 2 to 8 percent slopes**

**Map Unit Setting**

*National map unit symbol: 9q3n*  
*Elevation: 330 to 1,020 feet*  
*Mean annual precipitation: 32 to 41 inches*  
*Mean annual air temperature: 45 to 50 degrees F*  
*Frost-free period: 145 to 185 days*  
*Farmland classification: All areas are prime farmland*

**Map Unit Composition**

*Cazenovia and similar soils: 85 percent*  
*Minor components: 15 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 8 inches: silt loam*  
*H2 - 8 to 36 inches: silty clay loam*

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*H3 - 36 to 60 inches: silty clay loam*

### Properties and qualities

*Slope: 2 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 18 to 36 inches*

*Frequency of flooding: None*

*Frequency of ponding: None*

*Calcium carbonate, maximum content: 15 percent*

*Available water supply, 0 to 60 inches: Moderate (about 8.3 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

#### Romulus

*Percent of map unit: 5 percent*

*Landform: Depressions*

*Hydric soil rating: Yes*

#### Ovid

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

#### Ontario

*Percent of map unit: 5 percent*

*Hydric soil rating: No*

## DuC3—Dunkirk silt loam, 6 to 12 percent slopes, eroded

### Map Unit Setting

*National map unit symbol: 9q45*

*Elevation: 100 to 1,000 feet*

*Mean annual precipitation: 32 to 41 inches*

*Mean annual air temperature: 45 to 50 degrees F*

*Frost-free period: 145 to 185 days*

*Farmland classification: Farmland of statewide importance*

### Map Unit Composition

*Dunkirk and similar soils: 80 percent*

*Minor components: 20 percent*

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

## Description of Dunkirk

### Setting

*Landform:* Lake plains

*Landform position (two-dimensional):* Shoulder

*Landform position (three-dimensional):* Tread

*Down-slope shape:* Convex

*Across-slope shape:* Convex

*Parent material:* Silty and clayey glaciolacustrine deposits

### Typical profile

*H1 - 0 to 9 inches:* silt loam

*H2 - 9 to 16 inches:* silt loam

*H3 - 16 to 30 inches:* silt loam

*H4 - 30 to 60 inches:* stratified silty clay loam to silt loam

### Properties and qualities

*Slope:* 6 to 12 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 (0.20 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:* High (about 10.3 inches)

### Interpretive groups

*Land capability classification (irrigated):* None specified

*Land capability classification (nonirrigated):* 3e

*Hydrologic Soil Group:* C

*Hydric soil rating:* No

## Minor Components

### Schoharie

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

### Arkport

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

### Niagara

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

### Collamer

*Percent of map unit:* 5 percent

*Hydric soil rating:* No

# **Soil Information for All Uses**

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## **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 Classifications**

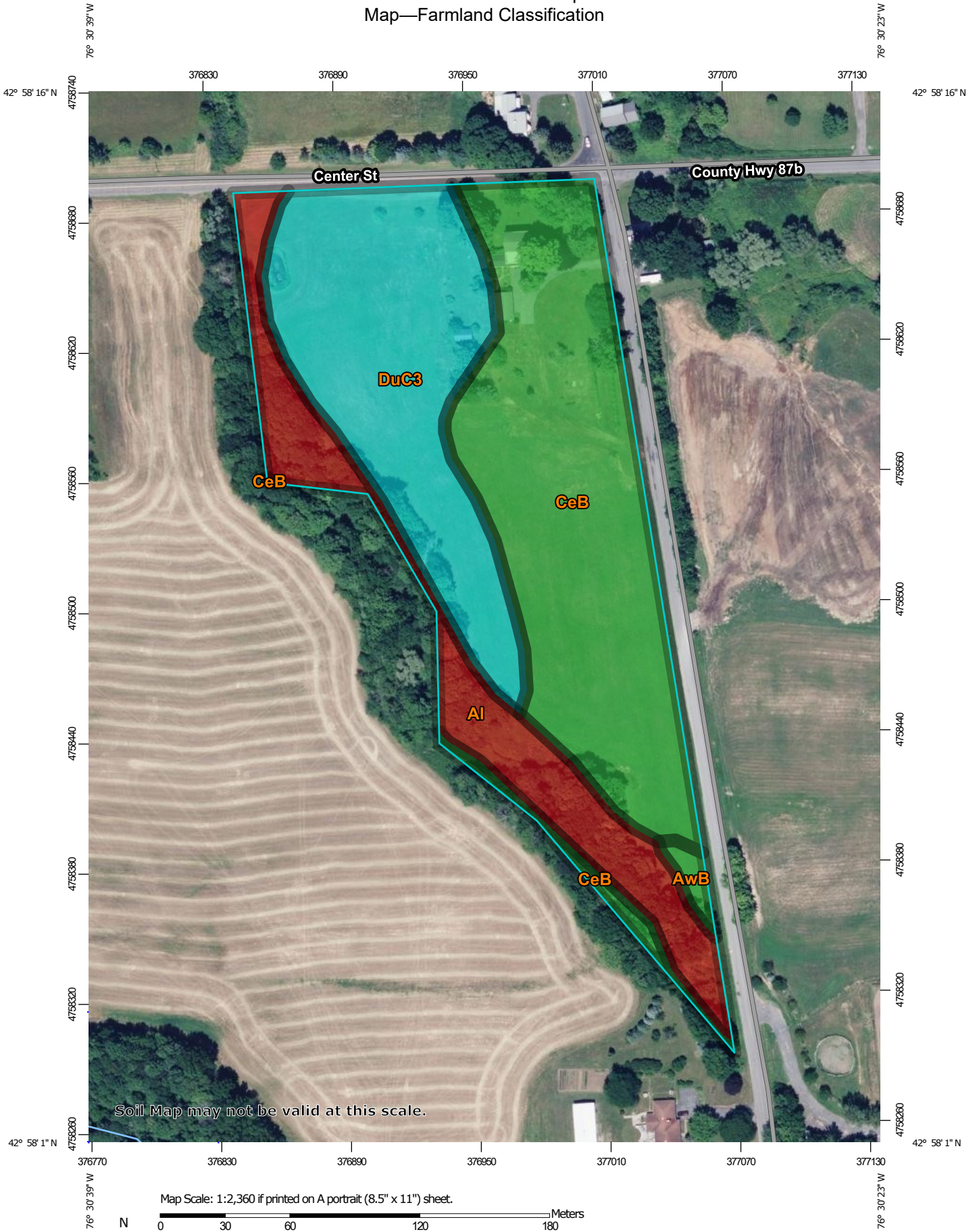
Land Classifications are specified land use and management groupings that are assigned to soil areas because combinations of soil have similar behavior for specified practices. Most are based on soil properties and other factors that directly influence the specific use of the soil. Example classifications include ecological site classification, farmland classification, irrigated and nonirrigated land capability classification, and hydric rating.

## **Farmland Classification**

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.



# Custom Soil Resource Report Map—Farmland Classification



Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.




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

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
## MAP LEGEND








### Area of Interest (AOI)






 Area of Interest (AOI)








### Soils



#### Soil Rating Polygons

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season









-  Prime farmland if subsoiled, completely removing the root inhibiting soil layer
-  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
-  Prime farmland if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance
-  Farmland of statewide importance, if drained
-  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated

-  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if irrigated and drained
-  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer
-  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60







































-  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium
-  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season
-  Farmland of statewide importance, if warm enough
-  Farmland of statewide importance, if thawed
-  Farmland of local importance
-  Farmland of local importance, if irrigated

-  Farmland of unique importance
-  Not rated or not available

#### Soil Rating Lines

-  Not prime farmland
-  All areas are prime farmland
-  Prime farmland if drained
-  Prime farmland if protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated
-  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
-  Prime farmland if irrigated and drained
-  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

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|  |   |  |  |  |
|--|---|--|--|--|
|  Prime farmland if subsoiled, completely removing the root inhibiting soil layer                                  |  Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season   |  Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium  |  Farmland of unique importance  |  Prime farmland if subsoiled, completely removing the root inhibiting soil layer                                  |
|  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60      |  Farmland of statewide importance, if irrigated and drained  |  Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season                         |  Not rated or not available   |  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60      |
|  Prime farmland if irrigated and reclaimed of excess salts and sodium   |  Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season |  Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season | <b>Soil Rating Points</b><br> Not prime farmland  |  Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60      |
|  Farmland of statewide importance   |  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer                                    |  Farmland of statewide importance, if warm enough   |  Prime farmland if drained  |  Prime farmland if irrigated and reclaimed of excess salts and sodium   |
|  Farmland of statewide importance, if drained   |  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60        |  Farmland of statewide importance, if thawed  |  Prime farmland if protected from flooding or not frequently flooded during the growing season                      |  Farmland of statewide importance   |
|  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season |  Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer                                    |  Farmland of local importance   |  Prime farmland if irrigated  |  Farmland of statewide importance, if drained   |
|  Farmland of statewide importance, if irrigated   |  Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60        |  Farmland of local importance, if irrigated   |  Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season   |  Farmland of statewide importance, if protected from flooding or not frequently flooded during the growing season |
|  |   |  |  Prime farmland if irrigated and drained  |  Farmland of statewide importance, if irrigated   |
|  |   |  |  Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season |  |

# Custom Soil Resource Report

|   |  |  |   |
|---|--|--|---|
| Farmland of statewide importance, if drained and either protected from flooding or not frequently flooded during the growing season   | Farmland of statewide importance, if irrigated and reclaimed of excess salts and sodium  | Farmland of unique importance<br>Not rated or not available                                      | The soil surveys that comprise your AOI were mapped at 1:15,800.  |
| Farmland of statewide importance, if irrigated and drained  | Farmland of statewide importance, if drained or either protected from flooding or not frequently flooded during the growing season                         | <b>Water Features</b><br>Streams and Canals  | <div style="border: 1px solid black; padding: 5px;"> <p>Warning: Soil Map may not be valid at this scale.</p> <p>Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.</p> </div> |
| Farmland of statewide importance, if irrigated and either protected from flooding or not frequently flooded during the growing season | Farmland of statewide importance, if warm enough, and either drained or either protected from flooding or not frequently flooded during the growing season | <b>Transportation</b><br>Rails<br>Interstate Highways<br>US Routes<br>Major Roads<br>Local Roads |   |
| Farmland of statewide importance, if subsoiled, completely removing the root inhibiting soil layer                                    | Farmland of statewide importance, if warm enough   | <b>Background</b><br>Aerial Photography  | Please rely on the bar scale on each map sheet for map measurements.  |
| Farmland of statewide importance, if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60        | Farmland of statewide importance, if thawed  |  | Source of Map: Natural Resources Conservation Service<br>Web Soil Survey URL:<br>Coordinate System: Web Mercator (EPSG:3857)  |
|   | Farmland of local importance   |  | 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.  |
|   | Farmland of local importance, if irrigated   |  | This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.   |
|   |  |  | Soil Survey Area: Cayuga County, New York<br>Survey Area Data: Version 18, Aug 29, 2021   |
|   |  |  | Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.   |
|   |  |  | Date(s) aerial images were photographed: Apr 1, 2020—Oct 1, 2020  |
|   |  |  | The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.  |

**Table—Farmland Classification**

| Map unit symbol                    | Map unit name                                     | Rating                           | Acres in AOI | Percent of AOI |
|------------------------------------|---|----------------------------------|--------------|----------------|
| AI                                 | Alluvial land                                     | Not prime farmland               | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | All areas are prime farmland     | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | All areas are prime farmland     | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | Farmland of statewide importance | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |                                  | <b>11.0</b>  | <b>100.0%</b>  |

**Rating Options—Farmland Classification**

*Aggregation Method:* No Aggregation Necessary

*Tie-break Rule:* Lower

## Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities 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 property or quality.

## Soil Chemical Properties

Soil Chemical Properties are measured or inferred from direct observations in the field or laboratory. Examples of soil chemical properties include pH, cation exchange capacity, calcium carbonate, gypsum, and electrical conductivity.

### pH (1 to 1 Water)

Soil reaction is a measure of acidity or alkalinity. It is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion. In general, soils that are either highly alkaline or highly acid are likely to be very corrosive to steel. The most common soil laboratory measurement of pH is the 1:1 water method. A crushed soil sample is mixed with an equal amount of water, and a measurement is made of the suspension.

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report  
Map—pH (1 to 1 Water)



Soil Map may not be valid at this scale.

Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.


0 30 60 120 180 Meters  
0 100 200 400 600 Feet

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

# Custom Soil Resource Report













## MAP LEGEND

### Area of Interest (AOI)













 Area of Interest (AOI)

### Soils



#### Soil Rating Polygons











-  Ultra acid (pH < 3.5)
-  Extremely acid (pH 3.5 - 4.4)
-  Very strongly acid (pH 4.5 - 5.0)
-  Strongly acid (pH 5.1 - 5.5)
-  Moderately acid (pH 5.6 - 6.0)
-  Slightly acid (pH 6.1 - 6.5)
-  Neutral (pH 6.6 - 7.3)
-  Slightly alkaline (pH 7.4 - 7.8)
-  Moderately alkaline (pH 7.9 - 8.4)
-  Strongly alkaline (pH 8.5 - 9.0)
-  Very strongly alkaline (pH > 9.0)
-  Not rated or not available

#### Soil Rating Lines


-  Ultra acid (pH < 3.5)
-  Extremely acid (pH 3.5 - 4.4)
-  Very strongly acid (pH 4.5 - 5.0)
-  Strongly acid (pH 5.1 - 5.5)
-  Moderately acid (pH 5.6 - 6.0)
-  Slightly acid (pH 6.1 - 6.5)
-  Neutral (pH 6.6 - 7.3)
-  Slightly alkaline (pH 7.4 - 7.8)
-  Moderately alkaline (pH 7.9 - 8.4)
-  Strongly alkaline (pH 8.5 - 9.0)
-  Very strongly alkaline (pH > 9.0)
-  Not rated or not available

#### Soil Rating Points


-  Ultra acid (pH < 3.5)
-  Extremely acid (pH 3.5 - 4.4)

-  Very strongly acid (pH 4.5 - 5.0)
-  Strongly acid (pH 5.1 - 5.5)
-  Moderately acid (pH 5.6 - 6.0)
-  Slightly acid (pH 6.1 - 6.5)
-  Neutral (pH 6.6 - 7.3)
-  Slightly alkaline (pH 7.4 - 7.8)
-  Moderately alkaline (pH 7.9 - 8.4)
-  Strongly alkaline (pH 8.5 - 9.0)
-  Very strongly alkaline (pH > 9.0)
-  Not rated or not available






### Background

 Aerial Photography

### Water Features

 Streams and Canals

### Transportation

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



## Custom Soil Resource Report

### MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Cayuga County, New York  
Survey Area Data: Version 18, Aug 29, 2021

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

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

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

**Table—pH (1 to 1 Water)**

| Map unit symbol                    | Map unit name                                     | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------|--------------|----------------|
| Al                                 | Alluvial land                                     | 6.3    | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | 6.2    | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | 6.5    | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | 6.2    | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |        | <b>11.0</b>  | <b>100.0%</b>  |

**Rating Options—pH (1 to 1 Water)**

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

*Layer Options (Horizon Aggregation Method):* Depth Range (Weighted Average)

*Top Depth:* 2

*Bottom Depth:* 10

*Units of Measure:* Inches

**Soil Erosion Factors**

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.

**K Factor, Whole Soil**

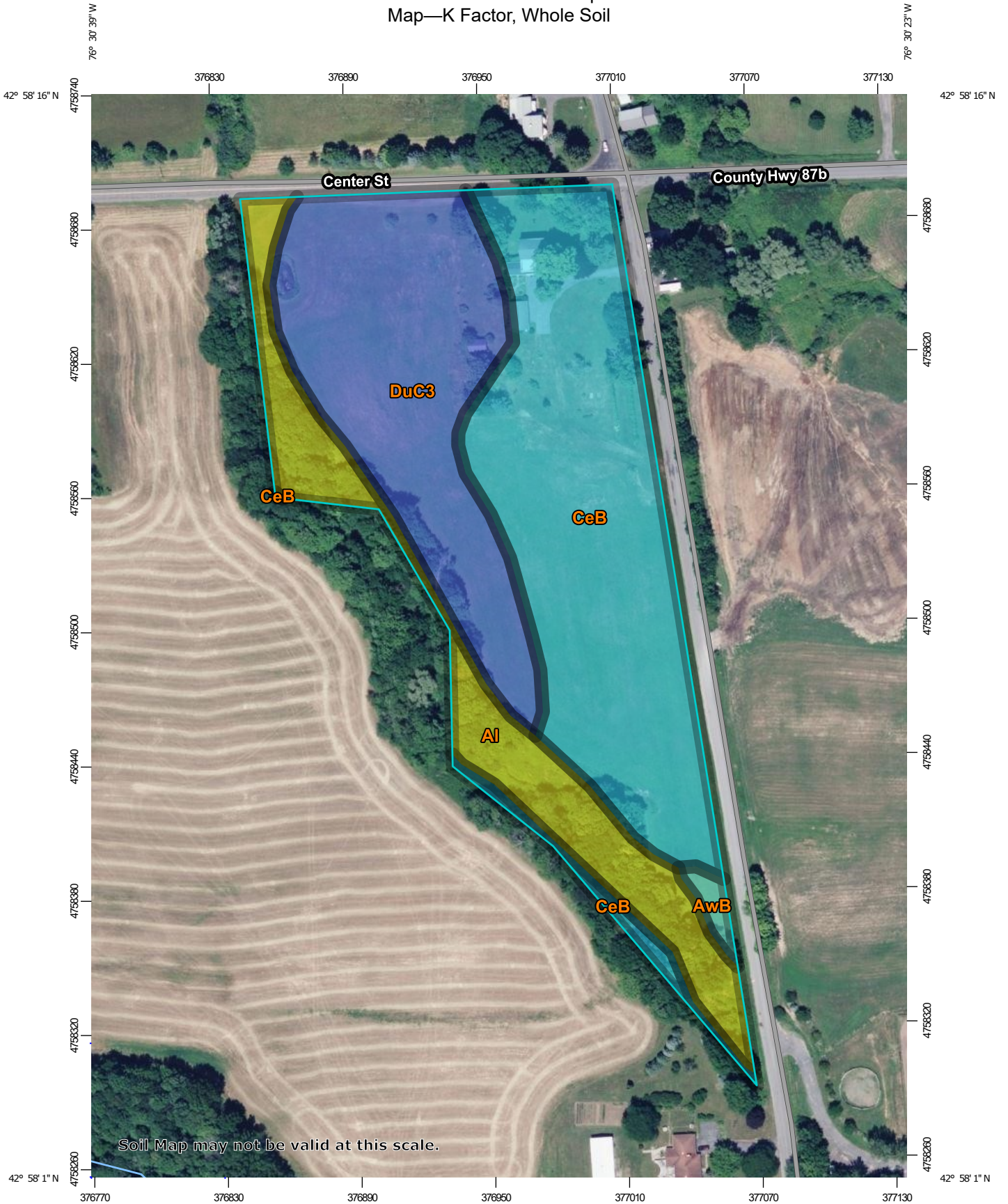
Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

## Custom Soil Resource Report

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Custom Soil Resource Report  
Map—K Factor, Whole Soil




Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.



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**
















-  .02
-  .05
-  .10
-  .15
-  .17
-  .20
-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

**Soil Rating Lines**








-  .02
-  .05
-  .10
-  .15
-  .17
-  .20

-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  Not rated or not available

**Soil Rating Points**

-  .02
-  .05
-  .10
-  .15
-  .17
-  .20
-  .24
-  .28
-  .32
-  .37
-  .43
-  .49
-  .55
-  .64
-  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.

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

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

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

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

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

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

Soil Survey Area: Cayuga County, New York  
 Survey Area Data: Version 18, Aug 29, 2021

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

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

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

**Table—K Factor, Whole Soil**

| Map unit symbol                    | Map unit name                                     | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|---|--------|--------------|----------------|
| Al                                 | Alluvial land                                     | .17    | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | .32    | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | .37    | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | .49    | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |        | <b>11.0</b>  | <b>100.0%</b>  |

**Rating Options—K Factor, Whole Soil**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

*Layer Options (Horizon Aggregation Method):* Depth Range (Weighted Average)

*Top Depth:* 2

*Bottom Depth:* 10

*Units of Measure:* Inches

**Soil Health Properties**

Soil health is defined as the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans. This folder contains information on soil properties that are important indicators of soil health.

**Soil Health - Organic Matter**

Organic matter percent is the weight of decomposed plant, animal, and microbial residues exclusive of non-decomposed plant and animal residues. It is expressed as a percentage, by weight, of the soil material that is less than 2 mm in diameter.

Significance:

Soil organic matter (SOM) influences the physical, chemical, and biological properties of soils far more than suggested by its relatively small proportion in most soils. The organic fraction influences plant growth through its influence on these soil properties. It encourages soil aggregation, especially macroaggregation, increases porosity, and lowers bulk density. Because the soil structure is improved, water infiltration rates increase. SOM has a high capacity to adsorb and exchange cations

and is important to pesticide binding. It furnishes energy to microorganisms in the soil. As SOM is decomposed by soil microbes, it releases nitrogen, phosphorous, sulfur, and many micronutrients, which become available for plant growth. SOM is a heterogeneous, dynamic substance that varies in particle size, carbon content, decomposition rate, and turnover time. In general, the content of SOM is highest at the surface—where plant, animal, and microbial residue inputs are greatest—and decreases with depth.

Total organic carbon (TOC) is the carbon (C) stored in SOM. Total organic carbon is also referred to as soil organic carbon (SOC) in the scientific literature. Organic carbon enters the soil through the decomposition of plant and animal residues, root exudates, and living and dead microorganisms. Inorganic carbon is common in calcareous soils in the form of calcium and magnesium carbonates. In calcareous soils, the content of inorganic carbon can exceed TOC.

#### Factors Affecting Content of SOM and SOC:

Inherent factors - Soil texture, parent material, drainage, climate, and time affect accumulation of SOM. Soils that are rich in clay have greater capacity to protect SOM from decomposition by stabilizing substances that bind to clay surfaces. The formation of soil aggregates—enabled by the presence of clay, aluminum and iron oxides, fungal hyphae, bacterial exudates (carbohydrates), and fine roots—protects SOM from microbial decomposition. Extractable aluminum and allophanes, which are present in volcanic soils, can react with SOM to form compounds that are stable and resist microbial decomposition. Warm temperatures increase decomposition rates of SOM. High mean annual precipitation increases accumulation rates of SOM by stimulating the production of plant biomass.

Loss of SOM through erosion results in SOM variations along slope gradients. Areas of level topography tend to have much more SOM than areas with other slope classes. Both elevation and topographic gradients affect local climate, vegetation distribution, and soil properties. They also affect associated biogeochemical processes, including SOM dynamics. Analysis of factors affecting C in the conterminous United States indicates that the effects of land use, topography (elevation and slope), and mean annual precipitation on SOM are more obvious than the effects of mean annual temperature. However, when other variables are highly restricted, SOM content clearly declines with increasing temperature.

Dynamic factors - Dynamic gains and losses in SOM are due primarily to management decisions in combination with climate and microbial influences. Accumulation of SOM is controlled by the rate of C mineralization, the amount and stage of decomposition of plant residues, and the addition of organic amendments to soil.

Soil organic carbon comprises approximately 52 to 58% of the SOM and is the main source of energy for soil microorganisms. The C within plant residues, particulate organic matter, and soil microbial biomass is generally considered to be within the active pool of SOM. The emergent view of SOM focuses on microbial access to SOM and includes an emphasis on the need to manage C flows rather than discrete C pools. During decomposition of SOM, energy and nutrients are released and utilized by plant roots and soil biota. Recognizing that SOM is a continuum of

decomposition products is a first step in designing management strategies for renewing SOM sources throughout the year.

Soil aggregates of various sizes and stabilities can act as sites at which SOM is physically protected from decomposition and C mineralization. Soil disturbance and aggregate destruction increase biodegradation of SOM. Aggregates are readily broken apart by tillage operations.

Crop residues incorporated into or left on the soil surface reduce erosion and the losses of SOM associated with sediment. In acidic soils, applications of lime increase plant productivity, microbial activity, organic matter decomposition, and CO<sub>2</sub> release.

The diversity of the soil microbial population affects SOM. For example, while soil bacteria and some fungi participate in SOM loss by mineralizing C compounds, other fungi, such as mycorrhizae, facilitate stabilization and physical protection by aggregating SOM with clay and minerals. SOM is better protected from degradation within aggregates than in free-form.

#### Relationship to Soil Function:

SOM is one of the most important soil constituents. It affects plant growth by improving aggregate stability, soil structure, water availability, and nutrient cycling. SOM fractions in the active pool, described above, are the main source of energy and nutrients for soil microorganisms, which mediate nutrient cycling in the soil. Biochemically stable SOM participates in aggregate stability and in holding capacity for nutrients and water.

Microaggregates are formed by mineral interactions with iron and aluminum oxides and are generally considered an inherent soil characteristic. They are, however, impacted by current and past management. Fine roots, fungal hyphae, and organic carbon compounds, such as complex sugars (carbohydrates) and proteins (also referred to as glues), bind mineral particles and microaggregates together to form macroaggregates that are still porous enough to allow air, water, and plant roots to move through the soil.

An increase in SOM leads to greater biological diversity and activity in the soil, thus increasing biological control of plant diseases and pests.

#### Problems Associated with Low Organic Matter Levels:

Low levels of SOM result in energy-source shortages and thereby lowered levels of microbial biomass, activity, and nutrient mineralization. In noncalcareous soils, aggregate stability, infiltration, drainage, and airflow are also reduced. Scarcity of SOM results in less diversity in soil biota and a risk of disruption to the food chain equilibrium. This disruption can cause disturbance in the soil environment (e.g., increased plant pests and diseases and accumulation of toxic substances).

#### Improving SOM Levels:



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An estimated  $4.4 \times 10^9$  tons of C have been lost from soils of the United States due to traditional farming practices. Most of this carbon was SOC. Nearly half of the SOM has been lost from many agricultural soils. Other farming practices, such as no-till and cover cropping (especially when used together), can stop losses of SOM and even lead to increases. Continuous application of manure and compost can increase SOM. Burning, harvesting, or otherwise removing plant residues decreases SOM.

### Measurement:

SOM is measured in the laboratory by determining total carbon (TC) content using either dry or wet-dry combustion. Current analytical methods do not distinguish between decomposed and nondecomposed residues, so soil is first sieved to 2 mm to remove as much of the recognizable plant material as possible. If no carbonates are present, TC is considered to be the same as TOC (or SOC). For calcareous soils, soil inorganic carbon in the form carbonates must also be measured and then subtracted from the TC to determine TOC content. Results are given as the percent TOC in dry soil. To convert percent TOC to percent SOM, multiply the TOC percentage by 1.724. To convert percent SOM to percent TOC, divide the SOM percentage by 1.724. Note that this value continues to be debated by researchers with possible values ranging from 1.4 to 2.5 (Pribyl, 2010). A conversion factor of 2 has been suggested for this database but has not yet been adopted. Detailed procedures for measurement of SOM are outlined in 'Soil Survey Investigations Report No. 42, Kellogg Soil Survey Laboratory Methods Manual, Version 5.0,' (Soil Survey Staff, 2014).

Many soil testing laboratories use a 'loss on ignition' method to estimate soil organic matter. The estimate produced by this method must be correlated to analytical TOC measurements for each area to improve accuracy. The loss on ignition method can provide a good indication of the trend in SOM content within a field. It is important to note that temperature and timing used for the loss on ignition approach vary across labs and can influence results. Thus, comparisons should be made using only results from within a given lab.

Currently, no standard method exists to measure TOC in the field. Attempts have been made to develop charts that match color to TOC content, but the correlation is better within soil landscapes and only for limited soils. Near-infrared spectroscopy has been tested for measuring C directly in the field, but it is expensive and sensitive to moisture content.

### Estimates:

Color and feel are soil characteristics that can be used to estimate SOM content. Color comparisons in areas of similar parent materials and textures can be correlated with laboratory data and thereby enable a soil scientist to make field estimates. In general, darker colors or black indicate the presence of higher amounts of organic matter. The contrast of color between the A horizon and subsurface horizons is also a good indicator. Sandy soils tend to look darker with a lower content of SOM. In general, lower numbers for hue, value, and chroma (in the Munsell soil color system) tend to be associated with darker soil colors that are attributed to higher content of SOM, soil moisture, or both.

## Custom Soil Resource Report

For each soil layer, this attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A 'representative' value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

### References:

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. (<http://soils.usda.gov>)

Edwards, J.H., C.W. Wood, D.L. Thurlow, and M.E. Ruf. 1999. Tillage and crop rotation effects on fertility status of a Hapludalf soil. *Soil Science Society of America Journal* 56:1577–1582.

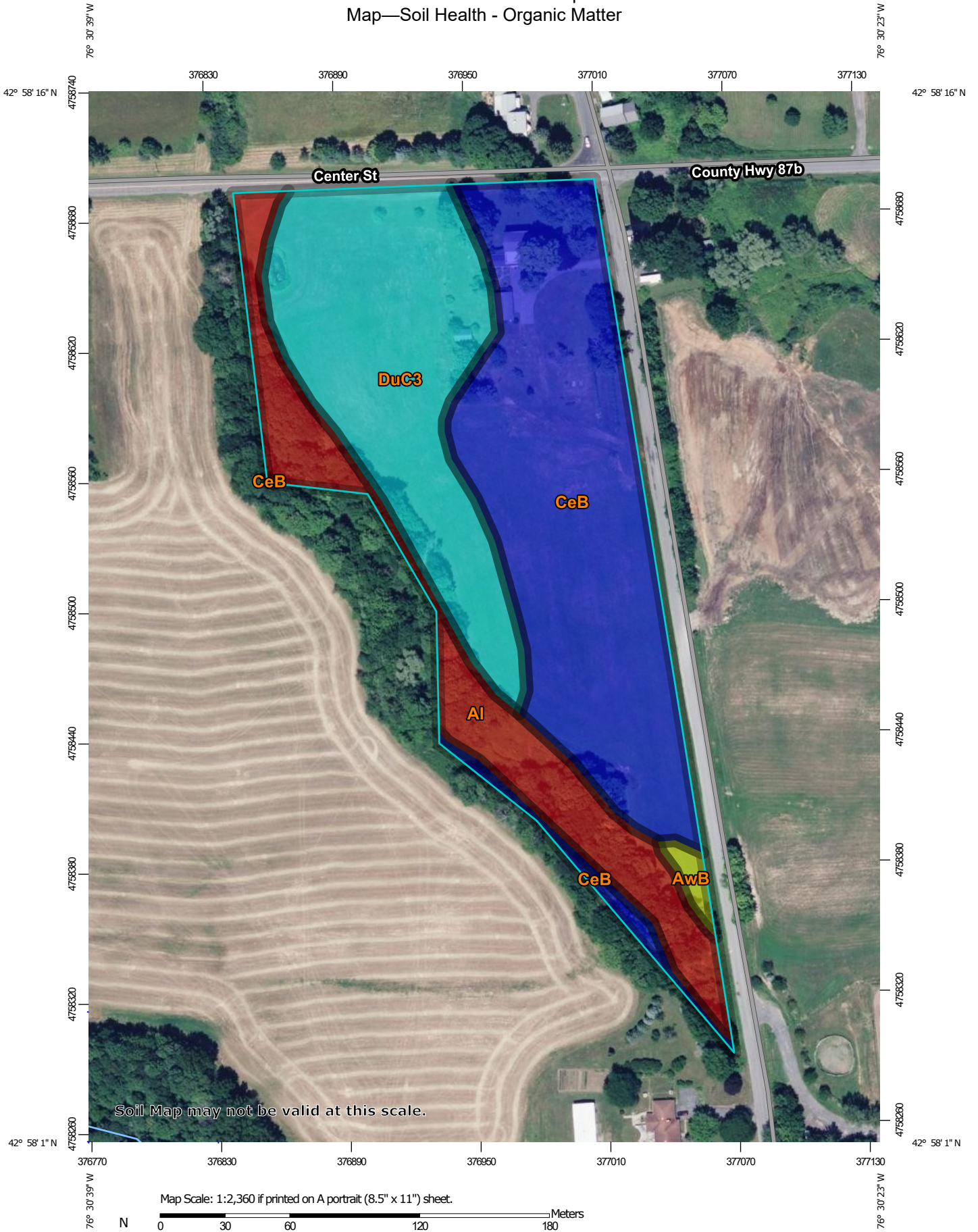
Pribyl, D.W. 2010. A critical review of the conventional SOC to SOM conversion factor. *Geoderma* 156:75–83.

Sikora, L.J., and D.E. Stott. 1996. Soil organic carbon and nitrogen. In: J.W. Doran and A.J. Jones, editors, *Methods for assessing soil quality*. Madison, WI. p. 157–167.

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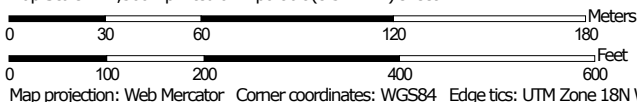
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Custom Soil Resource Report  
Map—Soil Health - Organic Matter


























Soil Map may not be valid at this scale.

Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.



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**
    -  <= 1.30
    -  > 1.30 and <= 4.00
    -  > 4.00 and <= 4.15
    -  > 4.15 and <= 4.38
    -  Not rated or not available
  - Soil Rating Lines**
    -  <= 1.30
    -  > 1.30 and <= 4.00
    -  > 4.00 and <= 4.15
    -  > 4.15 and <= 4.38
    -  Not rated or not available
  - Soil Rating Points**
    -  <= 1.30
    -  > 1.30 and <= 4.00
    -  > 4.00 and <= 4.15
    -  > 4.15 and <= 4.38
    -  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.

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

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

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

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

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

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

Soil Survey Area: Cayuga County, New York  
 Survey Area Data: Version 18, Aug 29, 2021

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

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

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

**Table—Soil Health - Organic Matter**

| Map unit symbol                    | Map unit name                                     | Rating (percent) | Acres in AOI | Percent of AOI |
|------------------------------------|---|------------------|--------------|----------------|
| Al                                 | Alluvial land                                     | 1.30             | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | 4.00             | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | 4.38             | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | 4.15             | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |                  | <b>11.0</b>  | <b>100.0%</b>  |

### Rating Options—Soil Health - Organic Matter

*Units of Measure:* percent

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Higher

*Interpret Nulls as Zero:* No

*Layer Options (Horizon Aggregation Method):* Depth Range (Weighted Average)

*Top Depth:* 2

*Bottom Depth:* 10

*Units of Measure:* Inches

### Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

### Depth to Any Soil Restrictive Layer

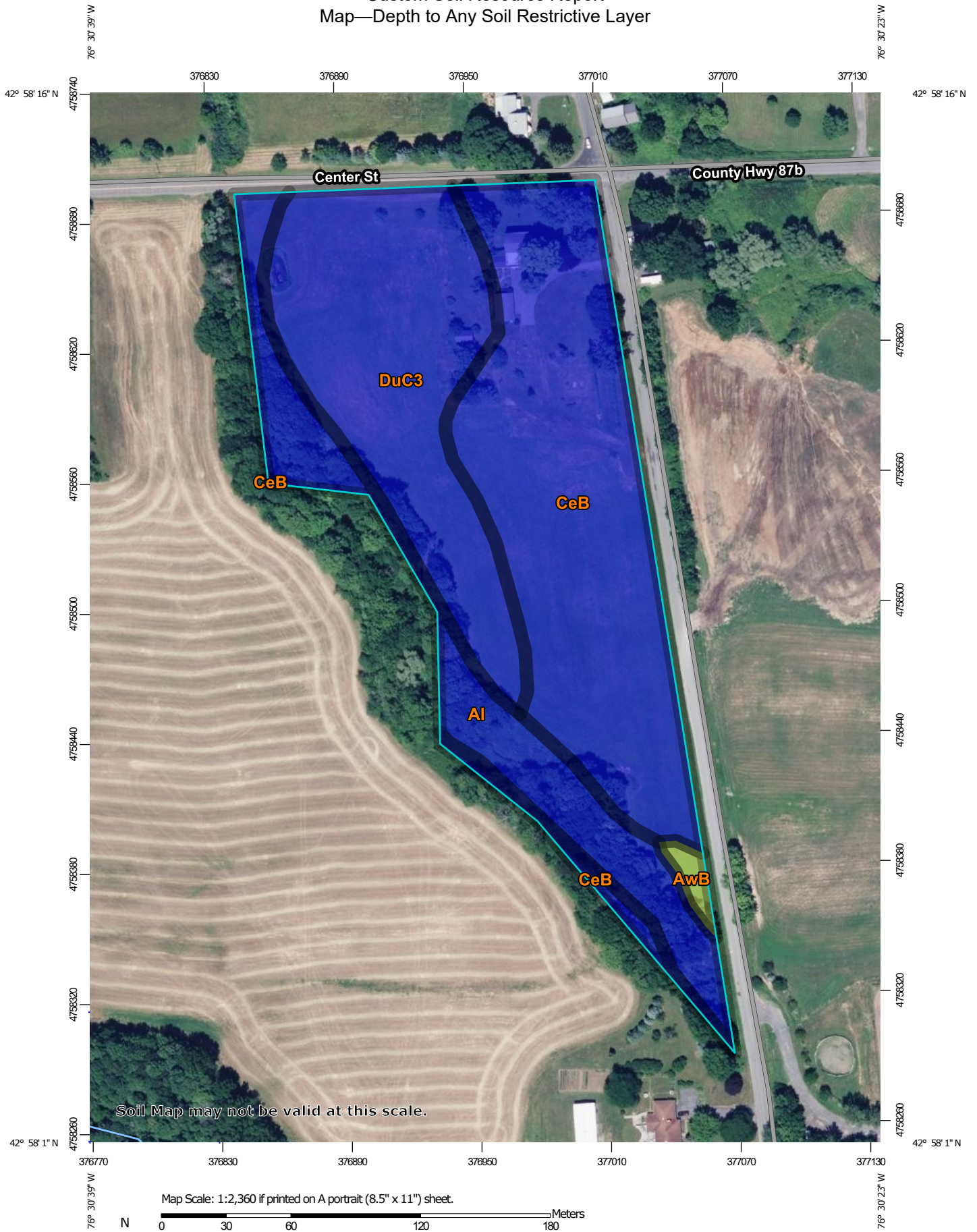
A "restrictive layer" is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers.

## Custom Soil Resource Report

This theme presents the depth to any type of restrictive layer that is described for each map unit. If more than one type of restrictive layer is described for an individual soil type, the depth to the shallowest one is presented. If no restrictive layer is described in a map unit, it is represented by the "greater than 200" depth class.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report  
Map—Depth to Any Soil Restrictive Layer
































Soil Map may not be valid at this scale.

Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.

0 30 60 120 180 Meters  
0 100 200 400 600 Feet

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**
    -  0 - 25
    -  25 - 50
    -  50 - 100
    -  100 - 150
    -  150 - 200
    -  > 200
    -  Not rated or not available
  - Soil Rating Lines**
    -  0 - 25
    -  25 - 50
    -  50 - 100
    -  100 - 150
    -  150 - 200
    -  > 200
    -  Not rated or not available
  - Soil Rating Points**
    -  0 - 25
    -  25 - 50
    -  50 - 100
    -  100 - 150
    -  150 - 200
    -  > 200
- Water Features**
  -  Streams and Canals
- Transportation**
  -  Rails
  -  Interstate Highways
  -  US Routes
  -  Major Roads
  -  Local Roads
- Background**
  -  Aerial Photography
-  Not rated or not available

### MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Cayuga County, New York  
 Survey Area Data: Version 18, Aug 29, 2021

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

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

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



**Table—Depth to Any Soil Restrictive Layer**

| Map unit symbol                    | Map unit name                                     | Rating (centimeters) | Acres in AOI | Percent of AOI |
|------------------------------------|---|----------------------|--------------|----------------|
| Al                                 | Alluvial land                                     | >200                 | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | 81                   | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | >200                 | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | >200                 | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |                      | <b>11.0</b>  | <b>100.0%</b>  |

**Rating Options—Depth to Any Soil Restrictive Layer**

*Units of Measure:* centimeters

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

*Interpret Nulls as Zero:* No

**Water Features**

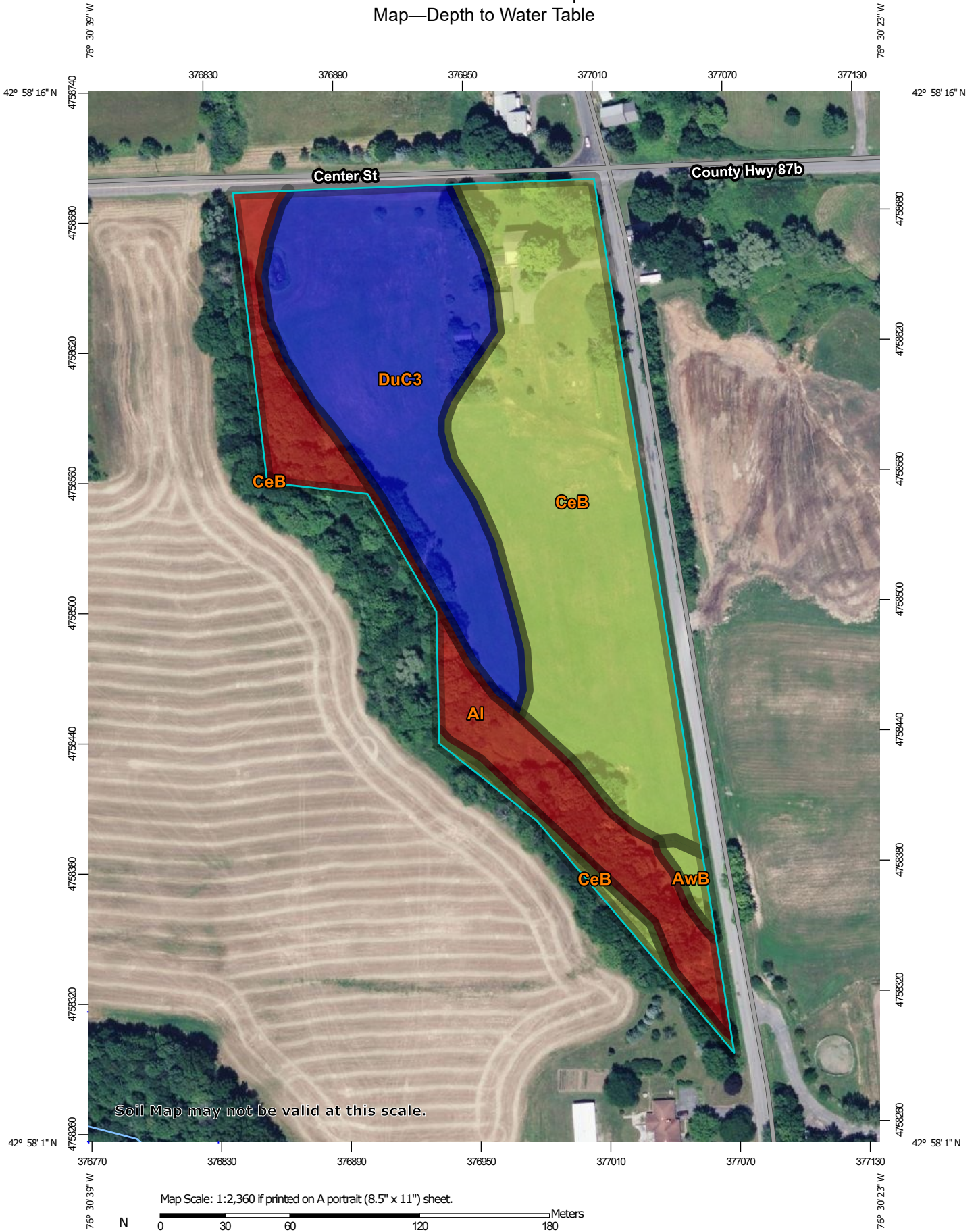
Water Features include ponding frequency, flooding frequency, and depth to water table.

**Depth to Water Table**


"Water table" refers to a saturated zone in the soil. It occurs during specified months. Estimates of the upper limit are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

This attribute is actually recorded as three separate values in the database. A low value and a high value indicate the range of this attribute for the soil component. A "representative" value indicates the expected value of this attribute for the component. For this soil property, only the representative value is used.

Custom Soil Resource Report  
Map—Depth to Water Table










### MAP LEGEND








**Area of Interest (AOI)**  
 Area of Interest (AOI)

**Soils**







**Soil Rating Polygons**


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available

**Soil Rating Lines**






-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200
-  Not rated or not available


**Soil Rating Points**


-  0 - 25
-  25 - 50
-  50 - 100
-  100 - 150
-  150 - 200
-  > 200

**Water Features**  
 Streams and Canals

**Transportation**

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

**Background**  
 Aerial Photography

 Not rated or not available

### MAP INFORMATION

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

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

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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)

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 Survey Area Data: Version 18, Aug 29, 2021

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

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

**Table—Depth to Water Table**

| Map unit symbol                    | Map unit name                                     | Rating (centimeters) | Acres in AOI | Percent of AOI |
|------------------------------------|---|----------------------|--------------|----------------|
| AI                                 | Alluvial land                                     | 0                    | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | 54                   | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | 69                   | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | >200                 | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |                      | <b>11.0</b>  | <b>100.0%</b>  |

## Rating Options—Depth to Water Table

*Units of Measure:* centimeters

*Aggregation Method:* Dominant Component

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

*Interpret Nulls as Zero:* No

*Beginning Month:* January

*Ending Month:* December

## Flooding Frequency Class

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent.

"None" means that flooding is not probable. The chance of flooding is nearly 0 percent in any year. Flooding occurs less than once in 500 years.

"Very rare" means that flooding is very unlikely but possible under extremely unusual weather conditions. The chance of flooding is less than 1 percent in any year.

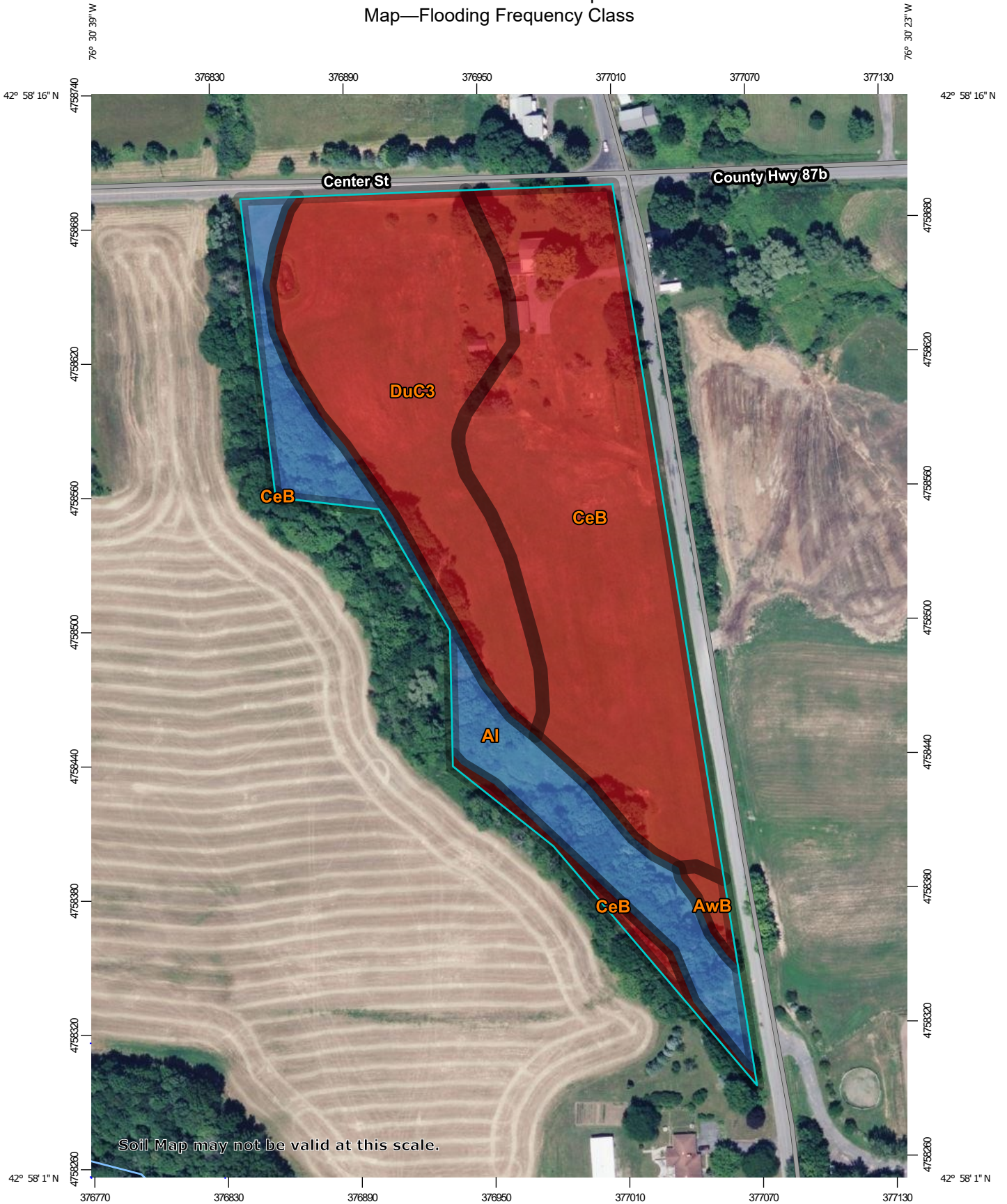
"Rare" means that flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5 percent in any year.

"Occasional" means that flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50 percent in any year.

"Frequent" means that flooding is likely to occur often under normal weather conditions. The chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year.

"Very frequent" means that flooding is likely to occur very often under normal weather conditions. The chance of flooding is more than 50 percent in all months of any year.

# Custom Soil Resource Report Map—Flooding Frequency Class
































Map Scale: 1:2,360 if printed on A portrait (8.5" x 11") sheet.



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

### MAP LEGEND

-  Area of Interest (AOI)
- Soils**
- Soil Rating Polygons**
-  None
-  Very Rare
-  Rare
-  Occasional
-  Frequent
-  Very Frequent
-  Not rated or not available
- Soil Rating Lines**
-  None
-  Very Rare
-  Rare
-  Occasional
-  Frequent
-  Very Frequent
-  Not rated or not available
- Soil Rating Points**
-  None
-  Very Rare
-  Rare
-  Occasional
-  Frequent
-  Very Frequent
-  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.

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

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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)

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

Soil Survey Area: Cayuga County, New York  
 Survey Area Data: Version 18, Aug 29, 2021

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

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

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

**Table—Flooding Frequency Class**

| Map unit symbol                    | Map unit name                                     | Rating   | Acres in AOI | Percent of AOI |
|------------------------------------|---|----------|--------------|----------------|
| AI                                 | Alluvial land                                     | Frequent | 2.1          | 19.0%          |
| AwB                                | Aurora silt loam, 2 to 6 percent slopes           | None     | 0.1          | 1.1%           |
| CeB                                | Cazenovia silt loam, 2 to 8 percent slopes        | None     | 5.2          | 47.0%          |
| DuC3                               | Dunkirk silt loam, 6 to 12 percent slopes, eroded | None     | 3.6          | 32.9%          |
| <b>Totals for Area of Interest</b> |   |          | <b>11.0</b>  | <b>100.0%</b>  |

**Rating Options—Flooding Frequency Class**

*Aggregation Method:* Dominant Condition

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* More Frequent

*Beginning Month:* January

*Ending Month:* December