
JMM WETLAND CONSULTING SERVICES, LLC

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Newtown, CT 06482**

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September 30, 2020

Town of South Windsor
Inland Wetlands Agency/Conservation Commission
1540 Sullivan Avenue
South Windsor, CT 06074

RE: ***Wetlands Assessment/Impact Analysis***
818 Sullivan Avenue, South Windsor, Connecticut

JMM Job # 20-2662-SWN-9

At the request of the applicant, Expct, LLC, JMM Wetland Consulting Services, LLC (JMM), is providing herein this Wetlands Assessment/Impact Analysis report, pursuant to the Town of South Windsor's Inland Wetland/Watercourse and Conservation Regulations, revised through October 18th, 2000.

1.0 Introduction

The site is located north of Sullivan Avenue, in South Windsor, Connecticut. This +/- 4.4-acre parcel is currently comprised of an active car wash, a single-family residence, maintained lawn, landscaped areas, paved/gravel parking areas and drives and forested, wet meadow and wet maintained lawn regulated wetland areas (see Figure 1, attached). The roughly northern half of the overall property is forested. The Podunk River riparian corridor is located just off-site to the west. Specifically, JMM focused its review at the southeastern portion of the overall site, which is the area of the majority of the proposed development (i.e., JMM Study Area).

Soils-based wetland delineations within the study area were conducted on August 27th, 2020. At that time JMM also gathered base-line information for this report.

In this report, JMM is providing the following:

1. Descriptions of the on-site regulated wetlands and watercourses.
2. A functions and values assessment of the regulated wetland associated with the site (i.e. #-series wetland).
3. An analysis of potential indirect impacts upon the regulated resources and upon the functions and values they provide.

2.0 Description of Regulated Resource Areas

#-Series Wetland

This wetland area is located in the eastern and northern portions of the study area, and continues northerly through the subject property, but outside and the study area and beyond the Town's 80-foot wide Upland Review Area (URA). This wetland is classified as a *palustrine, emergent marsh, persistent, seasonally saturated/flooded* (PEM1E) according the National Wetland Inventory (NWI) Classification system. The dominant hydrologic regime within this wet meadow is *seasonally saturated/seasonally flooded* and the wetland's hydro-geomorphic classification (HGM) is predominately *groundwater/surface water slope*. Within this wetland area soils are both poorly drained and very poorly drained (see photos 1-4, attached).

Typical vegetation observed within the study area's regulated wetlands include such species as common elderberry, cattails, purple loosestrife (invasive), New York ironweed, sedges including tussock, goldenrods, Joe-pye-weeds, sensitive fern, maintained grasses, and areas of fox grape, to name a few.

3.0 Soils

The soil types within the study were found to be mainly disturbed throughout the upland areas and primarily undisturbed within the regulated wetlands. The undisturbed soils are derived from glaciolacustrine (i.e., stratified sand, silt and clay) deposits. Any undisturbed upland soils were comprised of the moderately well drained Elmrige (28) soil series. The disturbed upland

soils were mapped as the Udorthents-Urban Land (306) mapping complex. The undisturbed wetland soils were identified as the poorly to very poorly drained Scitico, Shaker, and Maybid (9) soil series complex (for more information regarding the soil types see attached *On-Site Soil Investigation Report*).

4.0 Functions/Values Assessment

The assessment of wetland functions and values is based primarily on the US Army Corps of Engineers' (USACE) *Descriptive Approach* (1995), and on best professional judgment. The assessment looks mainly at the #-series emergent wetland within the study area, which is also proximal to the proposed activities at the southeastern section of the site, even though it is hydrologically connected to the Podunk River riparian corridor located off-site to the northwest.

A summary of the functions and values assessment can be found in Table 1, below. As can be seen, the #-series wetland offers three principal functions and values, that is, they are not only present, but available to at least a moderate-high degree. Other functions and values are present but are not principal, including wildlife habitat, and production export.

This assessment is based on a number of factors, including the type of wetland, its juxtaposition to other wetlands, namely the Podunk River riparian corridor, its past history of disturbance, and its proximity to existing uses on the property.

Table 1: Summary of Wetland/Watercourse Function-Value Assessment

Function/Value	#-Series Wetland
<i>Groundwater Recharge/Discharge</i>	P
<i>Floodflow Alteration</i>	N
<i>Sediment/Shoreline Stabilization</i>	N
<i>Sediment/Toxicant/Pathogen Retention</i>	P
<i>Nutrient Removal/Retention/Transformation</i>	P
<i>Production Export</i>	Y
<i>Fish and Aquatic Habitat</i>	N
<i>Wildlife Habitat</i>	Y
<i>Endangered Species Habitat</i>	N
<i>Visual Quality/Aesthetics</i>	N
<i>Educational/Scientific Value</i>	N
<i>Recreation (Passive, Active)</i>	N
<i>Uniqueness/Heritage</i>	N

Notes: P = Principal function; Y = function present; N = function not appreciably present or absent

5.0 Proposed Activities

Overview

According to the reviewed plans, entitled *Valvoline Instant Oil Change, 818 Sullivan Avenue, South Windsor, CT*, prepared for Expct, LLC and by Borghesi Building & Engineering Co., Inc., and dated August 19th, 2020, a proposed automobile oil change facility, paved parking areas and driveways, catch basins, detention basin and a grass-lined swale, as well as other miscellaneous site work, are proposed. The site is to be served by public water and sewer.

Direct Wetland Impacts

According to the reviewed site plans no *direct* wetland or watercourse impacts are proposed at the subject site.

Indirect Wetland Impacts

Indirect or secondary impacts to a wetland or watercourse can occur as a result of activities outside of wetlands or watercourses. Such impacts can be *short-term* or *long-term*, and are typically associated with erosion and sedimentation, mostly during the construction period, the removal or disturbance of vegetation in upland areas, but adjacent to wetlands or watercourses, the alteration of wetland hydrology or the flow regime of a watercourse, and the discharge of degraded or insufficiently treated surface water or groundwater, which may adversely impact the water quality of the regulated resources.

The potential for any of these indirect impacts to occur at the site as a result of the proposal depends on the regulated resources themselves, their sensitivity, their ecological and physical characteristics, and the degree to which they provide recognized functions and values. These *potential* impacts are discussed below.

Erosion and Sedimentation

The potential for soil erosion and subsequent deposition in wetlands or watercourses exists at every construction site that involves soil disturbance. At this site the risk or the potential for adverse impacts from erosion and sedimentation is considered *low-moderate*. The primary reasons for this assessment are as follows: (1) a detailed erosion and sedimentation control plan has been prepared and submitted, which complies with the CT DEEP's 2002 *Connecticut Guidelines for Erosion and Sediment Control*, as well as any recent guidelines promulgated by regulatory agencies, and (2) the site's undisturbed soils are only moderately erosive and the

development is on previously disturbed areas and has gentle slopes (see attached K-factor assessment).

Removal of Native Vegetation and Habitat Loss

Habitat loss associated with land clearing is an unavoidable consequence of land development, which has the potential of impacting wetlands and watercourses. This site is open and no tree canopy associated with wetland resources is to be removed.

Potential Impacts to Wetland Hydrology and Stream Flow

The hydrologic and flow regime of the #-series wetland is dependent both on on-site contributions via shallow groundwater flow and surface flows. The site development will have no impact to surface flows to the on-site and off-site wetlands, which includes the Podunk River.

Potential Water Quality Impacts

Stormwater runoff from impervious surfaces of commercial sites has the potential of degrading the water quality (i.e., surface and groundwater) of regulated resources. Generation of potential pollutants on impervious surfaces typically results from vehicular traffic over them.

The CT-DEEP's 2004 *Stormwater Quality Manual* ("the Manual") is used to guide the selection, design, siting, and sizing of appropriate best management practices (BMPs), which are protective of surface and groundwater quality. The CT-DEEP has adopted, through their General Permit for discharge of stormwater, an 80% TSS (total suspended solids) minimum annual removal goal, because research has shown that the concomitant removal of other runoff constituents is high at these levels of TSS removal.

The proposed stormwater management system will not only treat runoff from new impervious surfaces, but also provide improvements for the existing impervious surfaces in the form of a grass-lined water quality swale, to the north of the car-wash facility. Moreover, the new development proposes catch basins with four-foot deep sumps and hooded outlets, as well as an in-line swirl concentrator (i.e., advanced oil/grit separator; Hydrogard Model HG4). The final discharge will be to a small detention basin located at the frontage of the property, with a 4-inch outlet pipe to an existing catch basin within Sullivan Avenue. This small outlet will meter out treated runoff at a slow rate, which will enhance final polishing and infiltration. It is anticipated that these proposed measures will not only prevent any degradation of water quality to receiving waters, but will also improve treatment of stormwater runoff at the site.

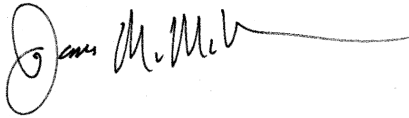
6.0 Conclusion

In conclusion, it is JMM's opinion that as proposed, and with **diligent** monitoring of erosion and sediment controls, the proposal will not have significant adverse short-term (construction) or long-term (water quality/habitat) impacts upon the regulated resources.

Please call us if you have any questions on the above or need further assistance.

Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC

A handwritten signature in black ink, appearing to read "James M. McManus", with a long horizontal flourish extending to the right.

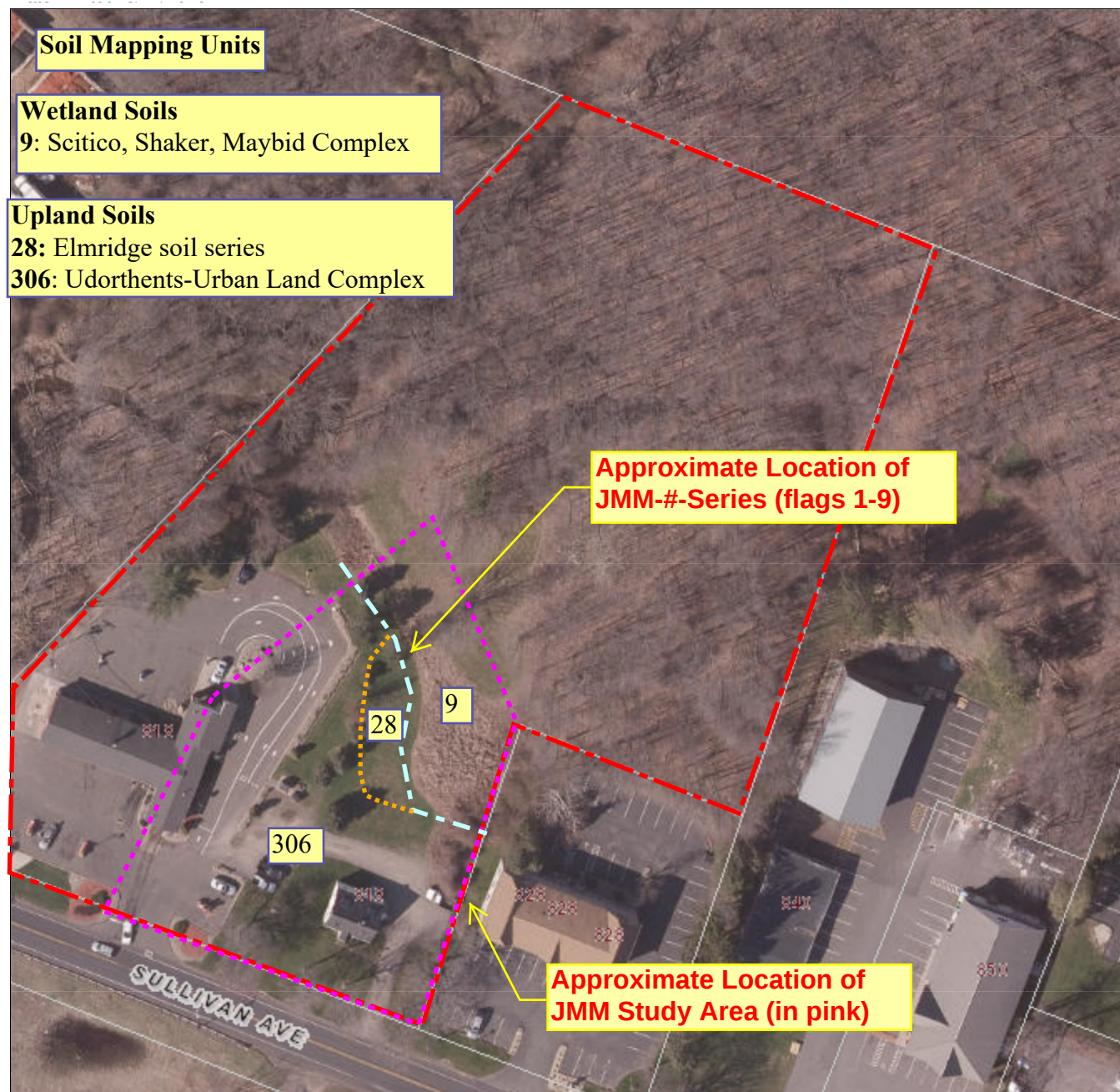
James M. McManus, MS, CPSS
Certified Professional Soil Scientist (No. 15226)

Attachments: Figures 1-2, Photos 1-4, On-Site Soils Investigation Report, NRCS Web Soil Survey Map,
K-Factor Erodibility Assessment Map

FIGURE 1: 818 Sullivan Avenue, South Windsor, CT
Town GIS Aerial Photo Showing the Approximate Location of Regulated Wetland, Soil Series, and Property Boundaries within the JMM Study Area.

Town of South Windsor

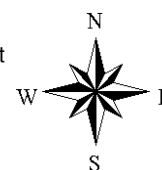
Geographic Information System (GIS)



MAP DISCLAIMER - NOTICE OF LIABILITY

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of South Windsor and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 100 feet





U.S. Fish and Wildlife Service

National Wetlands Inventory

FIG 2: 818 Sullivan Avenue



September 29, 2020

Wetlands

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

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.



Photo 1: View of wet meadow within the northwestern part of the study area (JMM photo taken 8/27/2020); facing northeasterly



Photo 2: View of wet meadow within the southeastern part of the study area (JMM photo taken 8/27/2020); facing northeasterly



Photo 3: View of upland area north side of existing residence (JMM photo taken 8/27/2020); facing southeasterly



Photo 4: View of upland area north side of existing residence (car wash facility in background) (JMM photo taken 8/27/2020); facing westerly

JMM WETLAND CONSULTING SERVICES, LLC

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Phone: 203-364-0345

REPORT DATE: September 8, 2020
PAGE 1 OF 3

ON-SITE SOIL INVESTIGATION REPORT

PROJECT NAME & SITE LOCATION:

Project Site
818 Sullivan Avenue
South Windsor, Connecticut

JMM Job No.: 20-2662-SWN-9

Field Investigation Date(s): 8/27/2020

Field Investigation Method(s):

- ☒ Spade and Auger
☐ Backhoe Test Pits
☐ Other: _____

REPORT PREPARED FOR:

Mr. Allan Borghesi
Borghesi Building & Engineering Co., Inc.
2155 East Main Street
Torrington, CT 06790

Field Conditions:

Weather: Rain, 70's
Soil Moisture: Moist
Snow Depth: N/A
Frost Depth: N/A

Purpose of Investigation:

- ☒ Wetland Delineation/Flagging in Field
☐ Wetland Mapping on Sketch Plan or Topographic Plan
☐ High Intensity Soil Mapping by Soil Scientist
☒ Medium Intensity Soil Mapping from USDA-NRCS Web Soil Survey Maps
☐ Other: _____

Base Map Source: USDA-NRCS Web Soil Survey (attached)

Wetland Boundary Marker Series: JMM-1 to JMM-9

General Site Description/Comments: The site is located north of Sullivan Avenue, in South Windsor, CT. The site is currently comprised of an existing car wash facility, a residence, maintained lawn, landscaped areas, paved/gravel parking areas and drives, forested upland areas, and forested, wet maintained lawn, and wet meadow wetland areas (see Figure 1, attached). Specifically, JMM review a portion of the overall site for regulated wetlands at this time (JMM Study Area). The study area is located in the easternmost portion of the site and within approximately 100-feet from any proposed activities. The soil types within the study were found to be mainly disturbed throughout the upland areas and primarily undisturbed within the regulated wetland areas. The undisturbed soils are derived from glaciolacustrine (i.e., stratified sand, silt and clay) deposits. Any undisturbed upland soils were comprised of the moderately well drained Elmdridge (28) soil series. The disturbed upland soils were mapped as the Udorthents-Urban Land (306) mapping complex. The undisturbed wetland soils were identified as the poorly to very poorly drained Scitico, Shaker, and Maybid (9) soil series complex. The regulated areas associated with the study area consist of a mix of wet maintained lawn and wet meadow communities located along the northern and eastern parts of the study area (JMM-#-series). Typical vegetation observed within the study area's regulated areas included such species as common elderberry, cattail, Joe-pye-weed, purple loosestrife, sedges, rushes, grasses, sensitive fern, goldenrods, and New York ironweed, to name a few.

ON-SITE SOIL INVESTIGATION REPORT (CONTINUED)

PROJECT NAME & SITE LOCATION: Project Site
818 Sullivan Avenue, South Windsor, CT

SOIL MAP UNITS

Wetland Soils

Scitico silt loam (9): This soil was formerly mapped in Connecticut as **Scantic**. The Scitico series consists of deep, poorly drained soils formed in silty and clayey glacial lacustrine sediments. They are in nearly level to gently sloping lowlands on glacial lacustrine or marine sediment terraces. Typically, these soils have a very dark grayish brown silt loam surface layer 6 inches thick. The subsoil from 6 to 24 inches is dark gray, mottled silty clay loam. The substratum from 24 to 60 inches is dark grayish brown, mottled, silty clay. Varved layers of silts and clays in the substratum often extend to very deep depths.

Shaker fine sandy loam (9). The Shaker series consists of deep, poorly drained soils formed in a coarse-loamy mantle over clayey lacustrine sediments. They are nearly level to moderately steeply sloping soils on glacial lacustrine terraces. Typically, these soils have a very dark grayish brown fine sandy loam surface layer 6 inches thick. The subsoil from 6 to 25 inches is light brownish gray, mottled sandy loam. The substratum from 25 to 60 inches is dark yellowish brown, mottled, silty clay. This soil was formerly mapped in Connecticut as **Swanton**.

Maybrid silt loam (9). The Maybrid series consists of deep, very poorly drained soils formed in silty and clayey glacial lacustrine sediments. They are in level to depressional areas on old glacial lakebeds or marine sediment terraces. Typically, these soils have a very dark gray silt loam surface layer 6 inches thick. The subsoil from 6 to 20 inches is gray, mottled silty clay loam. The substratum from 20 to 60 inches is gray, mottled, silty clay. Varved layers of silts and clays in the substratum often extend to very deep depths. This soil was formerly mapped in Connecticut as **Biddeford**.

Upland Soils

Elmridge (28) very fine sandy loam. The Elmridge series consists of deep, moderately well drained soils formed in a coarse-loamy mantle over clayey lacustrine sediments derived mainly from Triassic rocks. They are nearly level to moderately steeply sloping soils on glacial lacustrine terraces. Typically, these soils have a very dark grayish brown fine sandy loam surface layer 6 inches thick. The subsoil from 6 to 25 inches is dark yellowish brown, mottled fine sandy loam. The substratum from 25 to 60 inches is olive brown, mottled, silty clay. This soil was formerly mapped in Connecticut as **Elmwood**.

Udorthents-Urban Land complex (306). This soil mapping unit consists of well drained to moderately well drained soils that have been altered by cutting, filling, or grading. The areas either have had two feet or more of the upper part of the original soil removed or have more than two feet of fill material on top of the original soil. *Udorthents-Urban Land* or Made Land soils can be found on any soil parent material but are typically fluvial on glacial till plains and outwash plains and stream terraces.

ON-SITE SOIL INVESTIGATION REPORT (CONTINUED)

PROJECT NAME & SITE LOCATION: Project Site
818 Sullivan Avenue, South Windsor, CT

SOIL MAP UNITS

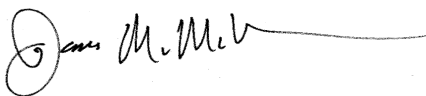
See previous page

Any accompanying soil logs and soil maps, and the on-site soil investigation narrative are in accordance with the taxonomic classification of the National Cooperative Soil Survey of the USDA Natural Resource Conservation Service, and with the Connecticut Soil Legend (DEP Bulletin No.5, 1983). Jurisdictional wetland boundaries were delineated pursuant to the Connecticut General Statutes (CGS Sections 22a-36 to 22a-45), as amended. The site investigation was conducted and/or reviewed by the undersigned Registered Soil Scientist(s) [registered with the Society of Soil Scientists of Southern New England (SSSSNE) in accordance with the standards of the Federal Office of Personnel Management].

All wetland boundary lines established by the undersigned Soil Scientist are subject to change until officially adopted by, local, state, and federal regulatory agencies.

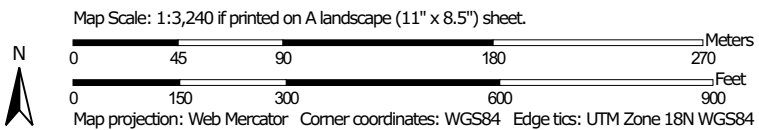
Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC



James M. McManus, MS, CPSS
Certified Professional Soil Scientist
Field Investigator/Reviewer

Soil Map—State of Connecticut
(818 Sullivan Avenue, South Windsor, CT)



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/27/2020
Page 1 of 3

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 1:12,000.

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

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

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

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: State of Connecticut

Survey Area Data: Version 20, Jun 9, 2020

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

Date(s) aerial images were photographed: Aug 24, 2019—Oct 24, 2019

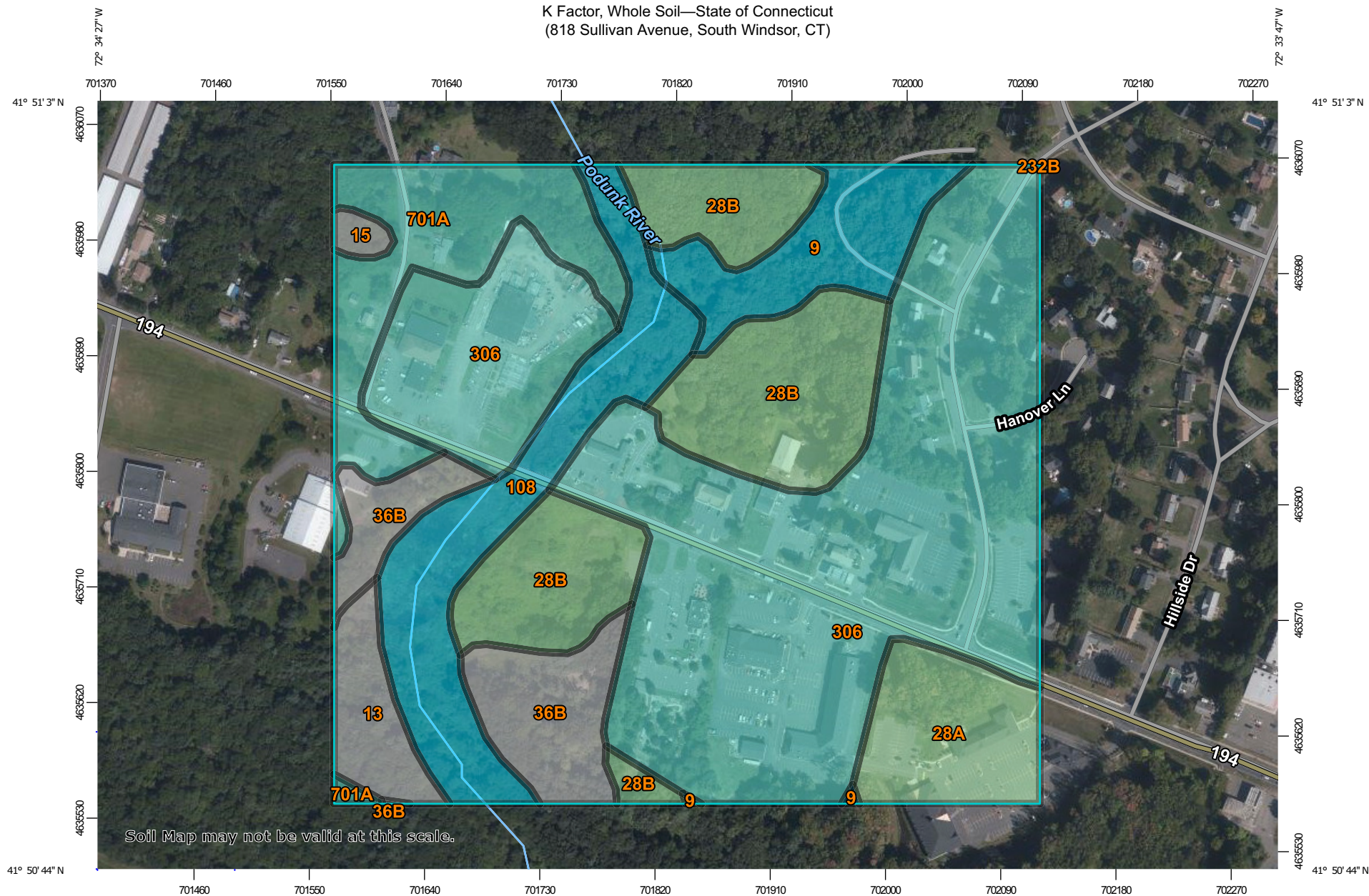
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
9	Scitico, Shaker, and Maybid soils	2.5	6.2%
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	0.9	2.2%
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	8.7	21.9%
36B	Windsor loamy sand, 3 to 8 percent slopes	2.1	5.4%
108	Saco silt loam	4.6	11.5%
306	Udorthents-Urban land complex	19.7	49.7%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	1.2	3.1%
Totals for Area of Interest		39.6	100.0%

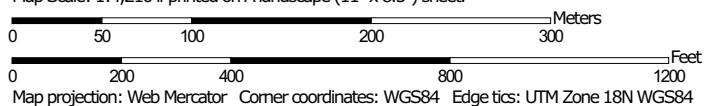


K Factor, Whole Soil—State of Connecticut
(818 Sullivan Avenue, South Windsor, CT)



Soil Map may not be valid at this scale.

Map Scale: 1:4,210 if printed on A landscape (11" x 8.5") sheet.



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

9/29/2020
Page 1 of 4

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
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads
	Background
	Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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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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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.

K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
9	Scitico, Shaker, and Maybid soils	.37	3.8	5.5%
13	Walpole sandy loam, 0 to 3 percent slopes		2.0	2.9%
15	Scarboro muck, 0 to 3 percent slopes		0.3	0.5%
28A	Elmridge fine sandy loam, 0 to 3 percent slopes	.28	3.8	5.5%
28B	Elmridge fine sandy loam, 3 to 8 percent slopes	.28	10.9	15.9%
36B	Windsor loamy sand, 3 to 8 percent slopes		4.5	6.6%
108	Saco silt loam	.37	6.9	10.2%
232B	Haven-Urban land complex, 0 to 8 percent slopes	.37	0.0	0.0%
306	Udorthents-Urban land complex	.32	30.1	44.3%
701A	Ninigret fine sandy loam, 0 to 3 percent slopes	.32	5.8	8.5%
Totals for Area of Interest			68.0	100.0%

Description

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.

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)