Appendix B

NRCS Soils Information; FEMA Map; NWI Map; NYS DEC Environmental Resource Map; OPRHP Cultural Resourse Sensitivity Map



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 Orange County, New York



Custom Soil Resource Report Soil Map



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

(0)

Blowout

 \boxtimes

Borrow Pit

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Clay Spot

 \Diamond

Closed Depression

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Gravel Pit

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Gravelly Spot

0

Landfill Lava Flow

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Marsh or swamp

2

Mine or Quarry

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Miscellaneous Water

0

Perennial Water
Rock Outcrop

+

Saline Spot

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Sandy Spot

-

Severely Eroded Spot

Sinkhole

6

Slide or Slip

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Sodic Spot

8

Spoil Area Stony Spot

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Very Stony Spot

3

Wet Spot Other

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Special Line Features

Water Features

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Streams and Canals

Transportation

ransp

Rails

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Interstate Highways

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US Routes
Major Roads

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Local Roads

Background

Marie Control

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: Orange County, New York Survey Area Data: Version 24, Sep 6, 2023

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: May 31, 2022—Oct 27, 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
ErA	Erie gravelly silt loam, 0 to 3 percent slopes	13.0	15.7%
MdB	Mardin gravelly silt loam, 3 to 8 percent slopes	20.3	24.5%
MdC	Mardin gravelly silt loam, 8 to 15 percent slopes	0.1	0.1%
SXC	Swartswood and Mardin soils, sloping, very stony	49.5	59.6%
Totals for Area of Interest		82.9	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.

Orange County, New York

ErA—Erie gravelly silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9vv8 Elevation: 100 to 1,360 feet

Mean annual precipitation: 42 to 52 inches Mean annual air temperature: 46 to 52 degrees F

Frost-free period: 135 to 215 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Erie and similar soils: 75 percent Minor components: 25 percent

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

Description of Erie

Setting

Landform: Till plains, hills, drumlinoid ridges

Landform position (two-dimensional): Footslope, summit Landform position (three-dimensional): Base slope

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Loamy till derived from siltstone, sandstone, shale, and limestone

Typical profile

H1 - 0 to 10 inches: gravelly silt loam H2 - 10 to 18 inches: channery silt loam H3 - 18 to 56 inches: channery silt loam H4 - 56 to 70 inches: channery silt loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 10 to 21 inches to fragipan

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 18 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Available water supply, 0 to 60 inches: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 3w

Hydrologic Soil Group: D

Ecological site: F144AY037MA - Moist Dense Till Uplands

Hydric soil rating: No

Minor Components

Alden

Percent of map unit: 5 percent

Landform: Depressions Hydric soil rating: Yes

Swartswood

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

Bath

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

Mardin

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

Wurtsboro

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

MdB—Mardin gravelly silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2v30j 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): Shoulder, summit 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: gravelly silt loam
Bw - 8 to 15 inches: gravelly silt loam
E - 15 to 20 inches: gravelly silt loam
Bx - 20 to 72 inches: gravelly 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: F144AY008CT - Moist Till Uplands

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

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

Bath

Percent of map unit: 5 percent Landform: Mountains, hills

Landform position (two-dimensional): Backslope, shoulder Landform position (three-dimensional): Interfluve, side slope

Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

MdC—Mardin gravelly silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2v30l 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): Shoulder, backslope 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: gravelly silt loam Bw - 8 to 15 inches: gravelly silt loam E - 15 to 20 inches: gravelly silt loam Bx - 20 to 72 inches: gravelly 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: F144AY008CT - Moist Till Uplands

Hydric soil rating: No

Minor Components

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): Mountainflank, side slope, nose slope

Down-slope shape: Linear 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

SXC—Swartswood and Mardin soils, sloping, very stony

Map Unit Setting

National map unit symbol: 2v30r 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

Swartswood, very stony, and similar soils: 41 percent Mardin, very stony, and similar soils: 39 percent

Minor components: 20 percent

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

Description of Swartswood, Very Stony

Setting

Landform: Till plains, hills

Landform position (two-dimensional): Shoulder

Landform position (three-dimensional): Crest

Down-slope shape: Convex Across-slope shape: Convex

Parent material: Loamy till derived mainly from quartzite, conglomerate, and

sandstone

Typical profile

H1 - 0 to 3 inches: gravelly loam

H2 - 3 to 31 inches: gravelly fine sandy loam H3 - 31 to 60 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 percent

Depth to restrictive feature: 20 to 36 inches to fragipan

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: About 23 to 31 inches

Frequency of flooding: None Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: C

Ecological site: F140XY030NY - Well Drained Dense Till

Hydric soil rating: No

Description of Mardin, Very Stony

Settina

Landform: Mountains, hills

Landform position (two-dimensional): Shoulder, backslope Landform position (three-dimensional): Side slope, interfluve

Down-slope shape: Linear Across-slope shape: Linear Parent material: Loamy till

Typical profile

A - 0 to 4 inches: gravelly silt loam

Bw - 4 to 15 inches: gravelly silt loam

E - 15 to 20 inches: gravelly silt loam

Bx - 20 to 72 inches: gravelly silt loam

Properties and qualities

Slope: 8 to 15 percent

Surface area covered with cobbles, stones or boulders: 1.6 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): 6s

Hydrologic Soil Group: D

Ecological site: F144AY008CT - Moist Till Uplands

Hydric soil rating: No

Minor Components

Wurtsboro, very stony

Percent of map unit: 5 percent Landform: Till plains, hills

Landform position (two-dimensional): Summit Landform position (three-dimensional): Crest

Down-slope shape: Concave Across-slope shape: Convex Hydric soil rating: No

Lordstown

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

Bath, very stony

Percent of map unit: 5 percent Landform: Mountains, hills

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Side slope, nose slope

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

Volusia, very stony

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

References

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

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

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

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

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

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

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

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2 053580

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

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

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2 053374

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

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

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

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

National Flood Hazard Layer FIRMette

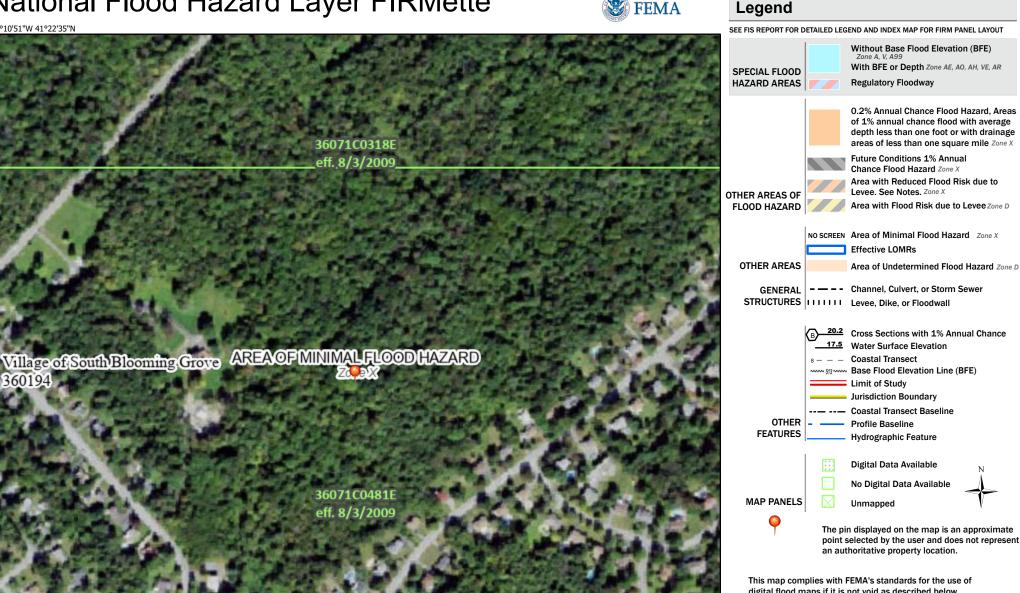
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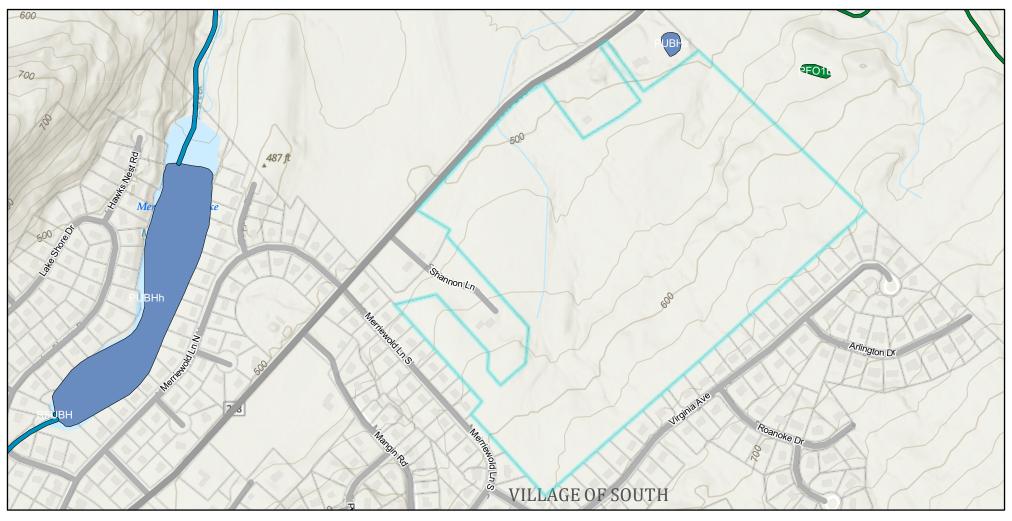
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digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/14/2024 at 9:10 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

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January 3, 2024



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Capitol Hill – Multifamily Development

CRIS Archeological Sensitive Buffer Areas Map 08-06-24

