MITIGATION PLAN - THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, North Carolina

DMS Project ID No. 100651
Full Delivery Contract No. 519674731-03
DWR Project No. 2021 0018 v2
RFP No. 16-519674731

Neuse River Basin
Cataloging Unit 03020201

Prepared for:

NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF MITIGATION SERVICES
1652 MAIL SERVICE CENTER
RALEIGH, NORTH CAROLINA 27699-1652

June 2023

Restoration Systems, LLC
1101 Haynes St. Suite 211
Raleigh, North Carolina
Ph: (919) 755-9490
Fx: (919) 755-9492

Response to DMS Comments
DMS Project ID No. 100651
Full Delivery Contract No. 519674731-03
NC DWR Stream Determination, Project No. 2021-0018 v2
RFP 16-519674731

Comments Received (Black Text) & Responses (Blue Text)

1. Table of Contents and report: Please update the section numbering for sections 5 & 6. Subsection numbers are incorrect.
   Subsections 5 and 6 have been updated in Table of Contents and report.

2. Please discuss the removal of the utility pole within the report, perhaps in section 2.6. The only reference to its removal is on some of the figures.
   The utility pole and line along with the associated easement were removed during the first phase of Thunder. The callout and utility alignment within the easement have been revised on all Figures.

3. Table 11: Empty boxes for willow oak are missing dashes, please update.
   Table 11 has been updated.

4. Be consistent throughout the report and figures for conservation easement acreage. Ex: Fig 2 says 13.49 vs Fig 5 13.486.
   Conservation easement acreage throughout the report and figures has been updated to 13.486.

5. Figure 8: missing the project number.
   Figure 8 has been updated.

6. Figure 8: Correct typo 2.28%. 2.02% is correct.
   Figure 8 has been updated.

7. Figure 8: Correct the typo TRRA.
   Typo corrected on Figure 8.

8. As required by the contract and in Section 4.6 of RFP 16-519674731, Restoration Systems must submit the required Performance Bond as part of the final mitigation plan. This must be approved before invoice submission.
   Understood.

9. This is a reminder that Task 2 has not been completed and will not be complete until the Conservation Easement is recorded for this project and all required deliverables have been submitted to the DMS Project Manager and State Property Office.
   Understood.

10. The report and tables state that the project will provide up to 28,052.373 nutrient offset credits. Please be mindful that the project is contracted to provide 29,580.139 nutrient offset credits.
    While updating the report and figures it was observed a 100-200 foot restoration buffer segment associated with Feature 1C was not included in the credit table. After including this additional segment the total project credits increased to 29,524.409. The credit table and reference to project credits has been updated throughout the report. We acknowledge this is still below the contract credit amount.

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Initial Comments:

1. Page 7 of PDF Table 2: Do not include this table since this is also in the Project Credit Table.
   Table 2 has been removed from the document.

2. Page 8 of PDF Section 1.3: When describing the restoration areas, make sure to include "and adjacent riparian areas". In some sections, it only says the riparian restoration or preservation of "riparian buffers". However, "Riparian Buffer" is defined in rules as having a "Zone 1" and a "Zone 2" and only being the area adjacent to streams depicted on certain maps. You also have ditches on the site, therefore using the term "Riparian Buffer" is not accurate for describing those areas. Errors can simply be avoided by just saying "riparian buffers and adjacent riparian areas".
   Understood text throughout has been revised from “riparian buffers” to “riparian buffers and adjacent riparian areas”.

3. Page 8 of PDF Section 1.3: Please add information on the ditches as well.
   Existing conditions for the ditches has been added to the narrative.

4. Page 9 of PDF Section 1.3: This is the buffer determination date, please add information about that site visit as well here.
   Additional narrative has been included with information regarding the buffer determination site visit.

5. Page 10 of PDF Section 1.3: First paragraph add “and ditch”.
   Completed.

6. Page 16 of PDF Section 3.1 Table 11: If 14 species of trees are shown in the table, DWR expects 14 species to be planted. If anticipating to plant only minimum of 4 from the list, DWR cannot confirm the density percentages column would comply with the performance standard of "no one tree species will be greater than 50%" as noted on Rule .0295 (n)(2). At this time the density according to Table 11 is not accurate unless all 14 species are planted.

   It is understood that changes to planting plans can happen. If any changes are needed to the planting list before planting, the Provider will need to submit a request to DWR for approval of the modified planting list if not listed as an approved tree in Table 11. DWR will accept a few substitutions if RS wants to include a table as potential substitutions in a Table 10b but you must include the % those subs are intended to be utilized in the case you need those substitutions.
   Understood. Table 11 has been updated to include the tree species that have been ordered for planting.

7. Page 19 of PDF Section 6.0: Replace NOC with RBC.
   The edit has been made.

8. Page 19 of PDF Table 16: Remove Pres. = Preservation.
   Text has been removed.

9. Page 25 of PDF Figure 4: Please remove all the SWIT symbology and call outs as this is providing conflicting information (i.e. the ditch being labeled as ephemeral). DWR just prefers just having the start points without the SWIT.

Understood Figure 4 has been updated as described.

10. Page 28 of PDF Figure 7: Please show stream origins on relevant figures. Please show a differentiation for credits between the widths and feature types so it is comparable to how it is listed in the Project Credit Table so we can determine where the credits are coming from.
    Stream origins have been added to Figures 5-8, and project feature centerlines have been added to Figure 6-8. Credits have been differentiated on the figure by width on Figure 7 and 7A.

11. Page 30 of PDF Figure 8: According to site viability, this is non-subject.
    Figure 8 Feature 3 and 1B labels have been updated.

12. Page 31 of PDF: Please provide up to date photos closer to time that this report was submitted.
    More recent photos have been included.

13. Page 35 of PDF: Move credit table to the end of Section 6.1
    Project credit table has been moved Section 6.1.

    Put 0 if there are no creditable areas for buffer.
    Zeros have been added to the no credit cells.

    Please include total area for less than 50 feet.
    This information has been added to the table.

    As previously discussed, DMS plans on DWR reviewing this project for RBC and NOC. Please fill out this table with RBC information. i.e. add creditable area of mitigation.
    RBC information has been added to the table.

Follow-up Comments:

1. Page 16 of PDF Section 3.0: Does this need to be referencing Table 8 instead? There are a few wrong references since a table was removed. Please fix throughout the report.
   All tables mentioned in the narrative have been updated to identify the appropriate table.

2. Page 17 of PDF Section 3.1: "A minimum of 4 species of trees will be planted as evident in Table 9 which shows the planting of 13 species."
   This sentence has been updated to reflect there will be a minimum of 10 species of trees planted as shown in the planting plan table.

3. Page 28 of PDF Figure 6: Add the appropriate range of widths in the legend.
   The legend has been updated to include the range of widths.

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Prepared by:

Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, North Carolina 27604
Contact: Raymond Holz
919-755-9490 (phone)
919-755-9492 (fax)

June 2023

This mitigation plan has been written in conformance with the requirements of the following:

- State Rule 15A NCAC 02B .0295 (Consolidated Buffer Mitigation Rule – CMB Rule)
- State Rule 15A NCAC 02B .0703 (Nutrient Offset Credit Trading Rule)

These documents govern NCDMS operations and procedures for the delivery of compensatory mitigation.

This document was assembled using the DMS Buffer Mitigation Plan Template and Guidance

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APPENDICES

1. Mitigation Project Summary

1.1. Introduction

The Thunder Phase B Nutrient Offset Mitigation Site (hereafter referred to as the "Project" or "Site") is designed in accordance with State Rules 15A NCAC 02B .0295 (Consolidated Buffer Mitigation Rule – CMB Rule) to Neuse River Riparian Buffer Credits (RBC) and 15A NCAC 02B .0703 (Nutrient Offset Credit Trading Rule) to Neuse River Nutrient Offset (Nitrogen) Credits (NOC) for impacts within the Neuse River Basin USGS 8-digit HUC 03020201, excluding the Falls Lake Watershed. The permanent conservation easement encompasses 13.486 acres and will provide 29,524.409 lbs. nitrogen NOCs (Available NOC). The Project will provide the State with the Available NOC while permanently protecting the restored riparian area and preserving the forested Thunder Swamp floodplain, a mapped FEMA Floodway (Map 3720256300K, Panel 2563, effective June 20, 2018).

Located in Wayne County, North Carolina, the Project encompasses 13.486 acres utilized for row crop production and is immediately adjacent to the Thunder Mitigation Site, a DMS full-delivery project (#100185) sponsored by Restoration Systems, LLC. (RS). The Project will restore the riparian buffers and adjacent riparian areas along five (5) unnamed tributaries and preserve the established riparian buffer along Thunder Swamp. The Site is located within the warm waters of the United States Geological Society (USGS) Hydrologic Unit 03020201-170030 and NC DWR subbasin 03-04-12. The Thunder Mitigation Site (DMS No. 100185) restoration efforts includes the 0–100 foot buffer of the unnamed tributaries, while this Project includes the buffer at 101-200 feet. Detailed project mapping is provided in Appendix A, along with site-specific data in Appendix B.

A DWR representative conducted an on-site stream determination on January 21, 2021. A Stream Determination letter was provided on February 26, 2021. Further, a DWR representative conducted a Site Viability visit on March 24, 2021, and provided an approval letter on April 13, 2021. An additional email was received from a DWR representative on March 14, 2023 confirming the site viability letter is still valid as long as there has been no change in landuse since the initial DWR review of the BPDP document. The landuse remains in agricultural production and has not changed since the initial DWR review. RS purchased the Parcel fee-simple from the previous landowners and the purchase was recorded on July 13, 2021 with the Wayne County Register of Deeds with documentation provided in Appendix C. Both the Stream Determination and Site Viability letters are attached in Appendix B.

1.2. Project Goals

The primary goals of the proposed nutrient offset project are to provide ecological and water quality enhancements to the Neuse River Basin by restoring the riparian area to create a functional riparian corridor. The Site is not located within a watershed planning unit but addresses watershed goals outlined by the Neuse River Basin Restoration Priorities (RBRP) report (NCEEP 2010 amended 2018). Table 1 summarizes the RBRP goals and provides site-specific objectives to address the RBRP goals. Specific enhancements to water quality and ecological processes are outlined in Table 1.

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Table 1. Ecological and Water Quality Goals

Goal	Objective
Decrease nutrient levels	Nutrient input will be decreased by filtering runoff from the agricultural fields through restored riparian buffer zones. The off-site nutrient input will also be absorbed on-site by filtering flood flows through restored floodplain areas where flood flows can disperse through native vegetation.
Decrease sediment input	Sediment from off-site sources will be captured by deposition on restored floodplain areas where native vegetation will slow overland flow velocities. Ephemeral ditch will be partially filled to remove on-site sediment source.
Decrease water temperature and increase dissolved oxygen concentrations	Planted riparian trees will shade the streams as they mature, reducing thermal pollution.
Create appropriate terrestrial habitat	Buffer areas will be restored by planting native woody and herbaceous vegetation.
Permanently protect the project Parcel from harmful uses	A permanent conservation easement will be recorded, protecting the Parcel's assets in perpetuity.

Ecological and water quality goals will be achieved by restoring 13.486 acres of forested riparian buffer. Proposed activities include:

- The cessation of agricultural production on the Site
- The cessation of vegetation maintenance along Site tributaries and ditches
- Planting of a diverse woody riparian buffer comprised of native hardwoods and a permanent herbaceous seed mix that supports native diversity, including pollinators and wildlife
- Protect Site tributaries, riparian buffers, and adjacent floodplains that drain directly to a FEMA regulated flood-way with a perpetual conservation easement

Mitigation activities outlined in this proposal are designed to provide the Division with **29,524.409 Nutrient Offset (Nitrogen) Credits (NOC).** Mitigation totals are calculated per the requirements in RFP #16-519674731, and State Rules 15A NCAC 02B .0295 (Consolidated Mitigation Buffer Rule) and 15A NCAC 02B .0703 (Nutrient Offset Credit Trading Rule). A completed DWR credit determination table is provided in Appendix A.

Site tributaries drain to Thunder Swamp, a FEMA regulated floodplain. NOC generated from Site activities is summarized below; a complete credit determination table is provided in Section 6.1.

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1.3. Existing and Historic Parcel Conditions

The proposed nutrient offset project includes riparian restoration of 13.47 acres of open agricultural fields and 0.019 acres of forested land along unnamed tributaries to Thunder Swamp. The agricultural fields are used for row crop production, including cotton, corn, and peanuts. Agricultural fields within and adjacent to the Site are subject to routine fertilizer and herbicide applications. Site streams and ditches exhibit bank erosion due to long-term plowing and removal of native vegetation throughout the proposed restoration areas. The Project will restore the riparian buffers and adjacent riparian areas along five (5) unnamed tributaries and preserve the established riparian buffer along Thunder Swamp. Thunder Swamp is a braided stream system within an old-growth forest. Site tributaries ("features") two, four, and five originate less than one (1) mile south of NC HWY 55. Tributaries one and three originate on-site. All tributaries drain to Thunder Swamp. One ditch is present at the upper end of feature one, the upper most portion of the ditch extends outside of the easement and has been filled while the lower portion of the ditch remains open as it enters feature one. Historic imagery dating back to 1959 indicates that land management practices are consistent with the Site's current conditions (EDR Report, Appendix D). Detailed project mapping is provided in Appendix A, along with site-specific data in Appendix B.

Table 2. Project Activity and Reporting History

Task	Anticipated Completion Date	Actual Completion Date
Mitigation Plan	June 2023	
Initial Planting Date	February 2024	
Baseline Report Date	April 2024	
MY1 Report Date	December 2024	
MY2 Report Date	December 2025	
MY3 Report Date	December 2026	
MY4 Report Date	December 2027	
MY5 Report Date	December 2028	

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Table 3. Project Attribute Table

Project Information			
Project Name		Thunder Phase B Nutrient Offset Site	
County		Wayne	
Project Area (acres)		13.486	
Project Coordinates (latitude and longitude)		35.207359, -78.110921	
Project Watershed Summary Information			
Physiographic Province		Coastal Plain	
River Basin		Neuse	
USGS Hydrologic Unit 8-digit	03020201	USGS Hydrologic Unit 14-digit	03020201-170030
DWR Sub-basin		03-04-12	
Project Drainage Area (acres)		UT1A: 22.85 UT4: 153.60	
Project Drainage Area Land Use		Row crops, forest	
Project Drainage Area Percentage of Impervious Area		< 2%	

Regulatory Considerations			
Regulation	**Applicable?**	**Resolved?**	**Supporting Documentation**
Waters of the United States – Section 404	No	NA	Appendix C
Waters of the United States – Section 401	No	NA	Appendix C
Endangered Species Act	Yes	Yes	Appendix D
Historic Preservation Act	Yes	Yes	Appendix D
Coastal Zone Management Act [CZMA/Coastal Area Management Act (CAMA)]	No	NA	NA
FEMA Floodplain Compliance	Yes	Yes	Section 2.3 Appendix C
Essential Fisheries Habitat	No	NA	Appendix D

Table 4. Project Contacts Table

Full Delivery Provider / Designer Restoration Systems 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 Raymond Holz 919-755-9490	**Planting Contractor** Restoration Systems 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 Josh Merritt (919) 639-6132	**Surveyor** k2 Design Group 5688 U.S. Hwy. 70 East Goldsboro, NC 27534 John Rudolph (L-4194) 919-394-2547
Monitoring Axiom Environmental, Inc. 218 Snow Avenue Raleigh, NC 27603 Grant Lewis 919-215-1693	**Construction & General Contractor** Restoration Systems 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 Worth Creech (GC #64807) 919-755-9490	

DWR performed an on-site stream determination site visit on January 21, 2021. The only modification to the Site was the origin point for feature 1 was shifted down valley, and the upper portion of feature 1 was determined to be a ditch. DWR performed an on-site visit to determine viability to provide riparian buffer credits based on the Consolidated Buffer Mitigation Rules (15A NCAC 02B .0295) and viability to provide nutrient offset credits based on the Nutrient Offset Credit Trading Rule (15A NCAC 02B .0703) on March

24, 2021. A copy of both the "On-Site Origin Determination for Applicability to the Neuse River Buffer Rules" and "Site Viability for Buffer Mitigation and Nutrient Offset" are provided in Appendix C.

A summary of their determinations, specific to Parcel Features, is summarized in Table 5 and correlated with stream and ditch segments as labeled in Appendix A figures. There have been no changes to land use in the project area since DWR's site visit.

Table 5. Project Features

Feature Name	Feature Type	Subject to Buffer Rules	Buffer Credit Viable	Nutrient Offset Viability
1A	Intermittent/Perennial	Yes	Yes	Yes
1B	Intermittent/Perennial	Yes	Yes	Yes
1C	Ditch >3' depth	No	No	Yes
2	Intermittent/Perennial	Yes	Yes	Yes
3	Ephemeral	No	Yes	Yes
4	Intermittent/Perennial	Yes	Yes	Yes
5	Intermittent/Perennial	Yes	Yes	Yes

1.4. Watershed Characteristics

The Site is located within USGS HUC 03020201 and DWR Subbasin 03-04-12. The Parcel topography, as indicated on the Mount Olive, NC USGS 7.5-minute topographic quadrangle, shows gently sloped areas throughout the Parcel (Figure 2, Appendix A). The Site is in a Habitat, Targeted Resource Area (TRA). Features drain to Thunder Swamp, which is classified as C and NSW by DWR. Class C water is designated for recreational use, agricultural, fishing/fish consumption, and the maintenance of biological integrity for wildlife. The NSW designation applies to surface water that is experiencing excessive growth of microscopic or macroscopic vegetation. Land uses draining to the project reaches are primarily agriculture with some existing forest.

1.5. Soils

The Parcel is mapped by the Wayne County Soil Survey. Project soils are described below in Table 6. An image of the paper copy of the 1974 Soil Survey of Wayne County is provided in Figure 3. A custom soil report is provided in Appendix B.

Table 6. Project Soil Types and Descriptions

Map Unit Symbol	Unit Name and Description	Percent of Bank Parcel	Hydric Status
Bb	Bibb sandy loam	0.5	Hydric
GoA	Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain	18.2	Non-hydric
NoA	Norfolk loamy sand, 0 to 2 percent slopes	8.4	Non-hydric
NoB	Norfolk loamy sand, 2 to 6 percent slopes	59.9	Non-hydric
NoC	Norfolk loamy sand, 6 to 10 percent slopes	2.3	Non-hydric
Ra	Rains sandy loam, 0 to 2 percent slopes	10.8	Hydric

Appendix B – Soils Report (Source: *https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm*)

1.6. Geology

The Site encapsulates a heavily modified headwater stream system within the Southeastern Plains. Specifically, the Site is located in the Rolling Coastal Plain (65m) Level IV Ecoregion of the Southeastern Plains Level III Ecoregion within the Coastal Plain physiographic province; USGS HUC 03020201 (NC DWR Subbasin Number 03-04-12) of the Neuse River Basin. The Rolling Coastal Plain extends south from Virginia and covers much of the northern upper coastal plain of North Carolina. The landscape is characterized by flatlands to gently rolling hills. Parcel elevations range from 120 to 150 feet above sea level. The Rolling Coastal Plain is characterized by elevation and relief, and tends to be higher than in other coastal regions. Soils tend to be well-drained. Historic forests were mostly compromised of Oak-Hickory-Pine forests.

1.7. Directions to Site

The Site is located in southern Wayne County, approximately three miles west of Mount Olive (Figure 1, Appendix A). Directions to the Site from Raleigh, North Carolina, are below.

- Head east on I-40 for 42 miles
- Take Exit 341 for NC-50/NC-55 toward US-13/Newton Grove
- After 1.3 miles, proceed into the traffic circle
- Exit right onto NC-50 S/NC-55 E/Mt Olive Dr.
- After 14.5 miles, merge right onto Old Smith Chapel Rd.
- After 0.2 miles, turn left onto Thunder Swamp Rd.
- After 0.1 miles, turn left on NC-55
- The Site is located on the right.
    - Site Latitude, Longitude 35.207359, -78.110921

1.8. Site Maps

Appendix A

2. Regulatory Considerations

The presence of conditions or characteristics that could hinder restoration activities at the Site were evaluated. The evaluation focused primarily on the existence of hazardous materials, utilities, restrictive easements, rare/threatened/endangered species or critical habitats, the potential for hydrologic trespass, and existing utility easements. Existing information regarding Parcel constraints was acquired and reviewed, including an Environmental Records Report developed by Environmental Data Resources Inc., which located no evidence of environmental risk associated with the Parcel (Appendix D). In addition, any Parcel conditions that could restrict the restoration and implementation were documented during the field investigation. As a result of our review and field surveys, **no known Parcel constraints exist** that may hinder proposed restoration activities. Potential constraints reviewed include the following;

2.1. Threatened and Endangered Species

Federally protected species listed by the US Fish and Wildlife – Information for Planning and Consultation (IPaC) website "as occurring in the vicinity" of the Parcel are summarized in Table 7. Restoration Systems performed pedestrian surveys of the Parcel in February 2020 and determined no suitable habitat for the species existed within restoration areas. The USFWS Self-Certification Letter is located in Appendix D.

Table 7. Threatened and Endangered Species

Common Name (Scientific Name)	Federal Status	Habitat at Parcel	Biological Conclusion	Summary
Red-cockaded Woodpecker (*Picoides borealis*)	Endangered	No	No Effect	Habitat does not exist in or near the project boundaries.
Neuse River Waterdog (*Necturus lewisi*)	Threatened	No	No Effect	Habitat does not exist in or near the project boundaries.
Carolina Madtom (*Noturus furiosus*)	Endangered	No	No Effect	Habitat does not exist in or near the project boundaries.

Red-cockaded Woodpecker

Primary nest sites for red-cockaded woodpeckers include open pine stands greater than 60 years of age with little or no mid-story development. The foraging habitat comprises open pine, or pine/mixed hardwood stands 30 years of age or older. Suitable nesting and foraging habitat are unlikely within the project area; however. According to the NCNHP records there have been no observations of this species within a one-mile radius of the Parcel.

Neuse River Waterdog

A suitable habitat for Neuse River waterdog consists of riffles, runs, and pools in medium to large streams. The optimal substrate is a predominantly silt-free, stable, gravel and cobble bottom habitat and must have cover for nest sites, including under rocks, bark, relic mussel shells, and even cans and bottles. Suitable habitat for this species does not exist within the Parcel. According to the NCNHP records there have been no observations of this species within a one-mile radius of the Parcel.

Carolina Madtom

A suitable habitat for the Carolina Madtom consists of low to moderate gradient streams and low current velocity. The species dwell in streams wider than 15 meters but have been found in smaller creeks. Suitable habitat for this species does not exist within the Parcel. According to the NCNHP records there have been no observations of this species within a one-mile radius of the Parcel.

2.2. Cultural Resources and Significant Natural Heritage Areas

There are no existing structures in the project area or on the larger tract of land. The State Historic Preservation Office (SHPO) was contacted with a request for review and comment. SHPO provided a response letter on April 29, 2021, stating, "We [SHPO] have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed." All communication with SHPO is included in Appendix D.

A North Carolina Natural Heritage Program (NCNHP) database query indicates no records for rare species, important natural communities, or conservation/managed areas within the proposed project boundary. Within a one-mile radius of the Site, NCNHP lists no federally-protected species (Appendix D).

2.3. FEMA Floodplain Compliance

All restoration activities are proposed outside of FEMA regulated areas and are located in FEMA Zone X (unshaded) – defined as "the area of minimal flood hazard, usually depicted on FIRMs as above the 500-year flood level" (FEMA 2021). The Site is located within a Special Flood Hazard Area (SFHA) due to its proximity and inclusion of Thunder Swamp, FEMA Floodway (Map 3720256300K, Panel 2563, effective

June 20, 2018 – Figure 4, Appendix A). The Site includes portions of the FEMA Regulated Floodway and Zone AE (1% and 0.2% annual chance of flood risk).

FEMA coordination/review is conducted at the county level. Regulated activities within mapped FEMA areas are discussed under Wayne County Ordinance Chapter 38 – Flood Prevention (*https://library.municode.com/nc/wayne_county/codes/code_of_ordinances?nodeId=COOR_CH38FLDAPR*). Specifically, Section 38-62, which discusses provisions required within FEMA mapped zones where base flood elevation data has been provided. Under this Section, there is no restriction of fill material in Zone X. Coordination with the Wayne County FEMA Administrator was completed in August of 2021. The attached NC DMS Floodplain Checklist is provided in Appendix C.

2.4. Waters of The United States (404 Considerations)

Jurisdictional Waters of the US within the Site were delineated in the field following guidelines outlined in the Corps of Engineers Wetlands Delineation Manual and subsequent regional supplements and located using GPS technology with reported submeter accuracy (Environmental Laboratory 1987). A jurisdictional wetland delineation was completed and confirmed by the United States Army Corps of Engineers (USACE) representative Emily Thompson via a desktop review and documented by email on May 21, 2021. Documentation of the delineation is included in Appendix C. Existing jurisdictional wetlands are depicted in a pink boundary, and jurisdictional tributaries are shown using a blue line symbology on Figure 5 in Appendix C.

2.5. Land Quality

Wayne County does not administer its own Erosion and Sediment Control program. Thus, the Site's proposed land-disturbing activities are subject to the State's authority under the Sedimentation Pollution Control Act of 1973 (1973 Act) and 15A NCAC 04. Under the 1973 Act, an erosion and sediment control plan is required if more than one acre of land on a tract is disturbed (§ 113A-57. Mandatory standards for land-disturbing activity). Site restoration activities will disturb 0.031 acres (Table 8; Appendix A: Figure 5), and thus, an Erosion and Sediment Control Plan is not required. All disturbed areas will be treated following standard methods outlined by State Statute and Rules, i.e., temporary and permanent seeding and use of erosion control matting.

2.6. Parcel Location, Parcel Constraints, and Access

The Parcel is in rural Wayne County, near the town of Mount Olive (Figure 1, Appendix A). The Parcel is accessible for construction, monitoring, and long-term stewardship from NC Highway 55. DOT right of ways, powerlines, and associated easements will be excluded from the conservation easement (Appendix F).

2.7. Other Environmental Conditions

An Environmental Data Resources, Inc (EDR) Radius Map Report with Geocheck was ordered for the Parcel on January 6, 2021. Neither the target property nor the adjacent properties were listed in any of the Federal, State, or Tribal environmental databases searched by EDR. The executive summary of the EDR report is included in Appendix D.

3. Restoration Plan

The Project will restore agriculturally impacted land in the Parcel footprint to a forested riparian corridor, protected in perpetuity, improving the ecological function of the area. Riparian buffer widths associated with restoration range from 50 to 200 feet. The design will ensure that no adverse impacts to wetlands or existing riparian buffers occur. Since the Project is expanding upon an existing buffer project no other

actions are needed to restore the riparian corridor. Table 8 describes the conceptual design for the Parcel (Appendix A, Figure 5).

Table 8. Restoration Plan Activities

Restoration Plan Activity	Actions (Appendix A: Figure 5)
Riparian Restoration	1.) Parcel-wide soil preparation herbaceous vegetation treatment ahead of planting 2.) Establishment of a native herbaceous community via site-specific seed mix (Table 9) 3.) Establishment of 13.486 acres of native hardwood forest via the planting of bare-root saplings (Table 10)

3.1. Materials and Methods

Restoration of Riparian Coastal Plain Bottomland Hardwood Forest and Riparian Upland Mesic-Oak-Hickory forests allows for the development and expansion of characteristic species across the landscape. Ecotonal changes between community types contribute to habitat diversity and provide secondary benefits, such as enhanced feeding and nesting opportunities for mammals, birds, amphibians, and other wildlife.

Revegetating floodplains will provide overall system stability, shade, and wildlife habitat. In addition, viable riparian communities will improve the system's biogeochemical function by filtering pollutants from overland and shallow subsurface flows and providing organic materials to adjacent stream channels.

A diverse and native herbaceous seed mix will be planted across the Site. This mix will provide soil stability, ecological diversity, and favorable growing conditions for the planted woody species. Seeding will consist of a seasonally appropriate temporary nurse crop (eg. millet or cereal rye), a mix of wildflowers known to benefit wildlife, including pollinators (eg. *Rudbeckia spp., Echinacea spp., Coreopsis spp., Eupatorium coelestinum, Chamaecrista fasciculata*), and a blend of low growing grasses, which will provide long term soil stability and wildlife benefit without unduly competing with the desired forbs or woody plantings (eg. *Agrostis spp.*).

Table 9. Seed Mix

Permanent Seed – Sitewide @ 2lbs/acre					
Species	**%**	**Species**	**%**	**Species**	**%**
Agrostis hyemalis	5	*Desmodium canadense*	2	*Lespedeza capitata*	2
Agrostis perennans	5	*Echinacea purpurea*	7	*Liatris spicata*	0.5
Bidens aristosa	3	*Elymus virginicus*	5	*Monarda fistulosa*	0.5
Carex albolutescens	2	*Eupatorium coelestinum*	0.5	*Panicum anceps*	2
Carex lupulina	1	*Eupoatorium perfoliatum*	1	*Panicum clandestinum*	2
Carex vulpinoidea	2	*Helianthus augustifolius*	4	*Rudbeckia hirta*	7
Chamaecrista fasciculata	5	*Heliopsis helianthoides*	4	*Senna hebecarpa*	5
Chamaecrista nictitans	2	*Hibiscus mosheutos*	0.5	*Tridens flavus*	20
Coreopsis lanceolata	3	*Juncus effusus*	2	*Verbena hastata*	2
Coreopsis tinctoria	3	*Juncus tenuis*	2	--	

Variations in vegetative planting will occur based on the topography and hydrologic condition of soils. Vegetative species composition will be based site-specific features, and community descriptions from

the Classification of the Natural Communities of North Carolina (Schafale and Weakley 2012). Community associations to be utilized include 1) Riparian and Wetland Buffer and 2) Upland Riparian Buffer.

Bare-root seedlings within the Riparian Coastal Plain Bottomland Hardwood Forest and Riparian Upland Mesic-Oak-Hickory forests will be planted at a density between 680 and 720 stems per acre on 8-foot centers. Planting will be performed between November 15 and March 15 to allow plants to stabilize during the dormant period and set roots during the spring season. Species will be well mixed within the planting scheme to ensure diversity of bare roots across planted areas and monitoring plots. Species availability may result in the substitution of regionally appropriate native species. A minimum of 13 species of trees will be planted. Final species composition and density will be detailed in the As-built Report. Potential species planted within the Site are detailed in Table 10 depicts the total number of stems and species distribution within each vegetation association (Figure 6, Appendix A).

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Table 10. Planting Plan

Vegetation Association		Coastal Plain Bottomland Hardwood*		Dry Mesic Oak-Hickory Mixed Forest*		TOTAL (Acres)
Area (acres)		**1.391**		**11.970**		**13.361**
Species	**Indicator Status**	**# planted ***	**% of total**	**# planted***	**% of total**	**# planted**
River birch (*Betula nigra*)	FACW	150	15	--	--	150
Black gum (*Nyssa Sylvatica*)	FAC	150	15	820	11.2	970
Bitternut hickory (*Carya cordiformis*)	FAC	150	15	410	5.5	560
American elm (*Ulmus americana*)	FAC	50	5	820	11.2	870
Red bud (*Cercis canadensis*)	UPL	--	--	820	11.2	820
Persimmon (*Diospyros virginiana*)	FAC	--	--	410	5.5	410
Hackberry (*Celtis occidentalis*)	FACU	--	--	820	11.2	820
Sycamore (*Platanus occidentalis*)	FAC	95	10	1,230	16.5	1,325
Tulip poplar (*Liriodendron tulipifera*)	FACU	95	10	820	11.2	915
Red mulberry (*Morus rubra*)	FACU	--	--	410	5.5	410
Water oak (*Quercus nigra*)	FACW	150	15	410	5.5	560
Willow oak (*Quercus phellos*)	FACW	--	--	410	5.5	410
Swamp Chestnut oak (*Quercus michauxii*)	FACW	150	15	--	--	150
TOTAL		**990**	**100**	**7,380**	**100**	**8,370**

* Planted at a density between 680 and 720 stems per acre.

3.2. Easement Marking

The entire easement area will be appropriately marked to identify the easement boundaries per NCDEQ-DWR and DMS requirements. Fencing is not proposed or required.

3.3. Other Activities

Beaver, Privet, and other potential nuisance species will be monitored throughout the 5-year monitoring period. Appropriate actions to alleviate any negative impacts regarding vernation development and/or water management will occur on an as-needed basis.

4. Monitoring Plan

Restoration monitoring procedures for vegetation will monitor plant survival and species diversity. Quantitative sampling will include eleven (11) permanent 10 x 10-meter vegetation plots as outlined in the CVS Level 1-2 Protocol for Recording Vegetation, Version 4.2 (Lee et al. 2008) and will occur no earlier than the first calendar day of Fall each year (Figure 8, Appendix A). A reference photo will be taken from the origin point of each plot. All planted stems in the plots will be marked with flagging tape and recorded. Data collected will include species, height, planting type (planted stem and/or volunteer), and vigor. Monitoring will be conducted by Axiom Environment, Inc based on the schedule in Table 11. A summary of monitoring is outlined in Table 12. Annual monitoring reports will be submitted to the NCDMS by Restoration Systems no later than December 1 of each monitoring year data.

Table 11. Monitoring Schedule

Resource	Year 1	Year 2	Year 3	Year 4	Year 5
Vegetation (2% of planted area)	x	x	x	x	x
Visual Assessment (100% of Site)	x	x	x	x	x
Report Submittal	x	x	x	x	x

Table 12. Monitoring Summary

Vegetation Parameters				
Parameter	**Method**	**Schedule/ Frequency**	**Number/ Extent**	**Data Collected/Reported**
Vegetation	11 Permanent vegetation plots 0.0247 acre (100 square meters) in size; *CVS-EEP Protocol for Recording Vegetation*, *Version 4.2* (Lee et al. 2008).	As-built (MY 0), MY 1, 2, 3, 4, and 5	11 plots across the restoration portion of the Site	Species, height, vigor, planted vs. volunteer, stems/acre. Reference photo at each monitoring plot.

5. Project Success Criteria

Success criteria will be based on the survival of planted species at a density of 260 stems per acre after five years of monitoring. The first annual monitoring activities will commence at the end of the first growing season, at least five months after planting has been completed.

Table 13. Success Criteria

Vegetation
• Within planted portions of the Site, in accordance with Rule 15A NCAC 02B .0295: a) a minimum of 260 stems per acre must be present at year 5, and b) a minimum of four native hardwood and native shrub species in each vegetation monitoring plot, where no one species is greater than 50 % of stems. • Planted and volunteer stems are counted, provided they are included in the approved planting list for the Site; natural recruits not on the planting list may be considered by the DWR on a case-by-case basis.

5.1. Vegetation Contingency / Adaptive Management Plan

An adaptive management plan will be developed and implemented with the approval of DMS and DWR in the event the Site or a specific component of the Site fails to achieve success criteria as outlined above. Other vegetation maintenance and repair activities may include pruning, mulching, and fertilizing. If exotic invasive plant species require treatment, such species will be controlled by mechanical (physical removal with the use of a chainsaw) and/or herbicide application in accordance with North Carolina Department of Agriculture (NCDA) rules and regulations.

5.2. Compatibility with Project Goals

The following table outlines the compatibility of Site performance criteria described above to Site goals and objectives that will be utilized to evaluate if Site goals and objectives are achieved.

Table 14. Compatibility of Performance Criteria to Project Goals and Objectives

Goals	Objectives	Compatibility of Success Criteria with Goals and Objectives
• Removing nonpoint sources of pollution associated with agricultural production, including a) ceasing the broadcast application of fertilizer, pesticides, and other agricultural materials into and adjacent to Site features, and b) providing a restored buffer to filter runoff from adjacent land use • Reducing sedimentation within on-site and downstream receiving waters • Promoting floodwater attenuation by increasing frictional resistance of floodwaters crossing Site floodplains. • Improving aquatic habitat by enhancing stream bed shading and natural detritus input. • Providing a terrestrial wildlife corridor and refuge in an area extensively developed for agricultural production. • Restoring and re-establishing natural community structure, habitat diversity, and functional continuity. • Protecting the Parcel's riparian buffer functions and values in perpetuity.	• Cessation of agricultural row crops from the Site • Cessation of vegetation maintenance along Site features • Mechanical disking of Site soils to reduce compaction and increase soil surface roughness • Plant a diverse woody riparian buffer comprised of native hardwoods • Protect riparian buffers, adjacent floodplains, and FEMA flood zones with a perpetual conservation easement	• Disking of Site soils to provide diffused flow per Rule 15A NCAC 02B .0295 • Planting at a density between 680 and 720 stems per acre, to achieve a minimum of 260 stems per acre by year five of monitoring, as required by Rule 15A NCAC 02B .0295 • Planting of diverse woody riparian buffer to meet the minimum species and percentage requirements detailed in Rule 15A NCAC 02B .0295 – "A minimum of four native hardwood and native shrub species, where no one species is greater than 50 percent of stems."

6. Mitigation Potential

The Site will generate Nutrient Offset (Nitrogen) Credits (NOC) on restored riparian areas measured from the top of bank out perpendicularly 200-feet on subject Features (streams and ephemeral channel).

The Site will generate Neuse River Riparian Buffer Credits (RBC) on restored riparian areas measured from the top of bank out perpendicularly 200-feet on subject Features. Per the Consolidated Mitigation Buffer Rule, the Parcel will generate RBC via allowed activities under Sections (n) Riparian Buffer Restoration Site.

All features will retain diffuse flow except for Feature 1C, where a small area (0.022 acres) at the upper end is not included for crediting as the buffer is less than 50-feet. The upper portion of Feature 1C, which is a ditch with depth greater than 3 feet, was filled during construction of NC DMS Project Number 100185 (Thunder) to promote diffuse flow.

6.1. Determination of Credits

Within the 13.486-acre Site, 13.361 acres of agricultural fields historically used for row crops and 0.068 acres of forested land along unnamed tributaries to Thunder Swamp are proposed for riparian buffer restoration. The primary goals associated with restoring riparian areas within the Site will improve water quality, enhance flood attenuation, and restore wildlife habitat. These goals will be achieved by restoring 13.361 acres of forested riparian buffer and preserving 0.125 acres of existing forest and State waters.

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Table 15. Mitigation Activities and Credit Summary

Thunder Phase B Nutrient Offset Site, 2021-0018v2, Project Credits

Neuse 03020201 - Outside Falls Lake	Project Area
19.16394	N Credit Conversion Ratio (ft^2/pound)
N/A	P Credit Conversion Ratio (ft^2/pound)

Credit Type	Location	Subject? (enter NO if ephemeral or ditch [1])	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (ft^2)	Total (Creditable) Area of Buffer Mitigation (ft^2)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Convertible to Riparian Buffer?	Riparian Buffer Credits	Convertible to Nutrient Offset?	Delivered Nutrient Offset: N (lbs)	Delivered Nutrient Offset: P (lbs)
Nutrient Offset	Rural	Yes	Ditch	Restoration	0-100	1C	52,425	0	1	100%		No	—	Yes	2,735.607	—
Nutrient Offset	Rural	No	Ditch	Restoration	101-200	1C	36,059	0	1	33%		No	—	Yes	1,881.607	—
													—		—	—
Nutrient Offset	Rural	No	Ditch	Restoration	0-50	Less Than 50-Feet Feature 1C	981	0	1	100%		No	—	Yes	51.190	—
													—		—	—
Nutrient Offset	Rural	No	I / P	Restoration	0-100	1A, 1B, 2, 4, 5, & Thunder Creek	9,358	9,358	1	100%	1.00000	Yes	9,358.000	Yes	488.313	—
Nutrient Offset	Rural	No	I / P	Restoration	101-200	1A, 1B, 2, 4, 5, & Thunder Creek	467,962	467,962	1	33%	3.03030	Yes	154,427.614	Yes	24,418.883	—
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						Totals (ft2):	566,785	477,320					163,785.614		29,575.600	0.000
						Total Buffer (ft2):	0	0								
						Total Nutrient Offset (ft2):	566,785	N/A								
						Total Ephemeral Area (ft^2) for Credit:	0	0								
						Total Eligible Ephemeral Area (ft^2):	0	0.0%	Ephemeral Reaches as % TABM							
Enter Preservation Credits Below						Total Eligible for Preservation (ft^2):	0	0.0%	Preservation as % TABM							

Credit Type	Location	Subject?	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (sf)	Total (Creditable) Area for Buffer Mitigation (ft^2)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Riparian Buffer Credits
												—
												—
												—
												—
												—
						Preservation Area Subtotals (ft^2):	0	0				

TOTAL AREA OF BUFFER MITIGATION (TABM)			
Mitigation Totals		Square Feet	Credits
Restoration:		0	0.000
Enhancement:		0	0.000
Preservation:		0	0.000
Total Riparian Buffer:		0	0.000
TOTAL NUTRIENT OFFSET MITIGATION			
Mitigation Totals		Square Feet	Credits
Nutrient Offset:	Nitrogen:	566,785	29,575.600
	Phosphorus:		0.000

7. Long-Term Management Plan

The Site will be transferred to the NCDEQ Stewardship Program. This party shall serve as the conservation easement holder and long-term steward for the property and will conduct periodic inspection of the Site to ensure that restrictions required in the conservation easement are upheld. Funding will be supplied by the responsible party on a yearly basis until such time an endowment is established. The NCDEQ Stewardship Program is developing an endowment system within the non-reverting, interest-bearing Conservation Lands Conservation Fund Account. The use of funds from the Endowment Account will be governed by North Carolina General Statute GS 113A-232(d)(3). Interest gained by the endowment fund may be used for the purpose of stewardship, monitoring, stewardship administration, and land transaction costs, if applicable.

8. References

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1. United States Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.

North Carolina Division of Mitigation Services (NCDMS). 2010 amended 2018. Neuse River Basin Restoration Priorities (online). Available: https://files.nc.gov/ncdeq/Mitigation%20Services/Watershed_Planning/Neuse_River_Basin/RBRP-Neuse-201807-.pdf (September 11, 2020).

Schafale, M.P. 2012. Guide to the Natural Communities of North Carolina: Fourth Approximation. North Carolina Natural Heritage Program, North Carolina Department of Environment and Natural Resources. Raleigh, North Carolina.

State of North Carolina. (1973). Chapter 113A - Article 4. https://www.ncleg.net/enactedlegislation/statutes/html/byarticle/chapter_113a/article_4.html.

State of North Carolina. NCAC Title 15A - Environmental Quality; Chapter 04 - Sedimentation Control. North Carolina Office of Administrative Hearings. http://reports.oah.state.nc.us/ncac.asp?folderName=%5CTitle+15A+-+Environmental+Quality%5CChapter+04+-+Sedimentation+Control.

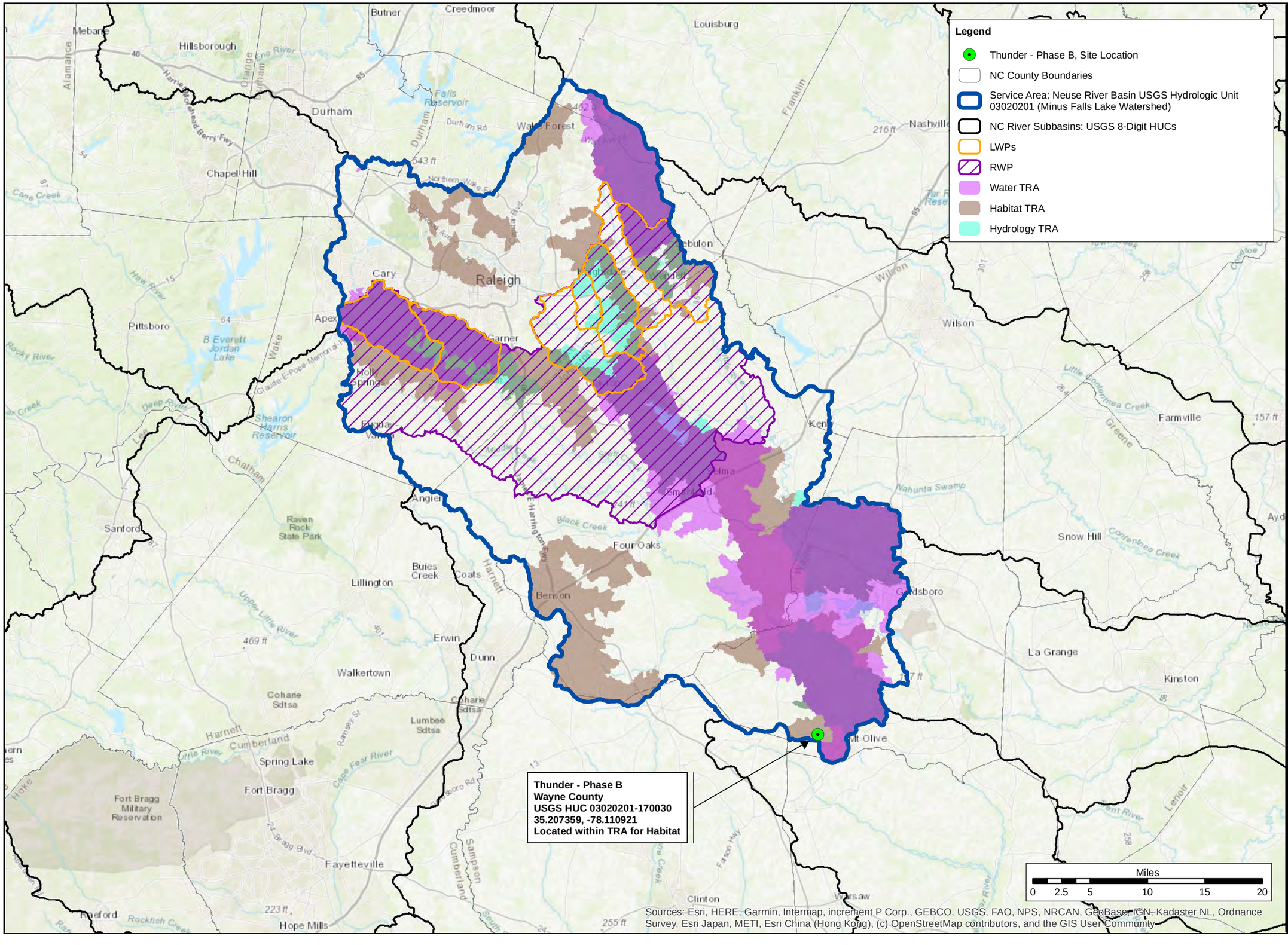
United States Department of Agriculture (USDA). 2019. Web Soil Survey (online). Available: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx [September 2, 2020].

United States Fish and Wildlife Service (USFWS). 2020. Endangered Species, Threatened Species, Federal Species of Concern, and Candidate Species, Wayne County, North Carolina (online, updated July 17, 2020). Available: https://www.fws.gov/raleigh/species/cntylist/wayne.html [September 2, 2020].

Appendix A. Figures & DWR Credit Determination Table

Figure 1. Site Location & Hydrologic Unit Map
Figure 2. US Geological Survey Topo Quad
Figure 3. Soil Survey of Wayne County
Figure 4. Existing Conditions
Figure 5. Restoration Plan
Figure 6. Planting Plan
Figure 7. Riparian Buffer Mitigation Credit Determination
Figure 7A. Riparian Buffer Mitigation Credit Determination (Detailed)
Figure 8. Monitoring Plan

Site Photos



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

SITE LOCATION, HYDROLOGIC UNIT, & SERVICE AREA

Drawn by: RJH

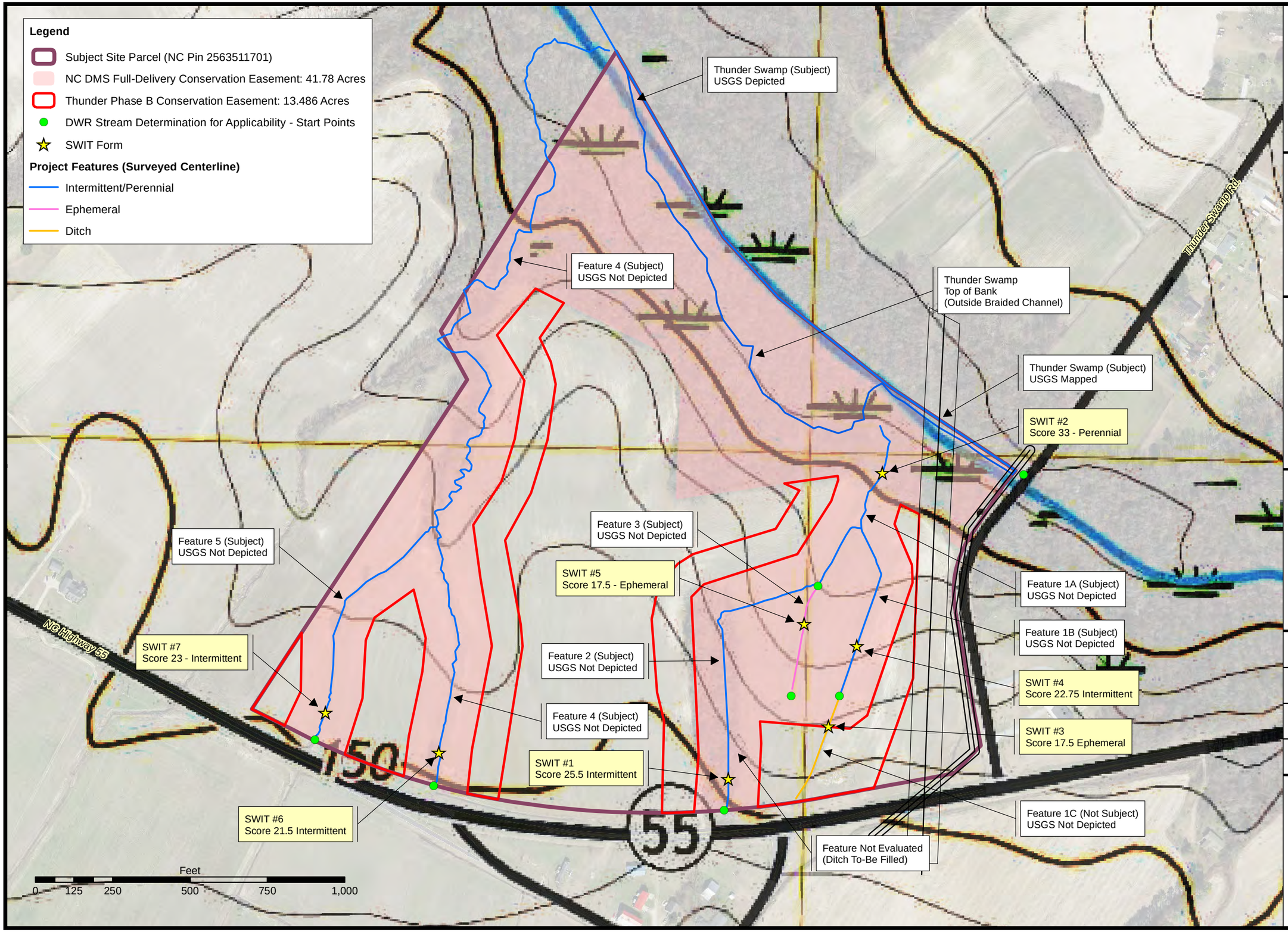
Date: AUG 2022

Scale: 1:450,000

Project No.: 2022-08-0001

FIGURE

1



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Water Resources

401 & Isolated Wetlands/Waters Program & 401 Stormwater

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

USGS TOPO QUAD

Mount Olive, NC (2019) 7.5 minute topographic quadrangle provided by the U.S. Geological Survey (USGS)

Drawn by: RJH

Date: JUNE 2023

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

2

N

Legend

- Subject Site Parcel (NC Pin 2563511701)
- NC DMS Full-Delivery Conservation Easement: 41.78 Acres
- Thunder Phase B Conservation Easement: 13.486 Acres
- DWR Stream Determination for Applicability - Start Points
- SWIT

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch

Thunder Swamp (Subject)
NRCS Depicted

Feature 4 (Subject)
NRCS Depicted

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)
NRCS Depicted

SWIT #2
Score 33 - Perennial

Feature 5 (Subject)
NRCS Depicted

Feature 3 (Subject)
NRCS Depicted

SWIT #5
Score 17.5 - Ephemeral

Feature 1A (Subject)
NRCS Depicted

Feature 1B (Subject)
NRCS Not Depicted

SWIT #7
Score 23 - Intermittent

Feature 2 (Subject)
NRCS Depicted

SWIT #4
Score 22.75 Intermittent

Feature 4 (Subject)
NRCS Depicted

SWIT #1
Score 25.5 Intermittent

SWIT #3
Score 17.5 Ephemeral

SWIT #6
Score 21.5 Intermittent

Feature 1C (Not Subject)
NRCS Not Depicted

Feature Not Evaluated
(Ditch To-Be Filled)

NC Highway 55

Thunder Swamp Rd.

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of
Water Resources

401 & Isolated
Wetlands/Waters
Program & 401
Stormwater

Project:

THUNDER
PHASE B
NUTRIENT OFFSET
SITE

Wayne County, NC

Title:

NRCS SOIL
SURVEY

Soil Survey of Wayne County, NC (1974) provided by the National Resource Conservation Service Sheet 41

Drawn by: RJH

Date: JUNE 2023

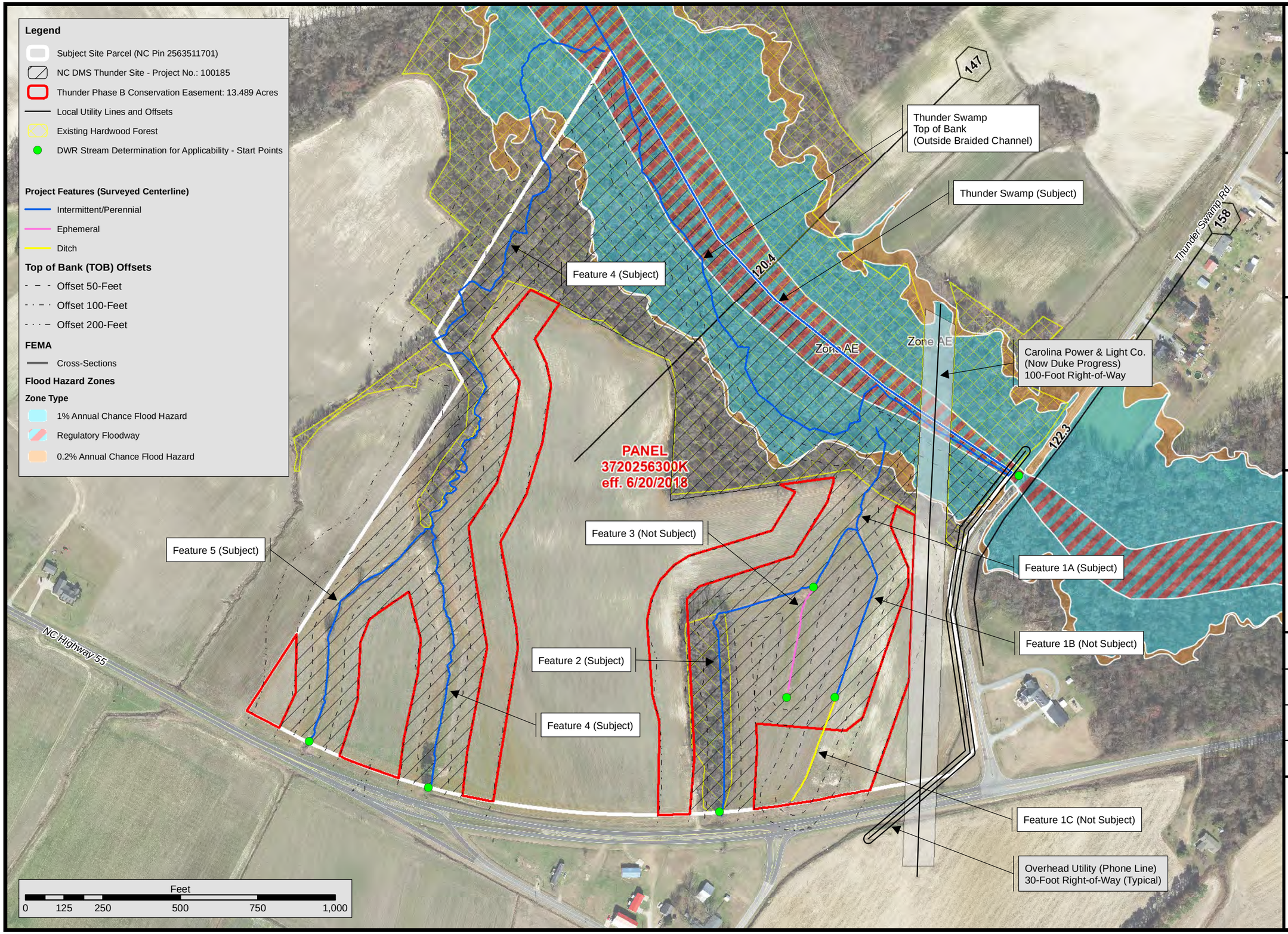
Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

3

N



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

EXISTING CONDITIONS

Source: FEMA Flood Insurance Rate Map 3720256300K, Panel 2563, effective June 20, 2018

2017 NC OneMap

Drawn by: RJH

Date: AUG 2022

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

4

N

Legend

- Subject Site Parcel (NC Pin 2563511701)
- Thunder Phase B Conservation Easement: 13.486 Acres
- NC DMS Thunder Site - Project No.: 100185
- Bare-Root Hardwood Planting and Seeding Area: 13.361 Acres
- DWR Stream Determination for Applicability - Start Points
- Ditches Filled During Construction of Thunder (Proj. No. 100185)

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch

Top of Bank (TOB) Offsets

- Offset 50-Feet
- Offset 100-Feet
- Offset 200-Feet

Feet
0 125 250 500 750 1,000

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)

Feature 4 (Subject)

Carolina Power & Light Co.
(Now Duke Progress)
100-Foot Right-of-Way

Thunder Swamp Rd.

Feature 5 (Subject)

Feature 3 (Not Subject)

Feature 1A (Subject)

Feature 1B (Not Subject)

Feature 2 (Subject)

Overhead Utility (Phone Line)
30-Foot Right-of-Way (Typical)

Feature 4 (Subject)

Feature 1C (Not Subject)

NC Highway 55

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

RESTORATION PLAN

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2023

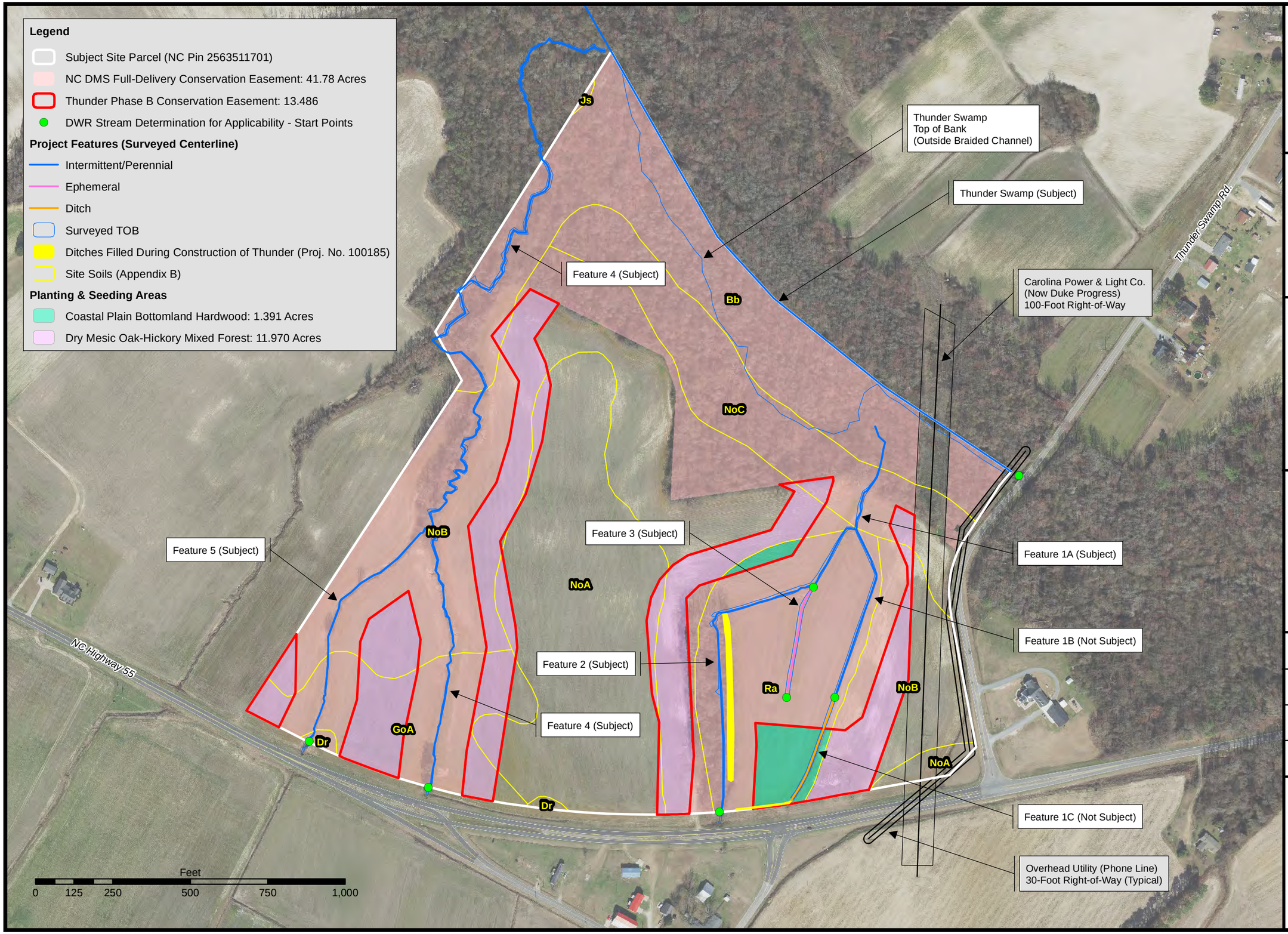
Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

5

N



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ Division of Water Resources

401 & Isolated Wetlands/Waters Program & 401 Stormwater

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

PLANTING PLAN

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2023

Scale: 1:3,500

Project No.: 0000-0000

FIGURE

6

N

Legend

- Subject Site Parcel (NC Pin 2563511701)
- NC DMS Full-Delivery Conservation Easement: 41.78 Acres
- Thunder Phase B Conservation Easement: 13.486 Acres
- Local Utility Lines and Offsets
- DWR Stream Determination for Applicability - Start Points

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch
- Surveyed TOB
- Ditches Filled During Construction of Thunder (Proj. No. 100185)

Top of Bank (TOB) Offsets

- Offset 50-Feet
- Offset 100-Feet
- Offset 200-Feet

Thunder Phase B Proposed Credits

- I/P Restoration 0-100-feet (NOC - RBC Conversion Eligible)
- I/P Restoration 101-200-feet (NOC - RBC Conversion Eligible)
- Ditch Restoration 0-100-feet (NOC Only)
- Ditch Restoration 101-200-feet (NOC Only)
- Preservation (No Credit)
- No Credit (Less Than 50-Ft.)

NOTE ABOUT WIDTHS & CREDITING:

Nutrient Offset Credit (NOC)
Nutrient Offset Credit is contiguous from TOB, is a minimum of 50 ft. from the TOB and a maximum of 200 ft. from the TOB.

Thunder Swamp Top of Bank (Outside Braided Channel)

Feature 4 (Subject)

Thunder Swamp (Subject)

Carolina Power & Light Co. (Now Duke Progress) 100-Foot Right-of-Way

Thunder Swamp Rd.

Feature 5 (Subject)

Feature 3 Drainage Area

Feature 3 (Not Subject)

Feature 2 (Subject)

Feature 4 (Subject)

Feature 1A (Subject)

Feature 1B (Not Subject)

Feature 1C (Not Subject)

NC Highway 55

Utility Line and Pole To-Be Removed

Overhead Utility (Phone Line) 30-Foot Right-of-Way (Typical)

New Top of Bank Post Restoration Activities, Filling of Upper Extent of Feature 1C (Ditch)

Feet
0 125 250 500 750 1,000

N

RESTORATION SYSTEMS | LLC

Prepared for:
NC DEQ Division of Water Resources

401 & Isolated Wetlands/Waters Program & 401 Stormwater

Project:
THUNDER NUTRIENT OFFSET BANK PARCEL

Wayne County, NC

Title:
CREDIT DETERMINATION

2017 NC OneMap

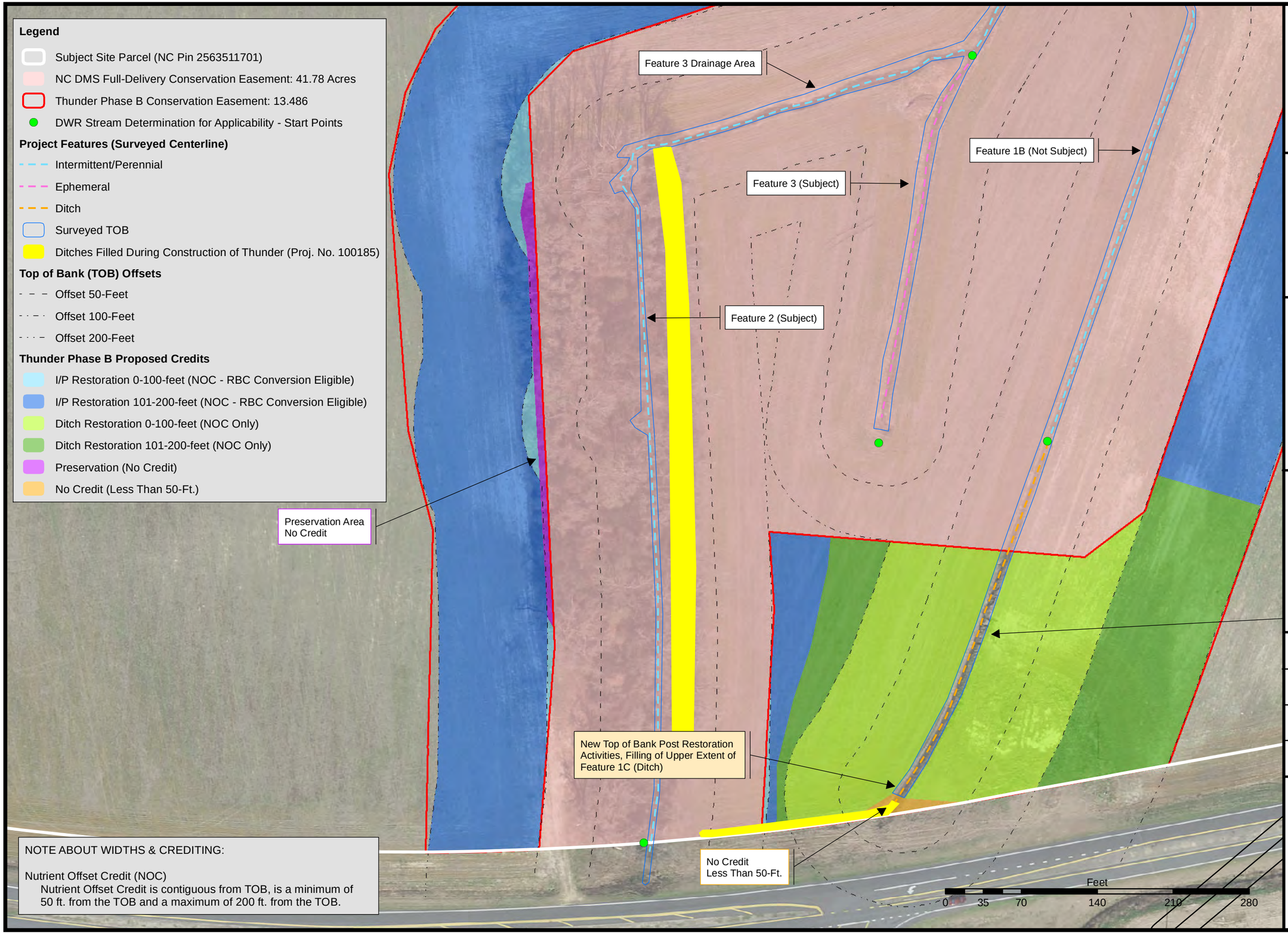
Drawn by: RJH

Date: JUNE 2023

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE
7



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ Division of Water Resources

401 & Isolated Wetlands/Waters Program & 401 Stormwater

Project:

THUNDER NUTRIENT OFFSET BANK PARCEL

Wayne County, NC

Title:

CREDIT DETERMINATION

PRESERVATION AND NON-CREDIT AREAS

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2023

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

7A

Legend

- Subject Site Parcel (NC Pin 2563511701)
- Thunder Phase B Conservation Easement: 13.486
- NC DMS Full-Delivery Conservation Easement: 41.78 Acres
- Thunder Phase B Monitoring Plots (11 Total)
- Local Utility Lines and Offsets
- DWR Stream Determination for Applicability - Start Points

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch
- Surveyed TOB
- Ditches Filled During Construction of Thunder (Proj. No. 100185)

Top of Bank (TOB) Offsets

- Offset 50-Feet
- Offset 100-Feet
- Offset 200-Feet

Thunder Phase B Proposed Credits

- I/P Restoration 0-100-feet (NOC - RBC Conversion Eligible)
- I/P Restoration 101-200-feet (NOC - RBC Conversion Eligible)
- Ditch Restoration 0-100-feet (NOC Only)
- Ditch Restoration 101-200-feet (NOC Only)
- Preservation (No Credit)
- No Credit (Less Than 50-feet)

MONITORING NOTES:

Quantitative sampling will include eleven (11) permanent 10 x10-meter vegetation plots, 2.02% of the Total Restoration Area (TRA).

1, 10 x10-meter vegetation plots = 1,076.39 sq. ft.
TRA = 587,450.16 sq. ft.
2% of TRA = 11,749.003 sq. ft. / 1,076.39 sq. ft. = 10.92

10.92 round-up to 11 vegetation plots accounting for 2.02% of the TRA.

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)

Feature 4 (Subject)

Carolina Power & Light Co.
(Now Duke Progress)
100-Foot Right-of-Way

Thunder Swamp Rd.

Feature 3 (Not Subject)

Feature 1A (Subject)

Feature 1B (Not Subject)

Feature 5 (Subject)

Feature 2 (Subject)

Feature 4 (Subject)

Feature 1C (Not Subject)

Overhead Utility (Phone Line)
30-Foot Right-of-Way (Typical)

NC Highway 55

Feet
0 125 250 500 750 1,000

RESTORATION SYSTEMS | LLC

Prepared for:
NC DEQ Division of Water Resources

401 & Isolated Wetlands/Waters Program & 401 Stormwater

Project:
THUNDER NUTRIENT OFFSET BANK PARCEL

Wayne County, NC

Title:
MONITORING PLAN

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2023

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE
8

N

Photo 1 –Features 1A, 1B, 1C, 2, and 3 (Looking North w/ Hwy. 55 in the foreground) –Photo Date, October 17, 2023

Photo 2 –Features 1A, 1B, 2, and 3 (Looking North w/ Hwy. 55 in the background) –Photo Date, October 17, 2023

Photo 3 –Features 1A, 1B, 1C, 2, and 3 (Looking North w/ Hwy. 55 in the foreground & Thunder Swamp Rd. in the background) –Photo Date, October 17, 2023

Photo 4 –Features 4 and 5 (Looking North w/ Hwy. 55 in the foreground) –Photo Date, October 17, 2023

Photo 5 –Features 4 and 5 (Looking North w/ Hwy. 55 in the foreground) –Photo Date, October 17, 2023

Photo 6 –Lower half of Features 4 (Looking Northwest) –Photo Date, October 17, 2023

Photo 7 –Thunder Swamp (Overhead, Northwest area of the Project) –Photo Date, October 17, 2023

Photo 8 –Thunder Swamp (Southern extent of top of bank) –Photo Date, March 29, 2021

Appendix B. Data

SWIT Sheets (1-7)
Soils Report

SWIT #1

NC DWQ Stream Identification Form Version 4.11

Date: 9/12/20	**Project/Site:** Thunder - Feature 2	**Latitude:** 35.205656
Evaluator: Jennigan / Avon	**County:** Wayne	**Longitude:** -78.111935
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 25.5	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	(1)	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream flowing out of culvert under NC-55. Strong baseflow and dense canopy here

Sketch:

SWIT #2

NC DWQ Stream Identification Form Version 4.11

Downstream

Date: 8/17/20	**Project/Site:** Thunder - Feature 1	**Latitude:** 35.20843
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.110056
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 33	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 18.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 10)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Very strong baseflow into broad Thunder Swamp footprint. No benthics or fish observed, but habitat has been impacted by recent heavy rains.

Sketch:

NC DWQ Stream Identification Form Version 4.11

upstream SUIT#3

Date: 8/17/20	**Project/Site:** Thunder - Feature 1	**Latitude:** 35.206269
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.11069
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 17.5	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 4.5)

	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank *	0	1	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)

12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)

18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream becomes fairly obviously ephemeral as valley gets weaker and it loses geomorphology.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Middle SWT = 4

Date: 8/17/20	**Project/Site:** Thunder - Feature 1	**Latitude:** 35.206818
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.11045
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22.75	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank * Ditch	0	1	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = (0.75); OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream develops more prominent geomorphological and hydrological features.

Sketch:

SWT #5

NC DWQ Stream Identification Form Version 4.11

Date: 8/17/20	**Project/Site:** Thunder Feature 3	**Latitude:** 35.206996
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.111012
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 7.25	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank *	0	1	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

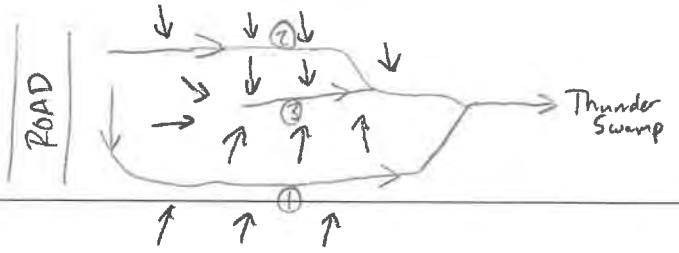
B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	1	(2)	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4.75)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = (0.75) OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: This feature lies in the center of the valley. Its drainage area has been partially intercepted by a roadside ditch that feeds Feature 1. It collects and transports the majority of the surface water between features 1 and 2.

Sketch:



TOB: 5'

SWIT #6

NC DWQ Stream Identification Form Version 4.11

Date: 8/17/20	**Project/Site:** Thunder - Feature 4	**Latitude:** 35.205872
Evaluator: Jerniqua / Aaron	**County:** Wayne	**Longitude:** -78.119968
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21.5	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank * Ditch	0	1	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

SWIT # 7

NC DWQ Stream Identification Form Version 4.11

Date: 8/17/20	**Project/Site:** Thunder - Features	**Latitude:** 35.206224
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.116223
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 23	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank * Ditched	0	1	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = (1.5) Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Wayne County, North Carolina

Thunder

May 14, 2021

Preface

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

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

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

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

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

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

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map

Map Scale: 1:6,350 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 50 100 200 300

Feet
0 300 600 1200 1800

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Wayne County, North Carolina
Survey Area Data: Version 18, Jun 3, 2020

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

Date(s) aerial images were photographed: Oct 22, 2018—Oct 25, 2018

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
Bb	Bibb sandy loam	13.1	16.9%
Dr	Dragston loamy sand	0.2	0.3%
GoA	Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain	6.0	7.8%
Js	Johnston loam	0.0	0.1%
NoA	Norfolk loamy sand, 0 to 2 percent slopes	14.3	18.5%
NoB	Norfolk loamy sand, 2 to 6 percent slopes	27.3	35.3%
NoC	Norfolk loamy sand, 6 to 10 percent slopes	7.3	9.4%
Ra	Rains sandy loam, 0 to 2 percent slopes	9.2	11.9%
Totals for Area of Interest		**77.6**	**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.

Wayne County, North Carolina

Bb—Bibb sandy loam

Map Unit Setting

National map unit symbol: 3wyb
Elevation: 80 to 330 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 210 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Bibb, undrained, and similar soils: 80 percent
Johnston, undrained, and similar soils: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bibb, Undrained

Setting

Landform: Flood plains
Landform position (two-dimensional): Toeslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy alluvium

Typical profile

A - 0 to 6 inches: sandy loam
Cg1 - 6 to 60 inches: sandy loam
Cg2 - 60 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Description of Johnston, Undrained

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy alluvium

Typical profile

A - 0 to 30 inches: mucky loam
Cg1 - 30 to 34 inches: loamy fine sand
Cg2 - 34 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Ponded
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Available water capacity: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Dr—Dragston loamy sand

Map Unit Setting

National map unit symbol: 3wyh
Elevation: 0 to 20 feet
Mean annual precipitation: 42 to 58 inches
Mean annual air temperature: 61 to 64 degrees F
Frost-free period: 190 to 270 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Dragston, drained, and similar soils: 45 percent
Dragston, undrained, and similar soils: 40 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dragston, Drained

Setting

Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and loamy fluviomarine deposits and/or marine deposits

Typical profile

A - 0 to 6 inches: loamy fine sand
E - 6 to 10 inches: loamy fine sand

Bt - 10 to 42 inches: sandy loam
2Cg - 42 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A/D
Hydric soil rating: No

Description of Dragston, Undrained

Setting

Landform: Marine terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy and loamy fluviomarine deposits and/or marine deposits

Typical profile

A - 0 to 6 inches: loamy fine sand
E - 6 to 10 inches: loamy fine sand
Bt - 10 to 42 inches: sandy loam
2Cg - 42 to 80 inches: loamy sand

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 12 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Hydric soil rating: No

Minor Components

Portsmouth, undrained

Percent of map unit: 3 percent
Landform: Flats on marine terraces, depressions on marine terraces

Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Nimmo, undrained

Percent of map unit: 2 percent
Landform: Depressions on marine terraces, flats on marine terraces
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: Yes

GoA—Goldsboro loamy sand, 0 to 2 percent slopes, Southern Coastal Plain

Map Unit Setting

National map unit symbol: 2v750
Elevation: 110 to 300 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Goldsboro and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Goldsboro

Setting

Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 9 inches: loamy sand
E - 9 to 12 inches: loamy sand
Bt - 12 to 62 inches: sandy clay loam
Btg - 62 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 24 to 36 inches

Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Norfolk

Percent of map unit: 8 percent
Landform: Broad interstream divides on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Hydric soil rating: No

Lynchburg

Percent of map unit: 7 percent
Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Js—Johnston loam

Map Unit Setting

National map unit symbol: 3wym
Elevation: 80 to 330 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 210 to 265 days
Farmland classification: Not prime farmland

Map Unit Composition

Johnston, undrained, and similar soils: 85 percent
Johnston, drained, and similar soils: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Johnston, Undrained

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy alluvium

Typical profile

A - 0 to 30 inches: mucky loam
Cg1 - 30 to 34 inches: loamy fine sand
Cg2 - 34 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Ponded
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Available water capacity: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Description of Johnston, Drained

Setting

Landform: Flood plains
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy alluvium

Typical profile

A - 0 to 30 inches: mucky loam
Cg1 - 30 to 34 inches: loamy fine sand
Cg2 - 34 to 80 inches: fine sandy loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Runoff class: Ponded
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: FrequentNone
Frequency of ponding: Frequent
Available water capacity: High (about 9.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

NoA—Norfolk loamy sand, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2v75w
Elevation: 10 to 330 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Norfolk and similar soils: 83 percent
Minor components: 17 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Norfolk

Setting

Landform: Broad interstream divides on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
E - 8 to 14 inches: loamy sand
Bt - 14 to 65 inches: sandy clay loam
BC - 65 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 40 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Goldsboro

Percent of map unit: 9 percent
Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Wagram

Percent of map unit: 8 percent
Landform: Broad interstream divides on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Crest, talf
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

NoB—Norfolk loamy sand, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2v75y
Elevation: 30 to 450 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Norfolk and similar soils: 83 percent
Minor components: 17 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Norfolk

Setting

Landform: Broad interstream divides on marine terraces, flats on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 8 inches: loamy sand
E - 8 to 14 inches: loamy sand
Bt - 14 to 65 inches: sandy clay loam
BC - 65 to 80 inches: sandy clay loam

Properties and qualities

Slope: 2 to 6 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 40 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Wagram

Percent of map unit: 10 percent
Landform: Broad interstream divides on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Riser, rise
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Goldsboro

Percent of map unit: 7 percent
Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

NoC—Norfolk loamy sand, 6 to 10 percent slopes

Map Unit Setting

National map unit symbol: 3wz7
Elevation: 80 to 330 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 210 to 265 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Norfolk and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Norfolk

Setting

Landform: Broad interstream divides on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 9 inches: loamy sand
E - 9 to 14 inches: loamy sand
Bt - 14 to 70 inches: sandy clay loam
C - 70 to 100 inches: sandy clay loam

Properties and qualities

Slope: 6 to 10 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 40 to 72 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Hydric soil rating: No

Ra—Rains sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2v760
Elevation: 30 to 330 feet
Mean annual precipitation: 40 to 55 inches
Mean annual air temperature: 59 to 70 degrees F
Frost-free period: 200 to 280 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Rains, undrained, and similar soils: 58 percent
Rains, drained, and similar soils: 24 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rains, Undrained

Setting

Landform: Carolina bays on marine terraces, broad interstream divides on marine terraces, flats on marine terraces
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Typical profile

A - 0 to 6 inches: sandy loam
Eg - 6 to 12 inches: sandy loam
Btg - 12 to 65 inches: sandy clay loam
BCg - 65 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 0 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Description of Rains, Drained

Setting

Landform: Carolina bays on marine terraces, broad interstream divides on marine terraces, flats on marine terraces
Landform position (three-dimensional): Dip, talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy marine deposits

Typical profile

Ap - 0 to 6 inches: sandy loam
Eg - 6 to 12 inches: sandy loam
Btg - 12 to 65 inches: sandy clay loam
BCg - 65 to 80 inches: sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 1.98 in/hr)
Depth to water table: About 12 to 36 inches
Frequency of flooding: None

Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B
Hydric soil rating: Yes

Minor Components

Lynchburg

Percent of map unit: 10 percent
Landform: Flats on marine terraces, broad interstream divides on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Pantego, undrained

Percent of map unit: 8 percent
Landform: Stream terraces, flats, broad interstream divides
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

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

Appendix C. Agency Letters/Correspondence

DWR Stream Determination Letter, February 26, 2021
DWR Verification of Site Viability Letter, March 14, 2023
DWR Site Viability Letter, April 13, 2021
Approved Jurisdictional Determination
FEMA Floodplain Checklist
Certificate of Ownership

ROY COOPER
Governor
DIONNE DELLI-GATTI
Secretary
S. DANIEL SMITH
Director

NORTH CAROLINA
Environmental Quality

April 13, 2021

Raymond Holz
Restoration Systems, LLC
(via electronic mail: rholz@restorationsystems.com)

Re: Site Viability for Buffer Mitigation & Nutrient Offset – Thunder Site
1105 NC-55, Mt. Olive (near 35.205514, -78.110868)
Neuse 03020201
Wayne County

Dear Mr. Holz,

On December 11, 2020, Katie Merritt, with the Division of Water Resources (DWR), received a request from you on behalf of Restoration Systems, LLC (RS) for a site visit near the above-referenced site in the Neuse River Basin within the 8-digit Hydrologic Unit Code 03020201. The site visit was to determine the potential for riparian buffer mitigation and nutrient offset within a proposed conservation easement boundary, which is more accurately depicted in the attached map labeled "Figure 1-Existing Conditions" (Figure 1) prepared by RS. The proposed easement boundary in Figure 1, includes all riparian areas intended to be proposed as part of a full-delivery project for the Division of Mitigation Services (RFP #16-20200402) as well as a private mitigation bank by RS. On March 24, 2021, Ms. Merritt performed a site assessment of the subject site. Staff with RS were also present.

Ms. Merritt's evaluation of the features onsite and their associated mitigation determination for the riparian areas are provided in the table below. This evaluation was made from Top of Bank (TOB) and landward 200' from each feature for buffer mitigation pursuant to 15A NCAC 02B .0295 (effective November 1, 2015) and for nutrient offset credits pursuant to 15A NCAC 02B .0703.

Feature	Classification onsite	[1]Subject to Buffer Rule	Riparian Land uses adjacent to Feature (0-200')	Buffer Credit Viable	[3]Nutrient Offset Viable	[4,5]Mitigation Type Determination w/in riparian areas
3	Ephemeral	No	Non-forested agricultural fields	[6]Yes	Yes	**Restoration Site** per 15A NCAC 02B .0295 (o)(7)
1a	Stream	Yes	Combination of non-forested agricultural fields with mature forest downstream to thunder swamp	[2]Yes	Yes (fields only)	Non-forested fields - **Restoration Site** per 15A NCAC 02B .0295 (n) Forested Areas – **Preservation Site** per 15A NCAC 02B .0295 (o)(5)
1b	Stream	No	Non-forested agricultural fields	Yes	Yes	**Restoration Site** per 15A NCAC 02B .0295 (n)

Feature	Classification onsite	[1]Subject to Buffer Rule	Riparian Land uses adjacent to Feature (0-200')	Buffer Credit Viable	[3]Nutrient Offset Viable	[4,5]Mitigation Type Determination w/in riparian areas
1c	Ditch >3' depth	No	Non-forested agricultural fields and partially located within a DOT Right Of Way (ROW)	No	Yes	**Restoration Site** per 15A NCAC 02B .0295 (n) Note: No credits are allowed within the DOT R.O.W
2	Stream	Yes	Combination of non-forested agricultural fields with mature forest a linear ditch within the riparian area along the right bank	Yes	Yes (fields only)	Non-forested fields - **Restoration Site** per 15A NCAC 02B .0295 (n) Forested Areas – **Preservation Site** per 15A NCAC 02B .0295 (o)(5) Note: Ditch needs to be filled
4	Stream	Yes	Combination of non-forested agricultural fields with mature forest downstream below confluence with feature 5. Upstream is partially located within a DOT ROW & Banks are unstable and eroding in many areas, some sink holes are present.	[2]Yes	Yes (fields only)	Non-forested areas - **Restoration Site** per 15A NCAC 02B .0295 (n) Forested Areas – **Preservation Site** per 15A NCAC 02B .0295 (o)(5) *Minor bank stabilization and grading needed where bank stability is compromised and where erosional rills, sink holes and gullies are observed* Note: No credits are allowed within the DOT R.O.W
5	Stream	Yes	Non-forested agricultural fields Upstream is partially located within a DOT ROW	Yes	Yes	**Restoration Site** per 15A NCAC 02B .0295 (n) *Minor bank stabilization and grading needed where bank stability is compromised and where erosional rills and gullies are observed* Note: No credits are allowed within the DOT R.O.W
Thunder Swamp	Stream	Yes	Mature forest	[2]Yes	No	**Preservation Site** per 15A NCAC 02B .0295 (o)(5)

[1]Subjectivity calls for the features were determined by DWR in correspondence dated February 26, 2021 (ID# 2021-0018) using the 1:24,000 scale quadrangle topographic map prepared by USGS and the most recent printed version of the soil survey map prepared by the NRCS .

[2]The area of preservation credit within a buffer mitigation site shall comprise of no more than 25 percent (25%) of the total area of buffer mitigation per 15A NCAC 0295 (o)(5) and 15A NCAC 0295 (o)(4). Site cannot be a Preservation Only site to comply with this rule.

[3]*NC Division of Water Resources - Methodology and Calculations for determining Nutrient Reductions associated with Riparian Buffer Establishment*

[4]Determinations made for this Site are determined based on the proposal provided in maps and figures submitted with the request.

[5] All features proposed for buffer mitigation or nutrient offset, must have a planted conservation easement established that includes the tops of channel banks when being measured perpendicular and landward from the banks, even if no credit is viable within that riparian area.

[6]The area of the mitigation site on ephemeral channels shall comprise no more than 25 percent (25%) of the total area of buffer mitigation per 15A NCAC 02B .0295 (o)(7).

Determinations provided in the table above were based on the proposed conservation easement boundaries depicted in Figure 1 for the full-delivery mitigation site and the private mitigation bank site. The two easement boundaries are contiguous, and thus, the approval of the private mitigation bank site will be dependent on the approval and implementation of the full-delivery mitigation site. The map representing the proposal for the site is attached to this letter and is initialed by Ms. Merritt on April 13, 2021. Substantial changes to the proposed easement boundaries could affect the site's potential to generate buffer mitigation and nutrient offset credits.

This letter does not constitute an approval of this Site to generate buffer and nutrient offset credits. Pursuant to 15A NCAC 02B .0295, a mitigation proposal and a mitigation plan shall be submitted to DWR for written approval **prior** to conducting any mitigation activities in riparian areas and/or surface waters for buffer mitigation credit. Pursuant to 15A NCAC 02B .0703, a proposal regarding a proposed nutrient load-reducing measure for nutrient offset credit shall be submitted to DWR for approval prior to any mitigation activities in riparian areas and/or surface waters.

All vegetative plantings, performance criteria and other mitigation requirements for riparian restoration, enhancement and preservation must follow the requirements in 15A NCAC 02B .0295 to be eligible for buffer and/or nutrient offset mitigation credits. For any areas depicted as not being viable for nutrient offset credit above, one could propose a different measure, along with supporting calculations and sufficient detail to support estimates of load reduction, for review by the DWR to determine viability for nutrient offset in accordance with 15A NCAC 02B .0703.

This viability assessment will expire on April 13, 2023 or upon approval of a mitigation plan by the DWR, whichever comes first. This letter should be provided in any nutrient offset, buffer, stream or wetland mitigation plan for this Site.

Please contact Katie Merritt at (919) 707-3637 if you have any questions regarding this correspondence.

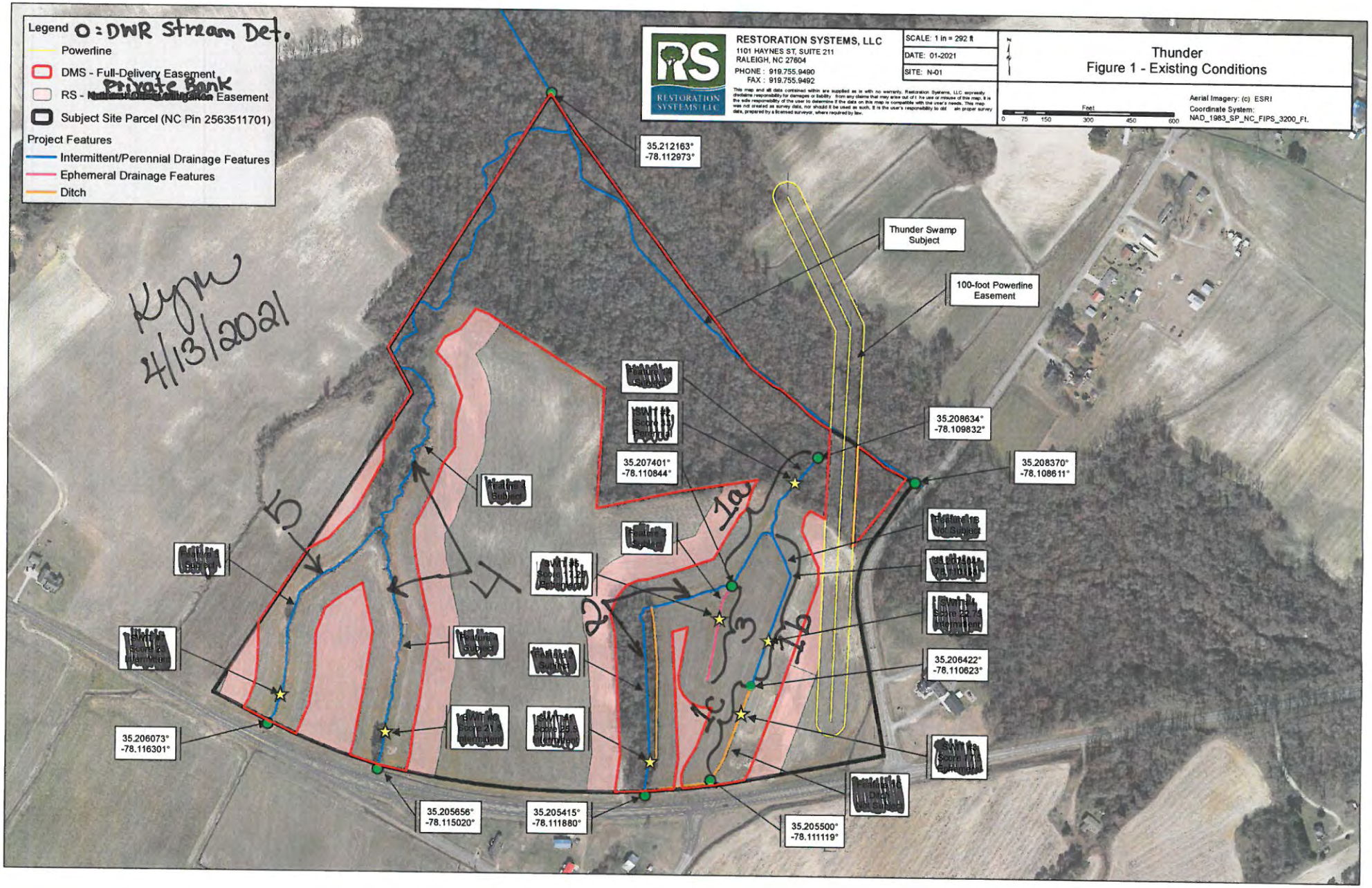
Sincerely,

DocuSigned by:
Paul Wojoski
949D91BA53EF4E0...

Paul Wojoski, Supervisor
401 and Buffer Permitting Branch

PW/kym
Attachments: "Figure 1 – Existing Conditions"

cc: File Copy (Katie Merritt)



Holz, Raymond

From: Merritt, Katie <katie.merritt@ncdenr.gov>
Sent: Tuesday, March 14, 2023 4:50 PM
To: Ray Holz
Cc: Dunnigan, Emily
Subject: RE: [External] Coor Island Phase B (DWR 2021-0021v2) & Thunder Phase B (DWR 2021-0018v2)

Hey Raymond,
Thank you for you letting me know. The Coor Island Phase B & Thunder Phase B BPDP documents along with the corresponding draft UMBI are formally withdrawn from the DWR Bank review. Please make sure to still use the same DWR project ID numbers that were assigned to these two sites when submitting documents to DMS.

The site viability letters for these two sites are still valid, as long as there have been no landuse changes since the initial DWR review of the two draft BPDP documents.

Thank you,
Katie

From: Ray Holz <rholz@restorationsystems.com>
Sent: Tuesday, March 14, 2023 3:26 PM
To: Merritt, Katie <katie.merritt@ncdenr.gov>
Cc: Dunnigan, Emily <emily.dunnigan@ncdenr.gov>
Subject: [External] Coor Island Phase B (DWR 2021-0021v2) & Thunder Phase B (DWR 2021-0018v2)

Katie – Following up on our conversation earlier today, I wanted to provide you with formal notice that Restoration Systems (RS) would like to terminate the banking process for Coor Island Phase B (DWR 2021-0021v2) & Thunder Phase B (DWR 2021-0018v2). RS received contracts from DEQ to provide these sites via full-delivery contracts through DMS. We have started that process and will submit mitigation plans to DMS soon. RS will apply comments received from DWR during the Draft BPDP submittal/review process.

Given that RS has already started the permitting process on these two sites and DWR has reviewed/made comments to the drafts, I wanted to confirm that our viability letters are still valid. Each Site's viability letter states, "This viability assessment will expire on April 13, 2023, or upon approval of a mitigation plan by the DWR, whichever comes first" – attached for quick reference.

Please let me know if we need to address the expiration of the viability letters.

Thanks,
RH

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Raymond J. Holz | Restoration Systems, LLC
1101 Haynes St. Suite 211 | Raleigh, NC 27604
tel: 919.334.9122 | cell: 919.604.9314 | fax: 919.755.9492
email: rholz@restorationsystems.com

ROY COOPER
Governor
MICHAEL S. REGAN
Secretary
S. DANIEL SMITH
Director

NORTH CAROLINA
Environmental Quality

February 26, 2021

Betty Carraway
c/o Raymond Holz
Restoration Systems, LLC
1101 Haynes Street Suite 211
Raleigh, North Carolina 27604

2021 0018 v1
Wayne County

Subject: **On-Site Determination** for Applicability to Neuse Riparian Buffer Rules (15A NCAC 02B .0714)

Subject Property/ Project Name: Thunder Mitigation Site

Address/Location: 1107 NC Hwy 55, Mt. Olive, NC 28635 Wayne County

Stream(s) Evaluated: (8) – UT 1 to UT 5 to Thunder swamp, Neuse River Basin

Determination Date: January 21, 2021 Staff: Allen Stewart

Determination Type:	
Buffer:	Stream:
X - Neuse (15A NCAC 02B .0714) - Tar-Pamlico (15A NCAC 02B .0734 - Catawba (15A NCAC 02B .0614) - Jordan (15A NCAC 02B .0267) (governmental and/or interjurisdictional projects) - Randleman (15A NCAC 02B .0724) - Goose Creek (15A NCAC 02B .0605-.0608)	X - Intermittent/Perennial Determination

Stream	E/I/P*	Not Subject	Subject	Start@	Stop@	Soil Survey	USGS Topo
Feature 1a / UT 1	P		X	35.207401, -78.110844	35.208634, -78.109632	X	
Feature 1b / UT 1b	I	X		35.206422, -78.110623	35.207909, -78.110380		
Feature 1c / UT 1c	E / Ditch	X		35.205500, -78.111119	35.206422, -78.110623		
Feature 2 / UT 2	I		X	35.205415, -78.111880	35.207401, -78.110844	X	
Feature 3 / UT 3	E	X		35.206422, -78.111144	35.207401, -78.110844	X	
Feature 4 / UT 4	I		X	35.205656, -78.115020	35.207863, -78.115017	X	
Feature 5 / UT 5	I		X	35.206073, -78.116301	35.212163, -78.112973	X	
Thunder Swamp	P		X	35.208370, -78.108611	35.212163, -78.112973	X	X

*Ephemeral / Intermittent / Perennial

Dear Ms. Carraway,

The Division of Water Resources has determined that the streams listed above and included on the attached map have been located on the most recent published (1974) NRCS Soil Survey of Wayne County, North Carolina and/or the most recent copy of the Mt. Olive USGS Topographic map at a 1:24,000 scale and evaluated for applicability to the Neuse Riparian Buffer Rule. Features 1b and 1c were determined to be the relocation of Feature 3 (the soils map shows it historically continuing to the road) this is backed up by the soil type (Rains) and Lidar imaging. They are not mapped and therefore not subject to buffer rules. What remains of Feature 3 today has a score of 17.25 on the SWIT form and is not subject. Feature 1b scored at 22.75 on the SWIT form and is acting as an intermittent natural stream. Feature 1c scored 17.5 on the SWIT form, remains a ditch and not subject. For Each stream that is checked "Not Subject" it has been determined to not be at least intermittent or not present on the property. Streams that are checked "Subject" have been mapped on (1974) NRCS Soil Survey and/or USGS Topographic map 1:24,000, located on the property and possess characteristics that qualify them to be at least intermittent streams. There may be other streams or features located on the property that do not appear on the maps referenced above but may be considered jurisdictional according to the US Army Corps of Engineers and subject to the Clean Water Act.

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the DWR may request a determination by the Director. An appeal request must be made within sixty (60) calendar days of date of this letter to the Director in writing.

If sending via US Postal Service:
c/o *Paul Wojoski*
DWR – 401 & Buffer Permitting Unit
1617 Mail Service Center
Raleigh, NC 27699-1617

If sending via delivery service (UPS, FedEx, etc.):
c/o Paul Wojoski
DWR – 401 & Buffer Permitting Unit
512 N. Salisbury Street
Raleigh, NC 27604

This determination is final and binding as detailed above unless an appeal is requested within sixty (60) days.

This determination only addresses the applicability to the buffer rules and does not approve any activity within the buffers or waters. The project may require a Section 404/401 Permit for the proposed activity. Any inquiries regarding applicability to the Clean Water Act should be directed to the US Army Corps of Engineers Raleigh Regulatory Field Office at (919)-554-4884 Ext. 22.

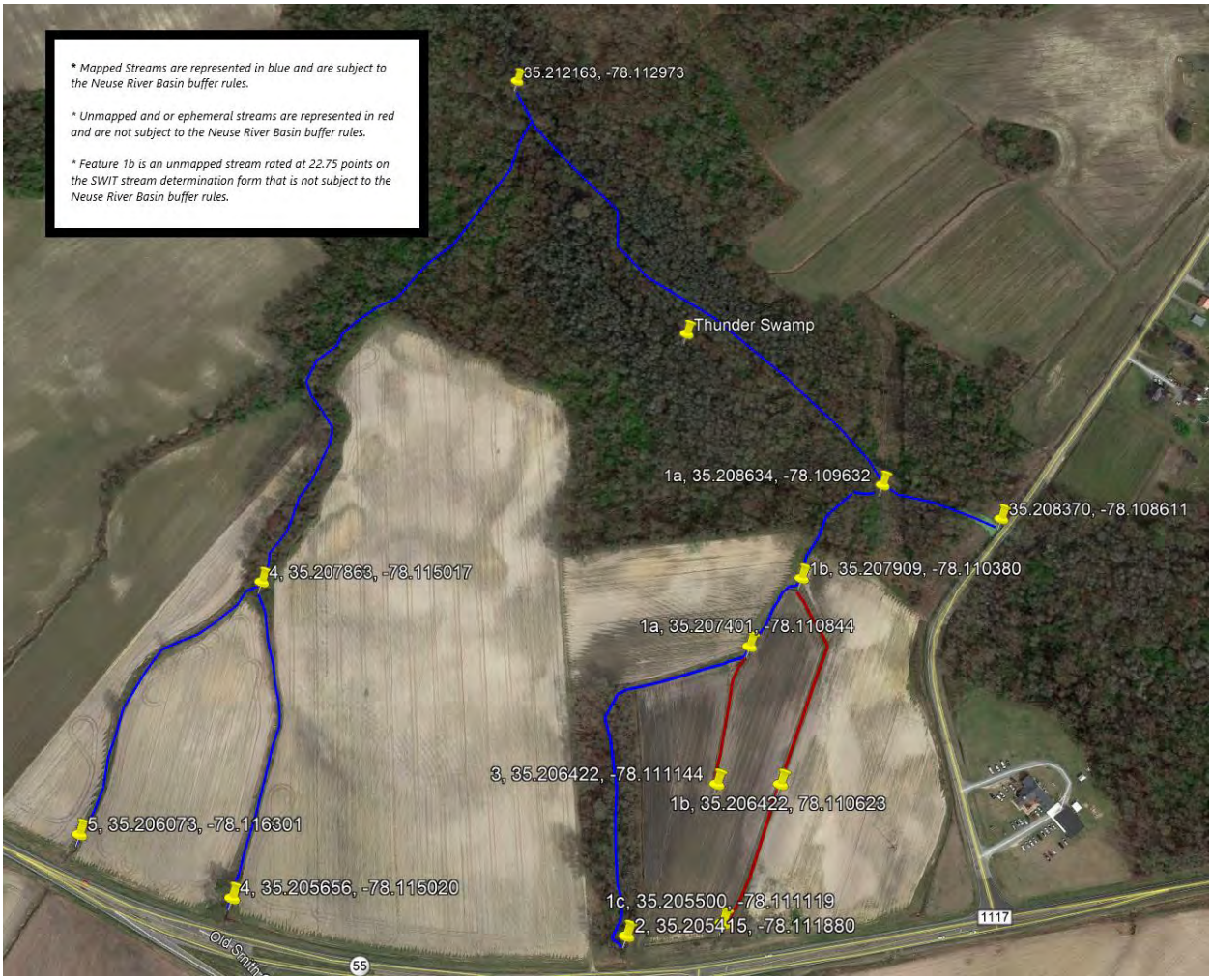
If you have questions regarding this determination, please feel free to contact Allen Stewart at (252) 946-6481.

Sincerely,

Robert Tankard

Robert Tankard, Assistant Regional Supervisor
Water Quality Regional Operations Section
Division of Water Resources, NCDEQ

cc: WaRO DWR File Copy/LASERFICHE
Raymond Holz, Restoration Systems LLC, rholz@restorationsystems.com
Katie Merritt, NCDWR 401 & Buffer Permitting Branch, Katie.Merritt@ncdenr.gov
Samantha Dailey, US Army Corps of Engineers Raleigh Regulatory Field Office,


* Mapped Streams are represented in blue and are subject to the Neuse River Basin buffer rules.
* Unmapped and or ephemeral streams are represented in red and are not subject to the Neuse River Basin buffer rules.
* Feature 1b is an unmapped stream rated at 22.75 points on the SWIT stream determination form that is not subject to the Neuse River Basin buffer rules.
35.212163, -78.112973
Thunder Swamp
1a, 35.208634, -78.109632
35.208370, -78.108611
4, 35.207863, -78.115017
1b, 35.207909, -78.110380
1a, 35.207401, -78.110844
3, 35.206422, -78.111144
1b, 35.206422, 78.110623
5, 35.206073, -78.116301
4, 35.205656, -78.115020
1c, 35.205500, -78.111119
2, 35.205415, -78.111880
1117
55

From:	Thompson, Emily B CIV USARMY CESAW (US)
To:	Alex Baldwin
Subject:	SAW-2021-01102 (Thunder Buffer Mitigation Site/Wayne)
Date:	Friday, May 21, 2021 12:54:31 PM
Attachments:	SAW-2021-01102 Thunder Buffer Mitigation Site Map.pdf

Hi Alex,

On May 13, 2021, we received information from you requesting the Wilmington District, Regulatory Division review and concur with the boundaries of an aquatic resource delineation.

We have reviewed the information provided by you concerning the aquatic resources, and by copy of this e-mail, are confirming that the aquatic resources delineation has been verified by the Corps to be a sufficiently accurate and reliable representation of the location and extent of aquatic resources within the identified review area. The location and extent of these aquatic resources are shown on the delineation map, labeled *Figure 5 – Potential Waters of the U.S. Jurisdictional Delineation Concurrence* and provided on May 13, 2021 without revisions.

Regulatory Guidance Letter (RGL) 16-01

https://usace.contentdm.oclc.org/utils/getfile/collection/p16021coll9/id/1256 provides guidance for Jurisdictional Determinations (JD) and states “The Corps generally does not issue a JD of any type where no JD has been requested”. At this time we are only verifying the delineation. This delineation may be relied upon for use in the permit evaluation process, including determining compensatory mitigation. “This verification does not address nor include any consideration for geographic jurisdiction on aquatic resources and shall not be interpreted as such. This delineation verification is not an Approved Jurisdictional Determination (AJD) and is not an appealable action under the Regulatory Program Administrative Appeal Process (33 CFR Part 331). However, you may request an AJD, which is an appealable action.

If you wish to receive a Preliminary Jurisdictional Determination (PJD), or an Approved Jurisdictional Determination (AJD) please respond accordingly, otherwise nothing further is required and we will not provide any additional documentation.
The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

Let me know if you have any questions – thank you for providing detailed information to facilitate our review.

Sincerely,
Emily

Emily B. Thompson
Regulatory Specialist
U.S. Army Corps of Engineers
Washington Regulatory Field Office
2407 W. 5th Street
Washington, NC 27889
(910) 251-4629
Emily.B.Thompson@usace.army.mil

From: Alex Baldwin <abaldwin@restorationsystems.com>

Legend

- Subject Site Parcel (NC Pin 2563511701)
- DMS - Full-Delivery Easement

Potential Waters of the U.S.

- Intermittent/Perennial Tributaries
- Wetlands
- Wetland Boundary Flags

Datapoints

- DWR SWIT Form
- USACE Paired Wetland Form

RESTORATION SYSTEMS, LLC
1101 HAYNES ST, SUITE 211
RALEIGH, NC 27604
PHONE : 919.755.9490
FAX : 919.755.9492

SCALE: 1 in = 250 ft
DATE: 04-2021
SITE: THUNDER

Figure 5 - Potential Waters of the U.S. Jurisdictional Delineation Concurrence (2017 Orthoimagery)

Feet
0 62.5 125 250 375 500

Imagery Source: NC One Map
Coordinate System: NAD_1983_SP_NC_FIPS_3200_Ft.

UT-4
Thunder Swamp
Wetland A
UT-1A
Thunder Swamp Rd
SWIT #2
Score: 33
Perennial
UT-5
UT-1B
Wetland B
SWIT #5
Score: 17.25
Ephemeral
SWIT #7
Score: 23
Intermittent
UT-1C
SWIT #4
Score: 22.75
Intermittent
Wetland C
UT-4
SWIT #3
Score: 17.5
Ephemeral
SWIT #6
Score: 21.5
Intermittent
SWIT #1
Score: 25.5
Intermittent
55
55

Jurisdictional Determination Request

US Army Corps of Engineers
Wilmington District

This form is intended for use by anyone requesting a jurisdictional determination (JD) from the U.S. Army Corps of Engineers, Wilmington District (Corps). Please include all supporting information, as described within each category, with your request. You may submit your request via mail, electronic mail, or facsimile. Requests should be sent to the appropriate project manager of the county in which the property is located. A current list of project managers by assigned counties can be found on-line at: http://www.saw.usace.army.mil/Missions/RegulatoryPermitProgram/Contact/CountyLocator.aspx, by calling 910-251-4633, or by contacting any of the field offices listed below. Once your request is received you will be contacted by a Corps project manager.

ASHEVILLE & CHARLOTTE REGULATORY FIELD OFFICES
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006
General Number: (828) 271-7980
Fax Number: (828) 281-8120

RALEIGH REGULATORY FIELD OFFICE
US Army Corps of Engineers
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587
General Number: (919) 554-4884
Fax Number: (919) 562-0421

WASHINGTON REGULATORY FIELD OFFICE
US Army Corps of Engineers
2407 West Fifth Street
Washington, North Carolina 27889
General Number: (910) 251-4610
Fax Number: (252) 975-1399

WILMINGTON REGULATORY FIELD OFFICE
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403
General Number: 910-251-4633
Fax Number: (910) 251-4025

INSTRUCTIONS:

All requestors must complete Parts A, B, C, D, E, F and G.

NOTE TO CONSULTANTS AND AGENCIES: If you are requesting a JD on behalf of a paying client or your agency, please note the specific submittal requirements in **Part H**.

NOTE ON PART D – PROPERTY OWNER AUTHORIZATION: Please be aware that all JD requests must include the current property owner authorization for the Corps to proceed with the determination, which may include inspection of the property when necessary. This form must be signed by the current property owner(s) or the owner(s) authorized agent to be considered a complete request.

NOTE ON PART D - NCDOT REQUESTS: Property owner authorization/notification for JD requests associated with North Carolina Department of Transportation (NCDOT) projects will be conducted according to the current NCDOT/USACE protocols.

NOTE TO USDA PROGRAM PARTICIPANTS: A Corps approved or preliminary JD may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should also request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

A. PARCEL INFORMATION

Street Address: 107 West NC 55 HWY

City, State: Mount Olive, NC

County: Wayne

Parcel Index Number(s) (PIN): 2563511701

B. REQUESTOR INFORMATION

Name: Alex Baldwin

Mailing Address: 1101 Haynes Street, Suite 211

Raleigh, NC 27604

Telephone Number: 919-274-2419

Electronic Mail Address: abaldwin@restorationsystems.com

Select one:

- ☐ I am the current property owner.
- ☐ I am an Authorized Agent or Environmental Consultant[1]
- ☑ Interested Buyer or Under Contract to Purchase
- ☐ Other, please explain. _____

C. PROPERTY OWNER INFORMATION[2]

Name: Myrtle K. Mangum & Betty K. Carraway

Mailing Address: 1002 Old Denbigh Blvd Newport News,

Newport News, VA 23602

Telephone Number: 757-898-4732

Electronic Mail Address: N/A

[1] Must provide completed Agent Authorization Form/Letter.

[2] Documentation of ownership also needs to be provided with request (copy of Deed, County GIS/Parcel/Tax Record).

D. PROPERTY ACCESS CERTIFICATION[3,4]

By signing below, I authorize representatives of the Wilmington District, U.S. Army Corps of Engineers (Corps) to enter upon the property herein described for the purpose of conducting on-site investigations, if necessary, and issuing a jurisdictional determination pursuant to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act of 1899. I, the undersigned, am either a duly authorized owner of record of the property identified herein, or acting as the duly authorized agent of the owner of record of the property.

Alex Baldwin
Print Name

Capacity: ☐ Owner ☑ Authorized Agent[5]

5/13/2021
Date

Signature

E. REASON FOR JD REQUEST: (Check as many as applicable)

☑ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
☐ I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
☐ I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
☐ A Corps JD is required in order obtain my local/state authorization.
☐ I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
☐ I believe that the site may be comprised entirely of dry land.
☐ Other: _____

[3] For NCDOT requests following the current NCDOT/USACE protocols, skip to Part E.
[4] If there are multiple parcels owned by different parties, please provide the following for each additional parcel on a continuation sheet.
[5] Must provide agent authorization form/letter signed by owner(s).

F. JURISDICTIONAL DETERMINATION (JD) TYPE (Select One)

☑ I am requesting that the Corps provide a preliminary JD for the property identified herein.

A Preliminary Jurisdictional Determination (PJD) provides an indication that there may be "waters of the United States" or "navigable waters of the United States"on a property. PJDs are sufficient as the basis for permit decisions. For the purposes of permitting, all waters and wetlands on the property will be treated as if they are jurisdictional "waters of the United States". PJDs cannot be appealed (33 C.F.R. 331.2); however, a PJD is "preliminary" in the sense that an approved JD can be requested at any time. PJDs do not expire.

☐ I am requesting that the Corps provide an approved JD for the property identified herein.

An Approved Jurisdictional Determination (AJD) is a determination that jurisdictional "waters of the United States" or "navigable waters of the United States" are either present or absent on a site. An approved JD identifies the limits of waters on a site determined to be jurisdictional under the Clean Water Act and/or Rivers and Harbors Act. Approved JDs are sufficient as the basis for permit decisions. AJDs are appealable (33 C.F.R. 331.2). The results of the AJD will be posted on the Corps website. A landowner, permit applicant, or other "affected party" (33 C.F.R. 331.2) who receives an AJD may rely upon the AJD for five years (subject to certain limited exceptions explained in Regulatory Guidance Letter 05-02).

☐ I am unclear as to which JD I would like to request and require additional information to inform my decision.

G. ALL REQUESTS

☑ Map of Property or Project Area. This Map must clearly depict the boundaries of the review area.

☑ Size of Property or Review Area 79 acres.

☑ The property boundary (or review area boundary) is clearly physically marked on the site.

H. REQUESTS FROM CONSULTANTS

☑ Project Coordinates (Decimal Degrees): Latitude: 35.206645
Longitude: -78.112882

☑ A legible delineation map depicting the aquatic resources and the property/review area. Delineation maps must be no larger than 11x17 and should contain the following: (Corps signature of submitted survey plats will occur after the submitted delineation map has been reviewed and approved).[6]

- North Arrow
- Graphical Scale
- Boundary of Review Area
- Date
- Location of data points for each Wetland Determination Data Form or tributary assessment reach.

For Approved Jurisdictional Determinations:

- Jurisdictional wetland features should be labeled as Wetland Waters of the US, 404 wetlands, etc. Please include the acreage of these features.
- Jurisdictional non-wetland features (i.e. tidal/navigable waters, tributaries, impoundments) should be labeled as Non-Wetland Waters of the US, stream, tributary, open water, relatively permanent water, pond, etc. Please include the acreage or linear length of each of these features as appropriate.
- Isolated waters, waters that lack a significant nexus to navigable waters, or non-jurisdictional upland features should be identified as Non-Jurisdictional. Please include a justification in the label regarding why the feature is non-jurisdictional (i.e. "Isolated", "No Significant Nexus", or "Upland Feature"). Please include the acreage or linear length of these features as appropriate.

For Preliminary Jurisdictional Determinations:

- Wetland and non-wetland features should not be identified as Jurisdictional, 404, Waters of the United States, or anything that implies jurisdiction. These features can be identified as Potential Waters of the United States, Potential Non-wetland Waters of the United States, wetland, stream, open water, etc. Please include the acreage and linear length of these features as appropriate.

☑ Completed Wetland Determination Data Forms for appropriate region
(at least one wetland and one upland form needs to be completed for each wetland type)

[6] Please refer to the guidance document titled "Survey Standards for Jurisdictional Determinations" to ensure that the supplied map meets the necessary mapping standards. http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Jurisdiction/

- [x] Completed appropriate Jurisdictional Determination form
  - **PJDs,** please complete a Preliminary Jurisdictional Determination Form[7] and include the Aquatic Resource Table
  - **AJDs**, please complete an Approved Jurisdictional Determination Form[8]
- [x] Vicinity Map
- [x] Aerial Photograph
- [x] USGS Topographic Map
- [x] Soil Survey Map
- [x] Other Maps, as appropriate (e.g. National Wetland Inventory Map, Proposed Site Plan, previous delineation maps, LIDAR maps, FEMA floodplain maps)
- [ ] Landscape Photos (if taken)
- [ ] NCSAM and/or NCWAM Assessment Forms and Rating Sheets
- [x] NC Division of Water Resources Stream Identification Forms
- [ ] Other Assessment Forms

[7] www.saw.usace.army.mil/Portals/59/docs/regulatory/regdocs/JD/RGL_08-02_App_A_Prelim_JD_Form_fillable.pdf
[8] Please see http://www.saw.usace.army.mil/Missions/Regulatory-Permit-Program/Jurisdiction/

Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USAGE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an AJD cannot be evaluated nor can an AJD be issued.

LANDOWNER AUTHORIZATION FORM

PROPERTY LEGAL DESCRITION:

Deed Book: 0073E **Page:** 108 **County:** Wayne

Parcel ID Number: 16555

Street Address: 1107 W NC HWY 55, Mount Olive NC, 28365

Property Owner (please print): Myrtle K. Mangum

Property Owner (please print): Betty K. Carraway

The undersigned, registered property owner(s) of the above property, do hereby authorize

Joshua Merritt (Contractor/Agent/Project Manager)[1] of Restoration Systems, LLC. (Name of Contractor/Agent Firm/Agency)[2]

to take all actions necessary for the evaluation of the property as a potential stream, wetland and/or riparian buffer mitigation project, including conducting stream and/or wetland determinations and delineations, as well as issuance and acceptance of any required permit(s) or certification(s). I agree to allow regulatory agencies, including the NC Division of Water Resources, to visit the property as part of these environmental reviews.

Property Owners(s) Address: 1002 Old Denbigh BLVD, Newport News VA, 23602
(if different from above)
2104 Jarman Dr, Ralegh NC, 27604

Property Owner Telephone Number: 757-898-4732

Property Owner Telephone Number: 919-624-7832

We hereby certify the above information to be true and accurate to the best of our knowledge.

Myrtle K. Mangum — (Property Owner Authorized Signature) — 9/11/20 (Date)

Betty K. Carraway — (Property Owner Authorized Signature) — 9-11-20 (Date)

[1]Name of full delivery staff member (full-deliveries) or DMS project manager (design-bid-build).
[2]Name of company (full-deliveries) or DMS (design-bid-build).

Appendix 2 - PRELIMINARY JURISDICTIONAL DETERMINATION (PJD) FORM

BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR PJD: April 21, 2021

B. NAME AND ADDRESS OF PERSON REQUESTING PJD: Alex Baldwin - 1101 Haynes Street, Suite 211, Raleigh, NC 27604

C. DISTRICT OFFICE, FILE NAME, AND NUMBER:

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE TABLE BELOW TO DOCUMENT MULTIPLE AQUATIC RESOURCES AND/OR AQUATIC RESOURCES AT DIFFERENT SITES)

State: NC County/parish/borough: Wayne City: Mt. Olive

Center coordinates of site (lat/long in degree decimal format):

Lat.: 35.206645 Long.: -78.112882

Universal Transverse Mercator: 17S

Name of nearest waterbody: Thunder Swamp

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☐ Office (Desk) Determination. Date:

☐ Field Determination. Date(s):

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION.

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Thunder Swamp	35.210289	-78.111523	2318	non-wetland waters	404
UT-1A	35.208008	-78.110409	572	non-wetland waters	
UT-1B	35.207307	-78.110235	474	non-wetland waters	
UT-1C	35.206842	-78.111879	980	non-wetland waters	
UT-4	35.209367	-78.114467	2944	non-wetland waters	
UT-5	35.207250	-78.115974	853	non-wetland waters	

TABLE OF AQUATIC RESOURCES IN REVIEW AREA WHICH "MAY BE" SUBJECT TO REGULATORY JURISDICTION (CONTINUED).

Site number	Latitude (decimal degrees)	Longitude (decimal degrees)	Estimated amount of aquatic resource in review area (acreage and linear feet, if applicable)	Type of aquatic resource (i.e., wetland vs. non-wetland waters)	Geographic authority to which the aquatic resource "may be" subject (i.e., Section 404 or Section 10/404)
Wetland A	35.209833	-78.111555	14.936	wetland	404
Wetland B	35.207136	-78.111996	0.031	wetland	404
Wetland C	35.206489	-78.111904	0.032	wetland	404

1) The Corps of Engineers believes that there may be jurisdictional aquatic resources in the review area, and the requestor of this PJD is hereby advised of his or her option to request and obtain an approved JD (AJD) for that review area based on an informed decision after having discussed the various types of JDs and their characteristics and circumstances when they may be appropriate.

2) In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an AJD for the activity, the permit applicant is hereby made aware that: (1) the permit applicant has elected to seek a permit authorization based on a PJD, which does not make an official determination of jurisdictional aquatic resources; (2) the applicant has the option to request an AJD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an AJD could possibly result in less compensatory mitigation being required or different special conditions; (3) the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) undertaking any activity in reliance upon the subject permit authorization without requesting an AJD constitutes the applicant's acceptance of the use of the PJD; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a PJD constitutes agreement that all aquatic resources in the review area affected in any way by that activity will be treated as jurisdictional, and waives any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an AJD or a PJD, the JD will be processed as soon as practicable. Further, an AJD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331. If, during an administrative appeal, it becomes appropriate to make an official determination whether geographic jurisdiction exists over aquatic resources in the review area, or to provide an official delineation of jurisdictional aquatic resources in the review area, the Corps will provide an AJD to accomplish that result, as soon as is practicable. This PJD finds that there *"may be"* waters of the U.S. and/or that there *"may be"* navigable waters of the U.S. on the subject review area, and identifies all aquatic features in the review area that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA. Data reviewed for PJD (check all that apply)

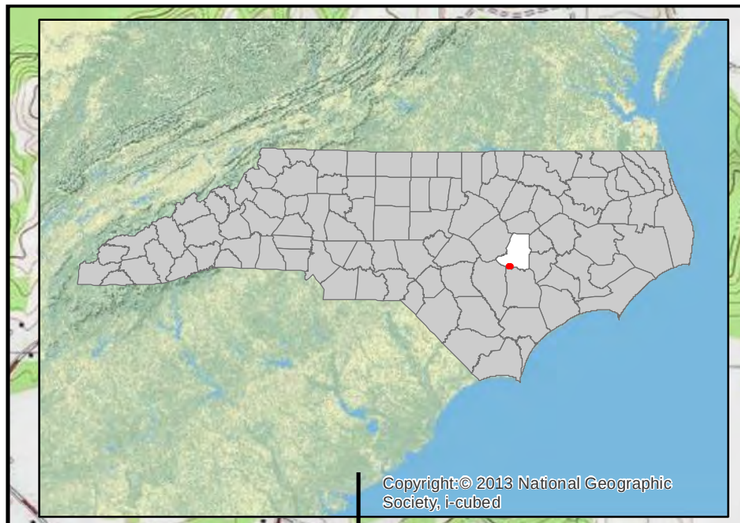
Checked items should be included in subject file. Appropriately reference sources below where indicated for all checked items:

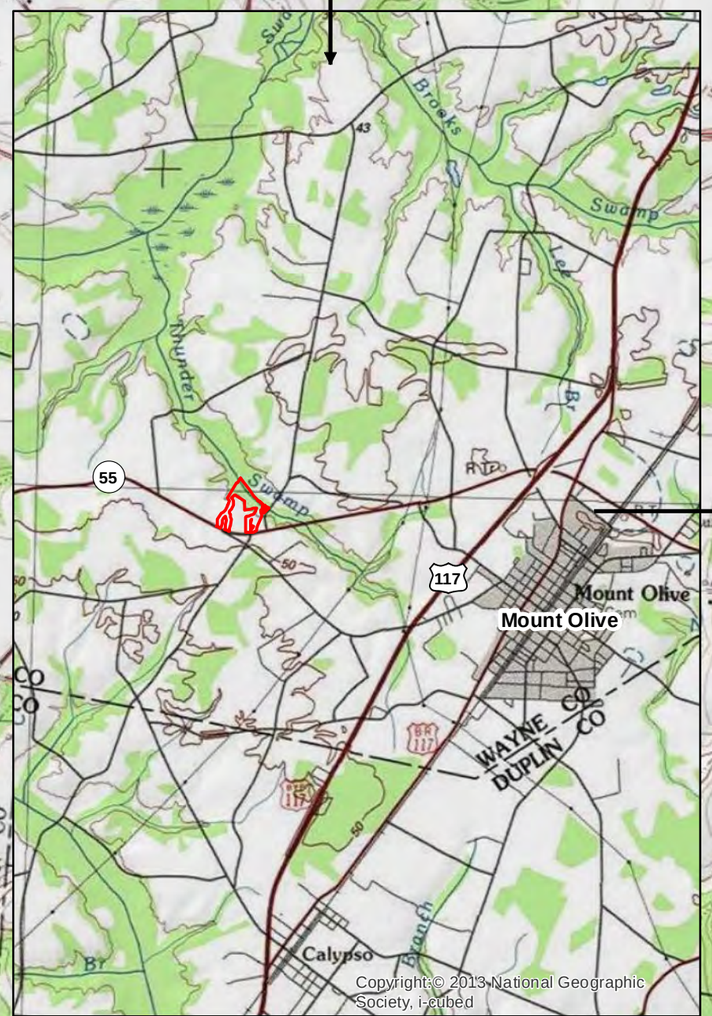
- [x] Maps, plans, plots or plat submitted by or on behalf of the PJD requestor:
  Map: _____.
- [x] Data sheets prepared/submitted by or on behalf of the PJD requestor.
  - [ ] Office concurs with data sheets/delineation report.
  - [ ] Office does not concur with data sheets/delineation report. Rationale: _____.
- [ ] Data sheets prepared by the Corps: _____.
- [ ] Corps navigable waters' study: _____.
- [ ] U.S. Geological Survey Hydrologic Atlas: _____.
  - [ ] USGS NHD data.
  - [ ] USGS 8 and 12 digit HUC maps.
- [x] U.S. Geological Survey map(s). Cite scale & quad name: 24K - Mt. Olive.
- [x] Natural Resources Conservation Service Soil Survey. Citation: Wayne Co., 1974.
- [ ] National wetlands inventory map(s). Cite name: _____.
- [ ] State/local wetland inventory map(s): _____.
- [ ] FEMA/FIRM maps: _____.
- [ ] 100-year Floodplain Elevation is: _____.(National Geodetic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): NAIP - 2017.
  or [ ] Other (Name & Date): _____.
- [ ] Previous determination(s). File no. and date of response letter: _____.
- [x] Other information (please specify): DWR Stream Determination Letter (DWR# 2021 0018 v1).

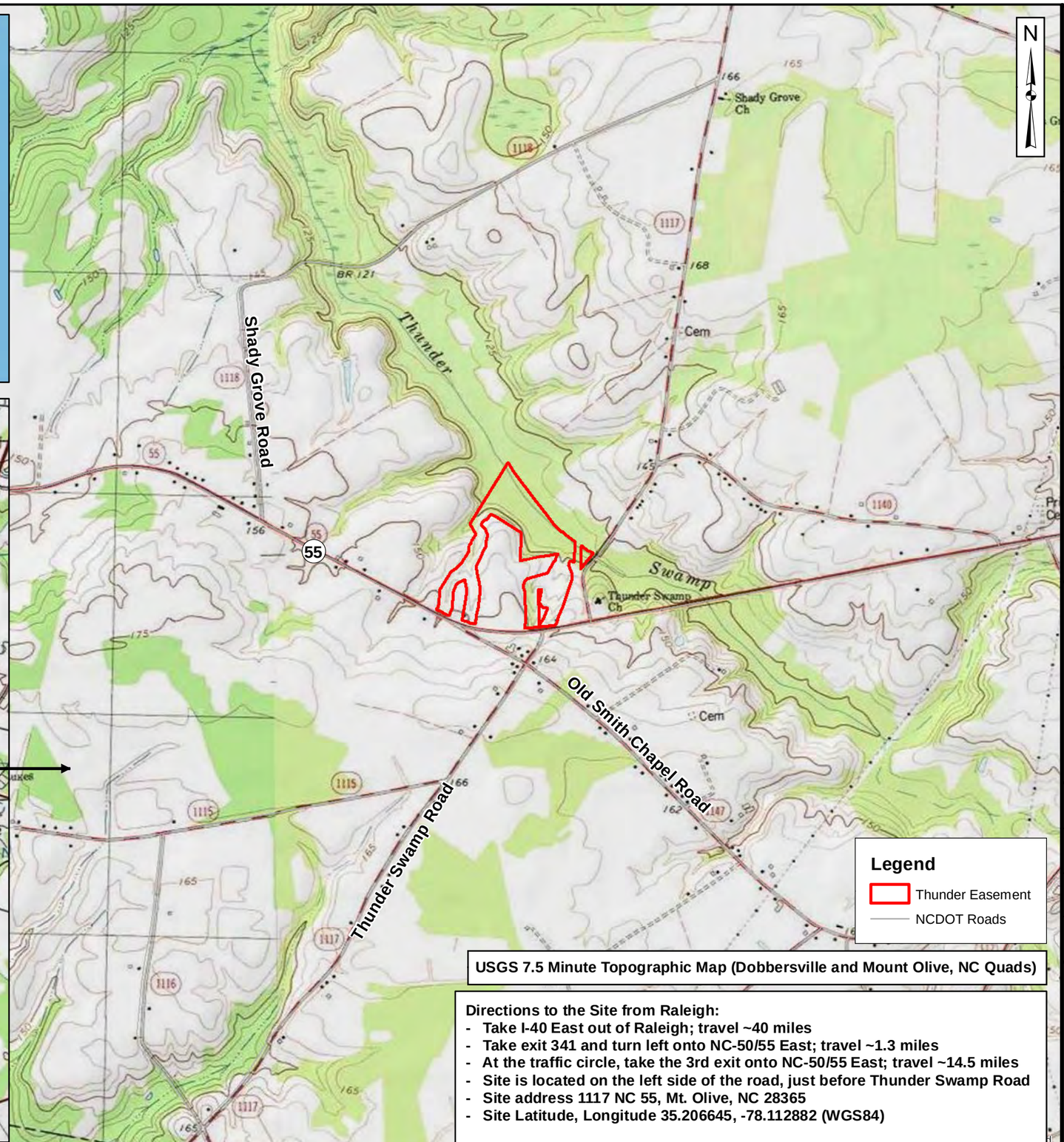
IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

_____	Digitally signed by Alexander E. Baldwin DN: cn=Alexander E. Baldwin, o=Restoration Systems, LLC, ou, email=abaldwin@restorationsystems.com, c=US Date: 2021.05.10 15:57:42 -04'00'
Signature and date of Regulatory staff member completing PJD	Signature and date of person requesting PJD (REQUIRED, unless obtaining the signature is impracticable)[1]

[1] Districts may establish timeframes for requestor to return signed PJD forms. If the requestor does not respond within the established time frame, the district may presume concurrence and no additional follow up is necessary prior to finalizing an action.







Legend

- Thunder Easement
- NCDOT Roads

USGS 7.5 Minute Topographic Map (Dobbersville and Mount Olive, NC Quads)

Directions to the Site from Raleigh:

- **Take I-40 East out of Raleigh; travel ~40 miles**
- **Take exit 341 and turn left onto NC-50/55 East; travel ~1.3 miles**
- **At the traffic circle, take the 3rd exit onto NC-50/55 East; travel ~14.5 miles**
- **Site is located on the left side of the road, just before Thunder Swamp Road**
- **Site address 1117 NC 55, Mt. Olive, NC 28365**
- **Site Latitude, Longitude 35.206645, -78.112882 (WGS84)**

Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

THUNDER MITIGATION SITE

Wayne County, NC

Title:

SITE LOCATION

Drawn by: KRJ

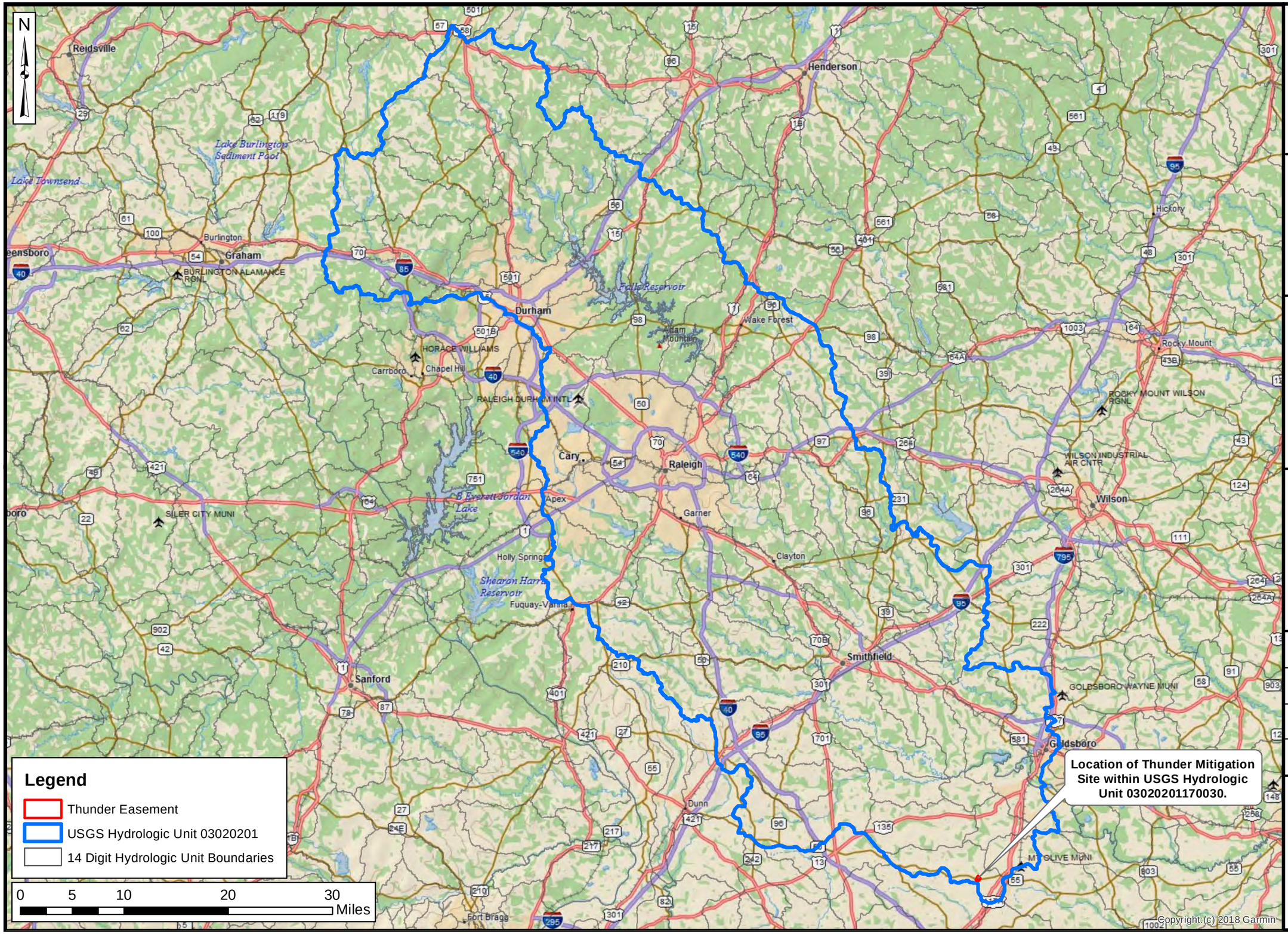
Date: SEPT 2020

Scale: 1:15,000

Project No.: 20-001.07

FIGURE

1



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

THUNDER MITIGATION SITE

Wayne County, NC

Title:

HYDROLOGIC UNIT MAP

Drawn by: KRJ

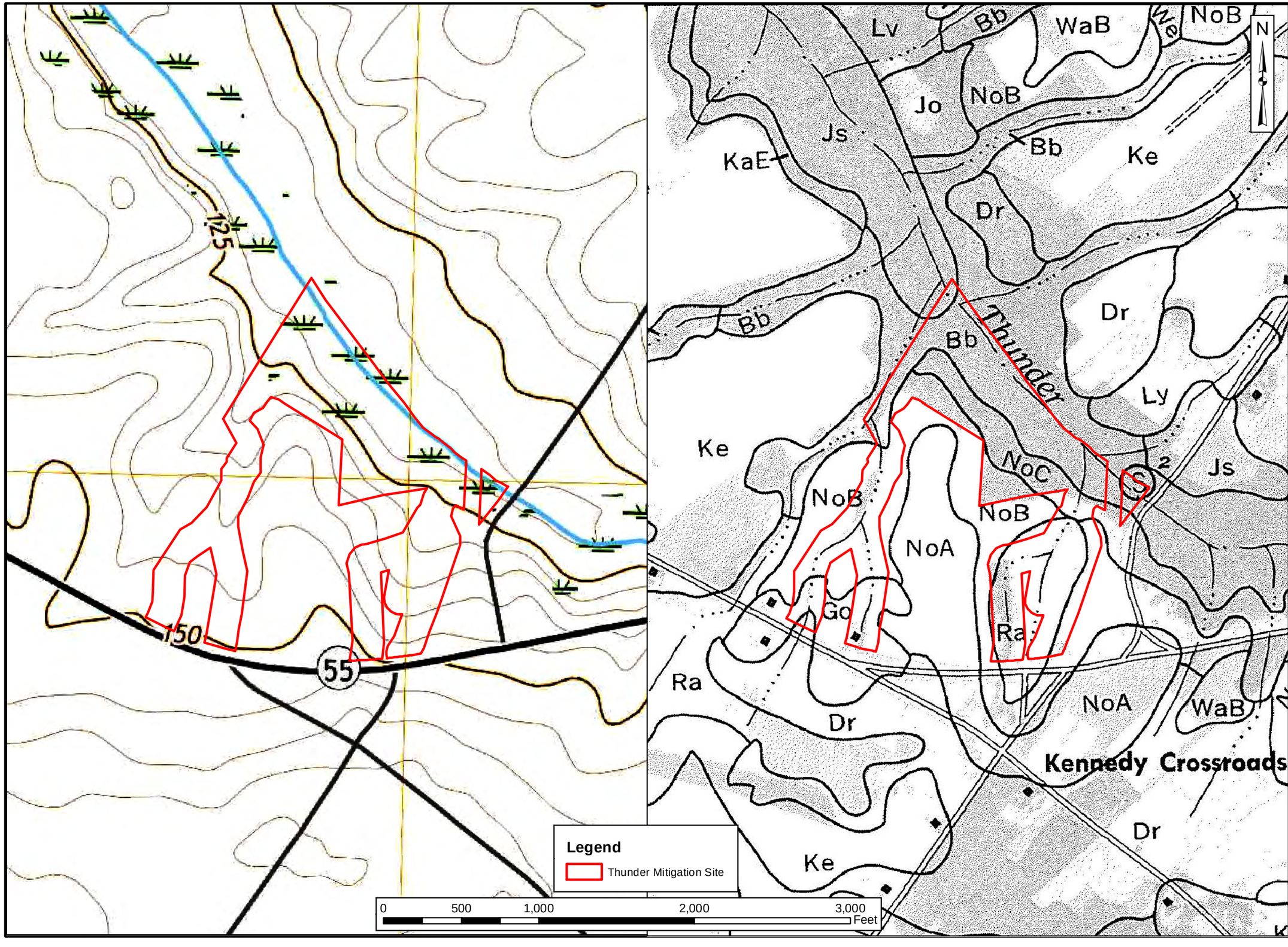
Date: SEPT 2020

Scale: 1:550,000

Project No.: 20-001.07

FIGURE

2



Axiom Environmental, Inc.

Prepared for:

RESTORATION SYSTEMS | LLC

Project:

THUNDER MITIGATION SITE

Wayne County, NC

Title:

PROJECT MAPPING

Notes:

1. Background Imagery Sources:
   a. Mount Olive, NC (2019) 7.5 minute topographic quadrangle provided by the U.S. Geological Survey (USGS, left window)
   b. Soil Survey of Wayne County, NC (1974) provided by the National Resource Conservation Service, sheet 41 (right window)

Drawn by:	KRJ
Date:	SEPT 2020
Scale:	1:7000
Project No.:	20-001.07

FIGURE

3

Legend

- Subject Site Parcel (NC Pin 2563511701)
- DMS - Full-Delivery Easement

Potential Waters of the U.S.

- Intermittent/Perennial Tributaries
- Wetlands
- Wetland Boundary Flags

Datapoints

- DWR SWIT Form
- USACE Paired Wetland Form

RESTORATION SYSTEMS, LLC
1101 HAYNES ST, SUITE 211
RALEIGH, NC 27604
PHONE : 919.755.9490
FAX : 919.755.9492

SCALE: 1 in = 250 ft
DATE: 04-2021
SITE: THUNDER

Figure 4 - Potential Waters of the U.S. Jurisdictional Delineation Concurrence (QL2 Lidar DEM)

Feet
0 62.5 125 250 375 500

Lidar Source: NC Floodplain Mapping Program
Coordinate System: NAD_1983_SP_NC_FIPS_3200_Ft.

UT-4
Thunder Swamp
Wetland A
Thunder Swamp Rd
SWIT #2
Score: 33
Perennial
UT-1A
UT-5
UT-1A
UT-1B
SWIT #5
Score: 17.25
Ephemeral
Wetland B
SWIT #7
Score: 23
Intermittent
UT-1C
SWIT #4
Score: 22.75
Intermittent
Wetland C
UT-4
SWIT #3
Score: 17.5
Ephemeral
55
SWIT #6
Score: 21.5
Intermittent
SWIT #1
Score: 25.5
Intermittent
55

Legend

- Subject Site Parcel (NC Pin 2563511701)
- DMS - Full-Delivery Easement

Potential Waters of the U.S.

- Intermittent/Perennial Tributaries
- Wetlands
- Wetland Boundary Flags

Datapoints

- DWR SWIT Form
- USACE Paired Wetland Form

RESTORATION SYSTEMS, LLC
1101 HAYNES ST, SUITE 211
RALEIGH, NC 27604
PHONE : 919.755.9490
FAX : 919.755.9492

SCALE: 1 in = 250 ft
DATE: 04-2021
SITE: THUNDER

Figure 5 - Potential Waters of the U.S. Jurisdictional Delineation Concurrence (2017 Orthoimagery)

Feet
0 62.5 125 250 375 500

Imagery Source: NC One Map
Coordinate System: NAD_1983_SP_NC_FIPS_3200_Ft.

UT-4
Thunder Swamp
Wetland A
UT-1A
Thunder Swamp Rd
SWIT #2
Score: 33
Perennial
UT-5
UT-1B
Wetland B
SWIT #5
Score: 17.25
Ephemeral
SWIT #7
Score: 23
Intermittent
UT-1C
SWIT #4
Score: 22.75
Intermittent
Wetland C
UT-4
SWIT #3
Score: 17.5
Ephemeral
SWIT #6
Score: 21.5
Intermittent
SWIT #1
Score: 25.5
Intermittent
55
55

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Thunder Buffer Mitigation Site City/County: Wayne Sampling Date: 4/1/2021
Applicant/Owner: Restoration Systems, LLC State: NC Sampling Point: WA-UP
Investigator(s): A. Baldwin Section, Township, Range:
Landform: (hillslope, terrace, etc.) toeslope Local Relief (concave, convex, none): none Slope (%): 5
Subregion (LRR or MLRA) LRR-T Lat: 35.208488 Long: -78.110948 Datum: NAD 83
Soil Map Unit Name: NoC - Norfolk loamy sand 6-10% slopes NWI Classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? NO Are "Normal Circumstances" present? Yes N☑ ☐
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐
Hydric Soil Present? Yes ☐ No ☑
Wetland Hydrology Present? Yes ☐ No ☑
Is the Sampled Area within a wetland? Yes ☐ No ☑

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply):

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Much Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss **(D8) (LRRT, U)**

Field Observations:

Surface Water Present? Yes ☐ No ☑ Depth (inches): _____
Water Table Present? Yes ☐ No ☑ Depth (inches): _____
Saturation Present? Yes ☐ No ☑ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☑

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: WA-UP

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft)			
1. *Acer rubrum*	60	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling Stratum (Plot size: 30-ft)			
1. *Acer rubrum*	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Shrub Stratum (Plot size: 30-ft)			
1. *Ligustrum sinense*	50	Y	FAC
2. *Acer rubrum*	10		FACW
3. *Carpinus caroliniana*	10		FAC
4.			
5.			
6.			
7.			
	70	= Total Cover	
Herb Stratum (Plot size: 30-ft)			
1. *Lonicera japonica*	50	Y	FAC
2. *Vitis aestivalis*	10		FAC
3. *Rubus spp.*	10		FAC
4. *Smilax rotundifolia*	10		FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80	= Total Cover	
Woody Vine Stratu (Plot size: 30-ft)			
2.			
2.			
2.			
2.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	140	x 3 =	420
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	215 (A)		570 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:

- ☐ 1. Rapid test for hydrophytic Vegetation
- ☑ 2. Dominance Test is > 50%
- ☐ 3. Prevalence Index is ≤ 3.0[1]
- ☐ 4. Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks: (If observed, list morphological adaptations below)

SOIL

Sampling Point: WA-UP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2/2	100					LS	
10-15+	10YR 4/4	100					SL	

[1]Type C = Concentration, D = depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains

[2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P,T,U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P,T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O,S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P,S,T,U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S,T,U)**
- ☐ Thin Dark Surface (S9) **(LRR S,T,U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O,P,T)**
- ☐ Umbric Surface (F13) **(LRR P,T,U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P,S,T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) **(LRR T,U)**
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches)

Hydric Soil Present? **Yes** ☐ **No** ☑

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Thunder Buffer Mitigation Site City/County: Wayne Sampling Date: 4/1/2021
Applicant/Owner: Restoration Systems, LLC State: NC Sampling Point: WA-WET
Investigator(s): A. Baldwin Section, Township, Range:
Landform: (hillslope, terrace, etc.) toeslope Local Relief (concave, convex, none): none Slope (%): 0
Subregion (LRR or MLRA) LRR-T Lat: 35.208656 Long: -78.111015 Datum: NAD 83
Soil Map Unit Name: Bb - Bibb sandy loam NWI Classification: PFO
Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☑ No ☐ (If no, explain in Remarks.)
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed? NO Are "Normal Circumstances" present? Yes N☑ ☐
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☑ No ☐
Hydric Soil Present? Yes ☑ No ☐
Wetland Hydrology Present? Yes ☑ No ☐
Is the Sampled Area within a wetland? Yes ☑ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply):

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☑ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☑ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Much Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss **(D8) (LRRT, U)**

Field Observations:

Surface Water Present? Yes ☑ No ☐ Depth (inches): 0-10
Water Table Present? Yes ☑ No ☐ Depth (inches): 0
Saturation Present? Yes ☑ No ☐ Depth (inches): 0
(includes capillary fringe)

Wetland Hydrology Present? Yes ☑ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants.

Sampling Point: WA-WET

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30-ft)			
1. *Acer rubrum*	60	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	60	= Total Cover	
Sapling Stratum (Plot size: 30-ft)			
1. *Acer rubrum*	30	Y	FACW
2. *Carpinus caroliniana*	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	
Shrub Stratum (Plot size: 30-ft)			
1. *Ligustrum sinense*	5	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 30-ft)			
1. *Unknown aquatic grass*	40	Y	OBL
2. *Juncus effusus*	5		FACW
3. *Woodwardia areolata*	5		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	
Woody Vine Stratu (Plot size: 30-ft)			
2.			
2.			
2.			
2.			
		= Total Cover	

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	95	x 2 =	190
FAC species	15	x 3 =	45
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	155 (A)		280 (B)

Prevalence Index = B/A = 1.8

Hydrophytic Vegetation Indicators:

- ☐ 1. Rapid test for hydrophytic Vegetation
- ☑ 2. Dominance Test is > 50%
- ☐ 3. Prevalence Index is ≤ 3.0[1]
- ☐ 4. Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? **Yes** ☑ **No** ☐

Remarks: (If observed, list morphological adaptations below)

SOIL

Sampling Point: WA-WET

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators).

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	98	7.5YR 3/4	2	C	PL	SiL	
3-12+	10YR 5/1	80	7.5YR 4/6	20	C	M	LS	

[1]Type C = Concentration, D = depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains

[2]Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P,T,U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P,T,U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P,T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O,S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☑ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P,S,T,U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S,T,U)**
- ☐ Thin Dark Surface (S9) **(LRR S,T,U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O,P,T)**
- ☐ Umbric Surface (F13) **(LRR P,T,U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P,S,T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12) **(LRR T,U)**
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type:

Depth (inches)

Hydric Soil Present? **Yes** ☑ **No** ☐

Remarks:

SWIT #1

NC DWQ Stream Identification Form Version 4.11

Date: 9/12/20	**Project/Site:** Thunder - Feature 2	**Latitude:** 35.205656
Evaluator: Jennigan / Avon	**County:** Wayne	**Longitude:** -78.111935
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 25.5	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	0	(1)	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	(1)	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream flowing out of culvert under NC-55. Strong baseflow and dense canopy here

Sketch:

SWIT #2

NC DWQ Stream Identification Form Version 4.11

Downstream

Date: 8/17/20	**Project/Site:** Thunder - Feature 1	**Latitude:** 35.20843
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.110056
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 33	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 18.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 10)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Very strong baseflow into broad Thunder Swamp footprint. No benthics or fish observed, but habitat has been impacted by recent heavy rains.

Sketch:

NC DWQ Stream Identification Form Version 4.11

upstream SUIT#3

Date: 8/17/20	**Project/Site:** Thunder - Feature 1	**Latitude:** 35.206269
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.11069
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 17.5	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 4.5)

	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank *	0	1	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)

12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)

18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream becomes fairly obviously ephemeral as valley gets weaker and it loses geomorphology.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Middle SWT = 4

Date: 8/17/20	**Project/Site:** Thunder - Feature 1	**Latitude:** 35.206818
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.11045
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22.75	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank * Ditch	0	1	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = (0.75); OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Stream develops more prominent geomorphological and hydrological features.

Sketch:

SWT #5

NC DWQ Stream Identification Form Version 4.11

Date: 8/17/20	**Project/Site:** Thunder Feature 3	**Latitude:** 35.206996
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.111012
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 7.25	**Stream Determination (circle one)** Ephemeral Intermittent Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank *	0	1	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	(0)	1	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

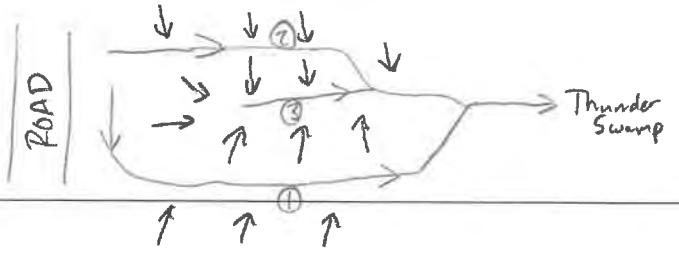
B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	1	(2)	3
14. Leaf litter	1.5	1	(0.5)	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	(0)	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 4.75)				
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = (0.75) OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: This feature lies in the center of the valley. Its drainage area has been partially intercepted by a roadside ditch that feeds Feature 1. It collects and transports the majority of the surface water between features 1 and 2.

Sketch:



TOB: 5'

SWIT #6

NC DWQ Stream Identification Form Version 4.11

Date: 8/17/20	**Project/Site:** Thunder - Feature 4	**Latitude:** 35.205872
Evaluator: Jerniqua / Aaron	**County:** Wayne	**Longitude:** -78.119968
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21.5	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank * Ditch	0	1	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	(0)	1	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 6)				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

SWIT # 7

NC DWQ Stream Identification Form Version 4.11

Date: 8/17/20	**Project/Site:** Thunder - Features	**Latitude:** 35.206224
Evaluator: Jernigan / Axiom	**County:** Wayne	**Longitude:** -78.116223
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 23	**Stream Determination (circle one)** Ephemeral (Intermittent) Perennial	**Other** *e.g. Quad Name:* Mt. Olive

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank * Ditched	0	1	2	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3
4. Particle size of stream substrate	0	1	(2)	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	(1)	2	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No = (0)		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	(1.5)	1	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = (3)	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = (1.5) Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

Ray Holz

From: Berry Gray <berry.gray@waynegov.com>
Sent: Thursday, July 01, 2021 9:57 AM
To: Ray Holz
Subject: RE: [External] - FEMA Floodplain Coordination - Riparian Buffer Restoration Project
Attachments: DOC070121-07012021093433.pdf

See attached. Let me know if you need anything else.

Berry Gray
Planning Director
Wayne County, North Carolina
134 N John Street
PO Box 227
Goldsboro, NC 27533-0227

Phone: 919-731-1650
Email: berry.gray@waynegov.com

From: Ray Holz [mailto:rholz@restorationsystems.com]
Sent: Thursday, July 1, 2021 9:24 AM
To: Berry Gray <berry.gray@waynegov.com>
Subject: [External] - FEMA Floodplain Coordination - Riparian Buffer Restoration Project

Mr. Gray,

I work with Restoration Systems, and we are implementing a riparian buffer restoration project on behalf of the North Carolina Division of Mitigation Services (DMS) west of Mount Olive, off Highway 55, and adjacent to Thunder Swamp. The project totals 41.78 acres and consists of minimal grading and the planting of hardwood trees. All work is located outside the FEMA-regulated floodplain/floodway. The project is to be permanently protected by a conservation easement that extends into and covers approximately 12.54 acres of the Thunder Swamp FEMA regulated floodplain/floodway (Panel 3720256300K – eff. 06/20/2018). By including the floodplain/floodway within the conservation easement, I am required by DMS to coordinate with the local Floodplain Administrator and to receive concurrence of the attached DMS Floodplain Checklist.

For my coordination, can you please review the attached information, fill out the last portion of the NCDMS floodplain checklist (bottom of page three), and return it to me via e-mail?

Thank you for your time. If you have any questions or would like to discuss, please do not hesitate to give me a call at 919-604-9314 – I am available all day.

Sincerely,
Raymond H.

Attachments
- NCDMS Floodplain Checklist
- Figure 1 – Location Map
- Figure 2 – Existing Conditions
- Figure 3 – Restoration Plan

- Figure 4 – Planting Plan

--- ------ ------

Raymond J. Holz | Restoration Systems, LLC
1101 Haynes St. Suite 211 | Raleigh, NC 27604
tel: 919.334.9122 | cell: 919.604.9314 | fax: 919.755.9492
email: rholz@restorationsystems.com

DMS Floodplain Requirements Checklist

This form was developed by the National Flood Insurance program, NC Floodplain Mapping program and the Division of Mitigation Services (DMS) to be filled for all DMS projects. The form is intended to summarize the floodplain requirements during the design phase of the projects. The form should be submitted to the Local Floodplain Administrator with three copies submitted to NFIP (attn. State NFIP Engineer), NC Floodplain Mapping Unit (attn. State NFIP Coordinator) and NC Ecosystem Enhancement Program.

Project Location

Name of project:	Thunder Site
Name if stream or feature:	Thunder Swamp
County:	Wayne
Name of river basin:	Neuse
Is project urban or rural?	Rural
Name of Jurisdictional municipality/county:	Wayne County
DFIRM panel number for entire site:	Panel 3720256300K (eff. 06/20/2018)
Consultant name:	Raymond Holz Restoration Systems, LLC
Phone number:	919-604-9314
Address:	1101 Haynes St. Suite 211 Raleigh, NC 27607

Design Information

Provide a general description of project (one paragraph). Include project limits on a reference orthophotograph at a scale of 1" = 500". – Project Figures Attached

No work is proposed within the FEMA regulated floodplain. A project description is included in the cover letter.

Floodplain Information

Is project located in a Special Flood Hazard Area (SFHA)?

(•) Yes ( ) No The lower reaches

If project is located in a SFHA, check how it was determined:

- [ ] Redelineation
- [ ] Detailed Study
- [ ] Limited Detail Study
- [ ] Approximate Study
- [ ] Don't know

List flood zone designation:

Check if applies:

- [x] AE Zone
  - (•) Floodway
  - ( ) Non-Encroachment
  - ( ) None
- [ ] A Zone
  - ( ) Local Setbacks Required
  - ( ) No Local Setbacks Required

If local setbacks are required, list how many feet:

Does proposed channel boundary encroach outside floodway/non-encroachment/setbacks?

( ) Yes (•) No

Land Acquisition (Check)

- [ ] State owned (fee simple)

☐ Conservation easment (Design Bid Build)

☑ Conservation Easement (Full Delivery Project)

Note: if the project property is state-owned, then all requirements should be addressed to the Department of Administration, State Construction Office (attn: Herbert Neily, (919) 807-4101)

Is community/county participating in the NFIP program?

◉ Yes ○ No

Note: if community is not participating, then all requirements should be addressed to NFIP (attn: State NFIP Engineer, (919) 715-8000

Name of Local Floodplain Administrator: Berry Gray
Phone Number: 919-731-1650

Floodplain Requirements

This section to be filled by designer/applicant following verification with the LFPA

☑ No Action

☐ No Rise

☐ Letter of Map Revision

☐ Conditional Letter of Map Revision

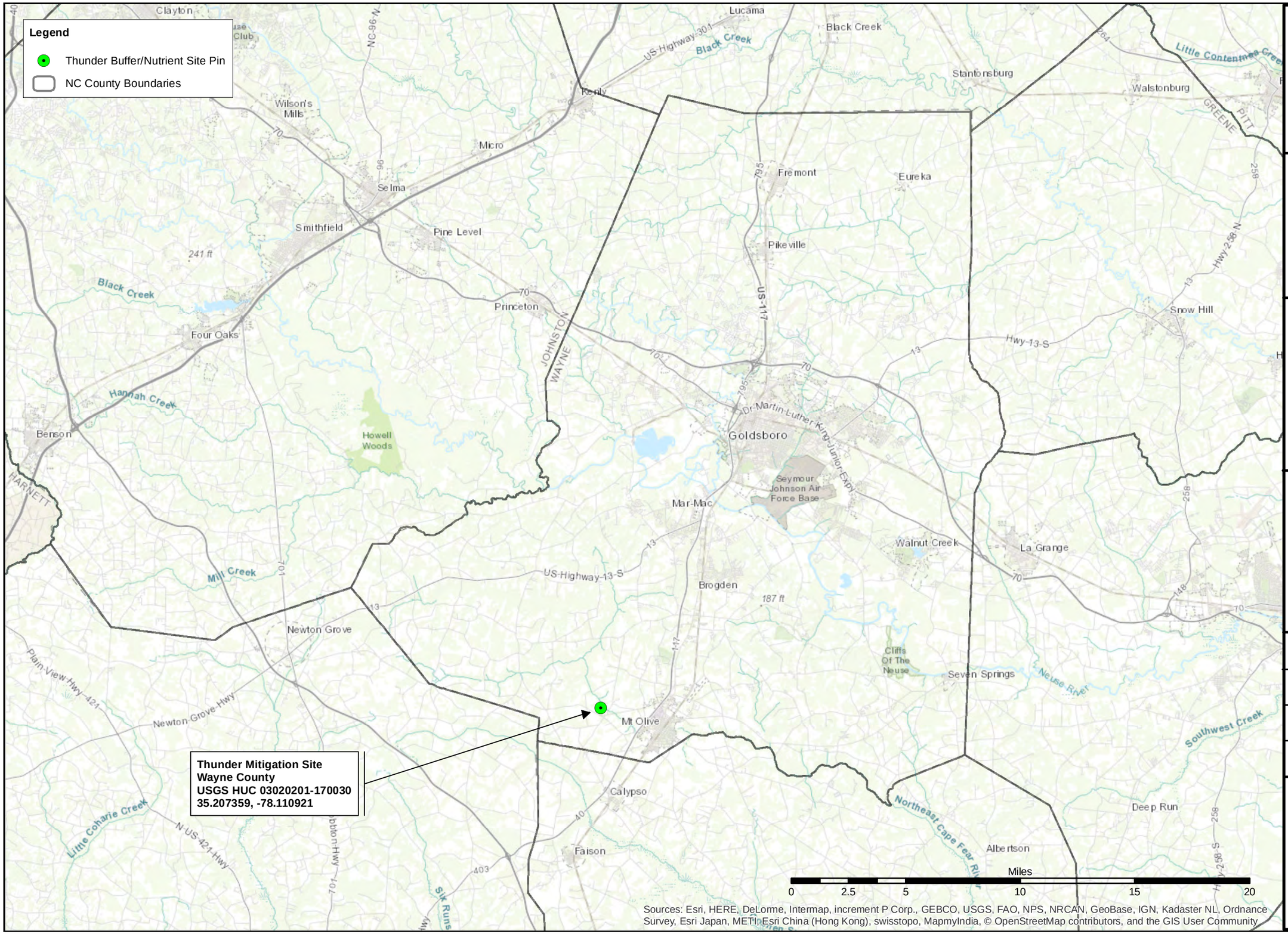
☐ Other Requirements

List other requirements:

Comments:

Name: Raymond Holz Signature: Raymond H.

Title: Operations Manager Date: 07-01-2021



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of
Mitigation Services

Project:

THUNDER
MITIGATION SITE

Wayne County, NC

Title:

SITE LOCATION

Drawn by: RJH

Date: JUNE 2021

Scale: 1:250,000

Project No.: 100185

FIGURE

1

Legend

- Subject Site Parcel (NC Pin 2563511701)
- Conservation Easement: 41.78 Acres
- DWR Stream Determination for Applicability - Start Points
- SWIT
- Existing Hardwood Forest

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Regulatory Floodway

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)

Feature 4 (Subject)

Carolina Power & Light Co.
(Now Duke Progress)
100-Foot Right-of-Way

SWIT #2
Score 33 - Perennial

PANEL
3720256300K
eff. 6/20/2018

Feature 3 (Subject)

Feature 5 (Subject)

SWIT #5
Score 17.5 - Ephemeral

Feature 1A (Subject)

Feature 1B (Subject)

SWIT #7
Score 23 - Intermittent

Feature 2 (Subject)

SWIT #4
Score 22.75 Intermittent

Feature 4 (Subject)

SWIT #3
Score 17.5 Ephemeral

Feature Not Evaluated
(Ditch To-Be Filled)

SWIT #6
Score 21.5 Intermittent

Feature 1C (Not Subject)

SWIT #1
Score 25.5 Intermittent

Overhead Utility (Phone Line)
30-Foot Right-of-Way (Typical)

Zone AE

147

120.4

122.3

158

Thunder Swamp Rd.

NC Highway 55

Feet
0 125 250 500 750 1,000

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of
Mitigation Services

Project:

THUNDER
MITIGATION SITE

Wayne County, NC

Title:

EXISTING
CONDITIONS

Source: FEMA Flood Insurance Rate Map 3720256300K, Panel 2563, effective June 20, 2018

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2021

Scale: 1:3,500

Project No.: 100185

FIGURE

1

N

Legend

- Subject Site Parcel (NC Pin 2563511701)
- Conservation Easement: 41.78 Acres
- Disturbed Acreage: 0.453 Acres
- Bank Stabilization

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch

Feet
0 125 250 500 750 1,000

Zone AE

147

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)

Thunder Swamp Rd.
158

Feature 4 (Subject)

Carolina Power & Light Co.
(Now Duke Progress)
100-Foot Right-of-Way

Stabilize stream banks at identified areas (9 total) above ordinary high-water mark/top of bank to field edge at 3:1 slope. Disturbed acreage = 0.155 acres (9 locations, avg. 30' in length & 25' of 3:1 slope)

Disturbed areas to be matted, seeded with temporary and permanent seed mix, and live-staked as needed.

120.4

PANEL
3720256300K
eff. 6/20/2018

Feature 3 (Subject)

Feature 5 (Subject)

Feature 1A (Subject)

122.3

Feature 1B (Subject)

Feature 2 (Subject)

Overhead Utility (Phone Line)
30-Foot Right-of-Way (Typical)

Feature 4 (Subject)

NC Highway 55

Feature 1C (Not Subject)

Fill ditch with existing spoil located adjacent to feature. Disturbed acreage = 0.267 acres

Straw and seed area with temporary and permanent seed mix.

Fill the upper portion of Feature 1C (Ditch) with existing spoil located adjacent to the feature. Disturbed acreage = 0.031 acres

Straw and seed area with temporary and permanent seed mix.

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of
Mitigation Services

Project:

THUNDER
MITIGATION SITE

Wayne County, NC

Title:

RESTORATION PLAN

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2021

Scale: 1:3,500

Project No.: 100185

FIGURE

2

N

Legend

- Subject Site Parcel (NC Pin 2563511701)
- Conservation Easement: 41.78 Acres
- Surveyed TOB

Planting & Seeding Area: 18.737 Acres

- Coastal Plain Bottomland Hardwood: 6.546 Acres
- Dry Mesic Oak-Hickory Mixed Forest: 12.191 Acres

Zone AE

147

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)

Thunder Swamp Rd.

158

Feature 4 (Subject)

Carolina Power & Light Co.
(Now Duke Progress)
100-Foot Right-of-Way

Zone AE

Zone AE

Zone AE

120.4

PANEL
3720256300K
eff. 6/20/2018

Feature 3 (Subject)

Feature 5 (Subject)

Feature 1A (Subject)

122.3

Feature 1B (Subject)

Feature 2 (Subject)

Feature 4 (Subject)

NC Highway 55

Feature 1C (Not Subject)

Overhead Utility (Phone Line)
30-Foot Right-of-Way (Typical)

Feet
0 125 250 500 750 1,000

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of
Mitigation Services

Project:

THUNDER
MITIGATION SITE

Wayne County, NC

Title:

PLANTING
PLAN

2017 NC OneMap

Drawn by: RJH

Date: JUNE 2021

Scale: 1:3,500

Project No.: 100185

FIGURE

3

N

From: Denton, Bill <bill.denton@ncdenr.gov>
Sent: Monday, June 28, 2021 4:26 PM
To: Worth Creech <worth@restorationsystems.com>
Cc: Summers, Kimberly M <kimberly.summers@ncdenr.gov>; Garcia, Lauren V <lauren.garcia@ncdenr.gov>
Subject: Permit Question

Mr. Creech:

Based on the description you provided, the best argument for exemption of the buffer restoration activity is that it would not technically meet the definition of a "Land-disturbing activity" as defined by NCGS 113A-52(6) which states:

(6) "Land-disturbing activity" means any use of the land by any person in residential, industrial, educational, institutional or commercial development, highway and road construction and maintenance that results in a change in the natural cover or topography and that may cause or contribute to sedimentation.

Inasmuch as the purpose of the activity is to plant trees for buffer restoration, it does not constitute any of the listed development, construction, or maintenance activities and is therefore not a land-disturbing activity by the legal definition. This makes it not subject to the Sedimentation Pollution Control Act in my opinion.

To further solidify the case for exemption under the NCGS 113A-52.01(1) (commonly referred to as the "Agricultural Exemption"), prior to crews arriving at the site to begin planting the buffer vegetation you may wish to have the owner of the agricultural land disc the area. This is assuming discing is part of his/her usual farming activities. Separating those activities, would provide a clear line of demarcation for the site when agriculture ends and buffer restoration begins.

The other option which we discussed by phone would also suffice, which is to plant the buffer vegetation in a manner that minimizes land disturbance (e.g. no-till methods). Our main goal is to keep sediment out of the buffer and surface waters. If that can be achieved and the permitting avoided, that would be acceptable to us.

Feel free to give me a call if we need to discuss or clarify further. Thanks.

Bill

William H. Denton, IV, PE
Regional Engineer – RRO
Division of Energy, Mineral, and Land Resources – Land Quality Section
Department of Environmental Quality

919 791 4200 office
bill.denton@ncdenr.gov

1628 Mail Service Center, Raleigh, North Carolina 27699

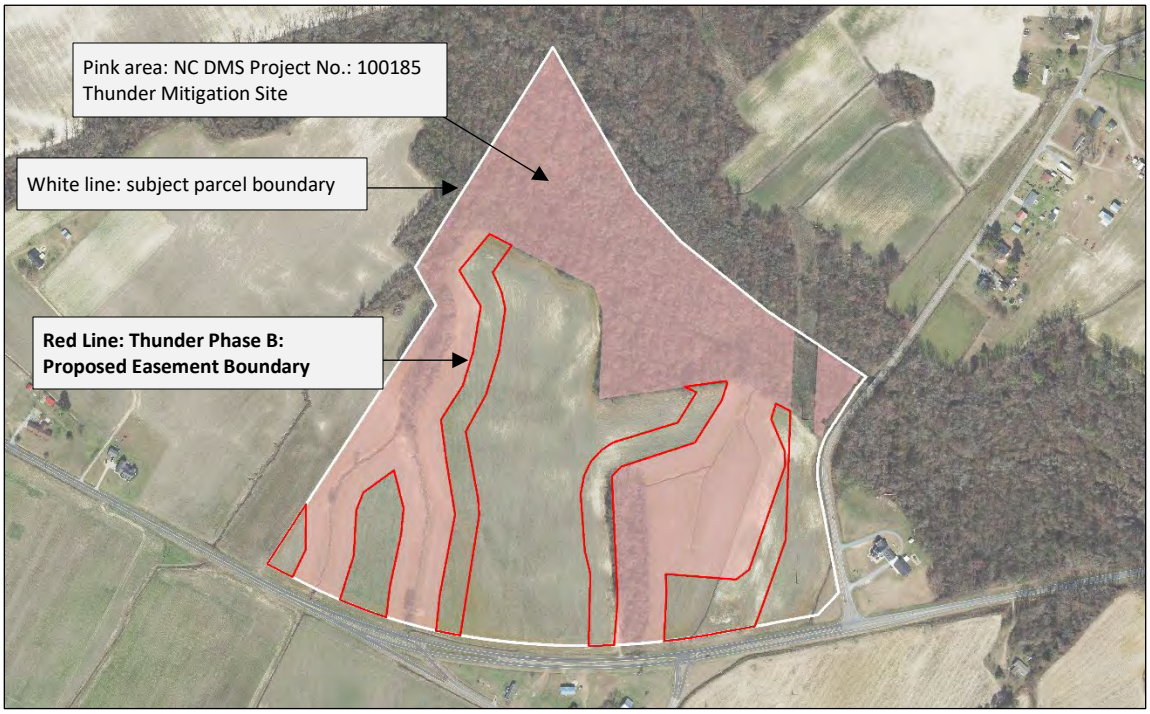
Appendix D. Categorical Exclusion Document (Including NHP)

THUNDER PHASE B MITIGATION SITE
Wayne County, North Carolina

DMS Project No. 100651 / Contract# 519674731-03 / RFP: 16-519674731

Task 1b: Categorical Exclusion/ERTR

Contents:



Prepared for:
North Carolina Department of Environmental Quality
Division of Mitigation Services
1652 Mail Service Center
Raleigh, NC 27699-1652

March 13, 2023

TASK 1 b.) Categorical Exclusion Summary:
Part 1: General Project Information (Attached)

Part 2: Summary of All Projects Regulation/Questions

Coastal Zone Management Act
No issue – the Project is not located within a CAMA county.

CERCLA
No issue within project boundaries – please see the attached Executive Summary from a Limited Phase 1 Site Assessment performed by Environmental Data Resources, Inc. on Jan. 6, 2021.

National Historic Preservation Act (Section 106)
No Issue – please see attached letter from Ramona M. Bartos, State of the Historic Preservation Office.

Uniform Act
N/A – Property acquisition was completed prior to the intent of use federal funds.

Part 3: Ground-Disturbing Activates Regulation/Questions

American Indian Religious Freedom Act (AIRFA)
Not applicable – the Project is not located in a county claimed as "territory" by the Eastern Band of Cherokee Indians.

Antiquities Act (AA)
Not applicable – Project is not located on Federal land.

Archaeological Resources Protection Act (ARPA)
Not applicable – Project is not located on Federal or Indian lands.

Endangered Species Act (ESA)
Project activities will have no effect on any Endangered or Threatened Species. The Project will occur in existing agricultural fields, which are intensively managed for row crops. A biological survey included in the 9-step online compliance process found "no effect" based on no suitable habitat present as the land is currently in agriculture production and does not propose removing trees. A Self-certification letter was submitted on Feb. 18, 2021, and no recommendations following the 30-day review period. The self-certification letter is attached.

Executive Order 13007 (Indian Sacred Sites)
Not applicable – Project is not located in a county claimed as "territory" by the Eastern Band of Cherokee Indians.

Farmland Protection Policy Act (FPPA)
Please find the attached Form AD-1006 and correspondence from Ryan Janway, Natural Resource Specialist USDA-NRCS.

Fish and Wildlife Coordination Act (FWCA)
Not applicable – Project will not impound, divert, channel deepen, or otherwise control/modify any water body.

Land & Water Conservation Fund Act (Section 6(f))
Not applicable

Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat)
Not applicable – Project is not located within an estuarine system.

Migratory Bird Treaty Act (MBTA)
USFWS provided no recommendations for the Project relative to the MBTA. Please see the attached email from Kathy Matthews, Fish and Wildlife Biologist, US Fish and Wildlife Service.

Wilderness Act
Not applicable – the Project is not located within a Wilderness area.

Appendix A

Categorical Exclusion Form for Division of Mitigation Services Projects
Version 2

Note: Only Appendix A should to be submitted (along with any supporting documentation) as the environmental document.

Part 1: General Project Information	
Project Name:	Thunder Phase B Mitigation Site
County Name:	Wayne
DMS Number:	100651
Project Sponsor:	Restoration Systems, LLC
Project Contact Name:	Raymond Holz
Project Contact Address:	1101 Haynes Street, Suite 211, Raleigh NC, 27604
Project Contact E-mail:	rholz@restorationsystems.com
DMS Project Manager:	Emily Dunnigan

Project Description

The Thunder Phase B Mitigation Site (Site) is designed to provide Nutrient Offset Credits (NOC) for impacts within the Neuse River Basin USGS 8-digit HUC 03020201, excluding the Falls Lake Watershed. The conservation easement will encompass 13.489 acres. The primary goal of the project is to convert 13.489 acres of active row crop land to a forested riparian buffer within FEMA Regulated Flood-way (BFE). There will be no ground disturbance.

For Official Use Only

Reviewed By:

3/15/2023
Date

Emily Dunnigan
DMS Project Manager

Conditional Approved By:

Date

For Division Administrator
FHWA

☐ **Check this box if there are outstanding issues**

Final Approval By:

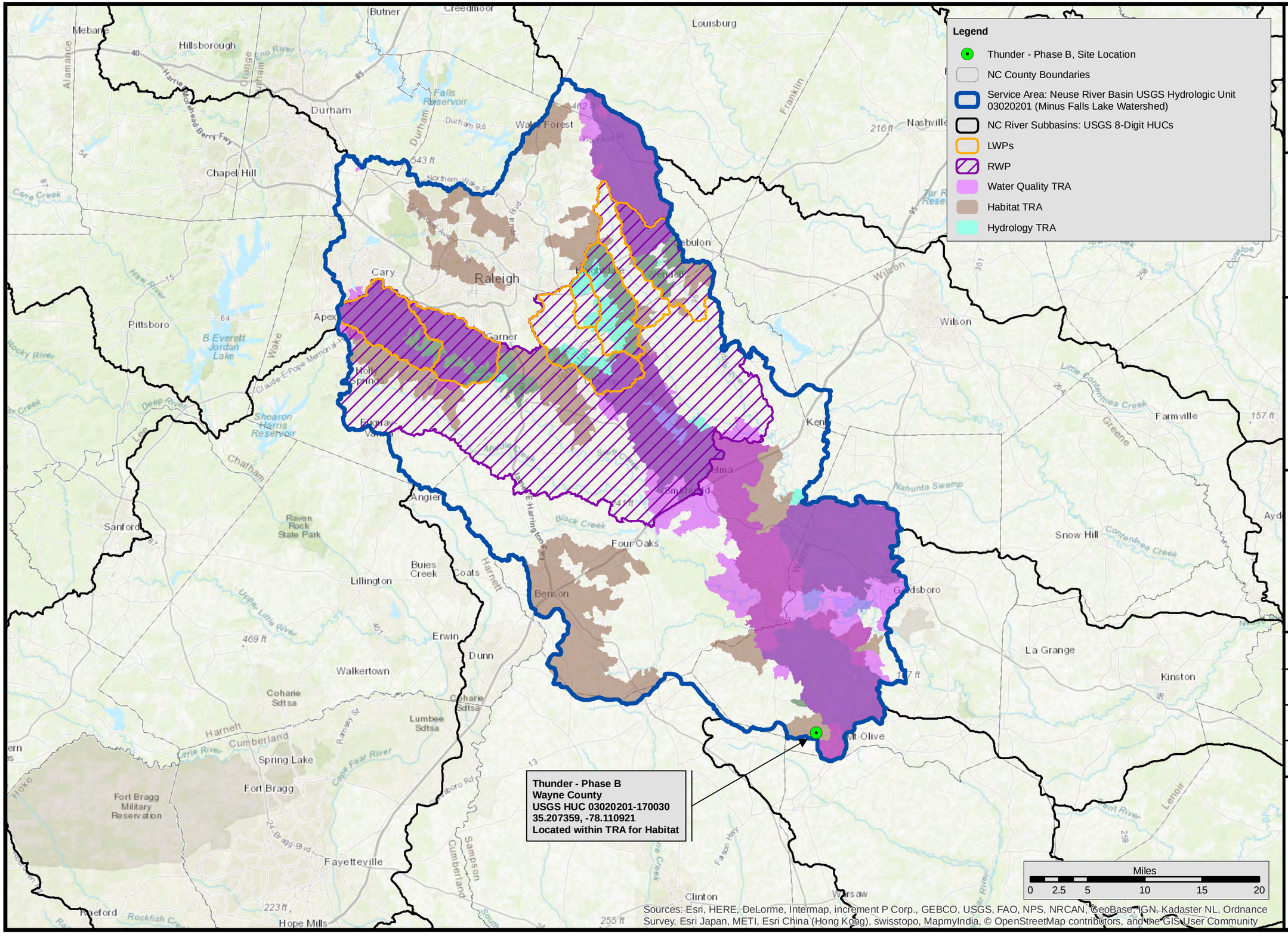
3-15-23
Date

Donald W Brew
For Division Administrator
FHWA

Part 2: All Projects Regulation/Question	Response
Coastal Zone Management Act (CZMA)	
1. Is the project located in a CAMA county?	☐ Yes ☒ No
2. Does the project involve ground-disturbing activities within a CAMA Area of Environmental Concern (AEC)?	☐ Yes ☐ No ☒ N/A
3. Has a CAMA permit been secured?	☐ Yes ☐ No ☒ N/A
4. Has NCDCM agreed that the project is consistent with the NC Coastal Management Program?	☐ Yes ☐ No ☒ N/A
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	
1. Is this a "full-delivery" project?	☒ Yes ☐ No
2. Has the zoning/land use of the subject property and adjacent properties ever been designated as commercial or industrial?	☐ Yes ☒ No ☐ N/A
3. As a result of a limited Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☒ No ☐ N/A
4. As a result of a Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☐ No ☒ N/A
5. As a result of a Phase II Site Assessment, are there known or potential hazardous waste sites within the project area?	☐ Yes ☐ No ☒ N/A
6. Is there an approved hazardous mitigation plan?	☐ Yes ☐ No ☒ N/A
National Historic Preservation Act (Section 106)	
1. Are there properties listed on, or eligible for listing on, the National Register of Historic Places in the project area?	☐ Yes ☒ No
2. Does the project affect such properties and does the SHPO/THPO concur?	☐ Yes ☐ No ☒ N/A
3. If the effects are adverse, have they been resolved?	☐ Yes ☐ No ☒ N/A
Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act)	
1. Is this a "full-delivery" project?	☒ Yes ☐ No
2. Does the project require the acquisition of real estate?	☒ Yes ☐ No ☐ N/A
3. Was the property acquisition completed prior to the intent to use federal funds?	☒ Yes ☐ No ☐ N/A
4. Has the owner of the property been informed: * prior to making an offer that the agency does not have condemnation authority; and * what the fair market value is believed to be?	☐ Yes ☐ No ☒ N/A

Part 3: Ground-Disturbing Activities Regulation/Question	Response
American Indian Religious Freedom Act (AIRFA)	
1. Is the project located in a county claimed as "territory" by the Eastern Band of Cherokee Indians?	☐ Yes ☒ No
2. Is the site of religious importance to American Indians?	☐ Yes ☐ No ☒ N/A
3. Is the project listed on, or eligible for listing on, the National Register of Historic Places?	☐ Yes ☐ No ☒ N/A
4. Have the effects of the project on this site been considered?	☐ Yes ☐ No ☒ N/A
Antiquities Act (AA)	
1. Is the project located on Federal lands?	☐ Yes ☒ No
2. Will there be loss or destruction of historic or prehistoric ruins, monuments or objects of antiquity?	☐ Yes ☐ No ☒ N/A
3. Will a permit from the appropriate Federal agency be required?	☐ Yes ☐ No ☒ N/A
4. Has a permit been obtained?	☐ Yes ☐ No ☒ N/A
Archaeological Resources Protection Act (ARPA)	
1. Is the project located on federal or Indian lands (reservation)?	☐ Yes ☒ No
2. Will there be a loss or destruction of archaeological resources?	☐ Yes ☐ No ☒ N/A
3. Will a permit from the appropriate Federal agency be required?	☐ Yes ☐ No ☒ N/A
4. Has a permit been obtained?	☐ Yes ☐ No ☒ N/A
Endangered Species Act (ESA)	
1. Are federal Threatened and Endangered species and/or Designated Critical Habitat listed for the county?	☒ Yes ☐ No
2. Is Designated Critical Habitat or suitable habitat present for listed species?	☐ Yes ☒ No ☐ N/A
3. Are T&E species present or is the project being conducted in Designated Critical Habitat?	☐ Yes ☐ No ☒ N/A
4. Is the project "likely to adversely affect" the specie and/or "likely to adversely modify" Designated Critical Habitat?	☐ Yes ☐ No ☒ N/A
5. Does the USFWS/NOAA-Fisheries concur in the effects determination?	☐ Yes ☐ No ☒ N/A
6. Has the USFWS/NOAA-Fisheries rendered a "jeopardy" determination?	☐ Yes ☐ No ☒ N/A

Executive Order 13007 (Indian Sacred Sites)	
1. Is the project located on Federal lands that are within a county claimed as "territory" by the EBCI?	☐ Yes ☒ No
2. Has the EBCI indicated that Indian sacred sites may be impacted by the proposed project?	☐ Yes ☐ No ☒ N/A
3. Have accommodations been made for access to and ceremonial use of Indian sacred sites?	☐ Yes ☐ No ☒ N/A
Farmland Protection Policy Act (FPPA)	
1. Will real estate be acquired?	☒ Yes ☐ No
2. Has NRCS determined that the project contains prime, unique, statewide or locally important farmland?	☒ Yes ☐ No ☐ N/A
3. Has the completed Form AD-1006 been submitted to NRCS?	☒ Yes ☐ No ☐ N/A
Fish and Wildlife Coordination Act (FWCA)	
1. Will the project impound, divert, channel deepen, or otherwise control/modify any water body?	☐ Yes ☒ No
2. Have the USFWS and the NCWRC been consulted?	☒ Yes ☐ No ☐ N/A
Land and Water Conservation Fund Act (Section 6(f))	
1. Will the project require the conversion of such property to a use other than public, outdoor recreation?	☐ Yes ☒ No
2. Has the NPS approved of the conversion?	☐ Yes ☐ No ☒ N/A
Magnuson-Stevens Fishery Conservation and Management Act (Essential Fish Habitat)	
1. Is the project located in an estuarine system?	☐ Yes ☒ No
2. Is suitable habitat present for EFH-protected species?	☐ Yes ☐ No ☒ N/A
3. Is sufficient design information available to make a determination of the effect of the project on EFH?	☐ Yes ☐ No ☒ N/A
4. Will the project adversely affect EFH?	☐ Yes ☐ No ☒ N/A
5. Has consultation with NOAA-Fisheries occurred?	☐ Yes ☐ No ☒ N/A
Migratory Bird Treaty Act (MBTA)	
1. Does the USFWS have any recommendations with the project relative to the MBTA?	☐ Yes ☒ No
2. Have the USFWS recommendations been incorporated?	☐ Yes ☐ No ☒ N/A
Wilderness Act	
1. Is the project in a Wilderness area?	☐ Yes ☒ No
2. Has a special use permit and/or easement been obtained from the maintaining federal agency?	☐ Yes ☐ No ☒ N/A



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

SITE LOCATION, HYDROLOGIC UNIT, & SERVICE AREA MAP

Drawn by: RJH

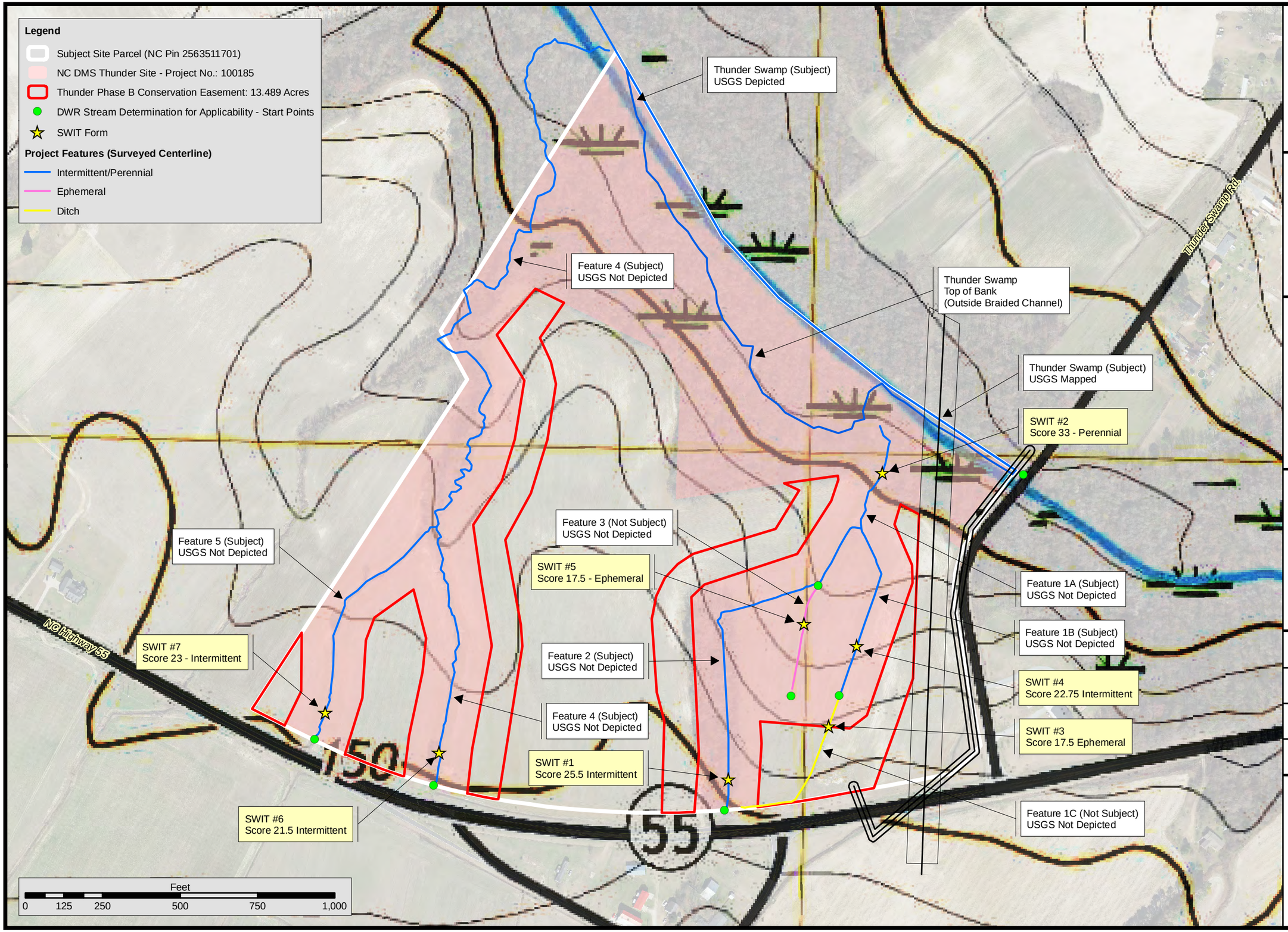
Date: AUG 2022

Scale: 1:450,000

Project No.: 2022-08-0001

FIGURE

1



RESTORATION SYSTEMS | LLC

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

USGS TOPO QUAD

Mount Olive, NC (2019) 7.5 minute topographic quadrangle provided by the U.S. Geological Survey (USGS)

Drawn by: RJH

Date: AUG 2022

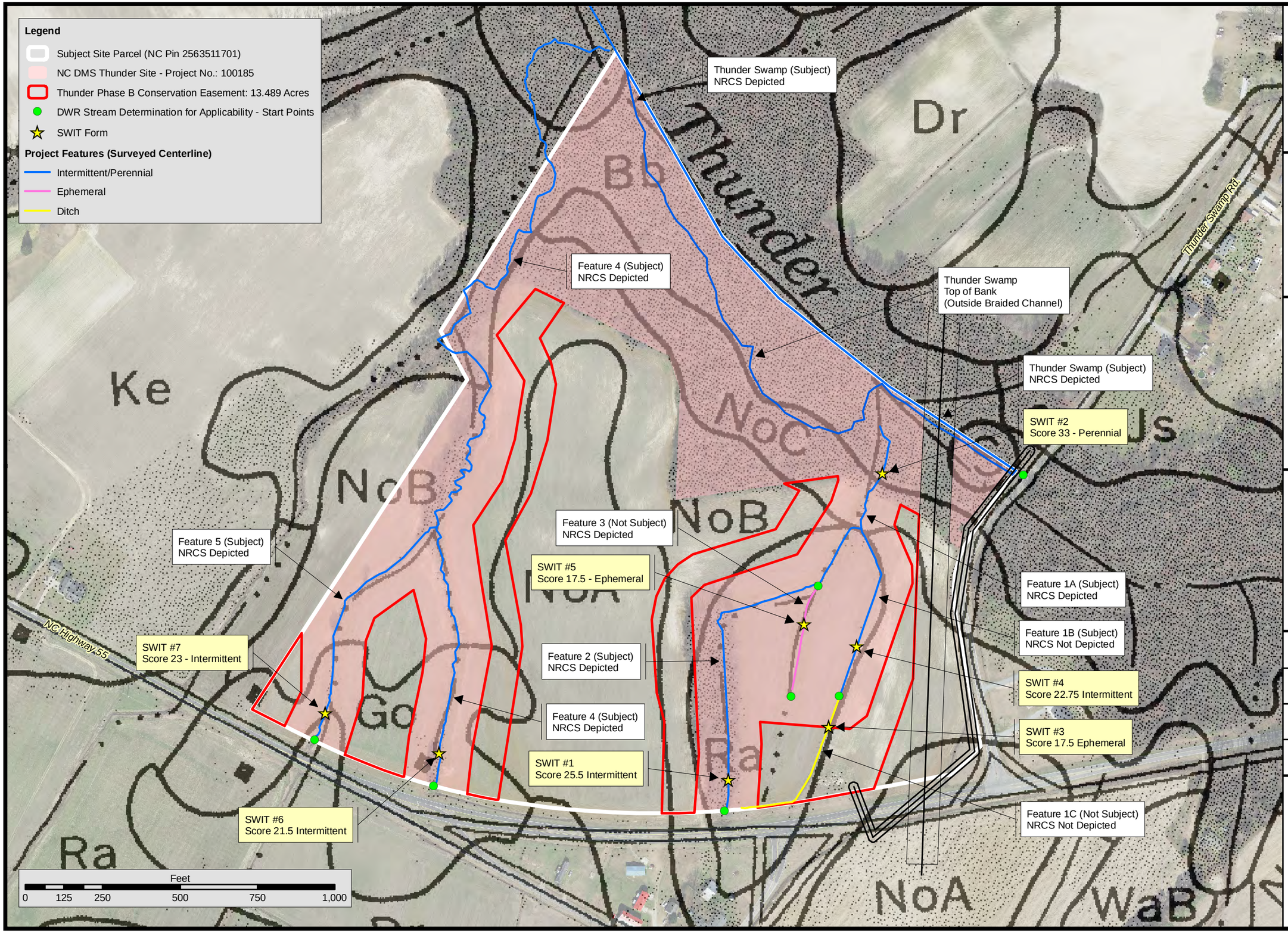
Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

2

N



RESTORATION SYSTEMS | LLC

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

NRCS SOIL SURVEY

Soil Survey of Wayne County, NC (1974) provided by the National Resource Conservation Service Sheet 41

Drawn by: RJH

Date: AUG 2022

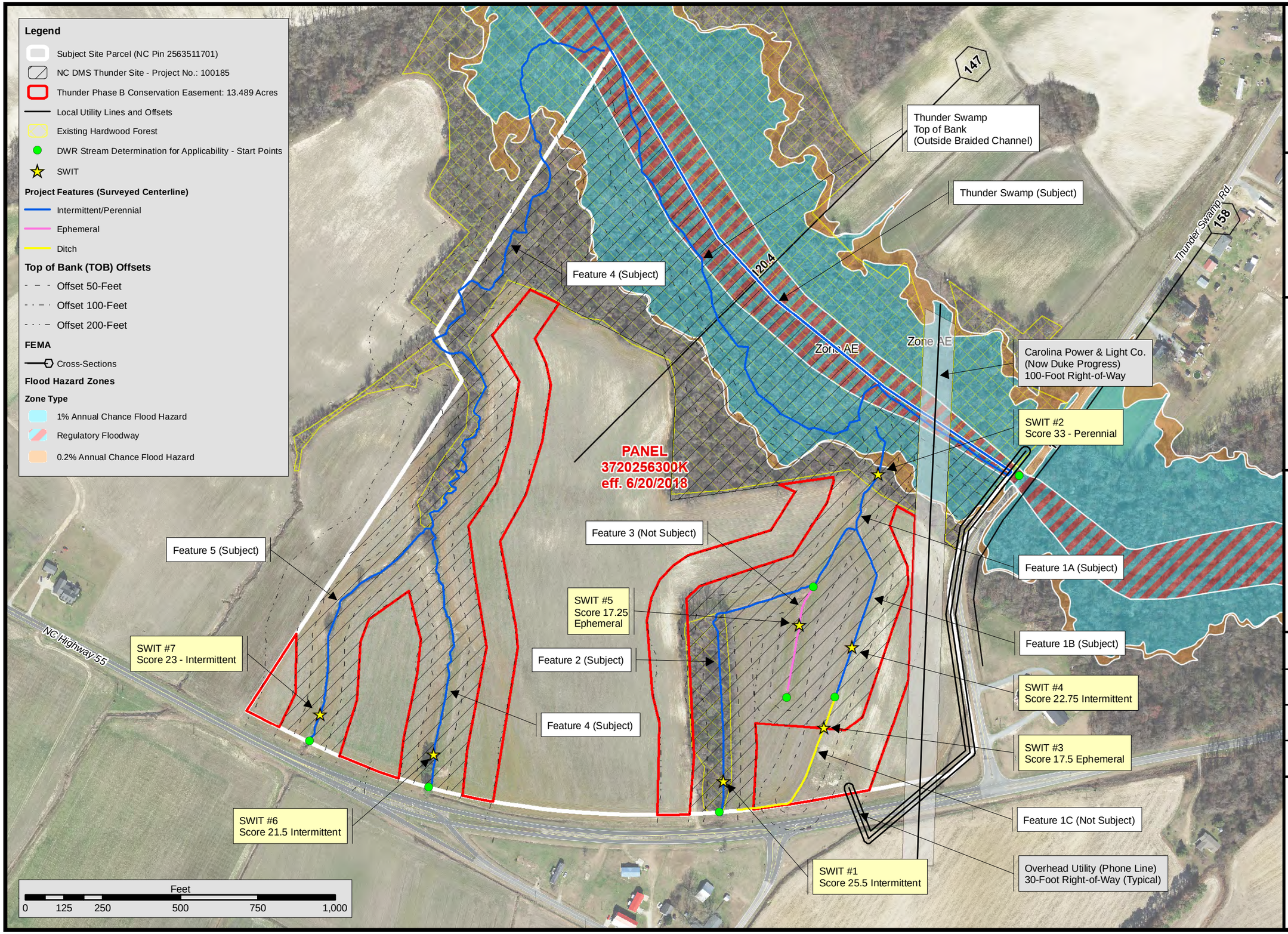
Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

3

N



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

EXISTING CONDITIONS

Source: FEMA Flood Insurance Rate Map 3720256300K, Panel 2563, effective June 20, 2018

2017 NC OneMap

Drawn by: RJH

Date: AUG 2022

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

4

N

Legend

- Subject Site Parcel (NC Pin 2563511701)
- Thunder Phase B Conservation Easement: 13.489 Acres
- NC DMS Thunder Site - Project No.: 100185
- Bare-Root Hardwood Planting and Seeding Area: 13.489 Acres

Project Features (Surveyed Centerline)

- Intermittent/Perennial
- Ephemeral
- Ditch

Top of Bank (TOB) Offsets

- Offset 50-Feet
- Offset 100-Feet
- Offset 200-Feet

Feet
0 125 250 500 750 1,000

Thunder Swamp
Top of Bank
(Outside Braided Channel)

Thunder Swamp (Subject)

Feature 4 (Subject)

Carolina Power & Light Co.
(Now Duke Progress)
100-Foot Right-of-Way

Thunder Swamp Rd.

Feature 5 (Subject)

Feature 3 (Not Subject)

Feature 1A (Subject)

Feature 1B (Subject)

Feature 2 (Subject)

Feature 4 (Subject)

Overhead Utility (Phone Line)
30-Foot Right-of-Way (Typical)

Feature 1C (Not Subject)

Utility Line and Pole
To-Be Removed

NC Highway 55

Fill the upper portion of Feature 1C (Ditch) with existing spoil located adjacent to the feature. Disturbed acreage = 0.031 acres

Straw and seed area with temporary and permanent seed mix.

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Enviromental Quality

Division of Mitigation Services

Project:

THUNDER PHASE B NUTRIENT OFFSET SITE

Wayne County, NC

Title:

RESTORATION PLAN

2017 NC OneMap

Drawn by: RJH

Date: AUG 2022

Scale: 1:3,500

Project No.: 2022-08-0001

FIGURE

5

N

Thunder Mitigation Site
1107 W NC 55 HWY
Mount Olive, NC 28365

Inquiry Number: 6321734.2s
January 06, 2021

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

TABLE OF CONTENTS

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

1107 W NC 55 HWY
MOUNT OLIVE, NC 28365

COORDINATES

Latitude (North):	35.2079350 - 35° 12' 28.56''
Longitude (West):	78.1126540 - 78° 6' 45.55''
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	762850.6
UTM Y (Meters):	3899724.8
Elevation:	141 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5947432 MOUNT OLIVE, NC
Version Date:	2013
West Map:	5947406 DOBBERSVILLE, NC
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20141018
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
1107 W NC 55 HWY
MOUNT OLIVE, NC 28365

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE ---------- Superfund Enterprise Management System Archive

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal RCRA generators list

RCRA-LQG ---------- RCRA - Large Quantity Generators
RCRA-SQG ---------- RCRA - Small Quantity Generators
RCRA-VSQG ---------- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

State- and tribal - equivalent NPL

NC HSDS..... Hazardous Substance Disposal Site

State- and tribal - equivalent CERCLIS

SHWS..... Inactive Hazardous Sites Inventory

State and tribal landfill and/or solid waste disposal site lists

SWF/LF..... List of Solid Waste Facilities
DEBRIS..... Solid Waste Active Disaster Debris Sites Listing
OLI..... Old Landfill Inventory
LCID..... Land-Clearing and Inert Debris (LCID) Landfill Notifications

State and tribal leaking storage tank lists

LAST..... Leaking Aboveground Storage Tanks
LUST..... Regional UST Database
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
LUST TRUST..... State Trust Fund Database

State and tribal registered storage tank lists

FEMA UST..... Underground Storage Tank Listing
UST..... Petroleum Underground Storage Tank Database
AST..... AST Database
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

INST CONTROL..... No Further Action Sites With Land Use Restrictions Monitoring

State and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Responsible Party Voluntary Action Sites

State and tribal Brownfields sites

BROWNFIELDS..... Brownfields Projects Inventory

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

EXECUTIVE SUMMARY

Local Lists of Landfill / Solid Waste Disposal Sites

SWRCY ---- Recycling Center Listing
HIST LF ---- Solid Waste Facility Listing
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---- Open Dump Inventory
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
US CDL ---- National Clandestine Laboratory Register

Local Land Records

LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
SPILLS ---- Spills Incident Listing
IMD ---- Incident Management Database
SPILLS 90 ---- SPILLS 90 data from FirstSearch
SPILLS 80 ---- SPILLS 80 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR ---- RCRA - Non Generators / No Longer Regulated
FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR ---- Financial Assurance Information
EPA WATCH LIST ---- EPA WATCH LIST
2020 COR ACTION ---- 2020 Corrective Action Program List
TSCA ---- Toxic Substances Control Act
TRIS ---- Toxic Chemical Release Inventory System
SSTS ---- Section 7 Tracking Systems
ROD ---- Records Of Decision
RMP ---- Risk Management Plans
RAATS ---- RCRA Administrative Action Tracking System
PRP ---- Potentially Responsible Parties
PADS ---- PCB Activity Database System
ICIS ---- Integrated Compliance Information System
FTTS ---- FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS ---- Material Licensing Tracking System
COAL ASH DOE ---- Steam-Electric Plant Operation Data
COAL ASH EPA ---- Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER ---- PCB Transformer Registration Database
RADINFO ---- Radiation Information Database
HIST FTTS ---- FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS ---- Incident and Accident Data
CONSENT ---- Superfund (CERCLA) Consent Decrees

INDIAN RESERV Indian Reservations
FUSRAP Formerly Utilized Sites Remedial Action Program
UMTRA Uranium Mill Tailings Sites
LEAD SMELTERS Lead Smelter Sites
US AIRS Aerometric Information Retrieval System Facility Subsystem
US MINES Mines Master Index File
ABANDONED MINES Abandoned Mines
FINDS Facility Index System/Facility Registry System
UXO Unexploded Ordnance Sites
DOCKET HWC Hazardous Waste Compliance Docket Listing
ECHO Enforcement & Compliance History Information
FUELS PROGRAM EPA Fuels Program Registered Listing
AIRS Air Quality Permit Listing
ASBESTOS ASBESTOS
COAL ASH Coal Ash Disposal Sites
DRYCLEANERS Drycleaning Sites
Financial Assurance Financial Assurance Information Listing
NPDES NPDES Facility Location Listing
UIC Underground Injection Wells Listing
AOP Animal Operation Permits Listing
PCSRP Petroleum-Contaminated Soil Remediation Permits
CCB Coal Ash Structural Fills (CCB) Listing
SEPT HAULERS Permitted Septage Haulers Listing
MINES MRDS Mineral Resources Data System

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP EDR Proprietary Manufactured Gas Plants
EDR Hist Auto EDR Exclusive Historical Auto Stations
EDR Hist Cleaner EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS Recovered Government Archive State Hazardous Waste Facilities List
RGA LF Recovered Government Archive Solid Waste Facilities List
RGA LUST Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

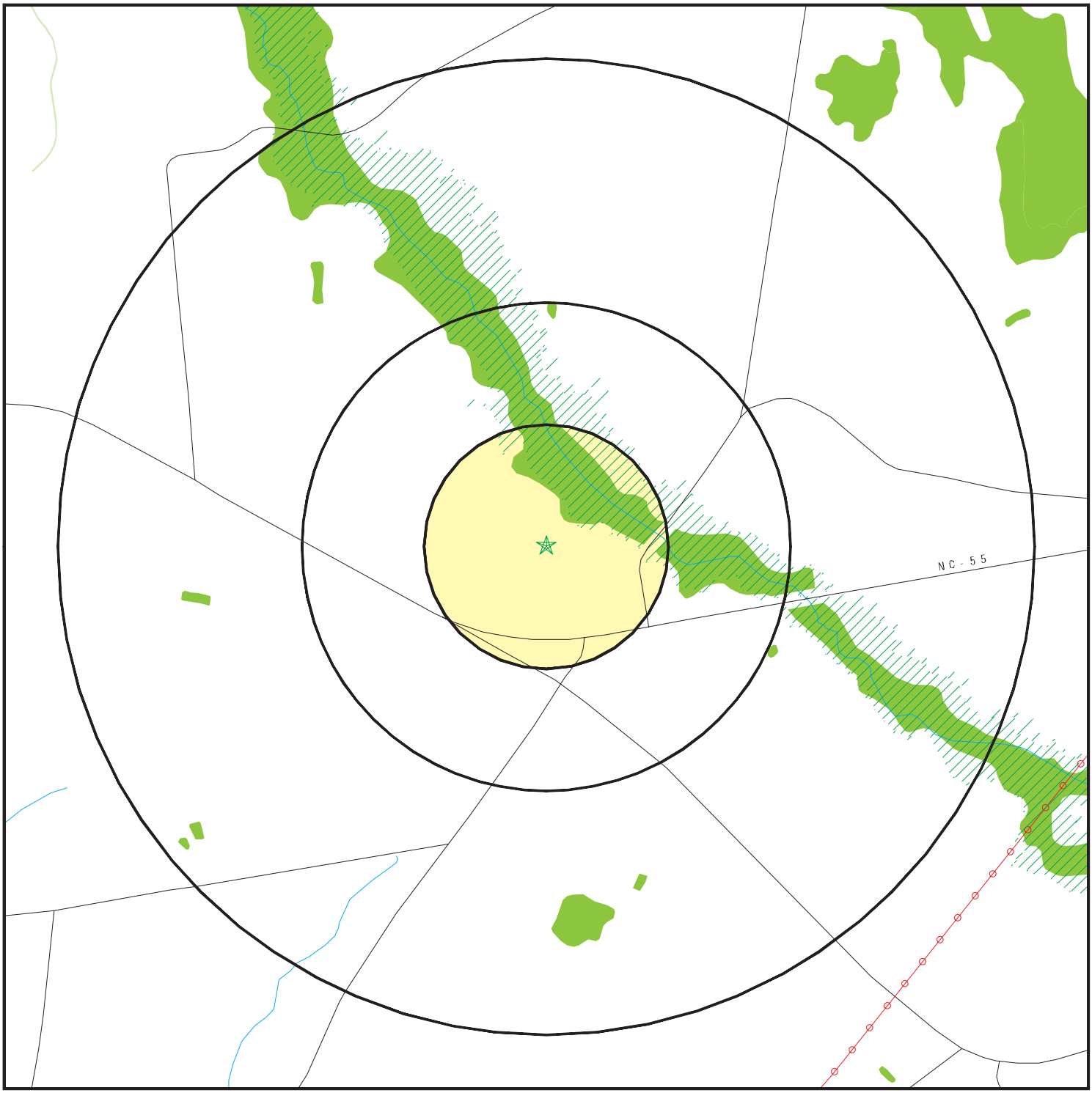
Surrounding sites were not identified.

Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

There were no unmapped sites in this report.

OVERVIEW MAP - 6321734.2S

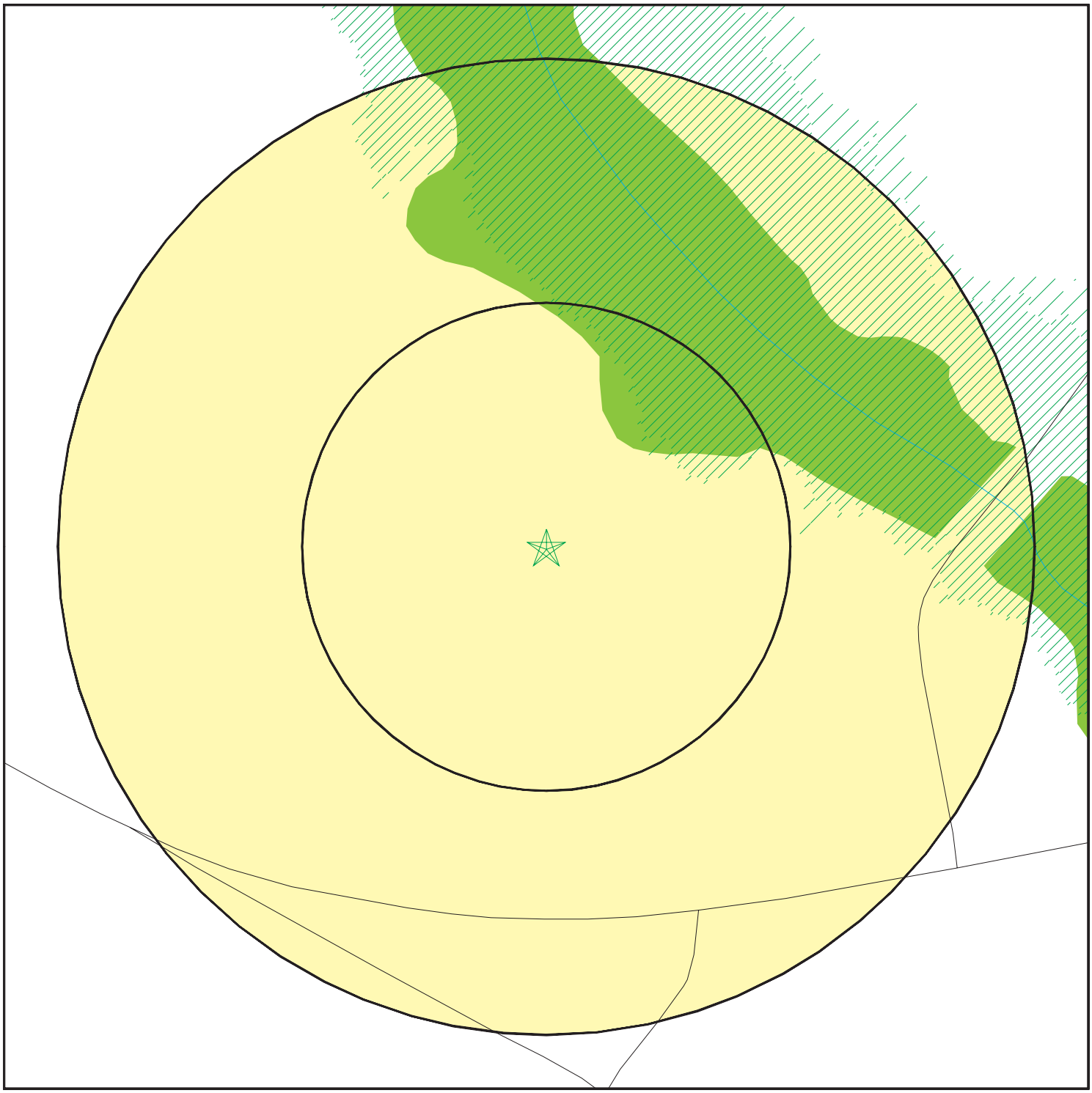


- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- National Priority List Sites
- Dept. Defense Sites
- Indian Reservations BIA
- Power transmission lines
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Hazardous Substance Disposal Sites

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Thunder Mitigation Site	CLIENT: Restoration Systems, LLC
ADDRESS: 1107 W NC 55 HWY Mount Olive NC 28365	CONTACT: JD Hamby
LAT/LONG: 35.207935 / 78.112654	INQUIRY #: 6321734.2s DATE: January 06, 2021 9:51 am

DETAIL MAP - 6321734.2S



- Target Property
- Sites at elevations higher than or equal to the target property
- Sites at elevations lower than the target property
- Manufactured Gas Plants
- Sensitive Receptors
- National Priority List Sites
- Dept. Defense Sites

0 1/16 1/8 1/4 Miles

- Indian Reservations BIA
- Special Flood Hazard Area (1%)
- 0.2% Annual Chance Flood Hazard
- National Wetland Inventory
- State Wetlands
- Hazardous Substance Disposal Sites

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: Thunder Mitigation Site	CLIENT: Restoration Systems, LLC
ADDRESS: 1107 W NC 55 HWY Mount Olive NC 28365	CONTACT: JD Hamby
LAT/LONG: 35.207935 / 78.112654	INQUIRY #: 6321734.2s DATE: January 06, 2021 9:52 am

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
NC HSDS	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
SHWS	1.000		0	0	0	0	NR	0
State and tribal landfill and/or solid waste disposal site lists								
SWF/LF	0.500		0	0	0	NR	NR	0
DEBRIS	0.500		0	0	0	NR	NR	0
OLI	0.500		0	0	0	NR	NR	0
LCID	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
State and tribal leaking storage tank lists								
LAST	0.500		0	0	0	NR	NR	0
LUST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
LUST TRUST	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
INST CONTROL	0.500		0	0	0	NR	NR	0
State and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
SWRCY	0.500		0	0	0	NR	NR	0
HIST LF	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
IMD	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SPILLS 90	TP		NR	NR	NR	NR	NR	0
SPILLS 80	TP		NR	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
COAL ASH	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
AOP	TP		NR	NR	NR	NR	NR	0
PCSRP	0.500		0	0	0	NR	NR	0
CCB	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
SEPT HAULERS	TP		NR	NR	NR	NR	NR	0
MINES MRDS	TP		NR	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA HWS	TP		NR	NR	NR	NR	NR	0
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 0 records.

ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
		NO SITES FOUND			

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: EPA
Telephone: N/A
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: EPA
Telephone: N/A
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: EPA
Telephone: N/A
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 12/23/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 08/06/2020
Date Data Arrived at EDR: 08/21/2020
Date Made Active in Reports: 11/11/2020
Number of Days to Update: 82

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/18/2020
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/18/2020
Number of Days to Update: 13

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 11/05/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/15/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 7

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

HSDS: Hazardous Substance Disposal Site

Locations of uncontrolled and unregulated hazardous waste sites. The file includes sites on the National Priority List as well as those on the state priority list.

Date of Government Version: 08/09/2011
Date Data Arrived at EDR: 11/08/2011
Date Made Active in Reports: 12/05/2011
Number of Days to Update: 27

Source: North Carolina Center for Geographic Information and Analysis
Telephone: 919-754-6580
Last EDR Contact: 10/14/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: No Update Planned

State- and tribal - equivalent CERCLIS

SHWS: Inactive Hazardous Sites Inventory

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: 09/04/2020
Date Data Arrived at EDR: 09/09/2020
Date Made Active in Reports: 12/03/2020
Number of Days to Update: 85

Source: Department of Environment, Health and Natural Resources
Telephone: 919-508-8400
Last EDR Contact: 12/08/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: List of Solid Waste Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 09/10/2020
Date Data Arrived at EDR: 09/23/2020
Date Made Active in Reports: 12/14/2020
Number of Days to Update: 82

Source: Department of Environment and Natural Resources
Telephone: 919-733-0692
Last EDR Contact: 12/23/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Varies

OLI: Old Landfill Inventory

Old landfill inventory location information. (Does not include no further action sites and other agency lead sites).

Date of Government Version: 09/11/2020
Date Data Arrived at EDR: 10/09/2020
Date Made Active in Reports: 12/30/2020
Number of Days to Update: 82

Source: Department of Environment & Natural Resources
Telephone: 919-733-4996
Last EDR Contact: 10/05/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

DEBRIS: Solid Waste Active Disaster Debris Sites Listing
NCDEQ Division of Waste Management Solid Waste Section Temporary Disaster Debris Staging Site (TDDSS) Locations which are available to be activated in a disaster or emergency.. Disaster Debris Sites can only be used for temporary disaster debris storage if the site's responsible party activates the site for use by notifying the NCDEQ DWM Solid Waste Section staff during an emergency

Date of Government Version: 09/02/2020
Date Data Arrived at EDR: 09/16/2020
Date Made Active in Reports: 12/08/2020
Number of Days to Update: 83
Source: Department of Environmental Quality
Telephone: 919-707-8247
Last EDR Contact: 12/14/2020
Next Scheduled EDR Contact: 03/29/2021
Data Release Frequency: Varies

LCID: Land-Clearing and Inert Debris (LCID) Landfill Notifications
A list all of the Land-Clearing and Inert Debris (LCID) Landfill Notification facilities (under 2 acres in size) in North Carolina.

Date of Government Version: 04/30/2020
Date Data Arrived at EDR: 07/09/2020
Date Made Active in Reports: 09/23/2020
Number of Days to Update: 76
Source: Department of Environmental Quality
Telephone: 919-707-8248
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

State and tribal leaking storage tank lists

LAST: Leaking Aboveground Storage Tanks
A listing of leaking aboveground storage tank site locations.

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/04/2020
Date Made Active in Reports: 10/27/2020
Number of Days to Update: 84
Source: Department of Environment & Natural Resources
Telephone: 877-623-6748
Last EDR Contact: 11/03/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

LUST: Regional UST Database
This database contains information obtained from the Regional Offices. It provides a more detailed explanation of current and historic activity for individual sites, as well as what was previously found in the Incident Management Database. Sites in this database with Incident Numbers are considered LUSTs.

Date of Government Version: 10/30/2020
Date Data Arrived at EDR: 11/03/2020
Date Made Active in Reports: 11/18/2020
Number of Days to Update: 15
Source: Department of Environment and Natural Resources
Telephone: 919-707-8200
Last EDR Contact: 11/03/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 78
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/15/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

LUST TRUST: State Trust Fund Database
This database contains information about claims against the State Trust Funds for reimbursements for expenses incurred while remediating Leaking USTs.

Date of Government Version: 10/02/2020
Date Data Arrived at EDR: 10/07/2020
Date Made Active in Reports: 12/31/2020
Number of Days to Update: 85
Source: Department of Environment and Natural Resources
Telephone: 919-733-1315
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Quarterly

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 07/21/2020
Date Data Arrived at EDR: 09/03/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 83

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

UST: Petroleum Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 10/30/2020
Date Data Arrived at EDR: 11/04/2020
Date Made Active in Reports: 12/31/2020
Number of Days to Update: 57

Source: Department of Environment and Natural Resources
Telephone: 919-733-1308
Last EDR Contact: 11/04/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

AST: AST Database
Facilities with aboveground storage tanks that have a capacity greater than 21,000 gallons.

Date of Government Version: 08/12/2020
Date Data Arrived at EDR: 09/15/2020
Date Made Active in Reports: 12/07/2020
Number of Days to Update: 83

Source: Department of Environment and Natural Resources
Telephone: 919-715-6183
Last EDR Contact: 12/09/2020
Next Scheduled EDR Contact: 03/29/2021
Data Release Frequency: Semi-Annually

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/29/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 11/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 85

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 04/03/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 78

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/14/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/08/2020
Date Data Arrived at EDR: 05/20/2020
Date Made Active in Reports: 08/12/2020
Number of Days to Update: 84

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

INST CONTROL: No Further Action Sites With Land Use Restrictions Monitoring

A land use restricted site is a property where there are limits or requirements on future use of the property due to varying levels of cleanup possible, practical, or necessary at the site.

Date of Government Version: 09/04/2020
Date Data Arrived at EDR: 09/09/2020
Date Made Active in Reports: 12/03/2020
Number of Days to Update: 85

Source: Department of Environmental Quality
Telephone: 919-508-8400
Last EDR Contact: 12/11/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/15/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Responsible Party Voluntary Action Sites
Responsible Party Voluntary Action site locations.

Date of Government Version: 09/04/2020
Date Data Arrived at EDR: 09/09/2020
Date Made Active in Reports: 12/03/2020
Number of Days to Update: 85
Source: Department of Environment and Natural Resources
Telephone: 919-508-8400
Last EDR Contact: 12/08/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Projects Inventory
A brownfield site is an abandoned, idled, or underused property where the threat of environmental contamination has hindered its redevelopment. All of the sites in the inventory are working toward a brownfield agreement for cleanup and liabitliy control.

Date of Government Version: 12/01/2020
Date Data Arrived at EDR: 12/08/2020
Date Made Active in Reports: 12/09/2020
Number of Days to Update: 1
Source: Department of Environment and Natural Resources
Telephone: 919-733-4996
Last EDR Contact: 12/08/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 09/14/2020
Date Data Arrived at EDR: 09/15/2020
Date Made Active in Reports: 12/10/2020
Number of Days to Update: 86
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 12/11/2020
Next Scheduled EDR Contact: 03/29/2021
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF: Solid Waste Facility Listing
A listing of solid waste facilities.

Date of Government Version: 11/06/2006
Date Data Arrived at EDR: 02/13/2007
Date Made Active in Reports: 03/02/2007
Number of Days to Update: 17

Source: Department of Environment & Natural Resources
Telephone: 919-733-0692
Last EDR Contact: 01/19/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Recycling Center Listing
A listing of recycling center locations.

Date of Government Version: 09/16/2020
Date Data Arrived at EDR: 09/17/2020
Date Made Active in Reports: 12/09/2020
Number of Days to Update: 83

Source: Department of Environment & Natural Resources
Telephone: 919-707-8137
Last EDR Contact: 10/22/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 10/20/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 10/30/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 03/18/2020
Date Data Arrived at EDR: 03/19/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 82

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/16/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/20/2020
Date Data Arrived at EDR: 09/22/2020
Date Made Active in Reports: 12/14/2020
Number of Days to Update: 83

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

SPILLS: Spills Incident Listing

A listing spills, hazardous material releases, sanitary sewer overflows, wastewater treatment plant bypasses and upsets, citizen complaints, and any other environmental emergency calls reported to the agency.

Date of Government Version: 06/30/2020
Date Data Arrived at EDR: 07/30/2020
Date Made Active in Reports: 10/15/2020
Number of Days to Update: 77

Source: Department of Environment & Natural Resources
Telephone: 919-807-6308
Last EDR Contact: 12/28/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Quarterly

IMD: Incident Management Database

Groundwater and/or soil contamination incidents

Date of Government Version: 07/31/2020
Date Data Arrived at EDR: 08/04/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 79

Source: Department of Environment and Natural Resources
Telephone: 877-623-6748
Last EDR Contact: 11/03/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: No Update Planned

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 09/27/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/06/2013
Number of Days to Update: 62

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SPILLS 80: SPILLS80 data from FirstSearch

Spills 80 includes those spill and release records available from FirstSearch databases prior to 1990. Typically, they may include chemical, oil and/or hazardous substance spills recorded before 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 80.

Date of Government Version: 06/14/2001
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/06/2013
Number of Days to Update: 62

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/14/2020
Date Data Arrived at EDR: 12/17/2020
Date Made Active in Reports: 12/22/2020
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: (404) 562-8651
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 08/05/2020
Date Data Arrived at EDR: 08/13/2020
Date Made Active in Reports: 10/21/2020
Number of Days to Update: 69

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 11/17/2020
Next Scheduled EDR Contact: 03/01/2021
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/08/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 11/09/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 09/21/2020
Date Data Arrived at EDR: 09/22/2020
Date Made Active in Reports: 12/14/2020
Number of Days to Update: 83

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 12/17/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 11/02/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 11/06/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/17/2020
Date Made Active in Reports: 09/10/2020
Number of Days to Update: 85

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/18/2020
Next Scheduled EDR Contact: 03/29/2021
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 08/14/2020
Date Made Active in Reports: 11/04/2020
Number of Days to Update: 82

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 11/17/2020
Next Scheduled EDR Contact: 03/01/2021
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 10/19/2020
Date Data Arrived at EDR: 10/19/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 10/19/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 07/24/2020
Date Data Arrived at EDR: 08/03/2020
Date Made Active in Reports: 10/21/2020
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 10/14/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/27/2020
Date Data Arrived at EDR: 05/06/2020
Date Made Active in Reports: 06/09/2020
Number of Days to Update: 34

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 10/09/2019
Date Data Arrived at EDR: 10/11/2019
Date Made Active in Reports: 12/20/2019
Number of Days to Update: 70

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 10/02/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/30/2020
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/05/2020
Date Data Arrived at EDR: 08/10/2020
Date Made Active in Reports: 10/08/2020
Number of Days to Update: 59
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 10/12/2020
Next Scheduled EDR Contact: 01/31/2021
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 12/04/2019
Date Made Active in Reports: 01/15/2020
Number of Days to Update: 42
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/01/2020
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 11/30/2020
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 11/06/2021
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 09/24/2020
Next Scheduled EDR Contact: 01/11/2021
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 01/02/2020
Date Data Arrived at EDR: 01/28/2020
Date Made Active in Reports: 04/17/2020
Number of Days to Update: 80

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 10/27/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2020
Date Data Arrived at EDR: 10/08/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 88

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/22/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 151

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 12/23/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 10/06/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 11/06/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 08/30/2019
Date Data Arrived at EDR: 11/15/2019
Date Made Active in Reports: 01/28/2020
Number of Days to Update: 74

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 11/20/2020
Next Scheduled EDR Contact: 03/01/2021
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 10/28/2020
Date Data Arrived at EDR: 11/05/2020
Date Made Active in Reports: 11/25/2020
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 04/12/2021
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data
A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

MINES VIOLATIONS: MSHA Violation Assessment Data
Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 09/10/2020
Date Data Arrived at EDR: 09/15/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 66

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 11/24/2020
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Quarterly

US MINES: Mines Master Index File
Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/04/2020
Date Data Arrived at EDR: 08/25/2020
Date Made Active in Reports: 11/18/2020
Number of Days to Update: 85

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 11/23/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing
This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 05/06/2020
Date Data Arrived at EDR: 05/27/2020
Date Made Active in Reports: 08/13/2020
Number of Days to Update: 78

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/25/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing
Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 11/25/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines
An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/16/2020
Date Data Arrived at EDR: 09/17/2020
Date Made Active in Reports: 12/10/2020
Number of Days to Update: 84

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/10/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 09/04/2020
Date Data Arrived at EDR: 09/15/2020
Date Made Active in Reports: 11/20/2020
Number of Days to Update: 66

Source: EPA
Telephone: (404) 562-9900
Last EDR Contact: 12/01/2020
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 11/17/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 07/02/2020
Date Made Active in Reports: 09/17/2020
Number of Days to Update: 77

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 10/08/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 10/03/2020
Date Data Arrived at EDR: 10/06/2020
Date Made Active in Reports: 01/04/2021
Number of Days to Update: 90

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 10/06/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Quarterly

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 08/17/2020
Date Data Arrived at EDR: 08/17/2020
Date Made Active in Reports: 10/21/2020
Number of Days to Update: 65

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 11/13/2020
Next Scheduled EDR Contact: 03/01/2021
Data Release Frequency: Quarterly

AIRS: Air Quality Permit Listing

A listing of facilities with air quality permits.

Date of Government Version: 09/08/2020
Date Data Arrived at EDR: 09/09/2020
Date Made Active in Reports: 12/03/2020
Number of Days to Update: 85

Source: Department of Environmental Quality
Telephone: 919-707-8726
Last EDR Contact: 12/08/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Varies

ASBESTOS: ASBESTOS
Asbestos notification sites

Date of Government Version: 08/04/2020
Date Data Arrived at EDR: 08/07/2020
Date Made Active in Reports: 10/22/2020
Number of Days to Update: 76

Source: Department of Health & Human Services
Telephone: 919-707-5973
Last EDR Contact: 11/12/2020
Next Scheduled EDR Contact: 02/01/2021
Data Release Frequency: Varies

COAL ASH: Coal Ash Disposal Sites
A listing of coal combustion products distribution permits issued by the Division for the treatment, storage, transportation, use and disposal of coal combustion products.

Date of Government Version: 09/10/2020
Date Data Arrived at EDR: 09/23/2020
Date Made Active in Reports: 12/14/2020
Number of Days to Update: 82

Source: Department of Environment & Natural Resources
Telephone: 919-807-6359
Last EDR Contact: 12/23/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Varies

DRYCLEANERS: Drycleaning Sites
Potential and known drycleaning sites, active and abandoned, that the Drycleaning Solvent Cleanup Program has knowledge of and entered into this database.

Date of Government Version: 09/08/2020
Date Data Arrived at EDR: 09/16/2020
Date Made Active in Reports: 12/08/2020
Number of Days to Update: 83

Source: Department of Environment & Natural Resources
Telephone: 919-508-8400
Last EDR Contact: 12/18/2020
Next Scheduled EDR Contact: 03/29/2021
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing
A listing of financial assurance information for underground storage tank facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 10/30/2020
Date Data Arrived at EDR: 11/04/2020
Date Made Active in Reports: 12/31/2020
Number of Days to Update: 57

Source: Department of Environment & Natural Resources
Telephone: 919-733-1322
Last EDR Contact: 11/04/2020
Next Scheduled EDR Contact: 02/15/2021
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing
Information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 10/02/2012
Date Data Arrived at EDR: 10/03/2012
Date Made Active in Reports: 10/26/2012
Number of Days to Update: 23

Source: Department of Environmental & Natural Resources
Telephone: 919-508-8496
Last EDR Contact: 12/16/2020
Next Scheduled EDR Contact: 04/05/2021
Data Release Frequency: Varies

Financial Assurance 3: Financial Assurance Information
Hazardous waste financial assurance information.

Date of Government Version: 09/04/2020
Date Data Arrived at EDR: 09/04/2020
Date Made Active in Reports: 11/30/2020
Number of Days to Update: 87
Source: Department of Environment & Natural Resources
Telephone: 919-707-8222
Last EDR Contact: 12/02/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Varies

NPDES: NPDES Facility Location Listing
General information regarding NPDES(National Pollutant Discharge Elimination System) permits.

Date of Government Version: 07/01/2020
Date Data Arrived at EDR: 07/27/2020
Date Made Active in Reports: 10/14/2020
Number of Days to Update: 79
Source: Department of Environment & Natural Resources
Telephone: 919-733-7015
Last EDR Contact: 10/27/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Varies

UIC: Underground Injection Wells Listing
A listing of uncerground injection wells locations.

Date of Government Version: 10/26/2020
Date Data Arrived at EDR: 11/30/2020
Date Made Active in Reports: 12/07/2020
Number of Days to Update: 7
Source: Department of Environment & Natural Resources
Telephone: 919-807-6412
Last EDR Contact: 11/25/2020
Next Scheduled EDR Contact: 03/15/2021
Data Release Frequency: Quarterly

AOP: Animal Operation Permits Listing
This listing includes animal operations that are required to be permitted by the state.

Date of Government Version: 04/01/2020
Date Data Arrived at EDR: 05/26/2020
Date Made Active in Reports: 05/27/2020
Number of Days to Update: 1
Source: Department of Environmental Quality
Telephone: 919-707-9129
Last EDR Contact: 12/11/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Varies

SEPT HAULERS: Permitted Septage Haulers Listing
This list of all active and permitted Septage Land Application Site (SLAS) and Septage Detention and Treatment Facility (SDTF) sites in North Carolina. The purpose of this map is to provide the public and government entities a visual overview of the businesses that manage septage and septage facilities throughout the state.

Date of Government Version: 05/13/2020
Date Data Arrived at EDR: 07/07/2020
Date Made Active in Reports: 09/23/2020
Number of Days to Update: 78
Source: Department of Environmental Quality
Telephone: 919-707-8248
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

PCSRP: Petroleum-Contaminated Soil Remediation Permits
To treat petroleum-contaminated soil in order to protect North Carolinaa??s environment and the health of the citizens of North Carolina.

Date of Government Version: 07/06/2020
Date Data Arrived at EDR: 07/07/2020
Date Made Active in Reports: 09/23/2020
Number of Days to Update: 78
Source: Department of Environmental Quality
Telephone: 919-707-8248
Last EDR Contact: 12/30/2020
Next Scheduled EDR Contact: 04/18/2021
Data Release Frequency: Varies

PCS ENF: Enforcement data
No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29
Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 12/30/2020
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Varies

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 04/06/2018
Date Data Arrived at EDR: 10/21/2019
Date Made Active in Reports: 10/24/2019
Number of Days to Update: 3

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 11/25/2020
Next Scheduled EDR Contact: 03/08/2021
Data Release Frequency: Varies

CCB: Coal Ash Structural Fills (CCB) Listing
These are not permitted Coal Ash landfills A list of all of the now closed Coal Ash Structural Fills (CCB) in North Carolina, in point data form. The purpose is to provide the public and other government entities a visual overview of coal ash structural fills throughout the state and increase public awareness of their current locations.

Date of Government Version: 02/27/2020
Date Data Arrived at EDR: 07/07/2020
Date Made Active in Reports: 09/23/2020
Number of Days to Update: 78

Source: Department of Environmental Quality
Telephone: 919-707-8248
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Varies

PCS: Permit Compliance System
PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 07/14/2011
Date Data Arrived at EDR: 08/05/2011
Date Made Active in Reports: 09/29/2011
Number of Days to Update: 55

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

PCS INACTIVE: Listing of Inactive PCS Permits
An inactive permit is a facility that has shut down or is no longer discharging.

Date of Government Version: 11/05/2014
Date Data Arrived at EDR: 01/06/2015
Date Made Active in Reports: 05/06/2015
Number of Days to Update: 120

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 01/04/2021
Next Scheduled EDR Contact: 04/19/2021
Data Release Frequency: Semi-Annually

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants
The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List

The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environment, Health and Natural Resources in North Carolina.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/24/2013
Number of Days to Update: 176

Source: Department of Environment, Health and Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environment, Health and Natural Resources in North Carolina.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Environment, Health and Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environment, Health and Natural Resources in North Carolina.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/20/2013
Number of Days to Update: 172

Source: Department of Environment, Health and Natural Resources
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 08/10/2020
Date Data Arrived at EDR: 10/20/2020
Date Made Active in Reports: 11/02/2020
Number of Days to Update: 13

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 11/09/2020
Next Scheduled EDR Contact: 02/22/2021
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 10/09/2020
Next Scheduled EDR Contact: 01/18/2021
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 04/29/2020
Date Made Active in Reports: 07/10/2020
Number of Days to Update: 72

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 10/30/2020
Next Scheduled EDR Contact: 02/08/2021
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 10/07/2020
Next Scheduled EDR Contact: 01/25/2021
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 10/02/2019
Date Made Active in Reports: 12/10/2019
Number of Days to Update: 69

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 11/11/2020
Next Scheduled EDR Contact: 03/01/2021
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/03/2020
Next Scheduled EDR Contact: 03/22/2021
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Child Care Facility List
Source: Department of Health & Human Services
Telephone: 919-662-4499

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: US Fish & Wildlife Service
Telephone: 703-358-2171

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

THUNDER MITIGATION SITE
1107 W NC 55 HWY
MOUNT OLIVE, NC 28365

TARGET PROPERTY COORDINATES

Latitude (North):	35.207935 - 35° 12' 28.57''
Longitude (West):	78.112654 - 78° 6' 45.55''
Universal Tranverse Mercator:	Zone 17
UTM X (Meters):	762850.6
UTM Y (Meters):	3899724.8
Elevation:	141 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5947432 MOUNT OLIVE, NC
Version Date:	2013
West Map:	5947406 DOBBERSVILLE, NC
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

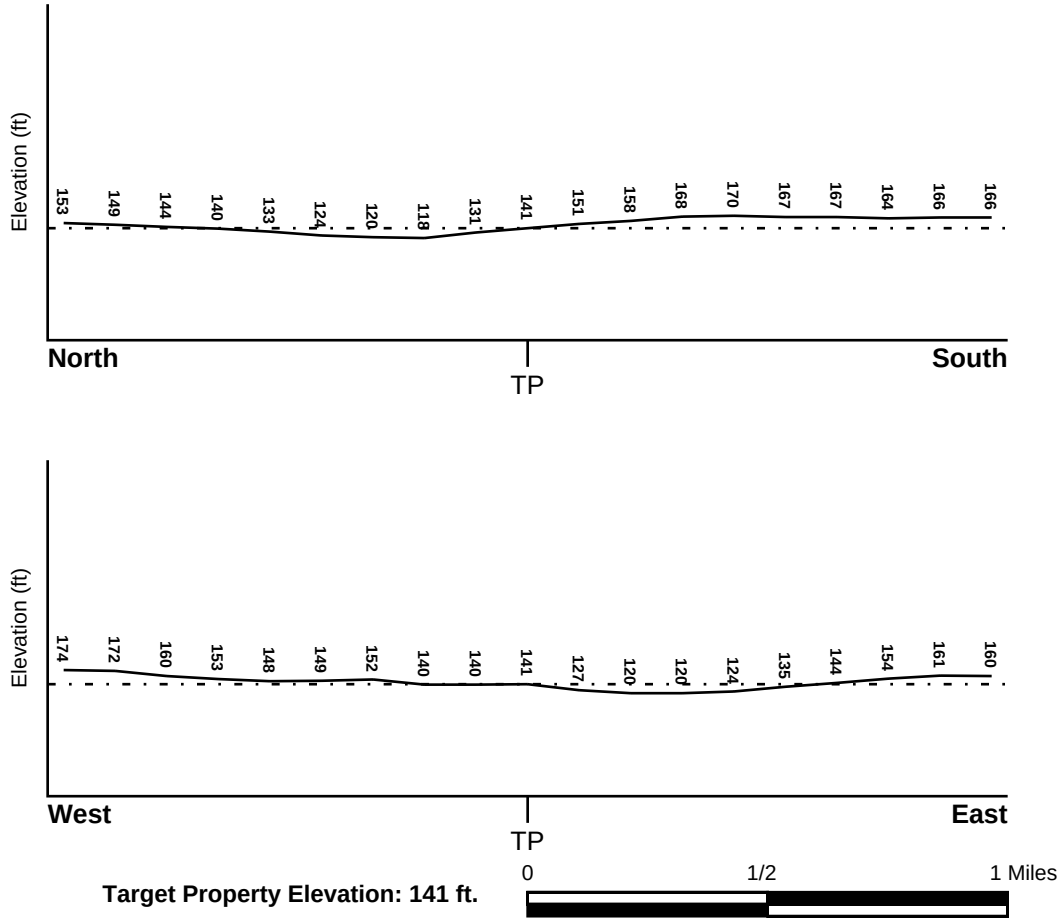
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
3720256300J	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
3720255300J	FEMA FIRM Flood data
3720257300J	FEMA FIRM Flood data
3720256200J	FEMA FIRM Flood data
3720257200J	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
MOUNT OLIVE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Mesozoic
System:	Cretaceous
Series:	Washita Group
Code:	lK3 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name:	NORFOLK
Soil Surface Texture:	loamy sand
Hydrologic Group:	Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.
Soil Drainage Class:	Well drained. Soils have intermediate water holding capacity. Depth to water table is more than 6 feet.

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel:	MODERATE
Depth to Bedrock Min:	> 60 inches
Depth to Bedrock Max:	> 60 inches

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	14 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 20.00 Min: 6.00	Max: 6.00 Min: 3.60
2	14 inches	38 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 3.60
3	38 inches	70 inches	sandy clay loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand.	Max: 2.00 Min: 0.60	Max: 5.50 Min: 3.60
4	70 inches	99 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: sandy loam
loam
mucky - loam

Surficial Soil Types: sandy loam
loam
mucky - loam

Shallow Soil Types: fine sandy loam
sandy clay loam
clay loam

Deeper Soil Types: sandy clay loam
stratified
sandy clay

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

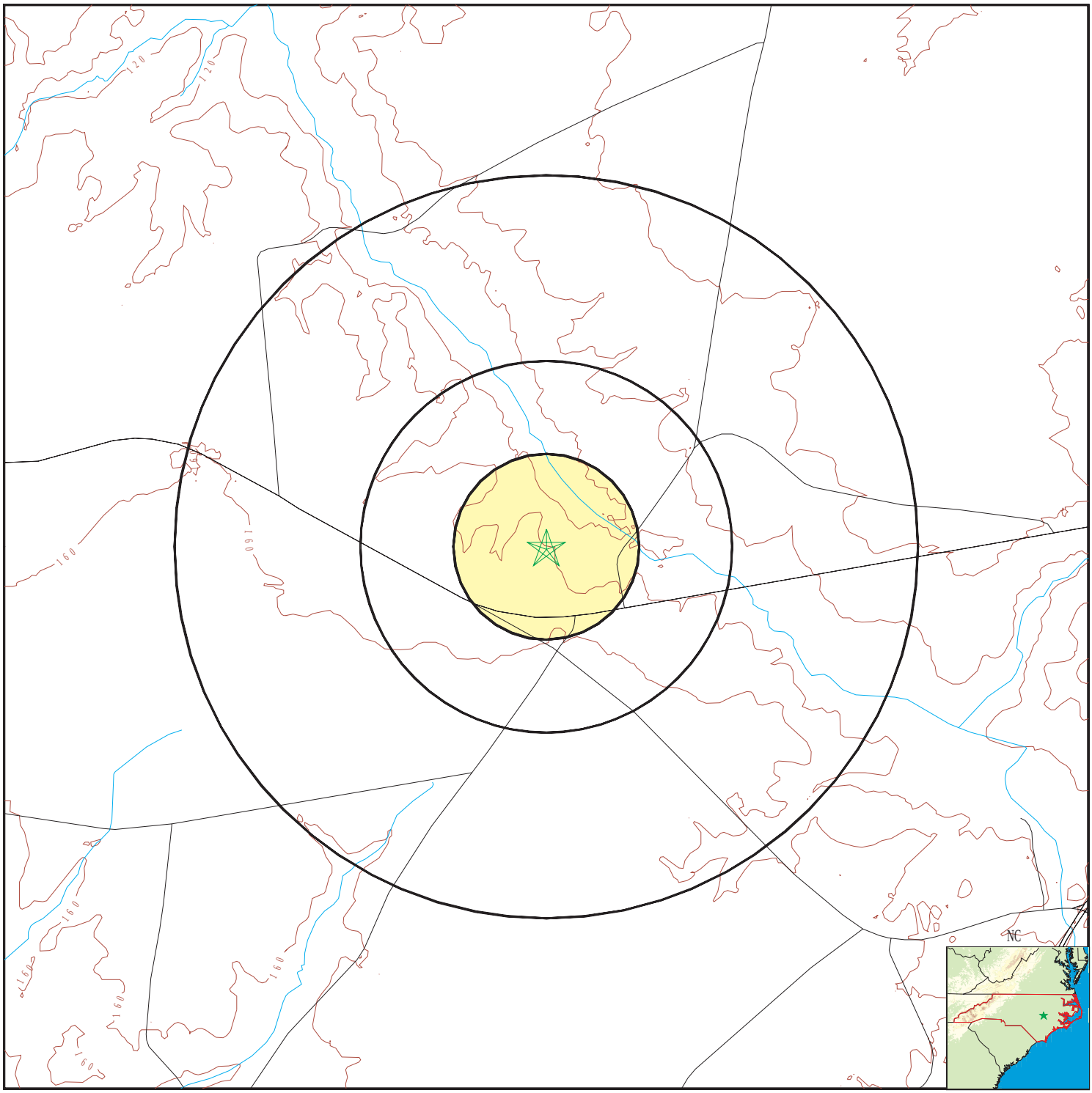
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 6321734.2s



County Boundary
Major Roads
Contour Lines
Earthquake epicenter, Richter 5 or greater
Water Wells
Public Water Supply Wells
Cluster of Multiple Icons

0 1/4 1/2 1 Miles

Groundwater Flow Direction
GI Indeterminate Groundwater Flow at Location
GV Groundwater Flow Varies at Location

Wildlife Areas
Natural Areas
Rare & Endangered Species

SITE NAME:	Thunder Mitigation Site	CLIENT:	Restoration Systems, LLC
ADDRESS:	1107 W NC 55 HWY Mount Olive NC 28365	CONTACT:	JD Hamby
		INQUIRY #:	6321734.2s
LAT/LONG:	35.207935 / 78.112654	DATE:	January 06, 2021 9:52 am

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: NC Radon

Radon Test Results

Num Results	Avg pCi/L	Min pCi/L	Max pCi/L
1	0.30	0.3	0.3

Federal EPA Radon Zone for WAYNE County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for WAYNE COUNTY, NC

Number of sites tested: 2

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: US Fish & Wildlife Service
Telephone: 703-358-2171

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

North Carolina Public Water Supply Wells
Source: Department of Environmental Health
Telephone: 919-715-3243

OTHER STATE DATABASE INFORMATION

North Carolina Wildlife Resources/Game Lands
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
All publicly owned game lands managed by the North Carolina Wildlife Resources Commission and as listed in Hunting and Fishing Maps.

NC Natural Heritage Sites: Natural Heritage Element Occurrence Sites
Source: Natural Heritage Occurrence Sites Center for Geographic Information and Analysis
Telephone: 919-733-2090
A point coverage identifying locations of rare and endangered species, occurrences of exemplary or unique natural ecosystems (terrestrial or aquatic), and special animal habitats (e.g., colonial waterbird nesting sites).

NC Natural Areas: Significant Natural Heritage Areas
Source: Center for Geographic Information and Analysis
Telephone: 919-733-2090
A polygon converage identifying sites (terrestrial or aquatic) that have particular biodiversity significance. A site's significance may be due to the presenceof rare species, rare or high quality natural communities, or other important ecological features.

RADON

State Database: NC Radon
Source: Department of Environment & Natural Resources
Telephone: 919-733-4984
Radon Statistical and Non Statiscal Data

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

STREET AND ADDRESS INFORMATION

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper | Secretary D. Reid Wilson

April 29, 2021

Josh Merritt
Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

jmerritt@restorationsystems.com

Re: Thunder Mitigation Site, 1107 NC-55, Mount Olive, Wayne County, ER 21-0851

Dear Mr. Merritt:

Thank you for your email of March 24, 2021, regarding the above-referenced undertaking. We have reviewed the submittal and offer the following comments.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

NC DEPARTMENT OF
NATURAL AND CULTURAL RESOURCES

Roy Cooper, **Governor**
D. Reid Wilson, **Secretary**
Walter Clark
Director, Division of Land and Water Stewardship

NCNHDE-13923

February 5, 2021

Alexander Baldwin
Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604
RE: Thunder

Dear Alexander Baldwin:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Thunder
February 5, 2021
NCNHDE-13923

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Freshwater Fish	36884	Notropis chalybaeus	Ironcolor Shiner	1961-06-12	H	4-Low	---	Significantly Rare	G4	S2S3

No Natural Areas are Documented Within a One-mile Radius of the Project Area

No Managed Areas are Documented Within a One-mile Radius of the Project Area

Definitions and an explanation of status designations and codes can be found at https://ncnhde.natureserve.org/help. Data query generated on February 5, 2021; source: NCNHP, Q4 January 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-13923: Thunder

February 5, 2021

Project Boundary

Buffered Project Boundary

1:24,995

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To: February 05, 2021
Consultation Code: 04EN2000-2021-SLI-0632
Event Code: 04EN2000-2021-E-01354
Project Name: Thunder Mitigation Site

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The species list generated pursuant to the information you provided identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or

evaluation and can be found on our web page at http://www.fws.gov/raleigh. Please check the web site often for updated information or changes

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

Not all Threatened and Endangered Species that occur in North Carolina are subject to section 7 consultation with the U.S Fish and Wildlife Service. Atlantic and shortnose sturgeon, sea turtles,when in the water, and certain marine mammals are under purview of the National Marine Fisheries Service. If your project occurs in marine, estuarine, or coastal river systems you should also contact the National Marine Fisheries Service, http://www.nmfs.noaa.gov/

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If you have any questions or comments, please contact John Ellis of this office at john_ellis@fws.gov.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
(919) 856-4520

Project Summary

Consultation Code: 04EN2000-2021-SLI-0632
Event Code: 04EN2000-2021-E-01354
Project Name: Thunder Mitigation Site
Project Type: LAND - RESTORATION / ENHANCEMENT
Project Description: Nutrient Buffer Mitigation
Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.2087825,-78.11103696252235,14z

Counties: Wayne County, North Carolina

Endangered Species Act Species

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Amphibians

NAME	STATUS
Neuse River Waterdog *Necturus lewisi* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6772	Proposed Threatened

Fishes

NAME	STATUS
Carolina Madtom *Noturus furiosus* There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/528	Proposed Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Species Conclusions Table

Project Name: Thunder Mitigation Site

Date: 02-05-2021

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Red-cockaded woodpecker	no suitable habitat present	no effect	Project is an existing ag field
Critical Habitat	no critical habitat present	no effect	Project is an existing ag field
Bald Eagle	unlikely to disturb nesting bald eagles	no effect	Project is an existing ag field
Northern long-eared bat	Suitable habitat not present (no trees)	No effect	No tree cutting or removal

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

Josh Merritt /Project Manager

Signature /Title

2/5/2021

Date

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: Feb. 5, 2021

Self-Certification Letter

Project Name Thunder Mitigation Site

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- [x] "no effect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- [ ] "may affect, not likely to adversely affect" determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- [ ] "may affect, likely to adversely affect" determination for the Northern long-eared bat (Myotis septentrionalis) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- [x] "no Eagle Act permit required" determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the "no effect" or "not likely to adversely affect" determinations for proposed and listed species and proposed and designated critical habitat; the "may affect" determination for Northern long-eared bat; and/or the "no Eagle Act permit required" determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website http://www.fws.gov/raleigh/pp.html. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package

NORTH CAROLINA WILDLIFE RESOURCES COMMISSION

Cameron Ingram, Executive Director

January 26, 2021

Mr. Joshua Merritt
Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, NC 27604

Subject: Request for Environmental Information for Thunder Mitigation Site, Wayne County, North Carolina.

Dear Mr. Merritt,

Biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the proposed project description. Comments are provided in accordance with certain provisions of the Clean Water Act of 1977 (as amended), Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667e) and North Carolina General Statutes (G.S. 113-131 et seq.).

Restoration Systems, LLC has developed the Thunder Mitigation Site. The 42.9-acre site will restore and preserve riparian buffer. The project area is located southeast of the intersection of Shady Grove Road and Highway 55, west of Mt Olive.

The project area drains to Thunder Swamp in the Neuse River basin. Stream restoration projects often improve water quality and aquatic habitat. Establishing native, forested buffers in riparian areas will improve both aquatic and terrestrial habitats and provide a travel corridor for wildlife species.

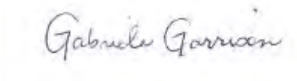
In addition to stringent best management practices for erosion and sediment control during construction, the NCWRC recommends the use of biodegradable and wildlife-friendly sediment and erosion control devices. Silt fencing, fiber rolls and/or other products should have loose-weave netting that is made of natural fiber materials with movable joints between the vertical and horizontal twines. Silt fencing and similar products that have been reinforced with plastic or metal mesh should be avoided as they impede the movement of terrestrial wildlife species. Excessive silt and sediment loads can have detrimental effects on aquatic resources including destruction of spawning habitat, suffocation of eggs and clogging of gills. Any invasive plant species found onsite should be removed and destroyed.

Thank you for the opportunity to review and comment on this project. If I can be of further assistance, please contact me at (910) 409-7350 or gabriela.garrison@ncwildlife.org.

Mailing Address: N.C. Wildlife Resources Commission • 1701 Mail Service Center • Raleigh, NC 27699-1701
Telephone: (919) 707-0010 • ncwildlife.org

January 26, 2021
Scoping – Thunder Mitigation Site

Sincerely,



Gabriela Garrison
Eastern Piedmont Habitat Conservation Coordinator
Habitat Conservation Program

From: Matthews, Kathryn H
To: Josh Merritt
Cc: Mann, Leigh
Subject: Fw: [EXTERNAL] Thunder Riparian Buffer Mitigation Site
Date: Monday, April 5, 2021 3:57:33 PM
Attachments: USFWS MTBA Thunder Mitigation Site.pdf

Hi Josh,

The Service does not have any significant concerns for this project with respect to MBTA. Planting of stream buffers should benefit migratory birds in the long-term.

Thank you for the opportunity to comment on this project.

Kathy Matthews
Please note that I am teleworking almost exclusively. Email is the best way to reach me. Thanks,

Kathy Matthews
Fish and Wildlife Biologist
U.S. Fish and Wildlife Service
551-F Pylon Drive
Raleigh, NC 27606
919-856-4520, x. 27

From: Ellis, John <john_ellis@fws.gov>
Sent: Thursday, March 25, 2021 2:01 PM
To: Matthews, Kathryn H <kathryn_matthews@fws.gov>
Subject: Fw: [EXTERNAL] Thunder Riparian Buffer Mitigation Site

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From: Josh Merritt <jmerritt@restorationsystems.com>
Sent: Thursday, March 25, 2021 1:54 PM
To: Ellis, John <john_ellis@fws.gov>
Subject: [EXTERNAL] Thunder Riparian Buffer Mitigation Site

Good Afternoon John,

This is Josh Merritt, a new project manager with Restoration Systems, LLC (RS). The purpose of this email is RS has recently been awarded a Full-Delivery project for the NC Division of Mitigation Services to restore Riparian Buffers within Wayne County, NC. It is RS's obligation to coordinate with your office for recommendations with the project relative to the Migratory Bird Act (MTBA). Attached to this email I hope you will find all the necessary documents to receive a concurrence.

If you have any questions, feel free to call or email me.

Best regards,
Josh M.

Josh Merritt
Project Manager
Restoration Systems
1101 Haynes Street, Suite 211, Raleigh NC, 27604
910-840-3809 (M)

United States Department of Agriculture

Natural Resources
Conservation Service

North Carolina
State Office

4407 Bland Rd.
Suite 117
Raleigh
North Carolina 27609
Voice (919) 873-2100
Fax (844) 325-2156

March 8, 2023

Raymond J. Holz
Restoration Systems, LLC
1101 Haynes St., Suite 211
Raleigh, NC 27604
Office: 919-334-9122

Dear Raymond Holz:

The following information is in response to your request soliciting comments regarding the Coor Island Phase B Mitigation site in Wayne County, NC.

> Projects are subject to Farmland Protection Policy Act (FPPA) requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.
>
> For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary to be farmland of statewide of local importance.
>
> “Farmland" does not include land already in or committed to urban development or water storage. Farmland ``already in'' urban development or water storage includes all such land with a density of 30 structures per 40-acre area. Farmland already in urban development also includes lands identified as ``urbanized area'' (UA) on the Census Bureau Map, or as urban area mapped with a ``tint overprint'' on the USGS topographical maps, or as ``urban-built-up'' on the USDA Important Farmland Maps. See over for more information.

The area in question **does include** land classified as Prime Farmland. In accordance with the Code of Federal Regulations 7CFR 658, Farmland Protection Policy Act, the AD-1006 was initiated. NRCS has completed Parts II, IV, V of the form, and returned for completion by the requesting agency.

If you have any questions, please feel free to email me at Ryan.Janway@usda.gov.

Sincerely,

Ryan Janway

Ryan Janway
Natural Resource Specialist

cc:
Andrew Faison, supervisory soil conservationist, NRCS, NC
Michael Jones, state soil scientist, Raleigh, NC

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request 03/03/2023
Name of Project Coor Island Phase B Mitigation Site	Federal Agency Involved FHWA
Proposed Land Use Nutrient Offset Credits	County and State Wayne County, North Carolina
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 3/3/2023 / Person Completing Form: Rvan Janwav

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated: 0	Average Farm Size: 300
Major Crop(s): Corn	Farmable Land In Govt. Jurisdiction Acres: 86.96 % 310,477	Amount of Farmland As Defined in FPPA Acres: 86.96 % 310,477	
Name of Land Evaluation System Used: Wayne County LESA	Name of State or Local Site Assessment System: NA	Date Land Evaluation Returned by NRCS: 3/8/2023	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating: Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly	17.7			
B. Total Acres To Be Converted Indirectly	0			
C. Total Acres In Site	17.7			
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	11.5			
B. Total Acres Statewide Important or Local Important Farmland	1.4			
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	.0051%			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	70.89%			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	49.95			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)				
2. Perimeter In Non-urban Use	(10)				
3. Percent Of Site Being Farmed	(20)				
4. Protection Provided By State and Local Government	(20)				
5. Distance From Urban Built-up Area	(15)				
6. Distance To Urban Support Services	(15)				
7. Size Of Present Farm Unit Compared To Average	(10)				
8. Creation Of Non-farmable Farmland	(10)				
9. Availability Of Farm Support Services	(5)				
10. On-Farm Investments	(20)				
11. Effects Of Conversion On Farm Support Services	(10)				
12. Compatibility With Existing Agricultural Use	(10)				
TOTAL SITE ASSESSMENT POINTS	160	0	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	49.95	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	0	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	49.95	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, http://fppa.nrcs.usda.gov/lesa/.

Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s)of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map**,** or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)

Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.

Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.

Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.

Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.

Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.

2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.
Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \text{ X } 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

United States Department of Agriculture

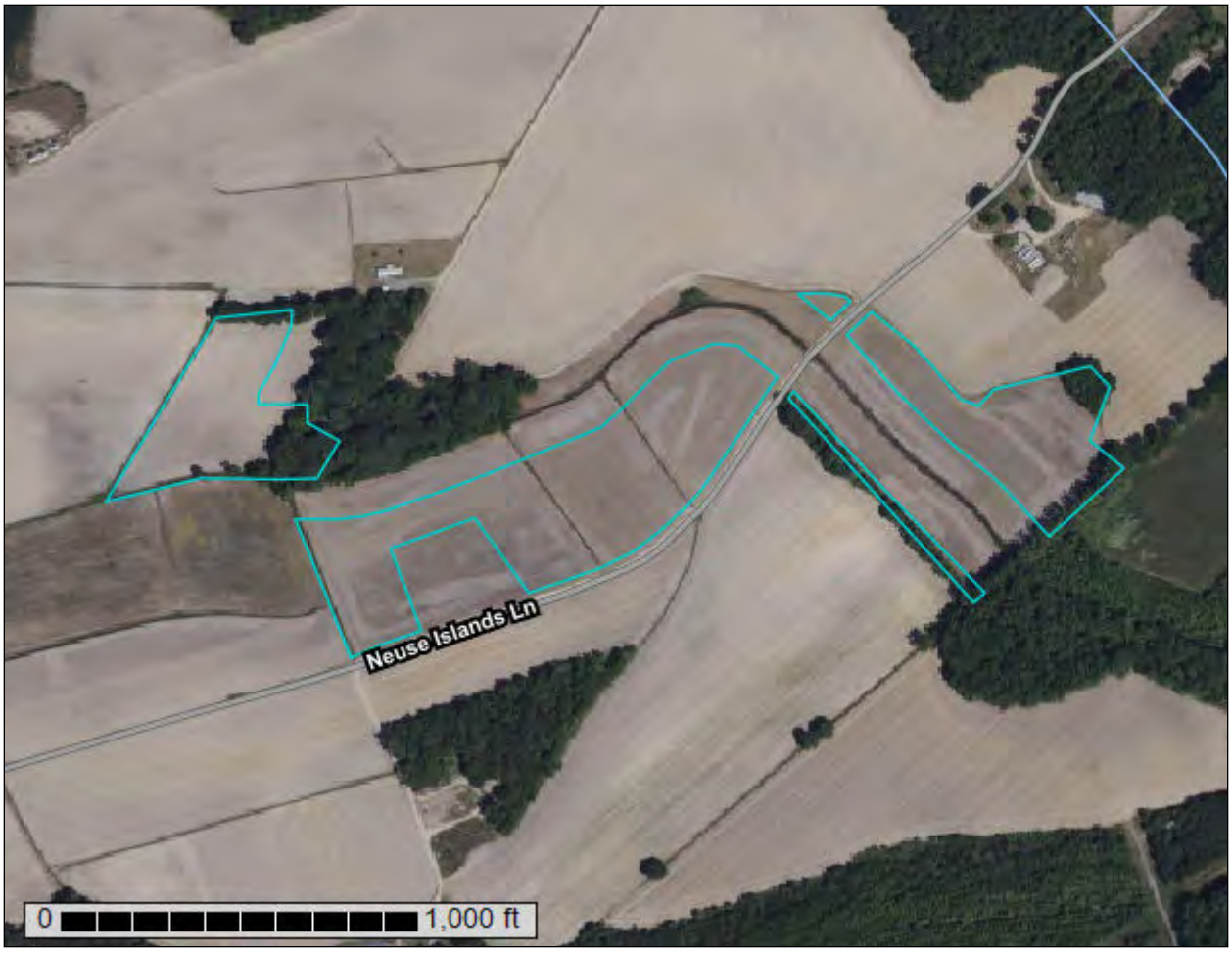
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Wayne County, North Carolina

Coor Island Phase B



March 8, 2023

Soil Map

Map Scale: 1:4,780 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 200 400 800 1200

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

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: Wayne County, North Carolina
Survey Area Data: Version 21, Sep 12, 2022

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

Date(s) aerial images were photographed: Apr 24, 2022—May 9, 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
Bb	Bibb sandy loam	4.8	27.4%
Jo	Johns sandy loam	0.1	0.8%
KaA	Kalmia loamy sand, 0 to 2 percent slopes	0.8	4.4%
Le	Leaf loam	0.5	2.7%
Lv	Lumbee sandy loam	10.2	57.4%
NrB2	Norfolk sandy loam, 2 to 6 percent slopes, eroded	0.4	2.4%
WaB	Wagram loamy sand, 0 to 6 percent slopes	0.9	4.9%
Totals for Area of Interest		**17.7**	**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.

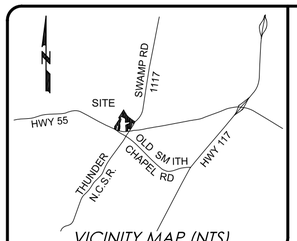
A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties 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

Appendix E. Financial Assurance

Pursuant to Section IV H and Appendix III of the NCDEQ DMS (formerly Ecosystem Enhancement Program) In-Lieu Fee Instrument dated July 28, 2010, the North Carolina Department of Environmental Quality (NCDEQ) has provided the USACE-Wilmington District with a formal commitment to fund projects to satisfy mitigation requirements assumed by NCDEQ DMS. This commitment provides financial assurance for all mitigation projects implemented by the program.

Appendix F. Site Protection Instrument



VICINITY MAP (NTS)

DEED REFERENCE(S):

BEING A PORTION OF THE PROPERTY RECORDED IN D.B. 3658, PG. 589, OF THE WAYNE COUNTY REGISTER OF DEEDS.

MAP REFERENCE(S):

P.C. P, SL. 43-J
P.C. P, SL. 44-A

NCDOT RIGHT OF WAY REFERENCE(S):

NC HIGHWAY 55 RIGHT OF WAY WIDTH PROVIDED BY NCDOT, DIVISION 4 RIGHT OF WAY OFFICE, WILSON, NC (PROJECT NO. 8.12872)

THUNDER SWAMP RIGHT OF WAY WIDTH PROVIDED BY NCDOT, DIVISION 4 RIGHT OF WAY OFFICE, WILSON, NC (PROJECT NO. 17BP.4.R.91)

OWNER'S CERTIFICATE (PIN 2563511701):

I (We) hereby certify that I (we) am (are) the owner(s) of the property shown and described herein which property was conveyed to me (us) by deed recorded at D.B. 3658, pg. 589, Wayne County Registry, and that (I) we hereby adopt the plan of the conservation easement with our free consent. Further, (I) we hereby certify that the land shown herein is within the subdivision regulation jurisdiction of Wayne County, North Carolina.

_____ _____
Date Restoration Systems, LLC Representative

STATE OF NORTH CAROLINA
COUNTY OF WAYNE

Filed for registration at _____ M. _____ , 2023 in the Register of Deeds

Office. Recorded in P.C. _____ , SL. _____.

_____ _____
Register of Deeds By

STATE OF NORTH CAROLINA
COUNTY OF WAYNE

I, _____ , Review Officer of Wayne County, certify that the map or plat to which this certification is affixed meets all statutory requirements for recording.

_____ _____
Date Review Officer

SURVEYORS CERTIFICATION(S)

Surveyor's disclaimer: No attempt was made to locate any cemeteries, wetlands, hazardous material sites, underground utilities or any other features above, or below ground other than those shown. However, no visible evidence of cemeteries or utilities, aboveground or otherwise, was observed by the undersigned (other than those shown).

I certify that the survey is of another category such as the recombination of existing parcels, a court-ordered survey, or other exception to the definition of subdivision (conservation easement).

I, JOHN A. RUDOLPH, certify that this plat was drawn under my supervision from an actual survey made under my supervision (deed description recorded in Book SEE, Page REFS, etc.) (other); that the boundaries not surveyed are clearly indicated as drawn from information found in Book____, page____; that the ratio of precision or positional accuracy as calculated is 1/10,000+; that this plat was prepared in accordance with G.S. 47-30 as amended. Witness my original signature, license number and seal this 27th day of June, A.D., 2023.

SEAL OR STAMP

L-4194
Professional Land Surveyor License Number

"PRELIMINARY PLAT"
NOT FOR RECORDATION,
CONVEYANCES OR SALES

FIRM LICENSE No.: C-2111

DRAWN BY:	R.P.E.
DATE:	06/27/23
DWG. NO.:	RSS501MR23
SURVEYED BY:	J.A.R.

k2 design group
774 S. Beston Road
La Grange, NC 28551
252.582.3097
www.k2designgroup.com

RESTORATION SYSTEMS, LLC
1101 HAYNES STREET
SUITE 211
RALEIGH, NC 27604

LINE DATA

LINE	BEARING	DISTANCE
L1	N33°09'49"E	294.61'
L2	N00°48'43"E	189.56'
L3	N25°38'34"E	122.29'
L4	N63°15'57"W	118.19'
L5	S17°20'49"W	190.21'
L6	S03°18'57"W	187.60'
L7	S21°09'06"W	78.18'
L8	S54°28'18"W	155.73'
L9	N14°01'03"W	161.27'
L10	N05°39'54"E	109.00'
L11	N11°56'59"E	213.20'
L12	N07°10'00"E	130.74'
L13	S05°57'47"W	144.77'
L14	S10°49'19"W	339.81'
L15	S09°28'51"E	221.34'
L16	S07°35'21"E	173.85'
L17	S33°00'50"W	167.29'
L18	S17°09'50"W	143.55'
L19	S09°24'34"W	191.57'
L20	S31°05'29"E	171.59'
L21	S39°34'36"W	194.84'
L22	N63°12'15"W	103.21'
L23	S34°52'31"W	136.91'
L24	S24°38'04"E	86.42'
L25	S12°42'49"E	72.97'
L26	S08°29'49"W	182.12'
L27	S17°12'51"W	180.39'
L28	S28°37'19"W	173.06'
L29	S10°22'08"E	277.32'
L30	S04°45'07"E	70.21'
L31	S09°02'53"W	501.43'
L32	N01°18'19"E	297.20'
L33	N13°56'03"W	94.45'
L34	N04°14'26"W	236.85'
L35	N11°14'35"E	76.47'
L36	N25°31'47"E	64.45'
L37	N42°29'10"E	62.98'
L38	N56°40'08"E	57.66'
L39	N73°01'35"E	279.74'
L40	N31°37'47"E	145.65'
L41	N65°07'33"W	53.68'
L42	S81°52'44"W	174.36'
L43	N06°49'49"W	13.32'
L44	N17°39'55"E	71.51'
L45	N32°40'36"E	204.19'
L46	N72°01'57"E	316.40'
L47	N45°33'59"E	57.98'
L48	N02°41'47"W	508.39'
L49	N04°28'47"E	187.84'
L50	S03°09'53"W	205.97'
L51	S03°23'34"E	71.34'
L52	N85°27'13"W	291.20'
L53	S52°47'01"W	69.55'
L54	S18°55'59"W	453.33'
L55	S01°54'04"E	58.10'
L56	S23°14'34"E	143.06'
L57	S17°28'16"W	66.56'
L58	N62°43'56"W	67.63'
L59	S02°49'59"W	32.95'
L60	S02°07'33"W	497.44'
L61	S19°17'20"W	153.32'
L62	S19°40'15"W	156.86'
L63	S20°37'03"W	67.16'
L64	S79°42'34"W	131.82'
L65	N63°15'57"W	112.07'

CURVE DATA

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	203.23'	2280.42'	5°06'22"	S69°32'53"E	203.17'
C2	96.67'	2980.27'	1°51'30"	S79°17'29"E	96.66'
C3	4.50'	2280.78'	0°06'47"	S77°30'37"E	4.50'
C4	104.32'	2980.27'	2°00'20"	N88°33'17"E	104.31'
C5	247.73'	2980.27'	4°45'45"	N81°12'30"E	247.66'
C6	103.95'	2280.42'	2°36'43"	S65°41'21"E	103.94'
C7	213.03'	2280.42'	5°21'09"	S74°46'39"E	212.95'
C8	531.70'	2980.27'	10°13'19"	S85°19'53"E	531.00'
C9	206.10'	2980.27'	3°57'44"	N85°34'15"E	206.06'

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PLAT IS BASED ON NORTH CAROLINA STATE PLANE COORDINATES ESTABLISHED BY USING THE ONLINE POSITIONING USER SERVICE (OPUS) PROVIDED BY THE NATIONAL GEODETIC SURVEY.

ISS (66) NC GRID COORDINATES NAD 83 (2011)
N=531,051.1459'
E=2,264,151.4264'

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PLAT IS 0.99987124 (GROUND TO GRID). THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM ISS (66) TO ISS (56) IS N 87°37'16" W 88.18' FEET.

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES.

GEOID-2012B CONUS

GNSS RECEIVER - TOPCON HIPER V WITH MINIMUM TIME OF 2+ HOURS COMPLETED ON 04/21/21

THE FOLLOWING BASE STATIONS WERE USED:

PID	DESIGNATION	LATITUDE (m)	LONGITUDE (m)
DK6525	NCSF SMITHFIELD CORS ARP	N353349.609	W0782010.805
DI1071	NCKN KENANSVILLE CORS ARP	N345630.497	W0775849.945
DK5550	NCGO GOLDSBORO CORS ARP	N352516.868	W0780330.575

LOCALIZED PROJECT COORDINATES ALONG CONSERVATION EASEMENTS

CORNERS	NORTHING	EASTING
1	531148.0119	2263868.5067
2	531258.2550	2263921.4273
3	531447.7999	2263924.1131
14	531830.9689	2265919.1178
15	531861.9556	2265858.9990
16	531798.4664	2265839.0160
17	531667.0157	2265895.4719
18	531608.9450	2265897.3994
19	531180.1460	2265750.3111
20	531138.0791	2265694.9231
21	531161.1618	2265404.6411
25	531089.9509	2265408.8628
26	530884.2924	2265397.4913
27	530868.3794	2265192.0491
28	531055.6464	2265206.7208
29	531563.4769	2265182.8049
30	531604.0666	2265224.2051
31	531701.6668	2265525.1704
32	531873.5418	2265635.4135
33	531941.6841	2265657.1149
34	531954.9091	2265655.5308
38	532559.8410	2264678.9320
39	532409.6674	2264554.8001
40	532262.7236	2264643.4119
41	532073.7299	2264612.0917
42	531936.5771	2264569.7306
43	531796.2993	2264478.5848
44	531623.9758	2264501.5449
45	531405.6598	2264538.0032
46	531071.8925	2264474.2011
47	530927.9015	2264459.1606
48	530983.8160	2264253.6801
49	531113.5374	2264269.9910
50	531322.1221	2264314.1356
51	531430.5947	2264324.8955
52	531587.0617	2264285.8330
53	531496.5670	2264159.0969
54	531423.6503	2264130.8851
55	531236.3673	2264120.0344
56	531054.8060	2264063.3210
65	531803.5744	2266055.6772
66	531784.9127	2266043.7382
69	532513.3132	2264771.0580
70	532400.9923	2264692.7738
71	532322.4333	2264728.7981
72	532251.2527	2264744.8571
73	532071.1312	2264717.9474
74	531898.8221	2264664.5620
75	531746.9124	2264581.6627
76	531474.1260	2264631.5758
77	531404.1607	2264637.3918
78	530908.9666	2264558.5345
79	530926.9278	2264463.5564
80	530865.7485	2265087.7703
81	531162.8724	2265094.5403
82	531254.5390	2265071.7972
83	531490.7369	2265054.2842
84	531565.7369	2265069.1930
85	531623.8967	2265096.9708
86	531670.3376	2265139.5055
87	531702.0217	2265187.6826
88	531783.6876	2265455.2390
89	531907.6980	2265531.6193
90	531930.2781	2265482.9172
91	531798.0623	2265917.4894
92	531300.9685	2265899.0367
93	531156.2578	2265848.3908
94	531008.5494	2265795.5887
95	530945.6933	2265771.9406
96	530922.1447	2265642.2404

GENERAL NOTES:

NOTE: TITLE COMMITMENT PROVIDED TO SURVEYOR ISSUED BY CHICAGO TITLE INSURANCE COMPANY COMMITMENT NUMBER:: 21-05745RA DATED MARCH 30, 2021 AT 3:16PM

ALL STREAMS, CREEKS, AND WATERWAYS SHOWN ARE SUBJECTED TO NEUSE RIVER RIPARIAN BUFFER RULES

ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES.

COORDINATES SHOWN ARE BASED ON LOCALIZED GROUND DISTANCES OTHER THAN ISS (66)
SEE DATUM DESCRIPTION.

FEMA FLOOD STATEMENT:

THE PORTION OF THE AREA REPRESENTED BY THIS PLAT IS LOCATED IN A FLOOD HAZARD BOUNDARY ACCORDING TO FEMA MAP NUMBER(S) 3720256300K, ZONE(S) X, AE, FLOOD WAY SHADED X, DATED: JUNE 20, 2018.

CORNER DESCRIPTIONS

CORNER #	DESCRIPTION
(1) THRU (3)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
(14) THRU (21)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
(25) THRU (34)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
(38) THRU (56)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"
(65)	CONCRETE MARKER BROKEN TOP WITH METAL ROD 0.4' BELOW GRADE
(66)	No. 5 REBAR FLUSH WITH GRADE GRADE INSCRIBED WITH "K2 DESIGN CONTROL POINT" SUITABLE FOR GNSS OBSERVATION
(69) THRU (96)	No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"

LEGEND:

ISS - IRON STAKE SET
ECM - EXISTING CONCRETE MARKER
EIP - EXISTING IRON PIPE
EN - EXISTING NAIL
MNS - MAG NAIL SET
EIS - EXISTING IRON STAKE
EPP - EXISTING PUMP PIPE
EIB - EXISTING IRON BAR
PPS - PUMP PIPE SET
NMC - NON-MONUMENTED CORNER
R/W - RIGHT OF WAY
EOP - EDGE OF PAVEMENT
E/B - EASEMENT BOUNDARY
CL - CENTERLINE
UP - UTILITY POLE
P.B. - PLAT BOOK
D.B. - DEED BOOK
PG. - PAGE
P.C.B. - PLAT CABINET BOOK
CMP - CORRUGATED METAL PIPE
CPP - CORRUGATED PLASTIC PIPE
RCP - REINFORCED CORRUGATED PIPE
MW - MONITORING WELL
SG - STREAM GAUGE

● No. 5 REBAR FLUSH WITH GRADE WITH AN ALUMINUM 3 1/4" CAP INSCRIBED: "STATE OF NORTH CAROLINA CONSERVATION EASEMENT"

CONSERVATION EASEMENT LINE
TIE DOWN LINE
RIGHT OF WAY LINE OR ADJOINER LINE
EASEMENT LINE
FENCE LINE
E OVERHEAD UTILITY LINE

FLOODWAY ZONE TAKEN FROM ARC GIS MAP SERVICE AT: https://spartagis.ncem.org/aregis/services/public/FRIS_FloodZones

AE FLOOD ZONE TAKEN FROM ARC GIS MAP SERVICE AT: https://spartagis.ncem.org/aregis/services/public/FRIS_FloodZones

SHEET 1 OF 2

CONSERVATION EASEMENT FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES OVER A PORTION OF THE LANDS OF RESTORATION SYSTEMS, LLC CURRENT OWNERS PER D.B. 3658, PG. 589, (PIN NUMBERS 2563511701) DMS PROJECT ID# 100651 SPO NUMBERS XX-XX THUNDER PHASE B

BROGDEN TOWNSHIP WAYNE COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING FEBRUARY 2021)

200 100 0 200 400 600

GRAPHIC SCALE 1" = 200'

LEGEND:

ISS - IRON STAKE SET
ECM - EXISTING CONCRETE MARKER
EIP - EXISTING IRON PIPE
EN - EXISTING NAIL
MNS - MAG NAIL SET
EIS - EXISTING IRON STAKE
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CONSERVATION EASEMENT LINE
TIE DOWN LINE
RIGHT OF WAY LINE OR ADJOINER LINE
EASEMENT LINE
FENCE LINE
E OVERHEAD UTILITY LINE

FLOODWAY ZONE TAKEN FROM ARC GIS MAP SERVICE AT: https://spartagis.ncem.org/aregis/services/public/FRIS_FloodZones

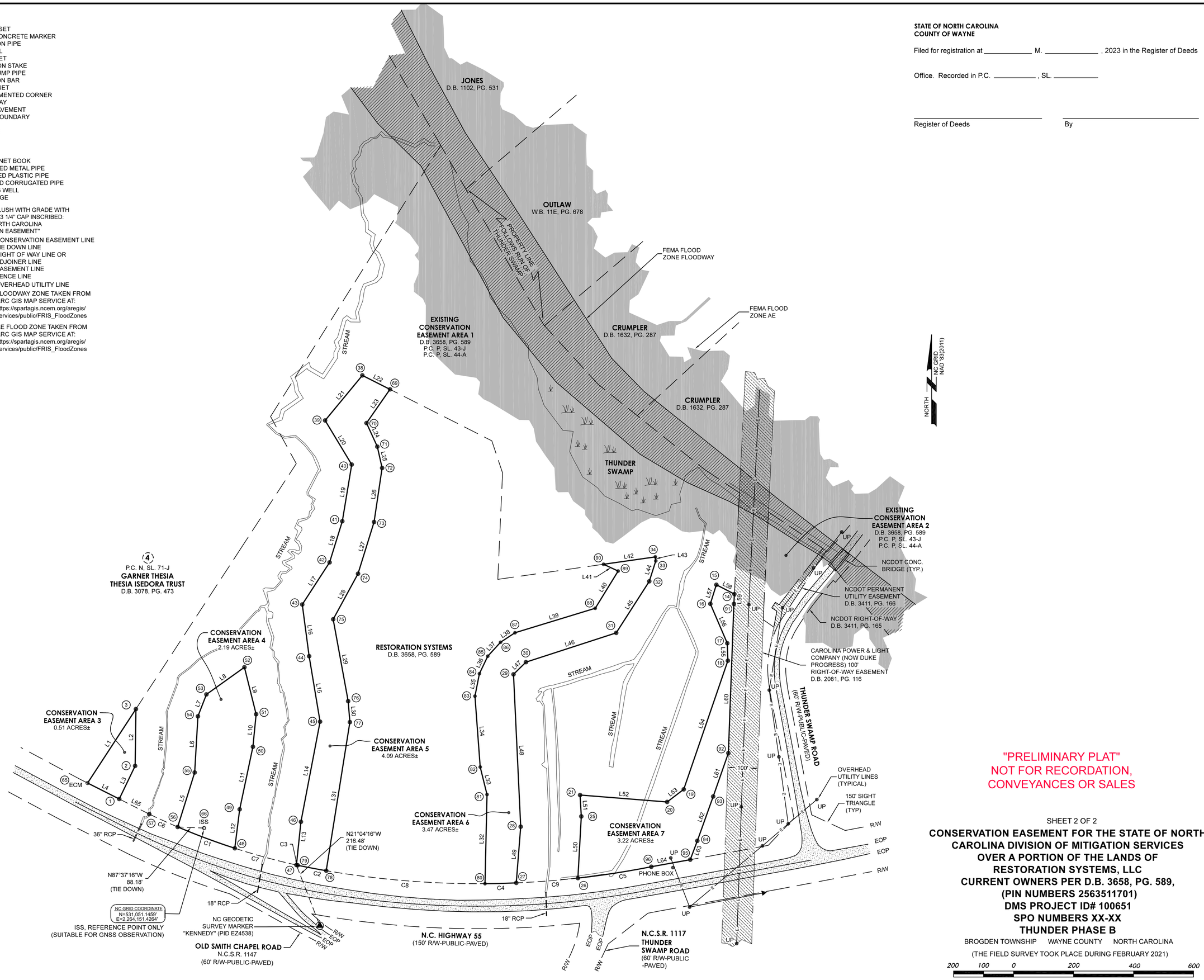
AE FLOOD ZONE TAKEN FROM ARC GIS MAP SERVICE AT: https://spartagis.ncem.org/aregis/services/public/FRIS_FloodZones

STATE OF NORTH CAROLINA
COUNTY OF WAYNE

Filed for registration at _____ M. _____ , 2023 in the Register of Deeds

Office. Recorded in P.C. _____ , SL. _____.

_____ _____
Register of Deeds By



"PRELIMINARY PLAT"
NOT FOR RECORDATION,
CONVEYANCES OR SALES

SHEET 2 OF 2

CONSERVATION EASEMENT FOR THE STATE OF NORTH CAROLINA DIVISION OF MITIGATION SERVICES OVER A PORTION OF THE LANDS OF RESTORATION SYSTEMS, LLC
CURRENT OWNERS PER D.B. 3658, PG. 589,
(PIN NUMBERS 2563511701)
DMS PROJECT ID# 100651
SPO NUMBERS XX-XX
THUNDER PHASE B

BROGDEN TOWNSHIP WAYNE COUNTY NORTH CAROLINA

(THE FIELD SURVEY TOOK PLACE DURING FEBRUARY 2021)

200 100 0 200 400 600

GRAPHIC SCALE 1" = 200'

Appendix G. Maintenance Plan

The Site shall be monitored on a regular basis and a physical inspection of the site shall be conducted a minimum of once per year throughout the post-construction monitoring period until performance standards are met. These site inspections may identify site components and features that require routine maintenance. Routine maintenance should be expected most often in the first two years following site construction and may include the following:

Component/Feature	Maintenance through project close-out
Vegetation	Vegetation shall be maintained to ensure the health and vigor of the targeted plant community. Routine vegetation maintenance and repair activities may include supplemental planting, pruning, mulching, and fertilizing. Exotic invasive plant species shall be controlled by mechanical and/or chemical methods. Any vegetation control requiring herbicide application will be performed in accordance with NC Department of Agriculture (NCDA) rules and regulations.
Beaver	Beaver and associated dams are to be removed as they colonize and until the project is closed.
Site Boundary	Site boundaries shall be identified in the field to ensure clear distinction between the mitigation site and adjacent properties. Boundaries may be identified by fence, marker, bollard, post, tree- blazing, or other means as allowed by site conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as needed basis.