Lake Accotink Park

Fairfax County, Virginia

WSSI #22647.01

Rough Avens (*Geum laciniatum*) Habitat Evaluation and Search

September 8, 2015

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Lake Accotink Park
Fairfax County, Virginia
WSSI #22647.01

Executive Summary

Wetland Studies and Solutions, Inc. (WSSI) has conducted a habitat evaluation and search for the rough avens (*Geum laciniatum*) in Lake Accotink Park in Fairfax County, Virginia. This habitat evaluation and search was undertaken at the request of Fairfax County, because the rough avens had been recorded in the vicinity of Lake Accotink in the past. This report discusses the distribution and habitat associations of the rough avens, details the methodology of our habitat evaluation and search, and presents our findings and conclusions.

Although habitat for this species is present within the study area, no rough avens were found during this search.

General Distribution and Habitat Associations of the Rough Avens

The rough avens is considered a rare species and is typically found in wet areas such as fens and meadows in the northern Piedmont and mountains of Virginia. It is usually found growing in calcareous or mafic soils, which are found in these regions of Virginia. In Virginia, it is known from six counties, including Augusta, Bath, Bland, Fairfax, Fauquier, and Tazewell (Harvill, et al, 1992; Virginia Botanical Associates, 2015).

The rough avens has been recorded in 27 eastern and Midwestern states, and in Ontario, Quebec, New Brunswick, and Nova Scotia, Canada. Although the species is not considered threatened or endangered, it is listed as a special concern species in Tennessee and as a historical species in Rhode Island (U.S. Department of Agriculture Plants Database). According to the Department of Conservation and Recreation, the rough avens is a rare plant in Virginia (Townsend, 2014).

Fig. 1: Rough Avens[1]

Lake Accotink Park Site Description

Lake Accotink Park is located in southeastern Fairfax County, Virginia, at the terminus of Accotink Park Road. The study area consists of the area within 100 feet of the shoreline of Lake Accotink and its adjacent wetlands. Exhibit 1 is a vicinity map that depicts

[1] Image courtesy of Illinois Wildflowers (http://www.illinoiswildflowers.info/savanna/plants/rough_avens.htm)

the approximate location of the study area. The topography of the study area is depicted on the Annandale, VA 1994 USGS Topographic Map in Exhibit 2, as well as in the background topo in Attachment I. The majority of the study area is dominated by open water, however large areas of wetlands are present in the northern portion of study area. The lake edge is mostly dominated by forested cover. General vegetative cover can be seen in the aerial photographs in Exhibit 3 (a March 2013 color infrared aerial photograph from VBMP), and Exhibit 4 (a 2013 natural color aerial photograph from the Virginia Base Mapping Program (VBMP)).

Lake Accotink Park Soils

The soils within the study area are mapped as Barkers Crossroads loam, Codorus-Hatboro complex, Glenelg silt loam, Nathalie gravelly loam, Rhodhiss sandy loam, Urban Land and Wheaton-Glenelg complex (Exhibit 5). Based on soil data and supplemental soil data in the *Description & Interpretive Guide to Soils in Fairfax County* (Fairfax County Department of Public Works and Environmental Services, 2008, revised through 2013)[2], none of the soils within the study area are considered calcareous or mafic. Most of the soils within the study area are considered felsic, being derived from granite.

Habitat Evaluation & Search Methodology

The habitat evaluation and search for rough avens were conducted between July 10 and 14, 2015 by Benjamin N. Rosner, PWS, PWD, CE, CT[3] and Jessica Campo, WPIT, CT[4]. Based on the literature consulted, the date of the survey was appropriately timed for observing rough avens, if present within the study area.

Before beginning intensive searches for the rough avens within the study area, WSSI conducted an evaluation of habitat suitability throughout the study area using scaled topographic mapping. This was accomplished by initially assessing the entire study area's vegetation, slope, and soil variability through qualitative data compilation using available aerial imagery, topography and soils surveys and preliminarily mapping habitat areas that could potentially support the rough avens within the study area.

In the field, the study area was transected and observers compiled field data, including: the presence of potential wetlands, relative soil moisture and soil type, and the presence of canopy coverage. These data were compared to the preliminarily mapped data, and, in addition to using landmarks, pacing and slope distance estimates, were used to further refine the approximate boundaries of habitat that appeared to be suitable for rough avens habitat searches.

After this initial assessment, all potentially suitable habitat areas on the study area were thoroughly and carefully searched for individual rough avens. Parallel search transects spaced at approximately 20 feet apart (or less) were walked through wetland areas while

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[2] *http://www.fairfaxcounty.gov/dpwes/environmental/soils_map_guide.pdf*

[3] *Professional Wetland Scientist #1766, Society of Wetland Scientists Certification Program, Inc.; Virginia Certified Professional Wetland Delineator #3402-000080; Certified Level 1 Taxonomist: All Phyla, Society for Freshwater Science (SFS); Certified Ecologist, Ecological Society of America.*

[4] *Wetland Professional In Training, Society of Wetlands Scientists Certification Program, Inc. and North American Benthological Society (NABS) Certified Level 1 Taxonomist: All Taxa.*

observers inspect areas closely for rough avens. Observers walked along these transects, looking both for rough avens and for patches of better microhabitat.

The investigators also search for rough avens in areas considered to be lower-quality habitat (i.e., wetland edges and adjacent upland areas) using transects spaced no less than 20 feet apart to ensure adequate survey coverage, and to reduce sampling bias.

To provide a visual description of the study areas, photographs of representative habitats within the study area are taken and are included in Exhibit 6. The approximate locations of these photographs are depicted on Attachment I. A list of vascular plant species observed within the study area is provided in Exhibit 7.

Habitat Evaluation & Search Findings

Habitat for the rough avens is present along the edge of Lake Accotink and in the wetlands in and around the edge of Lake Accotink. These areas contain wetlands that appear to be seasonally wet, with relatively open to very open (i.e., zero) canopy coverage. Some wetland areas are of lower quality habitat, being dominated by invasive species, such as common reed (*Phragmites australis*), or by dense areas of native grasses such as rice-cut grass (*Leersia oryzoides*).

Within these areas, and the adjacent upland areas, two species of avens were detected: *Geum canadense,* and *Geum virginianum*. Despite a thorough search of these areas, individuals of rough avens were not found within the study area. This is likely due to the presence of invasive species and of dense stands of native vegetation which may be out-competing the rough avens within the study area.

Conclusions

No rough avens were found during the survey of the study area. Suitable habitat for this species is present within the study area, but a thorough search of the study area detected no individuals. Given the intensity with which the study area was searched and the systematic nature of the search for this species, it is WSSI's opinion that there is a low probability that this species occurs within the study area, based on the negative search results.

Limitations

This study is based on examination of the habitat conditions on the study site at the time of our review and does not address conditions at a given time in the future. Such habitat conditions change over time. Therefore, our conclusions may vary from future observations.

Our habitat evaluation, rough avens search, and report have been prepared in accordance with generally accepted guidelines for the conduct of such surveys. We make no other warranties, either expressed or implied, and our report is not a recommendation to buy, sell or develop the property.

WETLAND STUDIES AND SOLUTIONS, INC.

Jessica M. Campo, WPIT, CT
Project Environmental Scientist

Benjamin N. Rosner, PWS, PWD, CE, CT
Manger – Environmental Science

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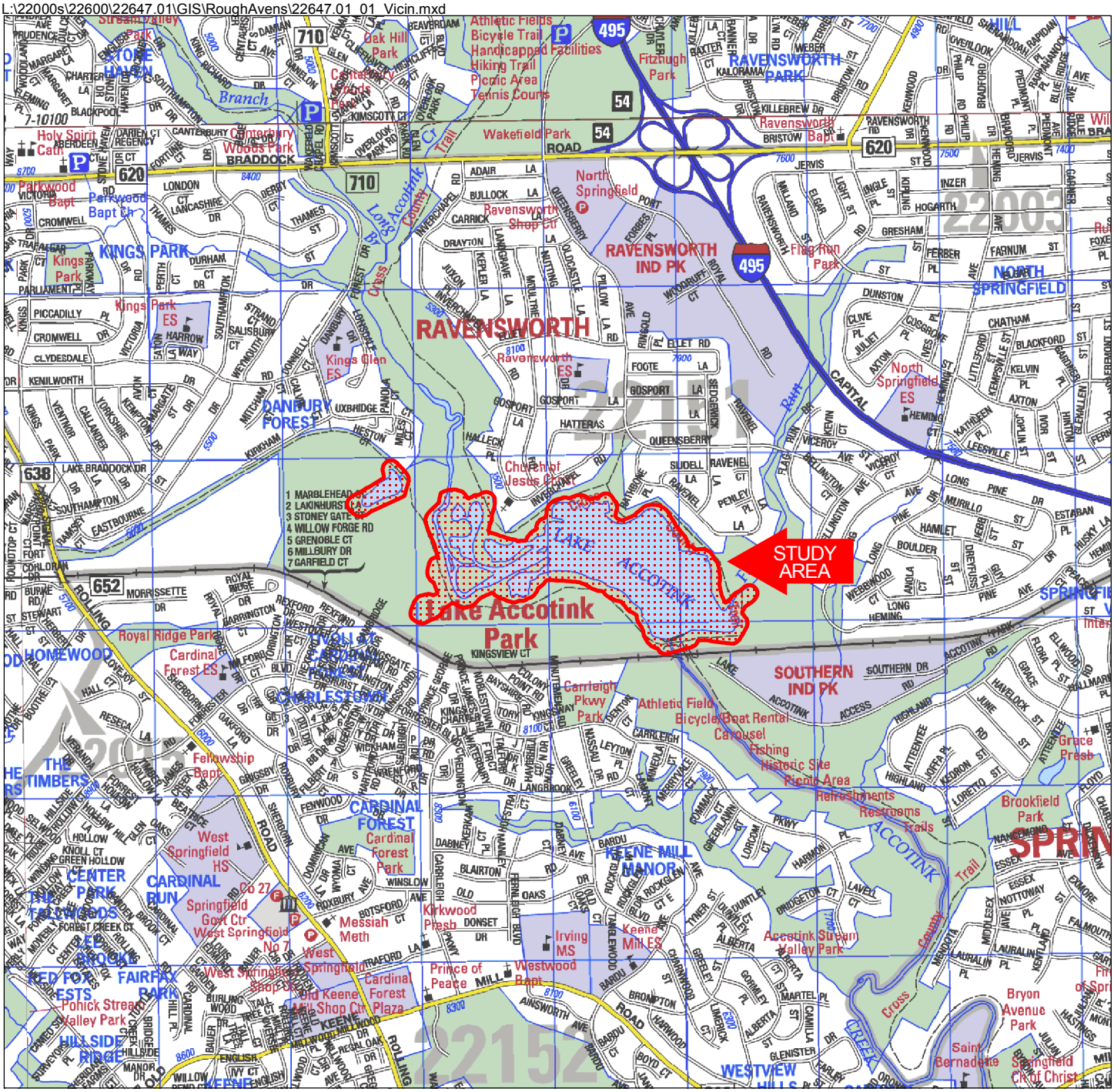

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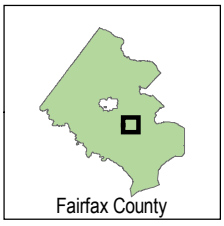
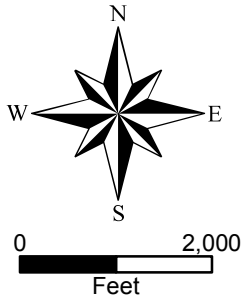
Vicinity Map
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 2000'





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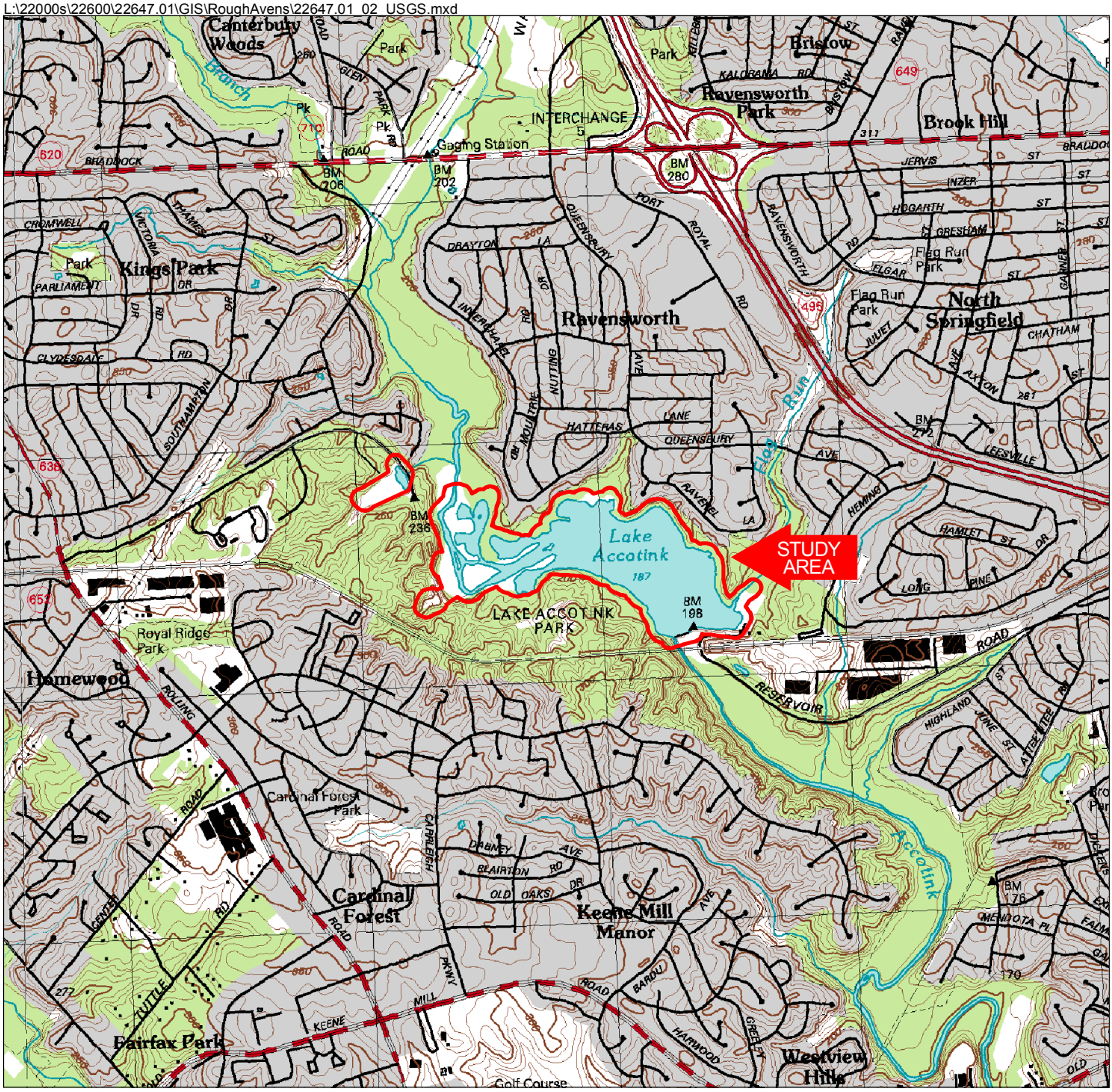

USGS Quad Map
Annandale, VA 1994
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 2000'

Latitude: 38°47'46" N
Longitude: 77°13'24" W
Hydrologic Unit Code (HUC): 020700100402
Stream Class: III
Name of Watershed: Accotink Creek
COE Region: Eastern Mountains and Piedmont

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March 2013 Color Infrared Imagery
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 1000'

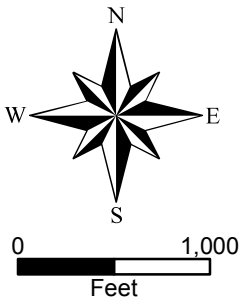

Photo Source: Virginia Base Mapping Program (VBMP)

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March 2013 Natural Color Imagery
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 1000'

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Photo Source: Virginia Base Mapping Program (VBMP)

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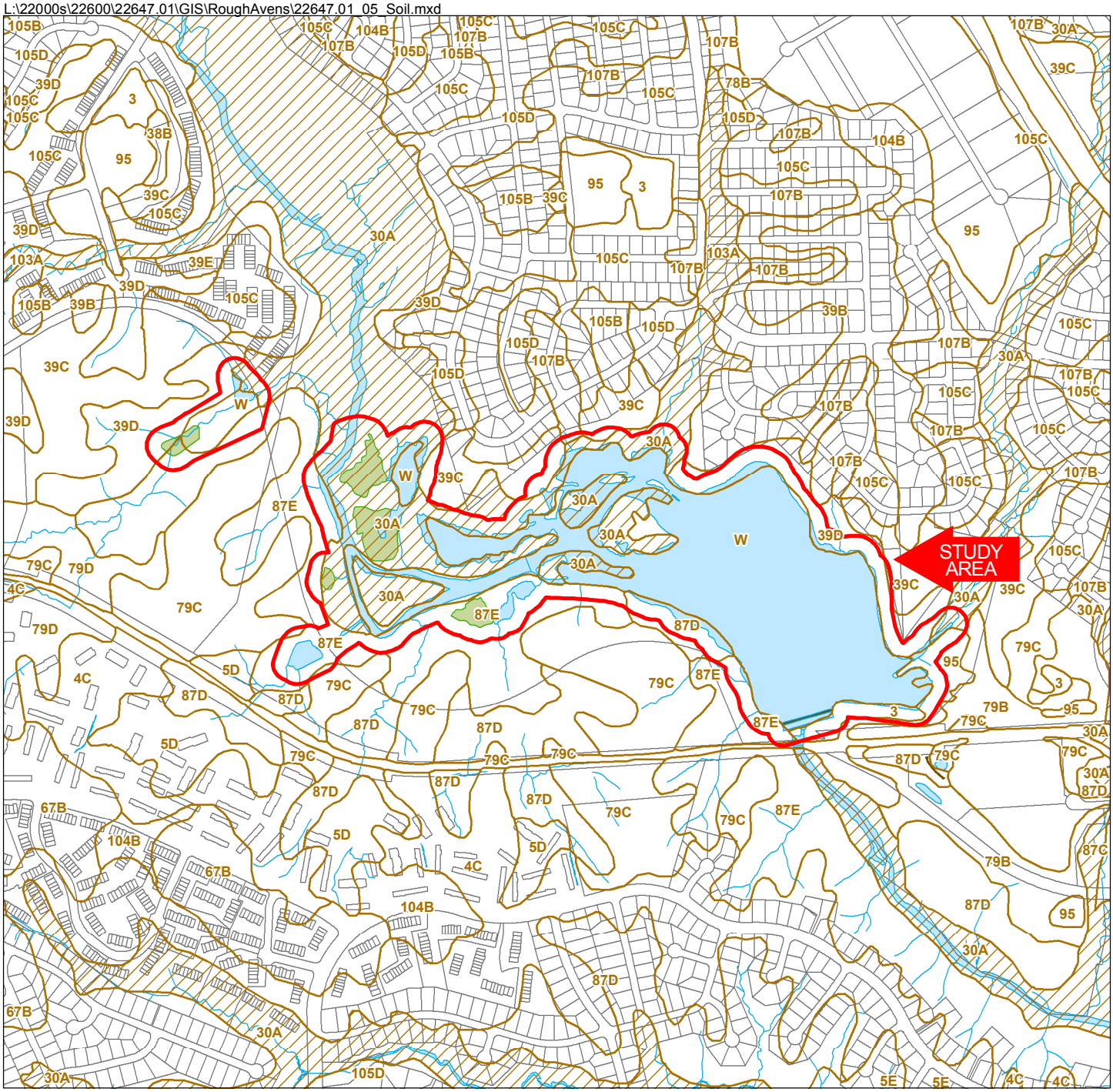

Soils Map
Fairfax County Digital Data
Lake Accotink
WSSI #22647.01
Original Scale: 1" = 1000'

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Hydric Soils

Soils with Hydric Inclusions

Non-hydric Soils

Wetland Studies and Solutions, Inc.
a DAVEY company

Exhibit 5

Mapped Soils Report for Lake Accotink Park

Project Number: 22647.01

Applicant / Owner: Burgess&Niple

County: Fairfax, VA

Map Symbol	Map Unit Name	Taxonomy	Drainage Class	Hydric National List	Hydric Local List	Hydric Inclusions
3	Barkers Crossroads loam, 0-45% slopes	Typic Udorthents	well	NO	NO	NO
30A	Codorus-Hatboro complex, 0-2% slopes	Fluvaquentic Dystrudepts	mod well-smwt poor	NO	NO	YES
39C	Glenelg silt loam, 7-15% slopes	Typic Hapludults	well	NO	NO	NO
39D	Glenelg silt loam, 15-25% slopes	Typic Hapludults	well	NO	NO	NO
79C	Nathalie gravelly loam, 7-15% slopes	Typic Kanhapludults	well	NO	NO	NO
87D	Rhodhiss sandy loam, 15-25% slopes	Typic Hapludults	well	NO	NO	NO
87E	Rhodhiss sandy loam, 25-45% slopes	Typic Hapludults	well	NO	NO	NO
95	Urban land	N/A	N/A	NO	NO	NO
105C	Wheaton-Glenelg complex, 7-15% slopes	Typic Udorthents	well	NO	NO	NO

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01

1. **Looking east along the dam at the southern end of Lake Accotink. This area consists of a rip-rap stabilized shoreline that is actively maintained. Suitable habitat for the rough avens is not present in this portion of the study area.**

2. **Looking southeast along the shoreline of Lake Accotink in the north-central portion of the study area. Water levels tend to fluctuate in the areas immediately adjacent to the lake.**

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01

3. Looking northeast along the shoreline of Lake Accotink. Several invasive species were noted in this area, including purple loosestrife (*Lythrum salicaria*), which tend to out-compete native plants.

4. Looking west at a ponded area and a stand of common reed (*Phragmites australis*). Dense stands of non-native, invasive species such as this do not provide suitable habitat for the rough avens.

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01

5. **Looking southwest at an emergent wetland at the western end of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.**

6. **Looking north at a forested wetland at the western end of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.**

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01

7. Looking southwest at a forested wetland along the south side of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

8. Looking northwest at a wetland and pond to the west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01

9. Looking southwest at a wetland adjacent to a pond to the west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

10. Looking west at an emergent wetland located west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

EXHIBIT 6
SITE PHOTOGRAPHS
LAKE ACCOTINK PARK
WSSI #22647.01

11. Looking southwest at the upland forest adjacent to a wetland and stream to the west of Lake Accotink. Such areas are typically too dry to provide suitable habitat for the rough avens.

12. Looking northeast at a wetland to the west of Lake Accotink. This area provides suitable habitat for the rough avens, however no rough avens were found in this portion of the study area.

EXHIBIT 7
Lake Accotink Park
Rough Avens Habitat Evaluation
WSSI #22647.01

Vascular Plants Observed in the Study Area
(LISTED ALPHABETICALLY BY SCIENTIFIC NAME)

Scientific Name	**Common Name**
Acer negundo	Boxelder
Acer rubrum	Red Maple
Albizia julibrissin	Silktree
Alliaria petiolata	Garlic mustard
Allium vineale	Wild Garlic
Alnus glutinosa	European Alder
Amphicarpaea bracteata	American Hogpeanut
Arisaema triphyllum	Jack In The Pulpit
Asimina triloba	Pawpaw
Aster sp.	Aster, species unknown
Berberis sp.	Barberry, species unknown
Boehmeria cylindrica	Smallspike False Nettle
Carex crinita	Fringed Sedge
Carex intumescens	Great Bladder Sedge
Carex tribuloides	Blunt Broom Sedge
Carpinus caroliniana	American Hornbeam
Celastrus orbiculatus	Oriental Bittersweet
Cephalanthus occidentalis	Common Buttonbush
Cercis canadensis	Eastern Redbud
Chamaecristra fasciculata	Partridge Pea
Cinna arundinacea	Sweet Woodreed
Circaea alpina	Small Enchanter's Nightshade
Coreopsis sp.	Tickseed, species unknown
Cornus amomum	Silky Dogwood
Dichanthelium clandestinum	Deertongue
Dichanthelium acuminatum	Tapered Rosette Grass
Diospyros sp.	Persimmon, species unknown
Eleocharis sp.	Spikerush
Elaeagnus umbellata	Autumn Olive
Elymus virginicus	Virginia Wildrye
Epilobium sp.	Willowherb, species unknown
Euonymus fortunei	Winter Creeper
Euonymous sp.	Spindletree, species unknown
Fagus grandifolia	American Beech

EXHIBIT 7
Lake Accotink Park
Rough Avens Habitat Evaluation
WSSI #22647.01

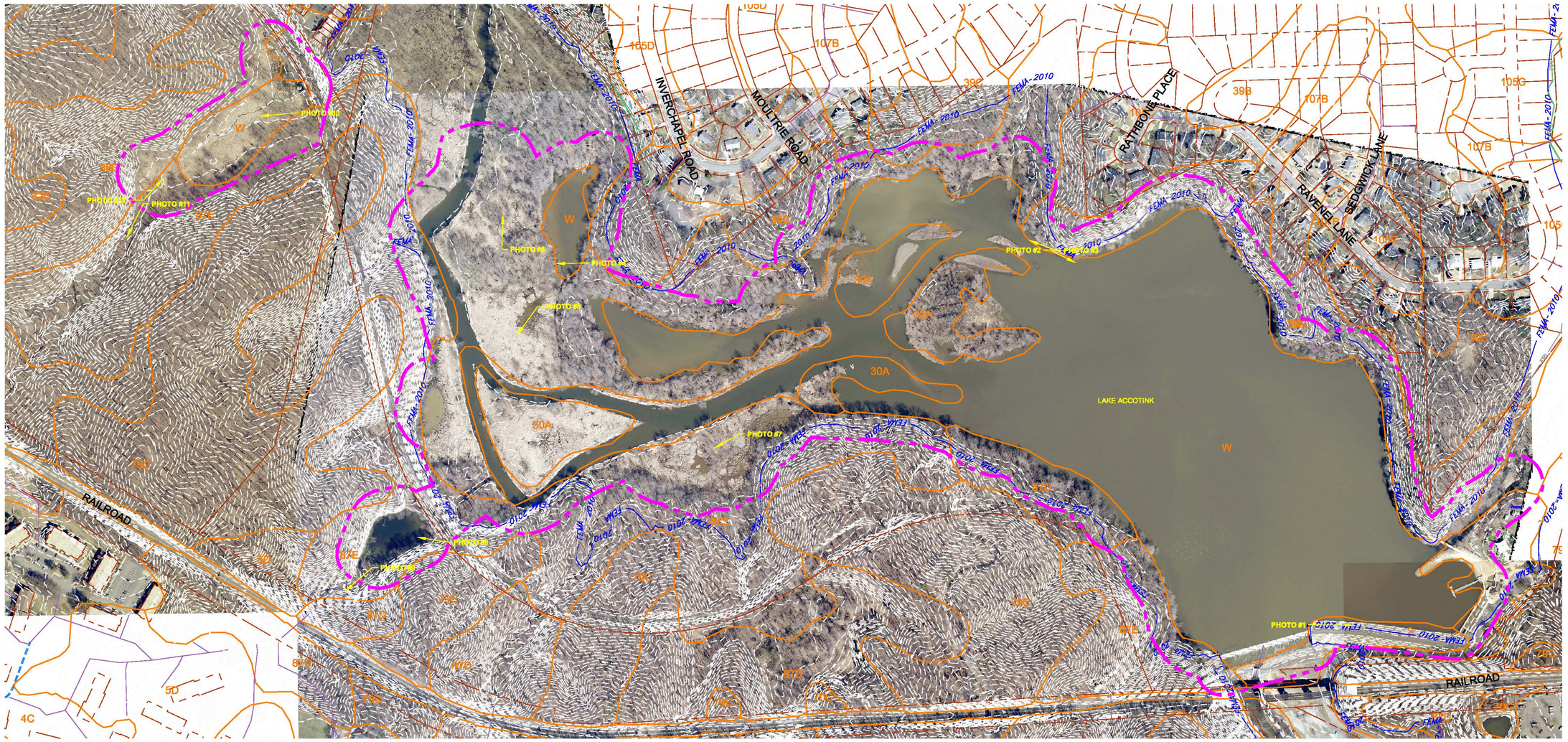
Vascular Plants Observed in the Study Area
(LISTED ALPHABETICALLY BY SCIENTIFIC NAME)

Fraxinus pennsylvanica	Green Ash
Galium aparine	Stickywilly
Galium lanceolatum	Lanceleaf Wild Licorice
Geum canadense	White Avens
Geum virginianum	Cream Avens
Hamamelis virginiana	American Witchhazel
Hedera helix	English Ivy
Hibiscus moscheutos	Crimsoneyed rosemallow
Impatiens capensis	Jewelweed
Ilex opaca	American Holly
Ipomoea pandurata	Man Of The Earth
Juncus effusus	Common Rush
Juniperus virginiana	Eastern Red Cedar
Lactuca sp.	Lettuce, species unknown
Leersia oryzoides	Rice Cutgrass
Lespedeza sp.	Lespedeza, species unknown
Ligustrum sp.	Privet, species unknown
Lindera benzoin	Northern Spicebush
Liriodendron tulipifera	Tuliptree
Lonicera japonica	Japanese Honeysuckle
Lonicera maackii	Amur Honeysuckle
Ludwigia palustris	Marsh Seedbox
Lysimachia ciliata	Fringed Loosestrife
Lythrum salicaria	Purple Loosestrife
Melilotus officinalis	Sweetclover
Mentha piperita	Peppermint
Microstegium sp.	Browntop, species unknown
Nyssa sylvatica	Black Gum
Onoclea sensibilis	Sensitive Fern
Osmunda cinnamomea	Cinnamon Fern
Parthenocissus quinquefolia	Virginia Creeper
Peltandra virginica	Green Arrow Arum
Persicaria virginiana	Virginia Knotweed
Phragmites australis	Common Reed
Phytolacca Americana	American Pokeweed

EXHIBIT 7
Lake Accotink Park
Rough Avens Habitat Evaluation
WSSI #22647.01

Vascular Plants Observed in the Study Area
(LISTED ALPHABETICALLY BY SCIENTIFIC NAME)

Pilea pumila	Canadian Clearweed
Pinus virginiana	Virginia Pine
Plantago major	Common Plantain
Podophyllum sp.	Mayapple, species unknown
Polygonum arifolium	Halberdleaf Tearthumb
Polygonum persicaria	Spotted Ladysthumb
Polygonum sagittatum	Arrowleaf Tearthumb
Polystichum arostichoides	Christmas Fern
Potentilla simplex	Common Cinquefoil
Potentilla sp.	Cinquefoil, species unknown
Prunus serotina	Black Cherry
Quercus alba	White Oak
Quercus rubra	Northern Red Oak
Robinia pseudoacacia	Black Locust
Rosa multiflora	Multiflora Rose
Rubus argutus	Saw-Tooth Blackberry
Salix nigra	Black Willow
Sassafras albidum	Sassafras
Scirpus cyperinus	Woolgrass
Smilacina racemosa	False Solomon’s Seal
Smilax glauca	Cat Greenbrier
Smilax rotundifolia	Common Greenbrier
Symplocarpus foetidus	Skunk Cabbage
Thelypteris noveboracensis	New York Fern
Toxicodendron radicans	Eastern Poison Ivy
Vaccinium angustifolium	Lowbush Blueberry
Verbesina alternifolia	Wingstem
Viburnum acerifolium	Mapleleaf Viburnum
Viburnum dentatum	Southern Arrowwood
Vinca minor	Common Periwinkle
Vitis sp.	Grape, species unknown
Wisteria sp.	Wisteria, species unknown



LEGEND

STUDY AREA BOUNDARY

FAIRFAX COUNTY SOIL SURVEY

NORTH

NOTES:

1. Wetland Studies and Solutions, Inc. (WSSI) visited the Lake Accotink Park study area between July 10 and 14, 2015 to conduct a habitat evaluation and search for the rough avens (*Geum laciniatum*). This attachment depicts the study area and current conditions referred to in detail in the report.

2. Topography and boundary information obtained from Fairfax County Digital Data and a 2015 natural color aerial photograph from Pictometry, were used as a base for this attachment.

3. Suitable habitat for rough avens is present within the study area. However, no rough avens were detected during this habitat evaluation and search.

MAPPED SOILS

MAPPING UNIT NUMBERS	SOIL SERIES NAME	SLOPE
3	BARKERS CROSSROADS	0-45%
30A	CODORUS-HATBORO COMPLEX	0-2%
39C	GLENELG SILT LOAM	7-15%
39D	GLENELG SILT LOAM	15-25%
79C	NATHALIE GRAVELLY LOAM	7-15%
87D	RHODHISS SANDY LOAM	15-25%
87E	RHODHISS SANDY LOAM	25-45%
95	URBAN LAND	N/A
105C	WHEATON-GLENELG COMPLEX	7-15%

GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

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Attachment I:
ROUGH AVENS HABITAT EVALUATION AND SEARCH MAP

Prepared For: Burgess & Niple

Lake Accotink Park
Fairfax County, Virginia

Copyright © 2015 Wetland Studies and Solutions, Inc.

REVISIONS

No.	Date	Description	Rev. By	App. By

SCALE: 1" = 200' C.I.: 2'

DATE: August 2015

Horizontal Datum: VCS NAD 83

Vertical Datum: NGVD 29

Boundary and Topo Source:
Fairfax County Digital Data

Design	Draft	Approved
BNR	BNR	MH

Sheet #
1 of 1

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