Delineation of Wetlands and Waters of the U.S.

Catawba Bend Preserve

York County, SC

PIN: 7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, 7470000042

Prepared for

ESP Associates, Inc.
Chris Ward, PG, RSM
P.O. Box 7030
Charlotte, NC 28241

June 20, 2022

Prepared By

Wetlands &Waters, Inc.
4108 LB Propst Dr.
Conover, NC 28613

Scope

Wetlands & Waters, Inc. (W&W) has conducted an evaluation of a parcel assemblage (+/- 1881 acres) in York County, SC, as depicted on the attached Figures, for the purpose of identifying the presence of surface waters and wetlands that may be subject to Federal and/or State jurisdiction under Sections 404 and 401 of the Clean Water Act (collectively referred to as "Waters of the U.S.," or WOTUS), as informed and implemented by subsequent regulations and guidance (1986 WOTUS regulation; 2003 SWANCC and 2008 Rapanos guidance). Section 404 of the Clean Water Act regulates the discharge of dredge and fill materials into "waters of the U.S." and is jointly administered by the U.S. Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA). Section 401 of the Clean Water Act grants each state the authority to approve, condition, or deny any Federal permits that could result in a discharge to waters of the State.

Unless stated otherwise, this report is limited in scope to evaluation of potential Waters of the United States subject to Federal and/or State jurisdiction under sections 404 and 401 of the Clean Water Act, as amended. Findings and assessments made by consultants regarding jurisdictional limits and permitting requirements are preliminary and subject to verification and modification by the Corps, and in some cases, the State agencies charged with protection of water resource, including the South Carolina Department of Health and Environmental Control (DHEC).

Clean Water Act Field Evaluation

Methods

Field evaluations are conducted using methods consistent with those outlined in the applicable regional supplement[1] of the 1987 U.S. Army Corps Wetland Delineation Manual. Under normal circumstances, an area is classified as a wetland when indicators of hydrology, hydrophytic vegetation, and hydric soils are present. Surface waters are evaluated for indicators of an Ordinary High-Water Mark (OHWM) and continuous bed and bank formation, which are baseline indicators used by the Corps to determine if a jurisdictional tributary[2] may be present. OHWM assessments are based on regulatory guidance[3] issued by the Corps to assist in OHWM identification. Stream flow regime determinations are made using the standardized Methodology for Identification of Intermittent and Perennial Streams and Their Origins, version 4.11, developed by the North Carolina Division of Water Resources (DWR). DHEC uses the DWR Stream Identification Methodology for stream evaluations when appropriate.

Findings

The Corps currently exerts jurisdiction over the territorial seas, waters used in interstate or foreign commerce, tributaries, certain categories of wetlands, and lakes, ponds and impoundments that meet certain criteria. Based on our assessment of existing site conditions, aerial photography, natural resource maps, and best professional judgement, W&W identified potentially jurisdictional tributaries, wetlands, open water, marginal areas, and erosional features within the review area. Findings are discussed below and approximated on Figure 1, *Approximate Delineation of Surface Waters and Wetlands*, and a series of insets included with this report.

Topographic drainages were evaluated across the site. Numerous drainages were found to contain continuous bed and bank formation and consistent indicators of an OHWM, which are baseline characteristics for determining the presence of potentially jurisdictional tributaries. The primary receiving water is the Catawba River, bordering the review area to the north and to the east. Based on characteristics of geomorphology, hydrology, and biology, some topographic drainages were assessed as

[1] Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0
[2] The terms "tributary" and "stream" are used interchangeably throughout this report.
[3] U.S. Army Corps of Engineers. Regulatory Guidance Letter No. 05-05 Dec. 7, 2005

perennial tributaries, likely having baseflow year-round. Based on characteristics of geomorphology, hydrology, and biology, other reaches were assessed as intermittent reaches, likely only having baseflow for parts of a typical year. At the time of this report, both intermittent and perennial tributaries are considered jurisdictional waters of the U.S. and are regulated by the Corps. Tributaries are differentiated by flow regime on Figure 1 and the attached insets.

Areas containing positive primary and secondary indicators of wetland hydrology, hydrophytic vegetation and hydric soils meet the criteria required to be considered wetlands, but additional criteria is necessary to be considered jurisdictional wetlands regulated by the Corps under Section 404 of the CWA. Areas identified on Figure 1 and attached insets as green polygons were assessed as meeting the criteria required to be considered jurisdictional wetland Waters of the U.S., regulated by the Corps under Section 404 of the CWA. These wetland areas occur primarily in expansive depressional and toe-of-slope landscape positions within the floodplain of the Catawba River, depressional streamside areas abutting intermittent and perennial streams, within the headwaters of tributaries, and as wetland fringes bordering the man-made impoundments throughout the review area.

In nine areas throughout the review area, W&W assessed impoundments that maintain a direct hydrologic connection to upstream and downstream jurisdictional waters and are non-isolated. These characteristics qualify these ponds as impoundments of jurisdictional waters and are therefore assessed as being regulated by the Corps under Section 404 of the CWA. The impoundments are indicated on Figure 1 and attached insets by a blue polygon.

Throughout the review area, there are areas with inconsistent indicators of hydric soils and vegetation with broad tolerances to saturated and dry conditions. Wetland indicators in these areas are inconsistent, therefore these areas should be considered marginal wetland areas with the potential to be captured by the Corps as jurisdictional until Corps concurrence with the delineation can be obtained. Within the floodplain of the Catawba River, there is the potential for additional marginal areas to be present that may or may not be illustrated on the map, due to variable floodplain indicators being less pronounced at the time of field review. Marginal areas are illustrated on Figure 1 as orange polygons.

Features represented on Figure 1 and attached insets as orange lines represent landscape features that contained partial indicators of an OHWM and/or discontinuous bed and bank formation (baseline indicators that a stream is present) at the time of the field review. The DWR method used to assess flow regimes indicates these features contain an ephemeral flow regime, or contain baseflow only as a result of precipitation events. At the time of this report, the Corps varies in their application of jurisdiction over ephemeral reaches depending on the degree to which characteristics are present. Therefore, ephemeral reaches are represented as having the potential for the Corps to capture portions, or all of their reach as jurisdictional.

Natural Resource Data

Various natural resource data was used to supplement field verification of findings. The review area is approximated on the attached publicly available natural resource maps and figures. This information is used by stakeholder agencies as baseline data when assessing the jurisdictional status of aquatic features. W&W makes no representations relating to the completeness or accuracy of baseline data and layers depicted on these maps and figures.

County GIS (Figure 2)

County GIS maps provide increased site-specific and land-use planning details relevant to site history and adjacent land uses. Relevant water resource and hydrologic layers have been activated for this figure. When jurisdictional streams are identified on a property by on-site inspection but are absent on County

GIS mapping, local authorities typically apply local buffer ordinances or rules to those features (unless the buffers are applied based on drainage area or parameters other than stream classification). Conversely, if a stream channel is depicted on the local GIS but is determined to be non-regulated by the Corps and/or DHEC, local governments may have the option to remove local buffer protections for those drainages if the property owner or a project proponent can produce concurrence from the Corps and/or DHEC.

USGS Topographic Quadrangle (Figure 3)
United States Geological Survey maps provide increased site-specific and land-use planning details relevant to site history and adjacent land uses. These maps are commonly used by state and local authorities to assist in applying riparian buffer regulations. Generally, a feature that is depicted in blue or magenta is a water resource, although some features may not be subject to State or Federal jurisdiction due to nuances within State and Federal regulations. Additional jurisdictional water resources may be present in addition to what is represented on these maps.

Natural Resource Conservation Service Soil Survey (Figure 4)
United States Geological Survey maps identify areas of potential aquatic resources and large-scale soils characteristics within the evaluated area. Typically, soil surveys do not show specific soils units that are less than two acres in size, but are useful in supplementing field evaluations by identifying potential problematic soils, hydric soils, historic surface drainage features, and other relevant soil characteristics. In certain cases of presumed land manipulation/disturbance, NRCS paper soil surveys may be used to inform site investigations.

National Wetland Inventory (Figure 5)
National Wetland Inventory maps depict wetlands and water resources based on U.S. Fish and Wildlife Service criteria and are produced by GIS image analysts who identify and classify wetlands and deep-water habitats from aerial imagery. They are not a substitute for a field evaluation, as there are often discrepancies between existing features and those that are mapped by GIS.

FEMA Flood Mapping (Figure 6)
Federal Emergency Management Act flood maps are utilized by the Army Corps to determine if regulated floodplains are present. The Presidents Executive Order 11990, Protection of Wetlands, requires federal agencies to consider the need to mitigate flood and storm hazards in consideration of all actions. The Corps, as stated in general conditions 10 and 27 of the Nationwide Permits, requires completion of a PCN form for identification of projects that require coordination involving work in FEMA designated 100-Year Floodplains. If a Section 404 permit is required, the proposed activity must comply with applicable FEMA approved state or local floodplain management requirements. Additional notification requirements, conditions, restrictions, or prohibitions may be imposed depending on the type of proposed activity or permit.

Clean Water Act Permitting Considerations

Construction activities requiring excavation or fill in waters of the U.S. are routinely authorized under the Corps' Nationwide Permit (NWP) program[4] and corresponding State Water Quality Certification[5]. Examples of activities that may require a permit include (but are not limited to) construction of a road crossing; stream bank/shoreline stabilization; wetland fill; dredging; and restoration, preservation, or enhancement activities in WOTUS. Activities authorized under the NWP program must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to WOTUS to the maximum extent practicable.

[4] See "Permitting Process" and most recent Nationwide Permits.
[5] See "DHEC's General State Certification for Nationwide Permits" and "DHEC's Final 401 Water Quality Certification"

Impact Limitations

Projects that fall within the Charleston District of the Corps of Engineers (SC counties) and wish to utilize an NWP for project-related impacts are subject to permit-specific impact limitations for each "Single and Complete" project. For commercial, residential, utility line, and other common projects, the below limitations apply:

Impact Type	Nationwide Permit Impact Limit
Stream Bed Loss	0.05 acre[6]
Aggregate Total Loss (All WOTUS Types)	0.5 acre

Unavoidable impacts that exceed NWP thresholds may only be authorized under an Individual permit and certification, and involve both public notices and comment periods.

Compensatory Mitigation

Compensatory mitigation is required for impacts to WOTUS that exceed the following thresholds, as determined by the language of the corresponding NWP and the Charleston District Regional Conditions:

Impact Type	Compensatory Mitigation Threshold
Wetland Loss	> 0.1 acre
Stream Loss	> 0.005 acre

Note that the Corps reviews each project on a "case-by-case" basis, and may apply a compensatory mitigation requirement to proposed impacts that are less than the thresholds noted above. Compensatory mitigation credit requirements are based on a number of factors, including but not limited to quality and type of resource impacted, existing conditions, duration and type of impact, and cumulative total of impact.

Compensatory mitigation in all forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) is required to the "maximum extent practicable" to ensure that a proposed project's individual and cumulative adverse effects are no more than minimal. The use of a private mitigation bank to satisfy compensatory mitigation requirements is prioritized over other methods if the appropriate credit type (i.e., warm water stream credits, wetland credits, etc.) is available within the service area, which is determined by the Hydrologic Unit Code (HUC) in which the project occurs. This project is located in the Catawba 03050101 HUC. Private bank rates are subject to change and in some cases may be negotiated.

In cases where no private mitigation banks are available within the region, an applicant may be required to pursue other forms of compensatory mitigation, such as a Permittee-Responsible Mitigation (PRM) plan, which can involve on-site or off-site restoration, preservation or enhancement and monitoring periods.

Other Permit Conditions

Use of NWPs require that a project comply with the respective permit Terms, General Conditions, and Regional Conditions. Phases of development completed by a single owner or developer (or entities with shared ownership) can be considered as part of a single project by the Corps, where cumulative impacts are assessed toward notification and compensatory mitigation thresholds under the Nationwide Permit process. An additional factor in assessing project limits by the Corps is a test for independent utility. Within the NWP language, independent utility is defined as "A test to determine what constitutes a single

[6] See "Final Regional Conditions for 2021 Nationwide Permits in Charleston District (SAC)."

and complete nonlinear project in the Corps Regulatory Program". A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility." Project limits can vary based on a particular agent's interpretation of the regulations and project specifics.

Other considerations for a project's eligibility under the Nationwide Permit program include (but are not limited to) a review for compliance with general and regional conditions, and impacts to cultural and historic resources, natural heritage resources, and federally protected species. For example, if activities authorized under the Nationwide Permit program may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, Section 106 consultation under the National Historic Preservation Act may be required. Similarly, if activities authorized under the Nationwide Permit program "may affect" a listed species or critical habitat identified in the Endangered Species Act, Section 7 consultation under the Endangered Species Act may be required.

Recommendations

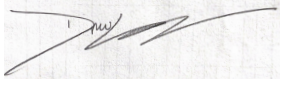
All findings assessing the jurisdictional status of potential waters of the U.S. are preliminary and are subject to verification and modification by the Corps, and are subject to change based on the Clean Water Act rules, regulations, and guidance in effect at the time of site development.

Generally, W&W recommends evaluating potential impacts and CWA permit strategies as soon as practical. Next steps may consist of requesting that the Corps provide concurrence with the delineation by submitting a Jurisdictional Determination (JD) request, or proceeding with a permit verification request if impacts to features identified as potentially jurisdictional, potentially non-jurisdictional or marginal are necessary. Standalone JD requests can take several months to be processed by the Corps and have no established statutory timeline for review; alternatively, if conceptual site plans have been developed and project-related impacts fall within Nationwide Permit thresholds, W&W can prepare a permit verification request with a JD or Delineation Concurrence letter. This strategy takes advantage of the statutory timeline established for the Corps to respond to and process NWP or Individual Permit verification requests.

If a federal permit is anticipated, W&W recommends a protected species survey to satisfy potential permitting requirements mandated under the Endangered Species Act. Vegetation surveys should occur during the Optimal Survey Window for South Carolina's Federally Threatened, Endangered, and At-Risk Plant Species (Attachment A), if applicable.

This concludes our field assessment of regulated Waters of the U.S. within the review area. Please do not hesitate to contact us should you have questions or concerns.

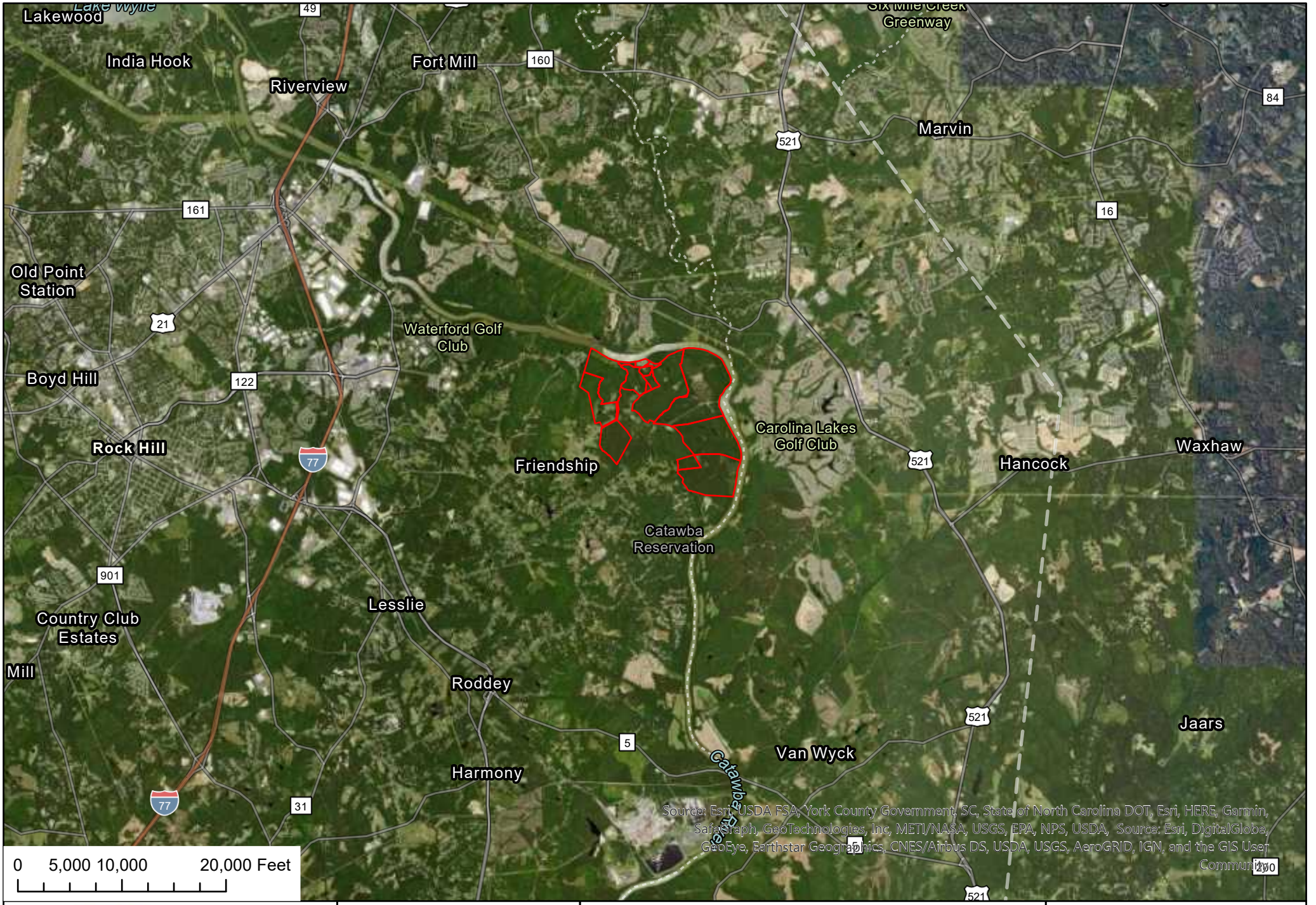
Sincerely,

Drew Lucas

Field Technician
540-529-2580

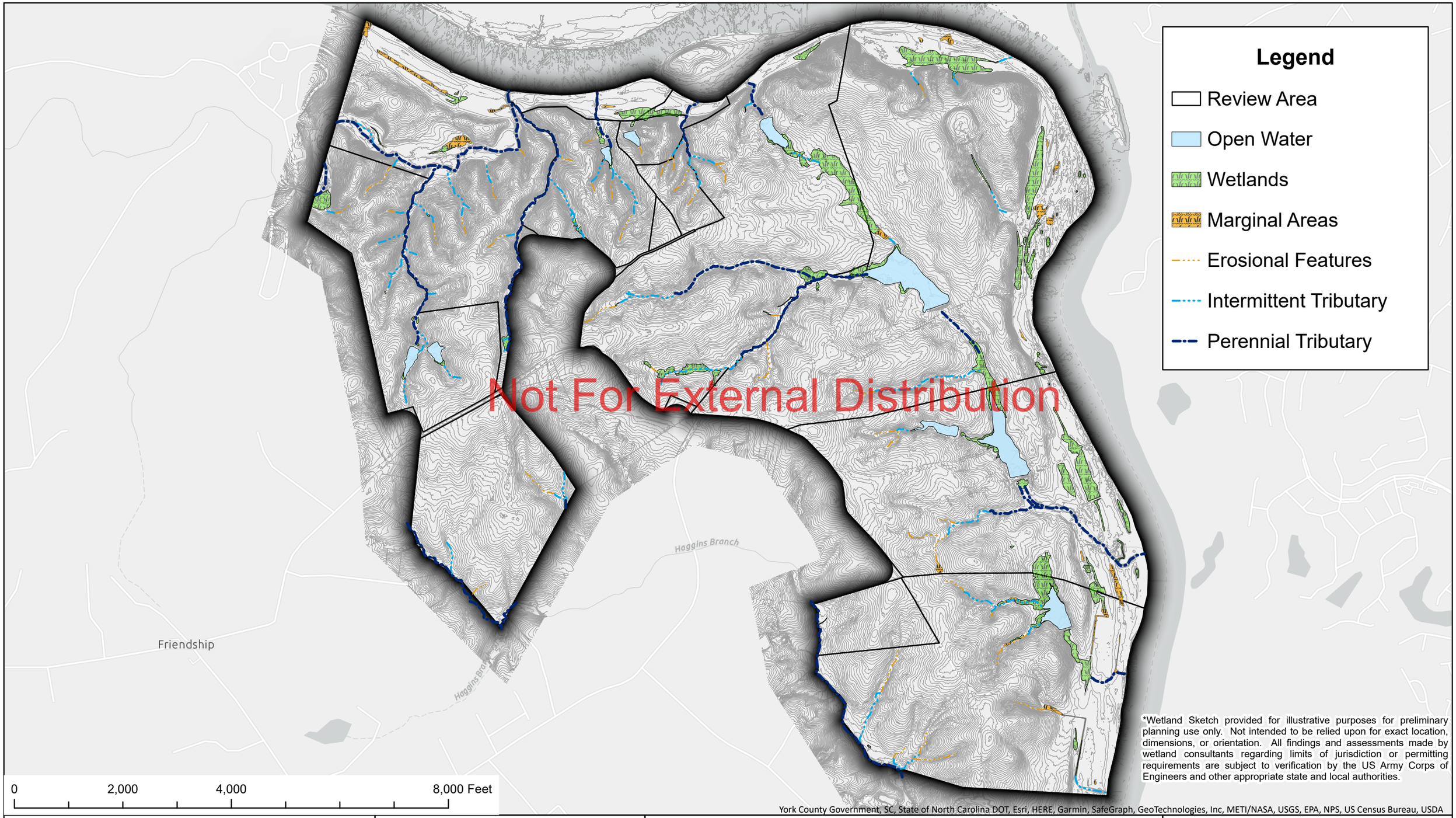
Tamp Bandy

Senior Project Manager
828-302-3437

Attachments: Vicinity Map
Figure 1: Approximate Delineation of Surface Waters and Wetlands
Inset Map
Inset 1: Approximate Delineation of Surface Waters and Wetlands
Inset 2: Approximate Delineation of Surface Waters and Wetlands
Inset 3: Approximate Delineation of Surface Waters and Wetlands
Figure 2. County GIS
Figure 3. USGS Topographic Quadrangle
Figure 4. NRCS Soil Survey
Figure 5. National Wetland Inventory
Figure 6. FEMA Floodplain Panel
Attachment A: Optimal Survey Window for South Carolina's Federally Threatened, Endangered, and At-Risk Plant Species



Wetlands & Waters, Inc.	Project Name:	Catawba Bend Preserve		N / W E / S
	Owner / Developer:	York County		
	City / County:	Rock Hill/York		
Site Vicinity	Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042		
	Coordinates:	Lat: 34.934878	Long: -80.880347	Date: 06-17-2022

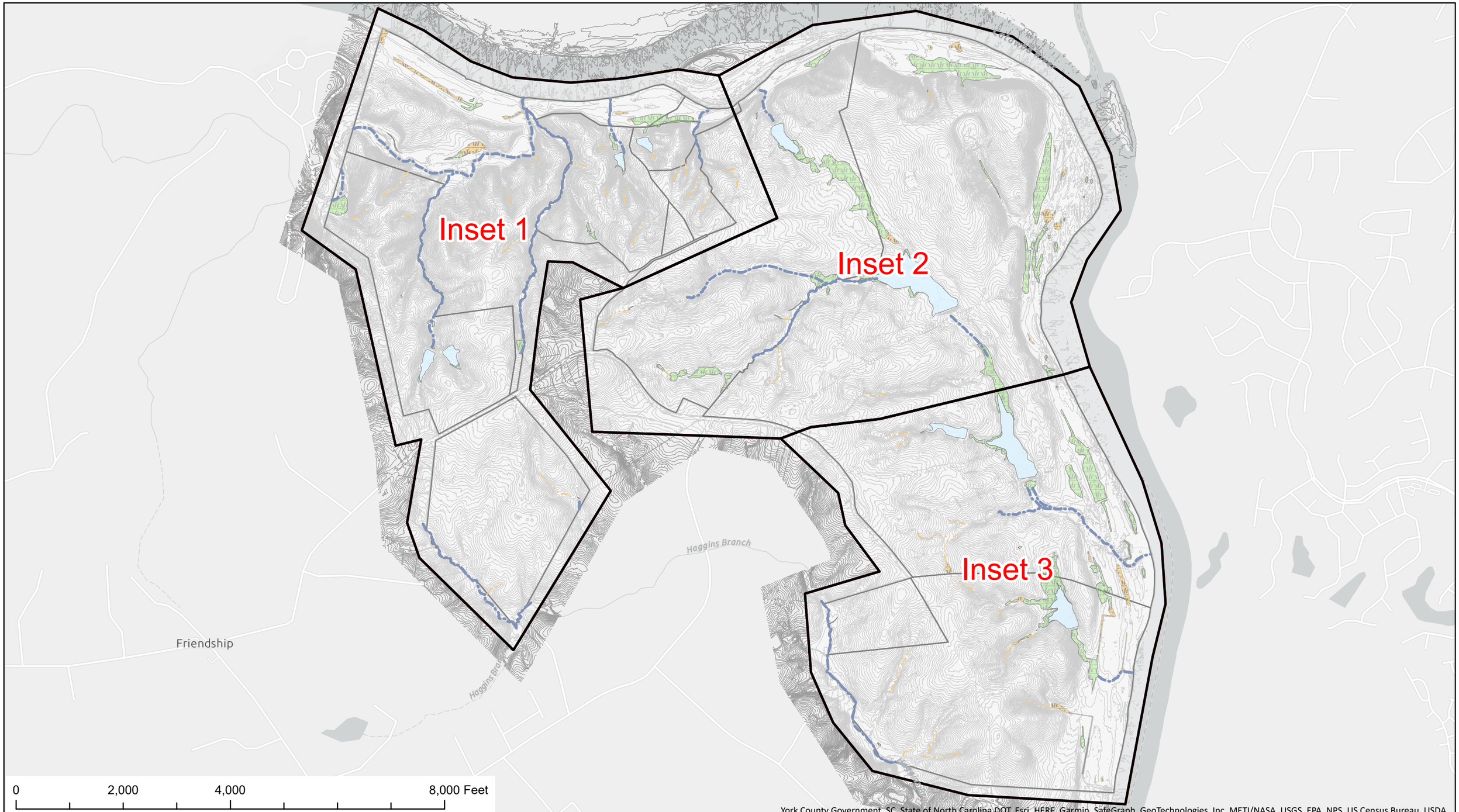


*Wetland Sketch provided for illustrative purposes for preliminary planning use only. Not intended to be relied upon for exact location, dimensions, or orientation. All findings and assessments made by wetland consultants regarding limits of jurisdiction or permitting requirements are subject to verification by the US Army Corps of Engineers and other appropriate state and local authorities.

WETLANDS & WATERS, INC.

Figure 1: Approximate Delineation of Surface Waters and Wetlands

Project Name:	Catawba Bend Preserve		N / W E / S
Owner / Developer:	York County		
City / County:	Rock Hill/York		
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042		
Coordinates:	Lat: 34.934878	Long: -80.880347	Date: 06-17-2022

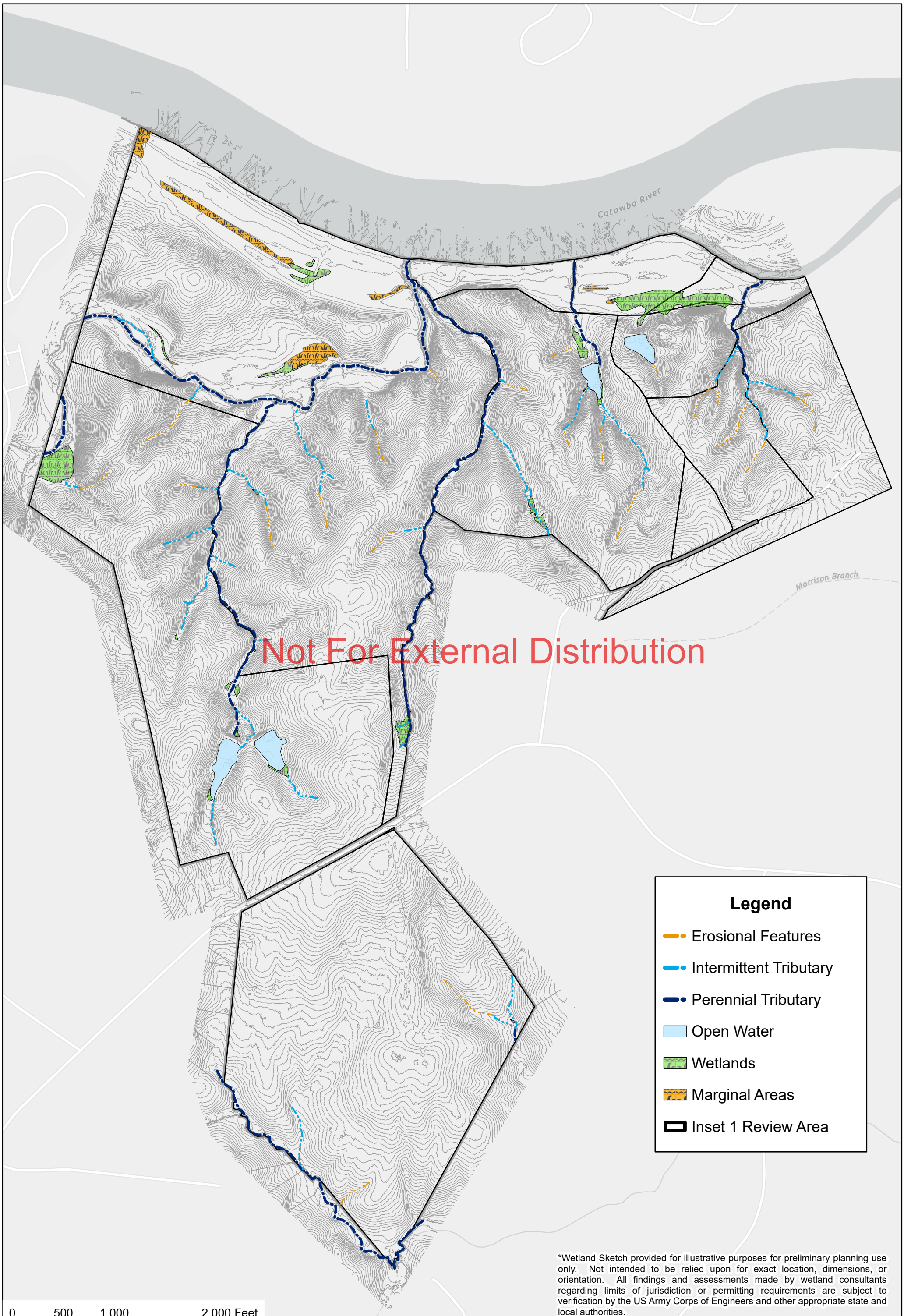


WETLANDS & WATERS, INC.

Inset Map

Project Name:	Catawba Bend Preserve		
Owner / Developer:	York County		
City / County:	Rock Hill/York		
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042		
Coordinates:	Lat: 34.934878	Long: -80.880347	Date: 06-17-2022

N
W E
S



WETLANDS & WATERS, INC.

Inset 1: Approximate Delineation of Surface Waters and Wetlands

Project Name:	Catawba Bend Preserve
Owner / Developer:	York County
City / County:	Rock Hill/York
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042
Coordinates:	Lat: 34.934878 Long: -80.880347

N W E S

Date: 06-17-2022

Legend

- Erosional Features
- Intermittent Tributary
- Perennial Tributary
- Open Water
- Wetlands
- Marginal Areas
- Inset 2 Review Area

0 1,000 2,000 4,000 Feet

*Wetland Sketch provided for illustrative purposes for preliminary planning use only. Not intended to be relied upon for exact location, dimensions, or orientation. All findings and assessments made by wetland consultants regarding limits of jurisdiction or permitting requirements are subject to verification by the US Army Corps of Engineers and other appropriate state and local authorities.

WETLANDS & WATERS, INC.

Inset 2: Approximate Delineation of Surface Waters and Wetlands

Project Name:	Catawba Bend Preserve		N / W E / S
Owner / Developer:	York County		
City / County:	Rock Hill/York		
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042		
Coordinates:	Lat: 34.934878	Long: -80.880347	Date: 06-17-2022

Legend

- Erosional Features
- Intermittent Tributary
- Perennial Tributary
- Open Water
- Wetlands
- Marginal Areas
- Inset 3 Review Area

*Wetland Sketch provided for illustrative purposes for preliminary planning use only. Not intended to be relied upon for exact location, dimensions, or orientation. All findings and assessments made by wetland consultants regarding limits of jurisdiction or permitting requirements are subject to verification by the US Army Corps of Engineers and other appropriate state and local authorities.

0 495 990 1,980 Feet

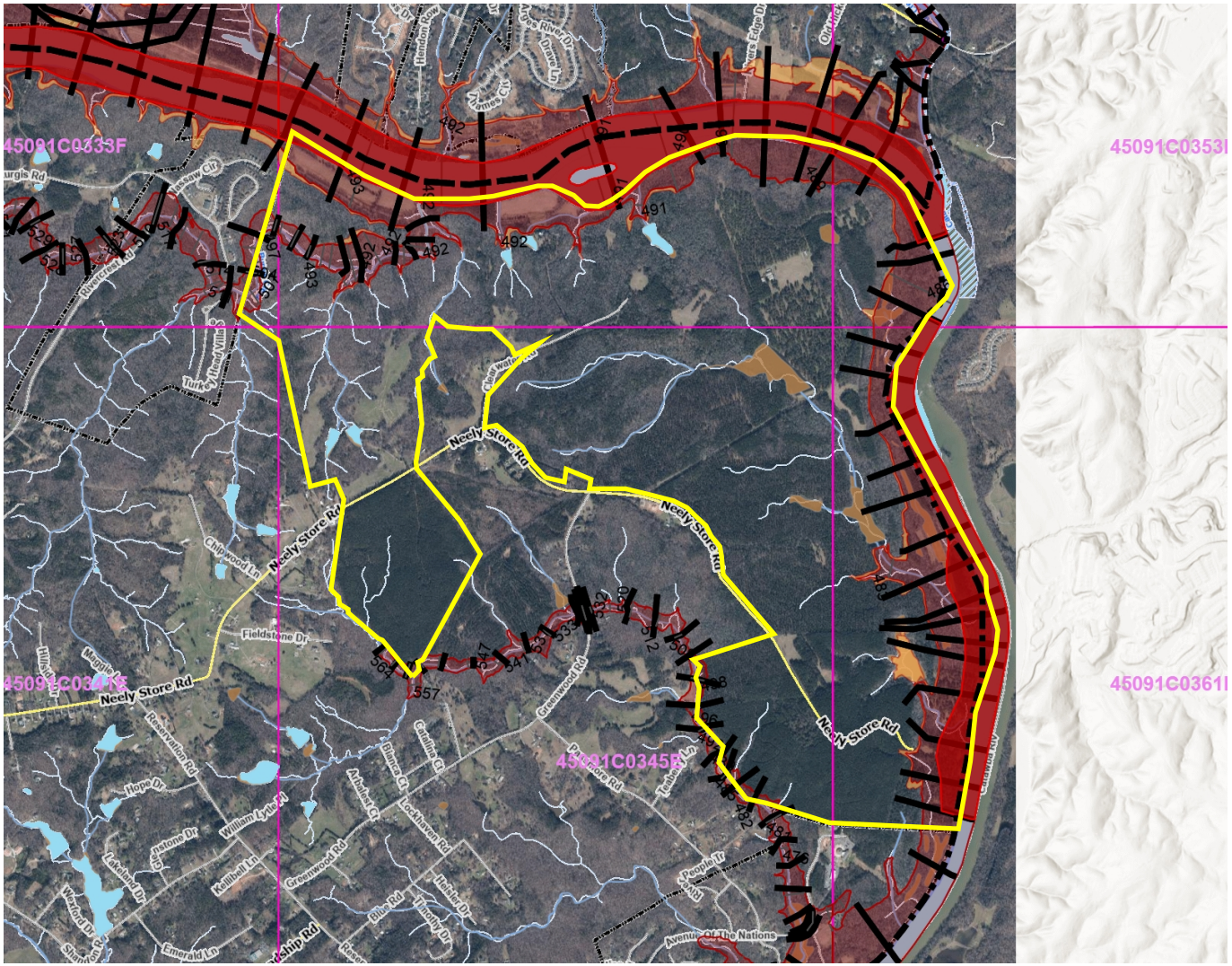
WETLANDS & WATERS, INC.

Inset 3: Approximate Delineation of Surface Waters and Wetlands

Project Name:	Catawba Bend Preserve		
Owner / Developer:	York County		
City / County:	Rock Hill/York		
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042		
Coordinates:	Lat: 34.934878	Long: -80.880347	Date: 06-17-2022

N W E S

Catawba Bend Preserve



Legend

Address
- Occupied
- Meter
- Vacant

1: 36,112

Notes

Enter Map Description

1.1 0 0.57 1.1 Miles

WGS_1984_Web_Mercator_Auxiliary_Sphere
GIS@YorkCountyGov.com

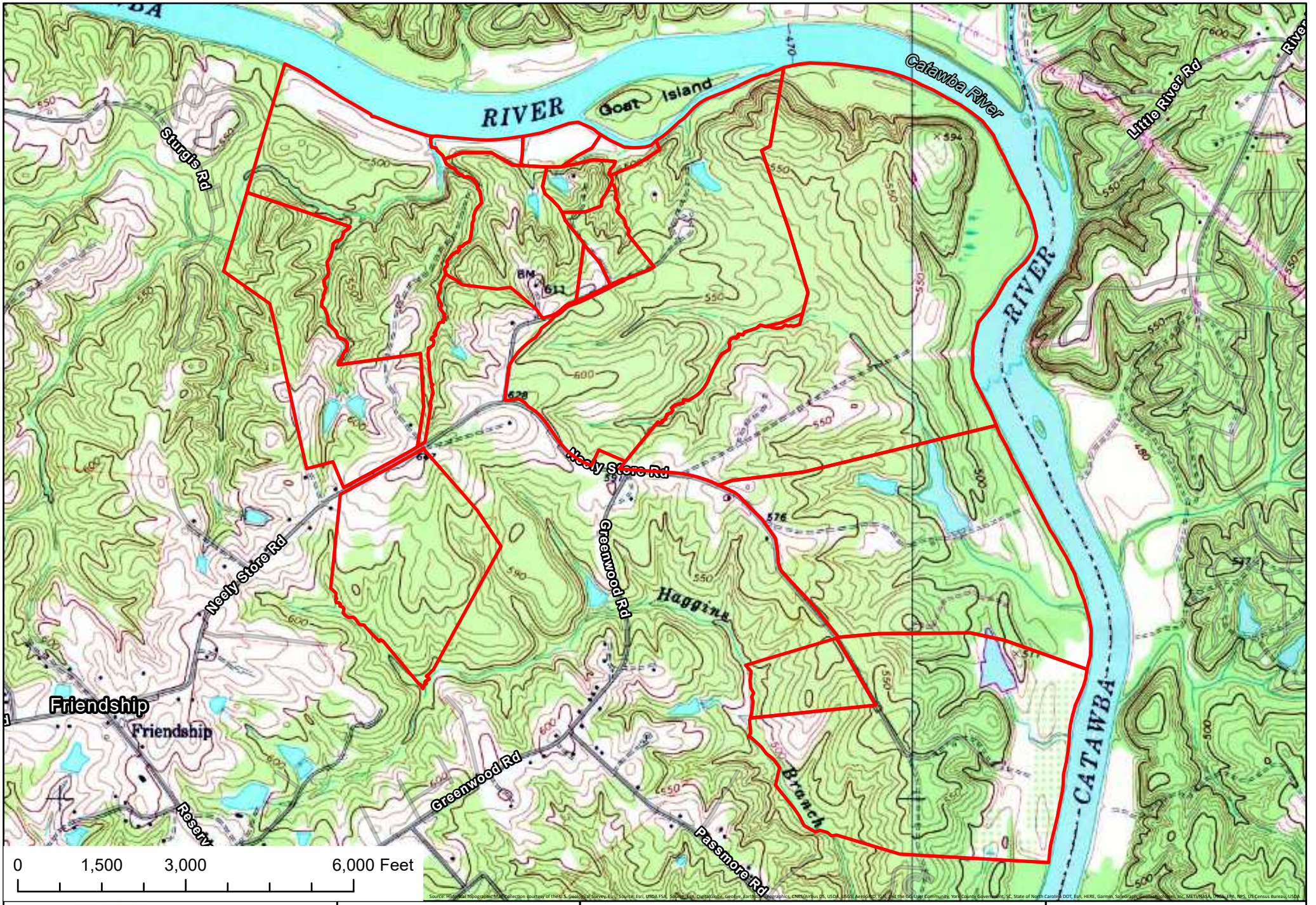
Printed: 3/3/2022

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.
THIS MAP IS NOT TO BE USED FOR NAVIGATION

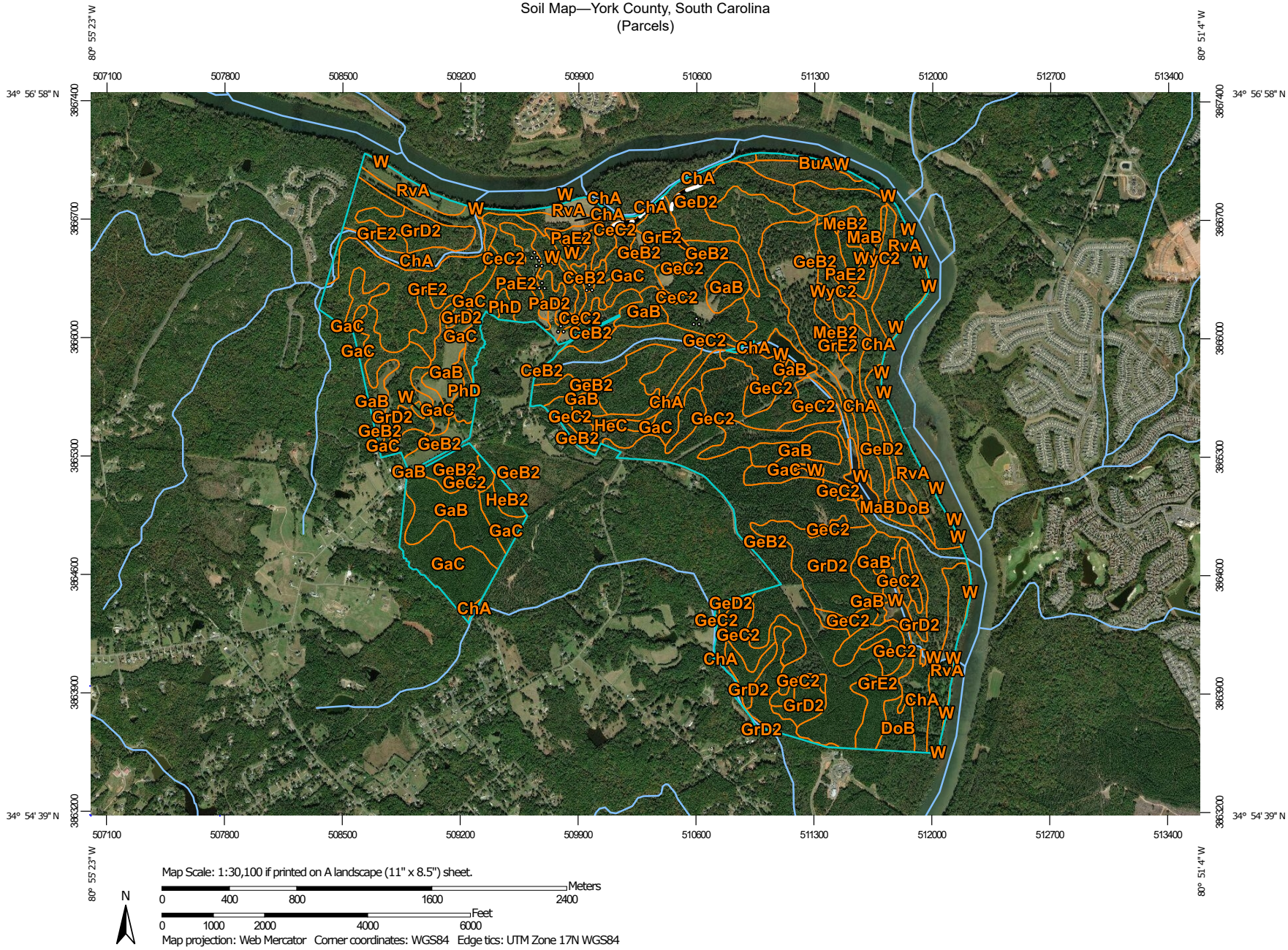
WETLANDS & WATERS, INC.

Figure 2: County GIS

Project Name:	Catawba Bend Preserve
Owner / Developer:	York County
City / County:	Rock Hill/York
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042
Coordinates: Lat: 34.934878 Long: -80.880347	Scale: Graphic
Date: 03-03-2022	



Wetlands & Waters, Inc.	Project Name:	Catawba Bend Preserve		N / W E / S
	Owner / Developer:	York County		
	City / County:	Rock Hill/York		
Figure 3: USGS Topo Quad	Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042		
	Coordinates:	Lat: 34.934878	Long: -80.880347	Date: 06-17-2022



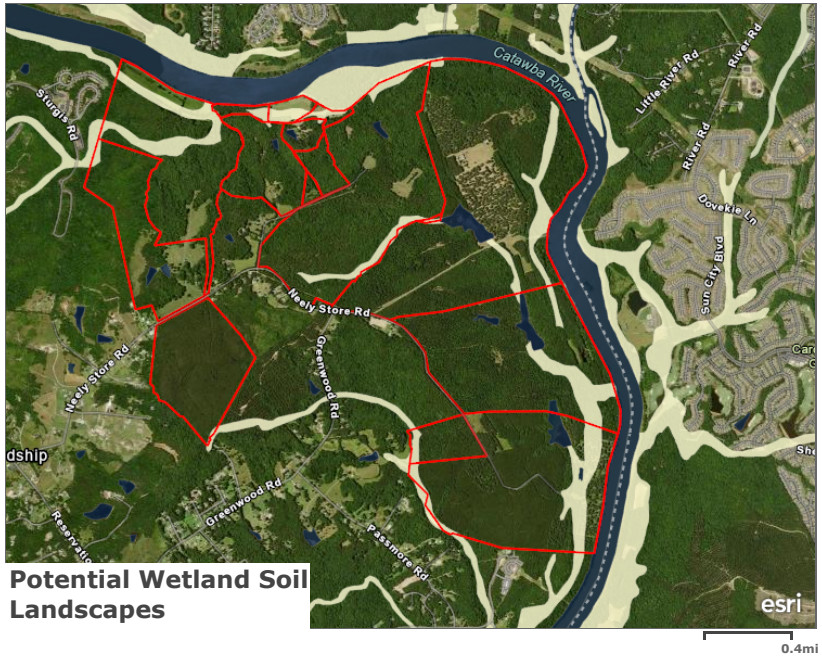
WETLANDS & WATERS, INC.

Figure 4: NRCS Soil Survey

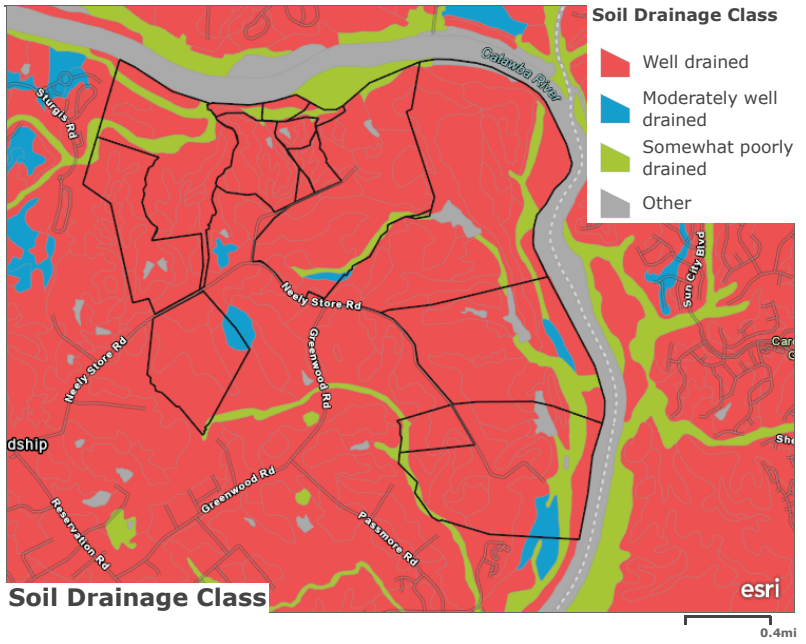
Project Name:	Catawba Bend Preserve
Owner / Developer:	York County
City / County:	Rock Hill/York
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042
Coordinates: Lat: 34.934878 Long: -80.880347	Scale: Graphic
	Date: 03-03-2022

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
BuA	Buncombe loamy sand, 0 to 3 percent slopes, occasionally flooded	5.0	0.3%
CeB2	Cecil sandy clay loam, 2 to 6 percent slopes, moderately eroded	20.2	1.1%
CeC2	Cecil sandy clay loam, 6 to 10 percent slopes, moderately eroded	35.1	1.9%
ChA	Chewacla loam, 0 to 2 percent slopes, frequently flooded	156.2	8.3%
DoB	Dorian sandy loam, 0 to 4 percent slopes, rarely flooded	20.2	1.1%
GaB	Georgeville loam, 2 to 6 percent slopes	136.0	7.2%
GaC	Georgeville loam, 6 to 10 percent slopes	166.2	8.8%
GeB2	Georgeville silty clay loam, 2-6 percent slopes, moderately eroded	401.0	21.3%
GeC2	Georgeville silty clay loam, 6 to 10 percent slopes, moderately eroded	222.5	11.8%
GeD2	Georgeville silty clay loam, 10 to 15 percent slopes, moderately eroded	47.0	2.5%
GrD2	Georgeville-Badin complex, 10 to 15 percent slopes, moderately eroded	149.6	8.0%
GrE2	Georgeville-Badin complex, 15 to 25 percent slopes, moderately eroded	167.4	8.9%
HeB2	Helena sandy loam, 2 to 6 percent slopes, moderately eroded	6.0	0.3%
HeC	Helena sandy loam, 6 to 10 percent slopes	4.2	0.2%
MaB	Masada sandy loam, 2 to 6 percent slopes	8.9	0.5%
MeB2	Mecklenburg-Wynott complex, 2 to 6 percent slopes, moderately eroded	20.4	1.1%
PaD2	Pacolet sandy clay loam, 10 to 15 percent slopes, moderately eroded	11.1	0.6%
PaE2	Pacolet sandy clay loam, 15 to 25 percent slopes, moderately eroded	107.6	5.7%
PhD	Pacolet-Hard Labor complex, 10 to 15 percent slopes	12.5	0.7%
RvA	Riverview sandy loam, 0 to 2 percent slopes, occasionally flooded	134.8	7.2%
W	Water	34.6	1.8%
WyC2	Wynott-Winnsboro complex, 6 to 10 percent slopes, moderately eroded	14.4	0.8%
Totals for Area of Interest		**1,881.0**	**100.0%**



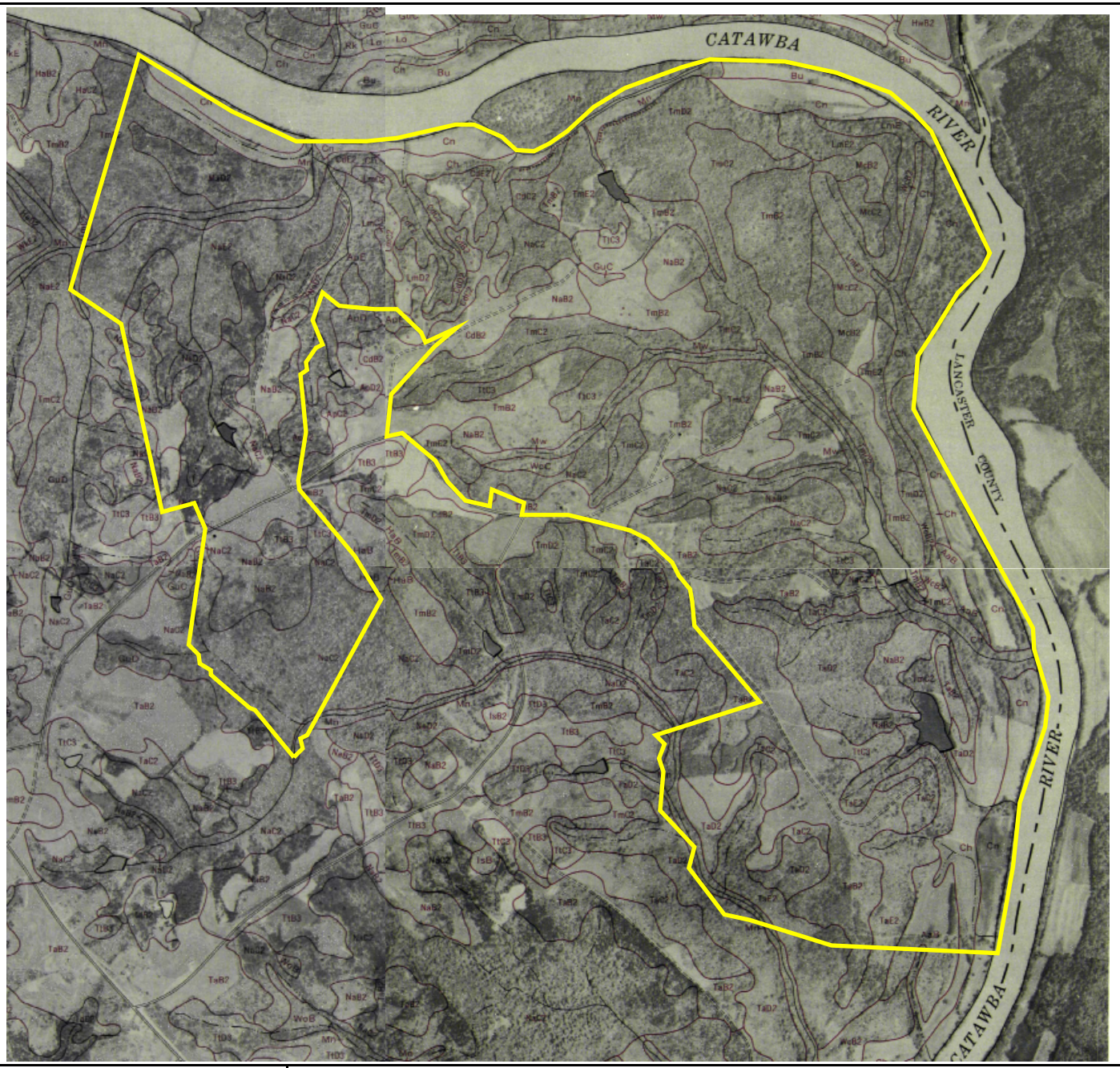
Potential Wetland Soil Landscapes



Soil Drainage Class

Figure 4 (continued): NRCS Soil Survey

Project Name:	Catawba Bend Preserve
Owner / Developer:	York County
City / County:	Rock Hill/York
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042
Coordinates: Lat: 34.934878 Long: -80.880347	Scale: Graphic / Date: 03-03-2022



WETLANDS & WATERS, INC.

Figure 4A: NRCS Paper Soil Survey

Project Name:	Catawba Bend Preserve
Owner / Developer:	York County
City / County:	Rock Hill/York
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042

Coordinates:	Scale:	Date:
Lat: 34.934878 Long: -80.880347	Graphic	03-03-2022

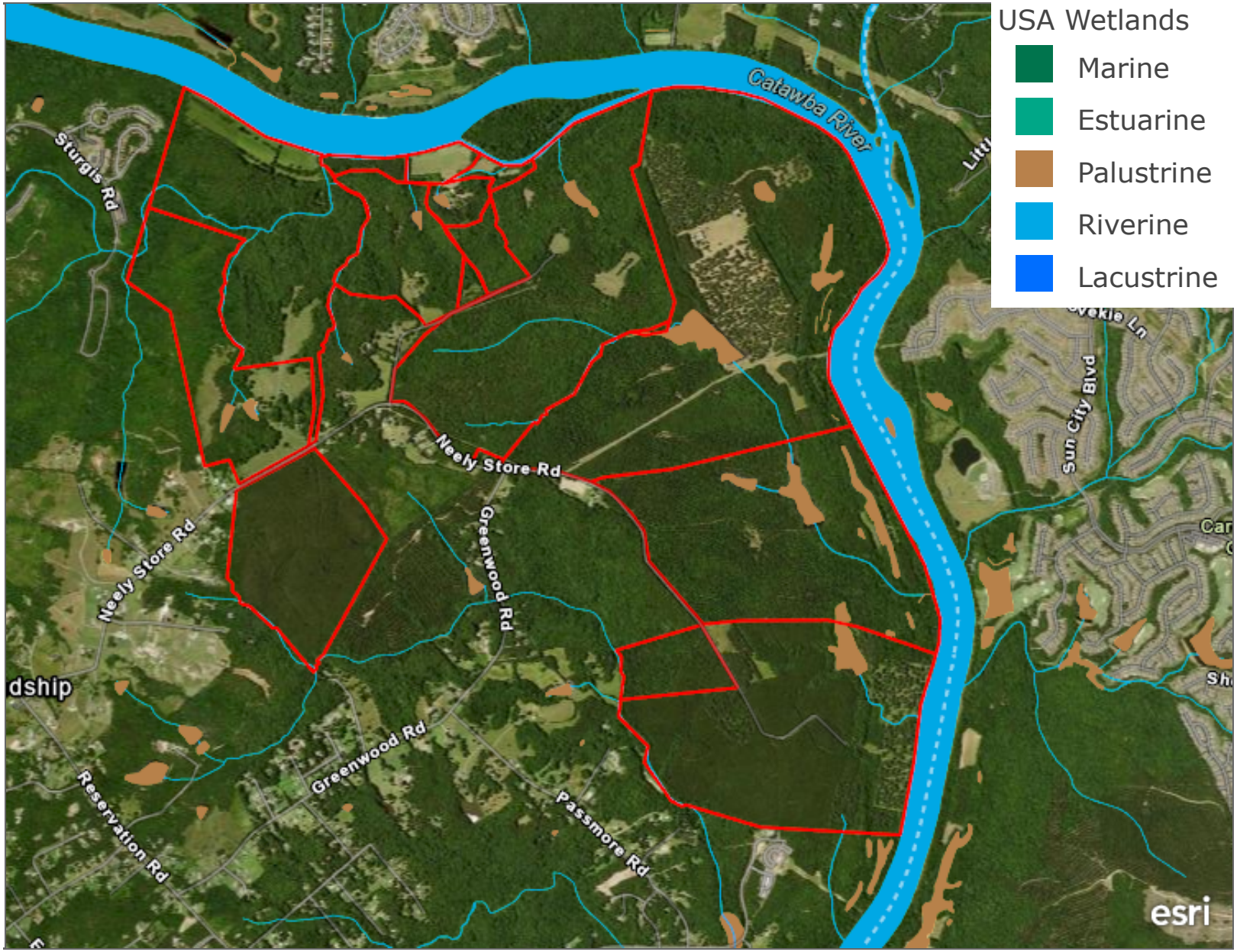
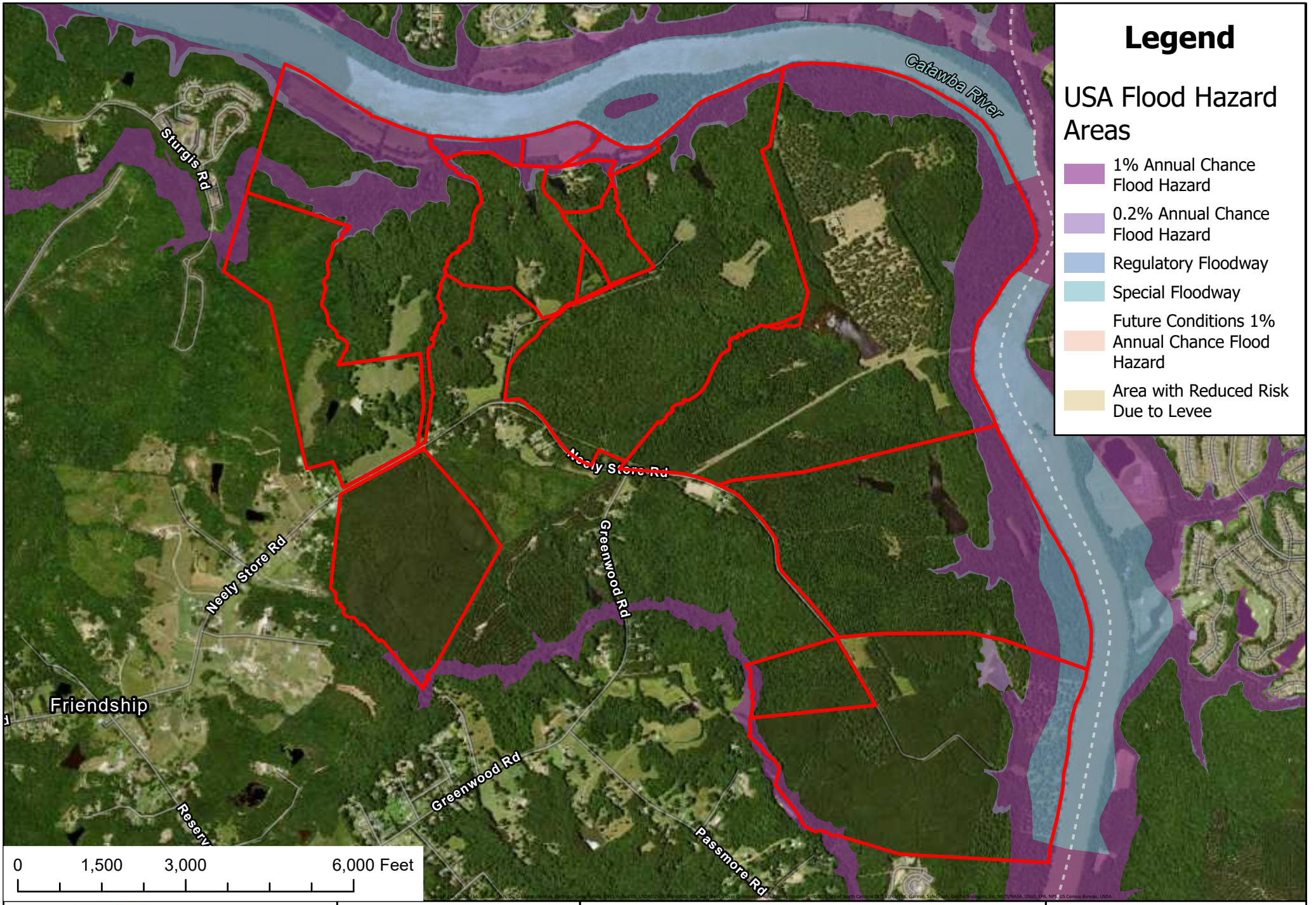


Figure 5: National Wetland Inventory Map

Project Name:	Catawba Bend Preserve
Owner / Developer:	York County
City / County:	Rock Hill/York
Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042
Coordinates: Lat: 34.934878 Long: -80.880347	Scale: Graphic
	Date: 03-03-2022



Wetlands & Waters, Inc.	Project Name:	Catawba Bend Preserve	N / W E / S
	Owner / Developer:	York County	
	City / County:	Rock Hill/York	
Figure 6: FEMA Floodplain Panel	Tax PIN(s):	7710000001, 7700000035, 7730000002, 7730000001, 7720000001, 7720000009, 7720000002, 7720000035, 7720000008, 7720000007, 7720000028, 7720000018, 7470000002, 7470000001, and 7470000042	
	Coordinates:	Lat: 34.934878 Long: -80.880347	Date: 06-17-2022

Attachment A

Optimal Survey Window for South Carolina's Federally Threatened, Endangered, and At-Risk Plant Species

OPTIMAL SURVEY WINDOWS FOR SOUTH CAROLINA'S
FEDERALLY THREATENED, ENDANGERED, AND CANDIDATE PLANT SPECIES

SCIENTIFIC NAME	COMMON NAME	STATUS	SURVEY WINDOW
Amaranthus pumilus	Seabeach amaranth	T	July–October
Amphianthus pusillus	Little amphianthus or Pool sprite	T	late March–April
Aster georgianus	Georgia aster	C	early October–mid November
Echinacea laevigata	Smooth coneflower	E	late May–October
Gymnoderma lineare	Rock gnome lichen	E	year round
Helianthus schweinitzii	Schweinitz's sunflower	E	late August–October
Helonias bullata	Swamp pink	T	April–May
Hexastylis naniflora	Dwarf-flowered heartleaf	T	March–May
Isoetes melanospora	Black spored quillwort	E	May–October
Isotria medeoloides	Small whorled pogonia	T	mid May–early July
Lindera melissifolia	Pondberry	E	February–March
Lysimachia asperulaefolia	Rough-leaved loosestrife	E	mid May–June
Oxypolis canbyi	Canby's dropwort	E	mid August–September
Narthecium americanum	Bog asphodel	C	June–July
Platanthera integrilabia	White fringeless orchid	C	late July–October
Ptilimnium nodosum	Harperella	E	July–October in periods of low water
Rhus michauxii	Michaux's sumac	E	May–October
Ribes echinellum	Miccosukee gooseberry	T	November–July
Sagittaria fasciculata	Bunched arrowhead	E	mid May–July
Sarracenia rubra ssp. jonesii	Mountain sweet pitcher-plant	E	April–October
Schwalbea americana	American chaffseed	E	May–August (1–2 months after a fire)
Sisyrinchium dichotomum	White irisette or Reflexed blue eyed grass	E	late May–July
Trillium persistens	Persistent trillium	E	early March–mid April
Trillium reliquum	Relict trillium	E	mid March–April
These recommended survey windows were determined from species recovery plans and field observations. For additional information about these species, please visit the U.S. Fish and Wildlife Service web page at http://endangered.fws.gov.			

STATUS KEY:

E	Federally endangered
T	Federally threatened
C	The U.S. Fish and Wildlife Service or the National Marine Fisheries Service has on file sufficient information on biological vulnerability and threat(s) to support proposals to list these species