COOR ISLAND MITIGATION SITE

As-built & Baseline Monitoring Report
Wayne County, North Carolina
Neuse River Basin - 03020201

DMS Project ID No. 100183
Full Delivery Contract No. 0402-03
DWR Project No. 2021 0021 v3
RFP No. 16-20200402

Prepared for:

Mitigation Services
ENVIRONMENTAL QUALITY

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

Baseline Data Collected: February 2023
Date Submitted: April 2023

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

Response to DMS Comments

Coor Island Mitigation Site, Project ID #100183, DMS Contract #0402-03
DWR Project No. 2021-0021 v3
Neuse River Basin 03020201, Wayne County
DMS Reviewers: Emily Dunnigan and Kelly Phillips

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

1. Please update the List of Tables to correct the error for Table 1 and Table 2.
   Completed.

2. The Mitigation Plan stated soil ripping would be completed, and soil testing may be completed before planting. Please include a discussion of these activities in the narrative.
   Discussion has been added to Section 3.1 Riparian Area Restoration Activities regarding these activities.

3. It would be helpful to include the phase 2 conservation easement on the CCPV.
   The adjacent second phase conservation easement has been added to the CCPV.

4. Suggest changing the title of the table on the first page of the credit determination plan to "Total Riparian Buffer Mitigation".
   The title of the table has been updated.

5. The table on the first page of the credit determination plan has total square feet for all the assets which do not match the assets in the credit table (Table 4). Shouldn't they match? Also, in the table, any areas that are not creditable should be labeled as such.
   After rechecking the GIS files and the CAD files the table on the first page of the credit determination plan now matches the credit table (Table 4). Non-credible areas have been removed from the table.

6. Table 12: Your planting list only includes Sambucus nigra, two species of elderberry are in the table, please revise.
   Table 12 has been updated to reflect the appropriate species of elderberry that was planted.

7. At as-built, RS is below contract by 836.48 credits. The Task 4 payment should be $51,473.48 (15% of the total contract value). However, the 836.48 buffer shortfall below the contracted amount reduces the contract value by $752.83 (at $0.90/buffer credit). To reconcile the difference resulting from the 836.48 buffer credit shortfall, please adjust the Task 4 payment downward to a revised amount of $50,720.65.
   After reconciling the credit differences noted in comment 5, the preservation (101-200) credit total decreased by 1 square foot. As a result, the as-built credits are short by 836.51. As a result, Restoration Systems was overpaid on Task 1-3 by $414.07. The Task 4 payment will be reduced by $414.07 (at $0.90/buffer credit) to account for the overpayment of Tasks 1-3; the Task 4 revised payment amount is $50,946.48. For Taks 5-9, invoice amounts will be based on the as-built credits.

Boundary Inspection Action Items:

8. Upgrade sign fasteners to a material that is likely to meet the longevity specifications in the marking requirements. Roofing nails of this type have failed repeatedly across DMS sites.
   Noted, sign fasteners will be upgraded and documented in the MY1 report.

9. Remove the scattered debris located within the conservation easement.
   Noted, the scattered debris will be removed from the conservation easement and documented in the MY1 report.

10. Blazing the trees in densely wooded areas would facilitate easier identification of the site boundary.
    Noted, trees in densely wooded areas will be blazed and documented in the MY1 report.

COOR ISLAND MITIGATION SITE

As-built & Baseline Monitoring Report
Wayne County, North Carolina
Neuse River Basin - 03020201

Prepared by:

Restoration Systems, LLC
1101 Haynes Street, Suite 211
Raleigh, North Carolina 27604

Contact: Raymond Holz
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- Table 8 - Project Components and Mitigation Credits
- Table 9 - Project Activity and Reporting History
- Table 10 - Project Contact
- Table 11 - Project Baseline Information and Attributes

Appendix B: Project Photos and Baseline Vegetation Data
- Construction and Planting Photos
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- DWR Site Viability Letter, April 16, 2021
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1.0 Mitigation Project Summary

Restoration Systems (RS) is pleased to provide the North Carolina Division of Mitigation Services (NC DMS) this **As-built & Baseline Monitoring Report** for the **Coor Island Mitigation Site (hereafter referred to as the "Project" or "Site")**. The Project has been implemented in accordance with State Rules 15A NCAC 02B .0295 (Consolidated Buffer Mitigation Rule – CMB Rule) to provide Neuse River Riparian Buffer Credits (RBC) and 15A NCAC 02B .0703 (Nutrient Offset Credit Trading Rule) to provide Neuse River Nutrient Offset Credits (NOC) for impacts within the Neuse River Basin USGS 8-digit HUC 03020201, excluding the Falls Lake Watershed. 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 permanent conservation easement encompasses 11.52 acres and provides 380,448.524 RBCs (Available RBC). Additionally, 364,095.993 RBCs can potentially be converted to 19,320.776 lbs nitrogen NOCs at the request of NCDMS. The Project provides the State with the Available RBC while permanently protecting the restored riparian area and preserving the forested floodplain, a mapped FEMA Floodway (Map 3720256800K, Panel 2568, effective June 20, 2018).

Located in Wayne County, North Carolina, the Project encompasses 11.52 acres, of which 1.904 acres are forested, and the remainder was utilized for row crop production. The Project restored riparian buffer areas along an unnamed tributary to Half Mile Creek and preserved the established riparian buffer where it exists. Detailed project mapping is provided in Appendix A, along with site-specific data in Appendix B.

The parcels were acquired by RS through a fee-simple purchase agreement with the former landowners (E & S Wayne Farms LLC) effective July 1, 2021. Following the purchase, RS assigned a conservation easement to the State Property Office recorded November 14, 2022.

A DWR representative conducted an on-site stream determination on January 21, 2021. A Stream Determination letter was provided on March 4, 2021. Further, A DWR representative conducted a Site Viability visit on March 24, 2021, and provided an approval letter on April 16, 2021. Both the Stream Determination and Site Viability letters are attached in Appendix C.

RS began preparation for restoration of the riparian buffer by planting the Site in February 2023. Riparian buffer restoration activities included planting a cover crop in advance of tree planting, bare-root planting, and broadcast application of a permanent seed mix. On February 15, 2023, Axiom Environmental installed eight (8) Carolina Vegetation Survey (CVS) monitoring plots and collected as-built data (Appendix B).

1.1 Project Goals and Objectives

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.

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.
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 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 8.747 acres of forested riparian buffer and preserving 1.904 acres of existing riparian forest.

1.2 Pre-construction Site Conditions

The Project encompasses 11.52 acres, of which 8.747 acres were in crop production, and the remaining area includes existing bottomland hardwood forest and water features. The Project has preserved and restored riparian buffer areas along an unnamed tributary to Half Mile Creek. The downstream site boundary is an existing mitigation site, Half Mile Branch Bank Site. Detailed project mapping is provided in Appendix A, along with site-specific data in Appendix B.

Intensive agriculture practices existed across all proposed restoration areas. Agricultural fields within and adjacent to the Site were subject to routine fertilizer and herbicide applications. Site streams and ditches exhibited bank erosion due to long-term plowing and removal of native vegetation throughout the proposed restoration areas. Historic imagery dating back to 1959 indicates that land management practices were consistent with the Site's conditions prior to restoration (Restoration Systems, 2022).

Site tributaries ("features") A, B, and C originate to the south less than 300 feet from the Project. Site feature 1 (UT to Half Mile Branch) originates to the east less than 300 feet from the Project. All tributaries drain to Half Mile Branch.

2.0 Determination of Credits

Within the 11.52 acre Site, 8.747 acres of agricultural fields historically used for row crops 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 8.747 acres of forested riparian buffer and preserving 1.904 acres of existing forest and State waters. Mitigation credits are presented in Table 8 and Figure 2 in Appendix A and are based upon the as-built survey in Appendix A.

3.0 Baseline Restoration Activities Summary

Riparian area restoration involved planting appropriate native tree species along the 200-foot-wide riparian corridor of streams and hydrologically connected ditches at a density of 680 stems per acre on 8ft x 8ft spacing. Vegetation management and herbicide applications may be needed over the first few years of tree establishment in the riparian restoration areas to prevent encroachment of undesirable species that may out-compete the planted native vegetation. Tree species planted across the riparian areas of the Project included those listed in Table 3. Stems were mixed prior to planting to ensure diversity of bare roots across the planted area. A seed mix including the species listed in Table 4 were applied to provide temporary and permanent ground cover for soil stabilization and reduction of sediment loss during rain events in areas without existing herbaceous cover. Planting took place on February 6, 2023.

Table 2 – Restoration Plan Activities

Restoration Plan Activity	Phase Specific Actions
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 4) 3. Establishment of 8.747 acres of native hardwood forest via the planting of bare-root saplings from the top of the bank to the conservation easement boundary (Table 3)

3.1 Riparian Area Restoration Activities

Restoration of the riparian area allows for recolonization and expansion of characteristic species across the landscape. The riparian areas were restored according to the Consolidated Buffer Mitigation Rule 15A NCAC 02B.0295. Prior to planting a cover crop was planted to improve soil health, and by doing so it was determined that soil ripping and testing was not needed to facilitate restoration of the native hardwood forest. The planting plan for the riparian restoration area included planting 6,000 native bare-root hardwood saplings across 8.747 acres at a density of +/- 686 stems per acre. The planted species composition is intentionally diverse and while based on these communities, also accounted for local observations and nursery availability.

All species were selected based on their ability for: sediment stabilization, rapid growth rate, withstanding hydraulic forces associated with flood events, suitability to specific soil types, and Project conditions. Tree species were mixed thoroughly before planting to provide a diverse and random plant across the Site. Planting density was set to ensure sufficient diversity and density of planted stems outlined in Rule 15A NCAC 02B.0295 of 260 trees per acre at the end of five years. No one tree species was greater than 50% of the established stems.

The bare root planting list is provided in Table 3 followed by the permanent seed mix in Table 4. As-built baseline vegetation data is provided in Appendix B. Baseline data was collected in February 2023 by Axiom Environmental and derived an average planted stem density of 597 stems per acre.

Table 3 – Planting List

Vegetation Association		**Coastal Plain Bottomland Hardwood**	
Species	**Indicator Status**	**# planted**	**% of total**
River birch (*Betula nigra*)	FACW	600	10.0%
Black gum (*Nyssa Sylvatica*)	FAC	600	10.0%
Bitternut hickory (*Carya cordiformis*)	FAC	300	5.0%
American elm (*Ulmus americana*)	FAC	300	5.0%
Persimmon (*Diospyros virginiana*)	FAC	500	8.3%
Green ash (*Fraxinus pennsylvanica*)	FACW	300	5.0%
Sycamore (*Platanus occidentalis*)	FAC	600	10.0%
Tulip poplar (*Liriodendron tulipifera*)	FACU	600	10.0%
Water oak (*Quercus nigra*)	FACW	600	10.0%
Swamp Chestnut oak (*Quercus michauxii*)	FACW	600	8.3%
Willow oak (*Quercus phellos*)	FACW	500	10.0%
Elderberry (*Sambucus nigra)*	FACW	500	8.3%
	TOTAL	**6,000**	**100.0%**

Table 4 – Permanent Seed

Permanent Seed- Sitewide @ 2 lbs /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	*Eupatorium perfoliatum*	1	*Panicum clandestinum*	2
Carex vulpinoidea	2	*Helianthus angustifolius*	4	*Rudbeckia hirta*	7
Chamaecrista fasciculata	5	*Heliopsis helianthoides*	4	*Senna hebecarpa*	5
Chamaecrista nictitans	2	*Hibiscus moscheutos*	0.5	*Tridens flavus*	20
Coreopsis lanceolata	3	*Juncus effusus*	2	*Verbena hastata*	2
Coreopsis tinctoria	3	*Juncus tenuis*	2	--	

4.0 Monitoring Protocol & Success Criteria

4.1 Monitoring Protocol

Restoration monitoring procedures for vegetation will monitor plant survival and species diversity. Eight permanent 10 x 10-meter vegetation plots were installed for quantitative sampling as outlined in the *CVS Level 1-2 Protocol for Recording Vegetation, Version 4.2* (Lee et al. 2008) (Figures 2A-B, Appendix A). Vegetation monitoring will occur no earlier than Fall of each year. 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 of the restoration efforts will be performed for five years or until success criteria are fulfilled. Monitoring will be conducted by Axiom Environmental, Inc based on the schedule in Table 5. A summary of monitoring is outlined in Table 6. Annual monitoring reports will be submitted to the NCDMS by Restoration Systems no later than December 1 of each monitoring year data. Appendix B includes the baseline (MY0) vegetation plot photographs along with the planted and total stem counts.

Table 5. 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 6. Monitoring Summary

Vegetation Parameters				
Parameter	**Method**	**Schedule/ Frequency**	**Number/ Extent**	**Data Collected/Reported**
Vegetation	8 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	8 plots across the restoration portion of the Site	Species, height, vigor, planted vs. volunteer, stems/acre. Reference photo at each monitoring plot.

4.2 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 7. 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.

4.3 Maintenance and Contingency Plans

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.

5.0 References

Consolidated Buffer Mitigation Rule - 15A NCAC 02B .0295 (Published November 17, 2014)

Lee, M.T., R.K. Peet, S.D. Roberts, and T.R. Wentworth. 2008. CVS-EEP Protocol for Recording Vegetation. Version 4.2. North Carolina Department of Environment and Natural Resources, Ecosystem Enhancement Program. Raleigh, North Carolina.

North Carolina Department of Environmental Quality, Division of Mitigation Services (NCDMS), 2017. Riparian Buffer and Nutrient Offset Buffer Baseline and Annual Monitoring Report Template version 2.0

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).

Restoration Systems, LLC, 2022. Coor Island Mitigation Site – Mitigation Plan. North Carolina Department of Environmental Quality, Division of Mitigation Services, Raleigh, NC.

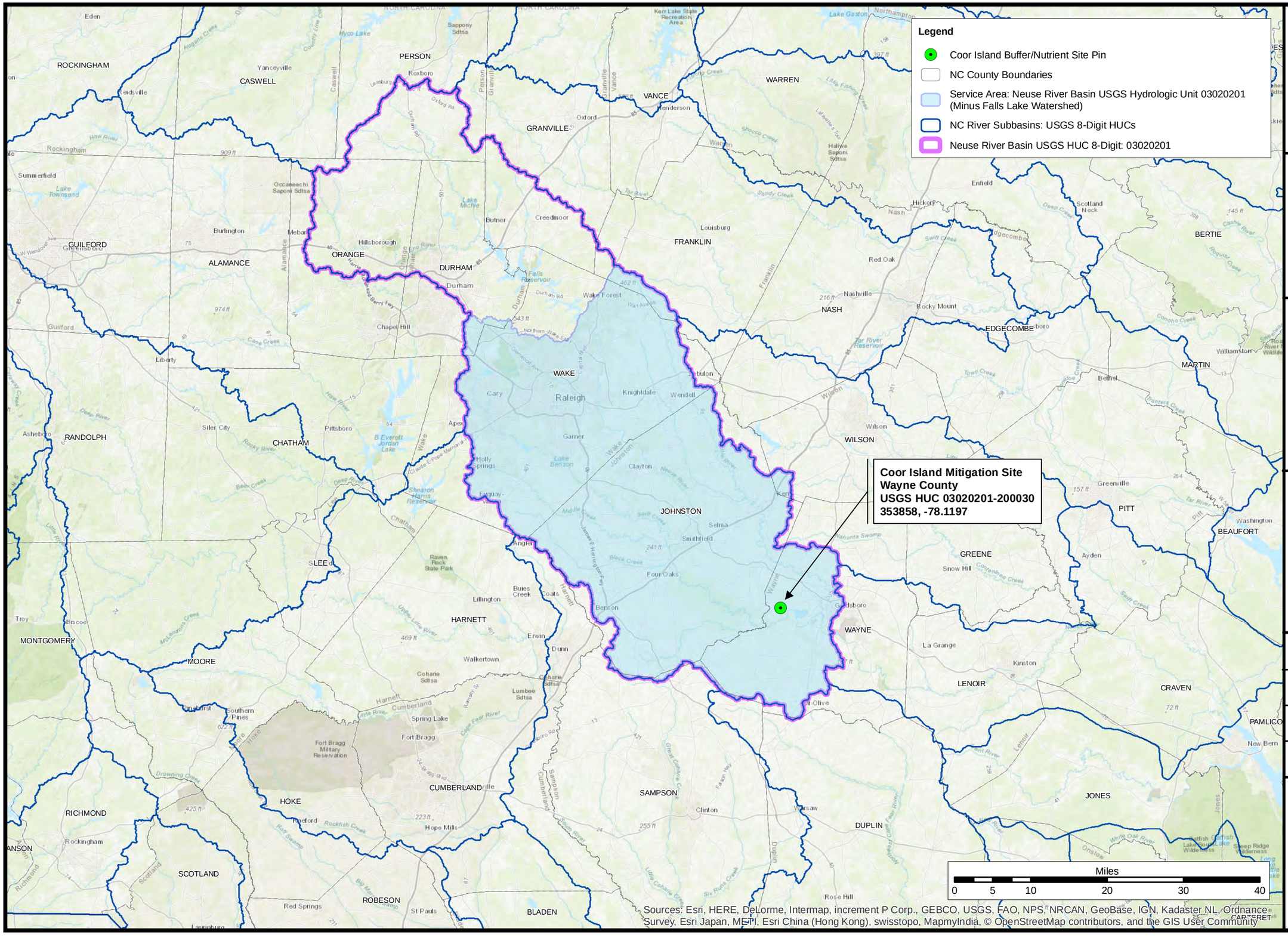
Schafale, M. P. and Weakley, 2012. A Classification of the Natural Communities of North Carolina, Fourth Approximation. North Carolina Natural Heritage Program, North Carolina Department of Environment and Natural Resources. Raleigh, North Carolina.

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

US Fish and Wildlife Service, 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: General Figures and Tables

Figure 1 - Parcel Location / Service Area
Figure 2 - Current Conditions Plan View
As-built Survey – Sheet 1-2
Table 8 - Project Components and Mitigation Credits
Table 9 - Project Activity and Reporting History
Table 10 - Project Contact
Table 11 - Project Baseline Information and Attributes



RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Mitigation Services

Project:

COOR ISLAND MITIGATION SITE

WAYNE COUNTY

Title:

VICINITY MAP & SERVICE AREA MAP

2021 NC OneMap

Drawn by: RJH

Date: MARCH 2023

Scale: 1:1,000,000

Project No.: 100183

FIGURE

1

NOTE ABOUT WIDTHS & CREDITING:

Diffuse flow at ditchs to be provided by adjacent DMS Site
(Coor Island Phase B DMS Project No. 100650)

Riparian Buffer Credits (RBC)
Restoration Areas TOB to 20-29' qualifies for 75% RBM credit.

TOB-100 ft. = Buffer width is contiguous from TOB, is a minimum of 30 ft. from the TOB and maximum of 100 ft. from the TOB, and qualifies for 100% RBM credit.

101-200 ft. = Buffer width is contiguous from TOB, is a maximum of 200 ft. from the TOB, and qualifies for 33% RBM credit.

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.

Legend

- Subject Parcel
- Coor Island - Conservation Easement: 11.52 Acres
- Coor Island Phase B - Conservation Easement
- Vegetation Monitoring Plots: 8 Total
- Surveyed Top of Bank (TOB)

Feet
0 100 200 400 600 800

TOB Offsets

- TOB - 30 Feet
- 31 - 50 Feet
- 51 - 100 Feet
- 101 - 200 Feet

Riparian Buffer Mitigaiton

- Riparian Restoraiton (TOB - 100 Feet)
- Riparian Restoraiton (101 -200 Feet)
- Preservation (TOB - 100 - Feet)
- Preservation (101 - 200 - Feet)
- Restoration (Previously Forested) - No Credit
- Areas Less Than 50 Feet - UT1, (9,800 Sq. Ft.)

Yellow Hatch
Less Than 50-Feet
Not Convertable to NOC

Feature 1 (Subject)
UT To Half Mile Branch
Buffer Creditable
Nutrient Creditable

Area Historically Forested
Planted, No Credit

Feature 1 (Subject)
UT To Half Mile Branch
Buffer Creditable
Nutrient Creditable

Feature C (Not Subject)
Non-Credit Generating

Feature A (Not Subject)
Non-Credit Generating

Feature B (Not Subject)
Non-Credit Generating

MONITORING NOTES:

Quantitative sampling will include eight (8) permanent 10 x10-meter vegetation plots, 2.07% of the Total Restoration Area (TRA). TRA includes all planted areas within 200-feet from the TOB, including non-credit restoration areas.

1, 10 x10-meter vegetation plots = 1,076.39 sq. ft.
TRA = 380,883.000 sq. ft.
2% of TRA = 7617.66 sq. ft. / 1,076.39 sq. ft. = 7.08

7.08 round-up to 8 vegetation plots accounting for 2.26% of the TRA.

RESTORATION SYSTEMS | LLC

Prepared for:

NC DEQ
Division of Mitigation Services

Project:

COOR ISLAND MITIGATION SITE

WAYNE COUNTY

Title:

PROJECT COMPONENT / ASSET MAP & MONITORING PLAN

2021 NC OneMap

Drawn by: RJH

Date: MARCH 2023

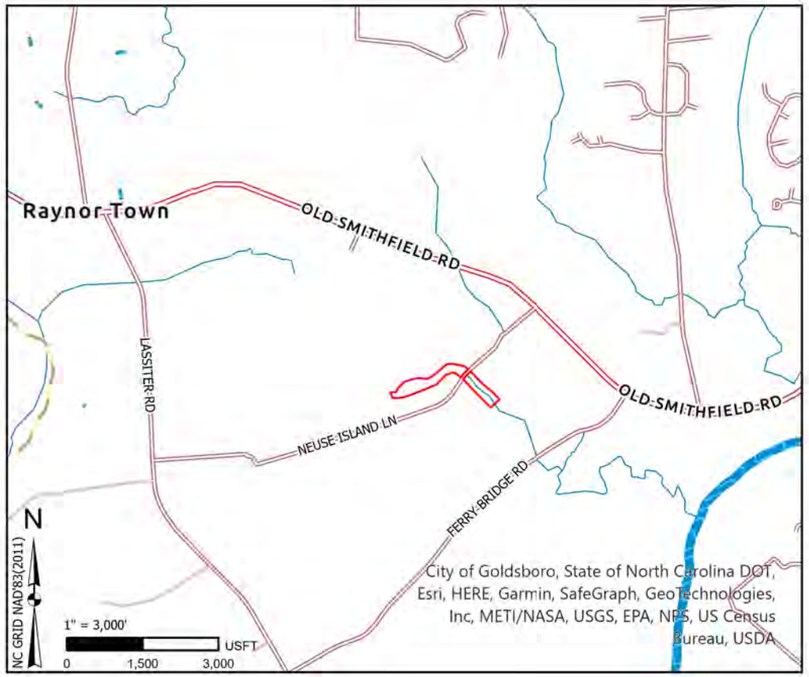
Scale: 1:2,500

Project No.: 100183

FIGURE

2

N



AS BUILT LEGEND:

TOB: TOP OF BANK
R/W: RIGHT-OF-WAY

- AREAS LESS THAN 50FT - UT1 (9,800 SQ. FT)
- RESTORATION (PREVIOUSLY FORESTED) - NO CREDIT
- PRESERVATION (101 - 200FT)
- PRESERVATION (TOB - 100FT)
- RIPARIAN RESTORATION (101 - 200FT)
- RIPARIAN RESTORATION (TOB - 100FT)
- ACCESS EASEMENT
- UTILITY EASEMENT
- SURVEYED TOP OF BANK
- INSTALLED VEGETATION MONITORING PLOTS (8 TOTAL)
- CONSERVATION EASEMENT
- DISTANCES FROM TOB (100FT, 200FT)
- ADJOINERS

TOTAL RIPARIAN BUFFER MITIGATION		
MITIGATION TOTALS	**SQ. FT**	**ACRES**
PRESERVATION (101 - 200FT)	26,006.00	0.60
PRESERVATION (TOB - 100FTFT)	56,943.00	1.31
RIPARIAN RESTORATION (101 - 200FT)	9,203.00	0.21
RIPARIAN RESTORATION (TOB - 100FT)	361,059.00	8.29
AREAS LESS THAN 50FT FROM TOB	9800.00	0.22
TOTAL RIPARIAN BUFFER MITIGATION AREA	**463,011.00**	**10.63**

SURVEYORS CERTIFICATION(S)

Surveyors disclaimer: No attempt was made to locate any cemeteries, wetlands hazardous material sites, underground or above ground utilities or any other features above, or below ground other than those shown.

I certify that the survey is of another category (credit determination plan), such as the recombination of existing parcels, a court-ordered survey, or other exception to the definition of subdivision.

I certify that this plat does not meet G.S. 47-30 as amended.

I, John A. Rudolph, certify that this project was completed under my direct and responsible charge from an actual survey made under my supervision; that this survey was performed to meet the requirements for an LIS/GIS survey to the accuracy of Class C and no vertical accuracy; method of measurement GNSS; date(s) of survey July of 2022; datum used for survey NAD83 (2011); and all coordinates are based on NAD83 (2011).

PRELIMINARY PLAT, NOT FOR RECORDATION, CONVEYANCES, OR SALES.

L-4194

Professional Land Surveyor — License Number

774 S. Beston Road
La Grange, NC 28551
252.582.3097
www.k2designgroup.com
Firm License no. C-2111

k2 design group

Client: RESTORATION SYSTEMS, LLC
1101 HAYNES STREET
SUITE 211
RALEIGH, NC 27604

Project: COOR ISLAND MITIGATION SITE
FORK TOWNSHIP, WAYNE COUNTY
NORTH CAROLINA

Title: CREDIT DETERMINATION PLAN
FOR THE PURPOSE OF MONITORING

DRAWN BY:	JTR
DATE:	06/07/23
SURVEYED BY:	JAR
DWG. NO.	RSS524AB23
SHEET:	1 OF 2

AS BUILT LEGEND:

TOB: TOP OF BANK
R/W: RIGHT-OF-WAY

- AREAS LESS THAN 50FT - UT1 (9,800 SQ. FT)
- RESTORATION (PREVIOUSLY FORESTED) - NO CREDIT
- PRESERVATION (101 - 200FT)
- PRESERVATION (TOB - 100FT)
- RIPARIAN RESTORATION (101 - 200FT)
- RIPARIAN RESTORATION (TOB - 100FT)
- ACCESS EASEMENT
- UTILITY EASEMENT
- SURVEYED TOP OF BANK
- INSTALLED VEGETATION MONITORING PLOTS (8 TOTAL)
- CONSERVATION EASEMENT
- DISTANCES FROM TOB (100FT, 200FT)
- ADJOINERS

N

NC GRID NAD83(2011)

ACCESS EASEMENT 1
20' WIDE

E & S WAYNE
FARMS, LLC
D.B. 3199, PG 420
PIN:2569371544

CONSERVATION
EASEMENT AREA 2
7.40 ACRES +/-

ORANGE HATCH
LESS THAN 50FT
NOT CONVERTABLE TO NOC

ACCESS EASEMENT 3
60' WIDE, 0.42 ACRES +/-

MARTIN
D.B. 1166, PG. 832
PIN: 2569475140

FEATURE 1 (SUBJECT)
UT TO HALF MILE BRANCH
BUFFER CREDITABLE
NUTRIENT CREDITABLE

MITCHELL
D.B. 1098, PG. 499
PIN: 2569058737

RESTORATION
SYSTEMS, LLC
D.B. 3757, PG. 327
P.C. P, SL. 67-C
PIN: 2569264339

200 FEET FROM TOB

100 FEET FROM TOB

FEATURE 1 (SUBJECT)
UT TO HALF MILE BRANCH
BUFFER CREDITABLE
NUTRIENT CREDITABLE

AREA HISTORICALLY FORESTED
PLANTED, NO CREDIT

FEATURE A (NOT SUBJECT)
NON-CREDIT GENERATING

FEATURE C (NOT SUBJECT)
NON-CREDIT GENERATING

APPARENT 30'
MAINTAINED
UTILITY EASEMENT

RESTORATION
SYSTEMS, LLC
D.B. 3757, PG. 327
P.C. P, SL. 67-C
PIN: 2569264339

FEATURE B (NOT SUBJECT)
NON-CREDIT GENERATING

CONSERVATION
EASEMENT AREA 2
4.12 ACRES +/-

HOWELL
D.B. 2679, PG. 84
PIN: 2569469594

MITCHELL
D.B. 1311, PG. 631
PIN: 2569058737

MARTIN
D.B. 1166, PG. 832
PIN: 2569258883

LANE FARMS, INC
D.B. 965, PG. 755
PIN: 2569039036

200 100 0 200
US Feet
1" = 200'

SHEET 2

Table 8. Project Components and Mitigation Credits
Coor Island Mitigation Site, Project Credits (Asbuilt)

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)
Buffer	Rural	Yes	I / P	Restoration	0-50	1	9,800	9,800	1	100%	1.00000	Yes	9,800.000	No	—	—
Buffer	Rural	Yes	I / P	Restoration	0-100	1	361,059	361,059	1	100%	1.00000	Yes	361,059.000	Yes	18,840.541	—
Buffer	Rural	Yes	I / P	Restoration	101-200	1	9,203	9,203	1	33%	3.03030	Yes	3,036.993	Yes	480.225	—
Buffer	Rural	Yes	I / P	Restoration	0-100	Non-Credit Areas (Previously Forested) Feature 1	812	0	1	100%		No	—	No	—	—
Buffer	Rural	Yes	I / P	Restoration	101-200	Non-Credit Areas (Previously Forested) Feature 1	9	0	1	33%		No	—	No	—	—
													—		—	—
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													—		—	—
						Totals (ft2):	**380,883**	**380,062**					**373,895.993**		**19,320.766**	**0.000**
						Total Buffer (ft2):	**380,883**	**380,062**								
						Total Nutrient Offset (ft2):	**0**	**N/A**								

Total Ephemeral Area (ft^2) for Credit:	**0**	**0**	
Total Eligible Ephemeral Area (ft^2):	**115,958**	**0.0%**	**Ephemeral Reaches as % TABM**
Total Eligible for Preservation (ft^2):	**126,961**	**16.3%**	**Preservation as % TABM**

Enter Preservation Credits Below

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
	Rural	Yes	I / P		0-100	1	56,943	56,943	10	100%	10.00000	5,694.300
	Rural	Yes	I / P		101-200	1	26,006	26,006	10	33%	30.30303	858.198
												—
												—
												—
						Preservation Area Subtotals (ft^2):	**82,949**	**82,949**				

TOTAL AREA OF BUFFER MITIGATION (TABM)			
Mitigation Totals		**Square Feet**	**Credits**
Restoration:		380,062	373,895.993
Enhancement:		0	0.000
Preservation:		82,949	6,552.498
Total Riparian Buffer:		463,011	380,448.491
TOTAL NUTRIENT OFFSET MITIGATION			
Mitigation Totals		**Square Feet**	**Credits**
Nutrient Offset:	**Nitrogen:**	0	0.000
	Phosphorus:		0.000

1. The Randleman Lake buffer rules allow some ditches to be classified as subject according to 15A NCAC 02B .0250 (5)(a).

last updated 08/03/2020

Table 9. Project Activity and Reporting History

Activity / Milestone	Mitigation Plan Proposed Date	Actual Date
Mitigation Plan Approved	NA	November 28, 2022
Parcel Protection	NA	Recorded November 11, 2022
Planting	Q1 2023	February 6, 2023
As-built Data Collection	Q1 2023	February 15, 2023
Construction Completion Walkthrough	NA	February 6, 2023
As-built Report Submittal	NA	March 2023
Year 1-5 Monitoring	Q4 2023 - 2027	On schedule

Table 10: Project Contact

	Firm	POC & Address
Full Delivery Provider	Restoration Systems, LLC	1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604 John Preyer 919.755.9490
Designer/Permitting:	Restoration Systems, LLC	Raymond Holz: 919.755.9490 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604
Planting Contractor:	Restoration Systems, LLC	Josh Merritt: 919.755.9490 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604
Seeding Contractor:	Restoration Systems, LLC	Matthew Harrell: 919.755.9490 1101 Haynes Street, Suite 211 Raleigh, North Carolina 27604
Nursery Stock Suppliers:	Superior Trees, Inc. & Native Forest Nursery	1.888.888.7158
Baseline Data Collection	Axiom Environmental, Inc.	Grant Lewis; 919.215.1693 218 Snow Ave. Raleigh, NC 27603
Vegetation Monitoring:	Axiom Environmental, Inc.	Grant Lewis; 919.215.1693 218 Snow Ave. Raleigh, NC 27603

Table 11: Project Baseline Information & Attributes

Project Information			
Project Name		Coor Island	
County		Wayne	
Project Area (acres)		11.52	
Project Coordinates (latitude and longitude)		35.3858º, -78.1197º (NAD83/WGS84)	
Project Watershed Summary Information			
Physiographic Province		Southeastern Plain	
River Basin		Neuse	
USGS Hydrologic Unit 8-digit	03020201	USGS Hydrologic Unit 14-digit	03020201200030
DWR Sub-basin		03-04-12	
Project Drainage Area, Total Outfall (acres)		0.4 square miles	
Project Drainage Area Percentage of Impervious Area		<5%	

Appendix B: Project Photos and Baseline Vegetation Data

Construction and Planting Photos
Table 12 - Baseline Vegetation
Vegetation Plot Photos 1-8

Photo 1: Mixing Barerоots Prior to Planting. February 6, 2023

Photo 2: Planting Barerоots. February 6, 2023

Photo 3: Planting Bareroots. February 6, 2023

Photo 4: Planting Bareroots. February 6, 2023

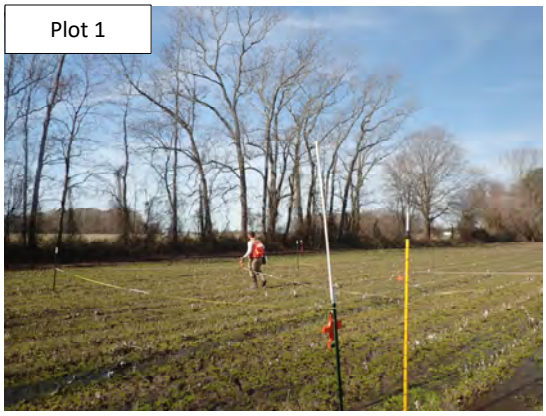
Photo 5: Planting Barerоots. February 6, 2023

EEP Project Code 23008. Project Name: Coor Island

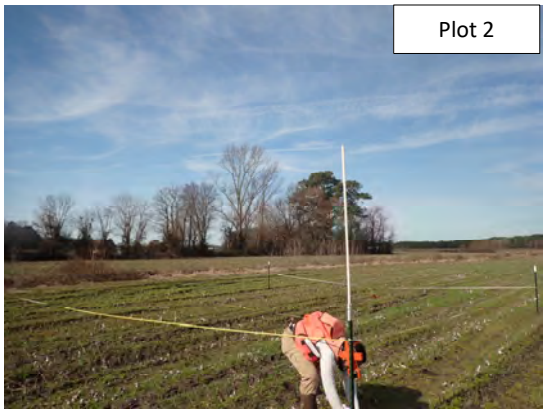
			Current Plot Data (MY0 2023)																						Annual Means		
			23008-01-0001			23008-01-0002			23008-01-0003			23008-01-0004			23008-01-0005			23008-01-0006			23008-01-0007			23008-01-0008			MY0 (2023)		
Scientific Name	Common Name	Species Type	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Betula nigra	river birch	Tree										3	3	3	2	2	2	1	1	1							6	6	6
Carya cordiformis	bitternut hickory	Tree	1	1	1							1	1	1										1	1	1	3	3	3
Diospyros virginiana	common persimmon	Tree	4	4	4							1	1	1							6	6	6	1	1	1	12	12	12
Fraxinus pennsylvanica	green ash	Tree				2	2	2													2	2	2				4	4	4
Liriodendron tulipifera	tuliptree	Tree	1	1	1	2	2	2				3	3	3													6	6	6
Nyssa sylvatica	blackgum	Tree	4	4	4	5	5	5	1	1	1	2	2	2	7	7	7				2	2	2				21	21	21
Platanus occidentalis	American sycamore	Tree	1	1	1				1	1	1										1	1	1	2	2	2	5	5	5
Quercus	oak	Tree							1	1	1				3	3	3	10	10	10	2	2	2	12	12	12	28	28	28
Quercus michauxii	swamp chestnut oak	Tree	2	2	2	1	1	1	1	1	1																4	4	4
Quercus nigra	water oak	Tree				3	3	3	5	5	5							3	3	3							11	11	11
Quercus phellos	willow oak	Tree	1	1	1				3	3	3							4	4	4				1	1	1	9	9	9
Sambucus nigra	European black elderbe	Shrub				1	1	1													2	2	2				3	3	3
Ulmus americana	American elm	Tree	2	2	2	1	1	1										1	1	1	2	2	2				6	6	6
		Stem count	16	16	16	15	15	15	12	12	12	10	10	10	12	12	12	19	19	19	17	17	17	17	17	17	118	118	118
		size (ares)	1			1			1			1			1			1			1			1			8		
		size (ACRES)	0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.20		
		Species count	8	8	8	7	7	7	6	6	6	5	5	5	3	3	3	5	5	5	7	7	7	5	5	5	13	13	13
		Stems per ACRE	647.5	647.5	647.5	607	607	607	485.6	485.6	485.6	404.7	404.7	404.7	485.6	485.6	485.6	768.9	768.9	768.9	688	688	688	688	688	688	596.9	596.9	596.9

Coor Island
MY0 (2023) Vegetation Monitoring Photographs (February 2023)

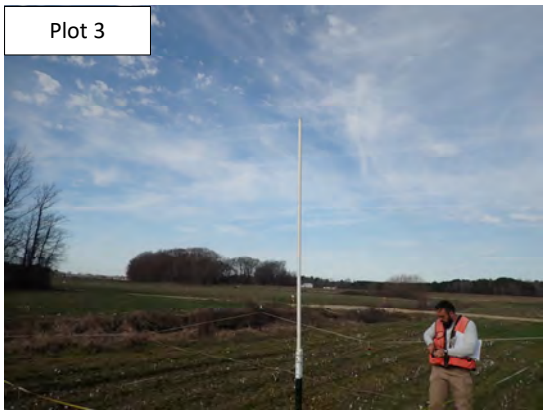
Plot 1



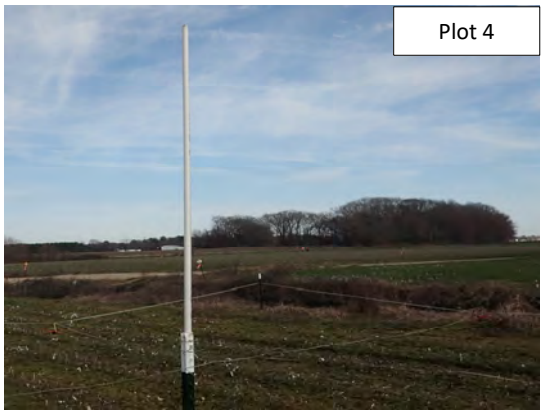
Plot 2



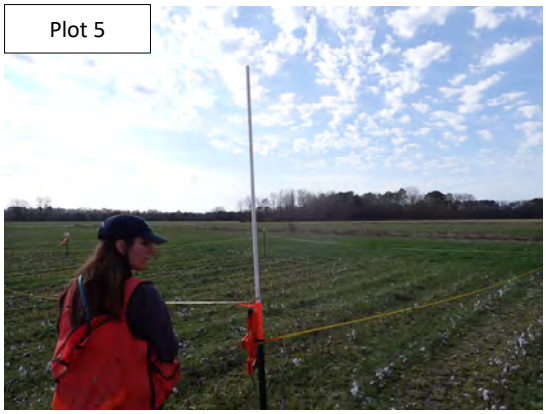
Plot 3



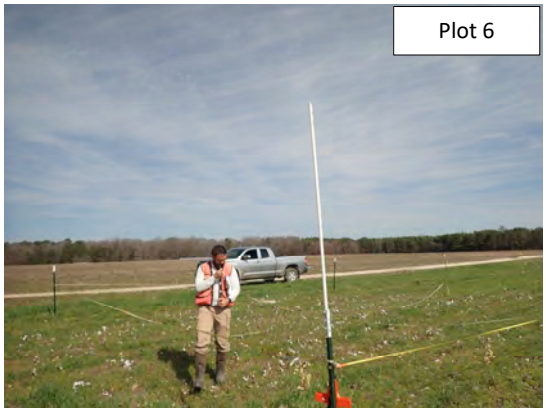
Plot 4



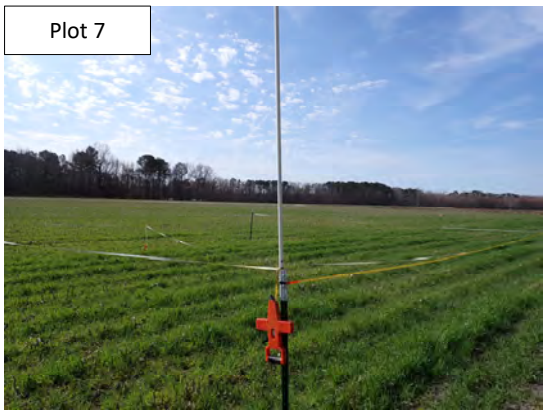
Plot 5



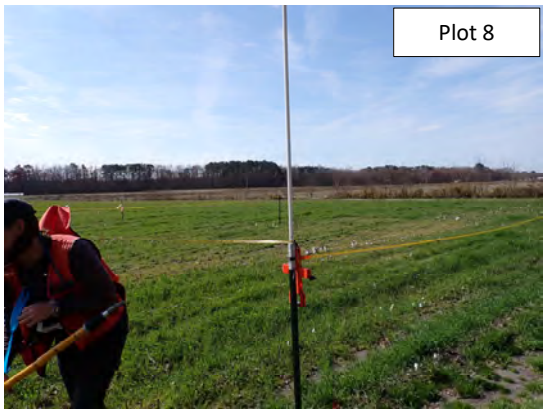
Plot 6



Plot 7



Plot 8



Appendix C: Agency Letters/Correspondence

DWR Stream Determination Letter, March 4, 2021
DWR Site Viability Letter, April 16, 2021
FEMA Floodplain Checklist

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

NORTH CAROLINA
Environmental Quality

March 4, 2021

E and S Wayne Farms, LLC
4216 White Kestrel Drive
Raleigh, NC 27616

2021 0021 v1
Wayne County

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

Subject Property/ Project Name: Coor Island Mitigation Site

Address/Location: (No Number) Neuse Island Lane, Goldsboro Wayne County

Stream(s) Evaluated: (1) – UT to Half Mile Branch

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
UT to Half Mile Branch	P		X	35.385270, -78.123396	35.384778, -78.114888	X	X

*Ephemeral / Intermittent / Perennial

To: E and S Wayne Farms LLC,

The Division of Water Resources has determined that the stream listed above and included on the attached map has been located on the most recent published (1974) NRCS Soil Survey of Wayne County, North Carolina and/or the most recent copy of the 2019 Princeton USGS Topographic map at a 1:24,000 scale and evaluated for applicability to the Neuse Riparian Buffer Rule. 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.

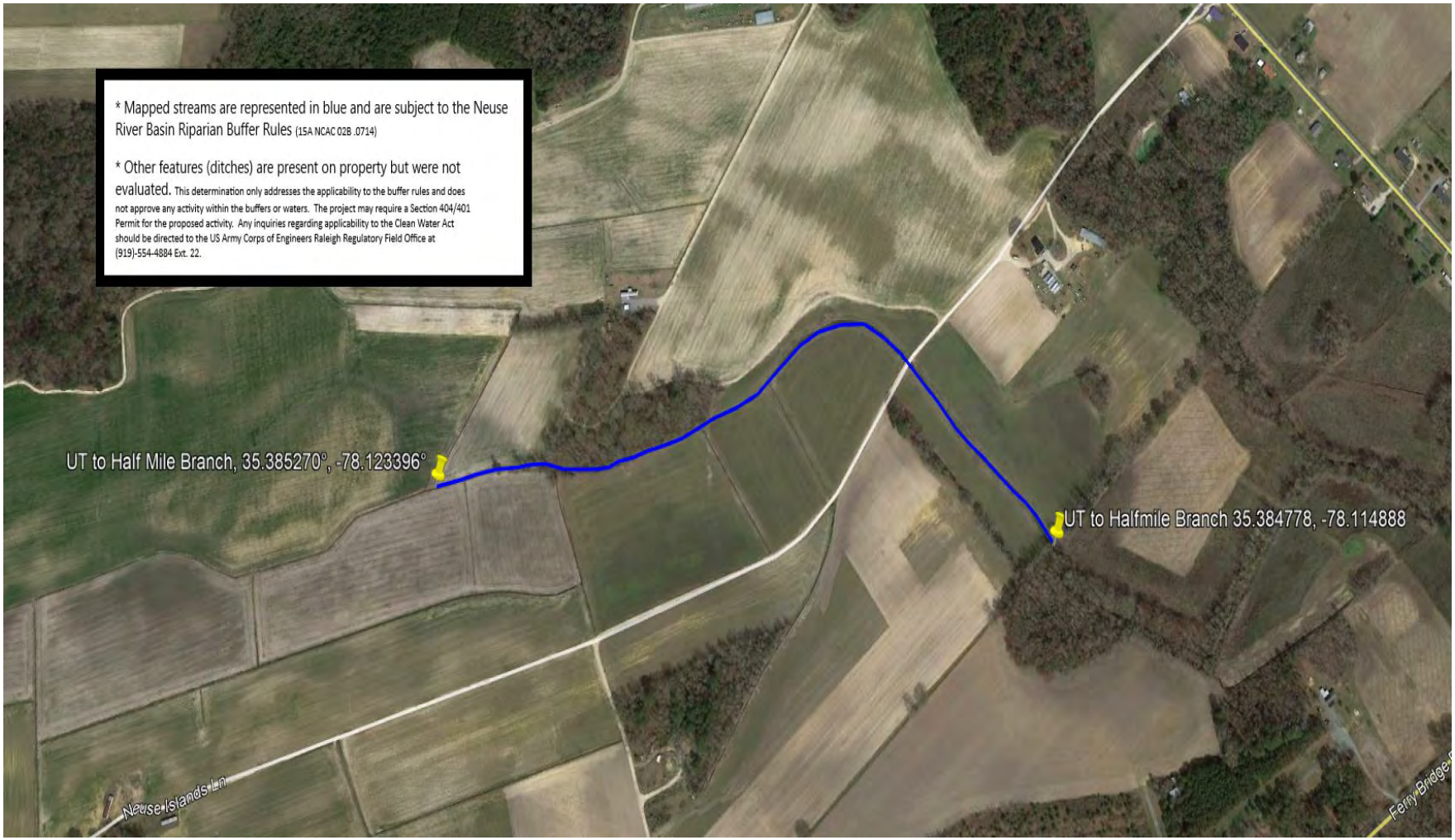
If you have questions regarding this determination, please feel free to contact Allen Stewart at (252) 946-6481.

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, samantha.j.dailey@usace.army.mil


* Mapped streams are represented in blue and are subject to the Neuse River Basin Riparian Buffer Rules (15A NCAC 02B .0714)
* Other features (ditches) are present on property but were not evaluated. 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.
UT to Half Mile Branch, 35.385270°, -78.123396°
UT to Halfmile Branch 35.384778, -78.114888
Neuse Islands Ln
Ferry Bridge

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

NORTH CAROLINA
Environmental Quality

April 16, 2021

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

Re: Site Viability for Buffer Mitigation & Nutrient Offset – Coor Island Site
Off Neuse Island Lane, Goldsboro (near 35.386634, -78.116390)
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 project 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
UT to Half Mile Branch	Stream	Yes	Combination of non-forested agricultural fields with mature forest Agricultural land uses not present along entire reach during baseline period 1991-1995 (see map) Neuse buffers (Zone 1 & Zone 2) timbered & cleared between 1999-2004 (see map) post buffer-protection rules cannot be used for crediting *(area not shown within the proposed project boundary but was assessed)*	[2]Yes (except within certain areas)	Yes (non-forested ag fields also not forested during baseline)	Non-forested fields - **Restoration Site** per 15A NCAC 02B .0295 (n) Timbered & Cleared Neuse Buffer (Zone 1 & Zone 2)- no credit Timbered & Cleared areas (beyond the Neuse Buffer) – **Restoration Site** per 15A NCAC 02B .0295 (n) for buffer credit only Forested Areas – **Preservation Site** per 15A NCAC 02B .0295 (o)(5)
A	Ditch >3'	No	Non-forested agricultural fields & 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
B	Ditch <3' depth	No	Non-forested agricultural fields and partially located within a DOT Right Of Way (ROW)	*see note	Yes	**Restoration Site** per 15A NCAC 02B .0295 (o)(8) ***Buffer Mitigation Note –** Assessment concludes the ditch meets 15A NCAC 02B.0295 (o)(8) (A, B, C, D & E). More information is required to be provided in a mitigation plan for complete assessment. See rule. Note: No credits are allowed within the DOT R.O.W
C	Ditch >3' depth	No	Right Bank – non-forested agricultural fields and partially located within a DOT Right Of Way (ROW) Left bank - Agricultural land uses not present adjacent to entire reach during baseline period 1991-1995 (see map)	No	Yes (on right side only)	**Restoration Site** per 15A NCAC 02B .0295 (n) Fields forested during baseline – no credit Note: No credits are allowed within the DOT R.O.W

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
D	Ditch >3' depth	No	Left Bank - non-forested agricultural fields and partially located within a DOT Right Of Way (ROW) Right Bank - Agricultural land uses not present adjacent to entire reach during baseline period 1991-1995 (see map)	No	Yes (on left side only)	**Restoration Site** per 15A NCAC 02B .0295 (n) Fields forested during baseline – no credit Note: No credits are allowed within the DOT R.O.W
E	Ditch	No	Not assessed	N/A	N/A	Not assessed

[1]Subjectivity calls for the features were determined by DWR in correspondence dated March 4, 2021 (ID# 2021-0021) 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 16, 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,

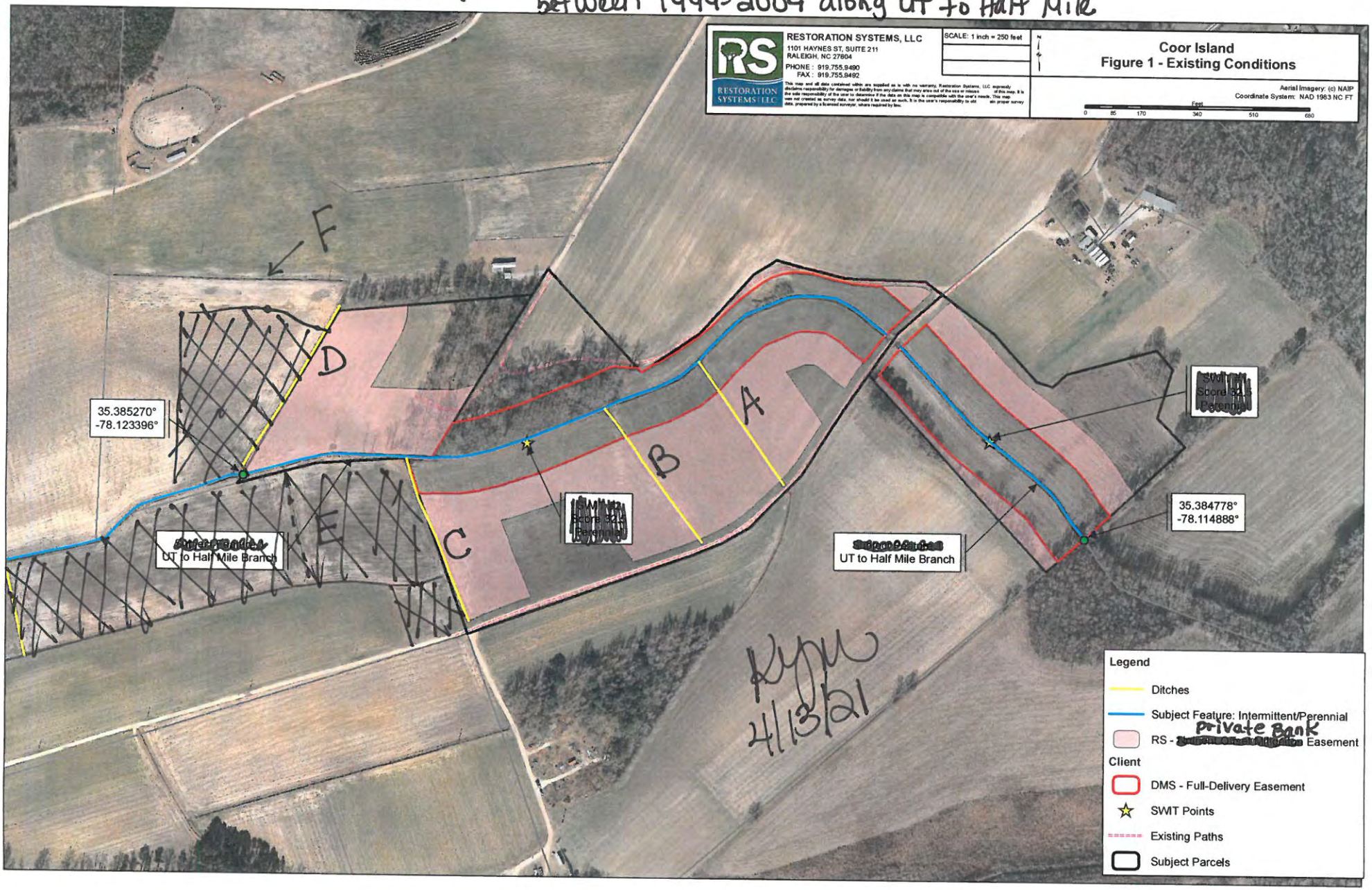
DocuSigned by:
Paul Wojoski
949D91BA53EF4E0...

Paul Wojoski, Supervisor
401 and Buffer Permitting Branch

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

cc: File Copy (Katie Merritt)

= Not agriculture during baseline, forested until between 1999-2004 along UT to Half Mile



Private Bank

KYW 4/13/21

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:	Coor Island Site
Name if stream or feature:	UT To Half Mile Branch
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 3720256800K (eff. 06/20/2018)
Consultant name:	Matthew Harrell Restoration Systems, LLC
Phone number:	252-299-1655
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:

☑ 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

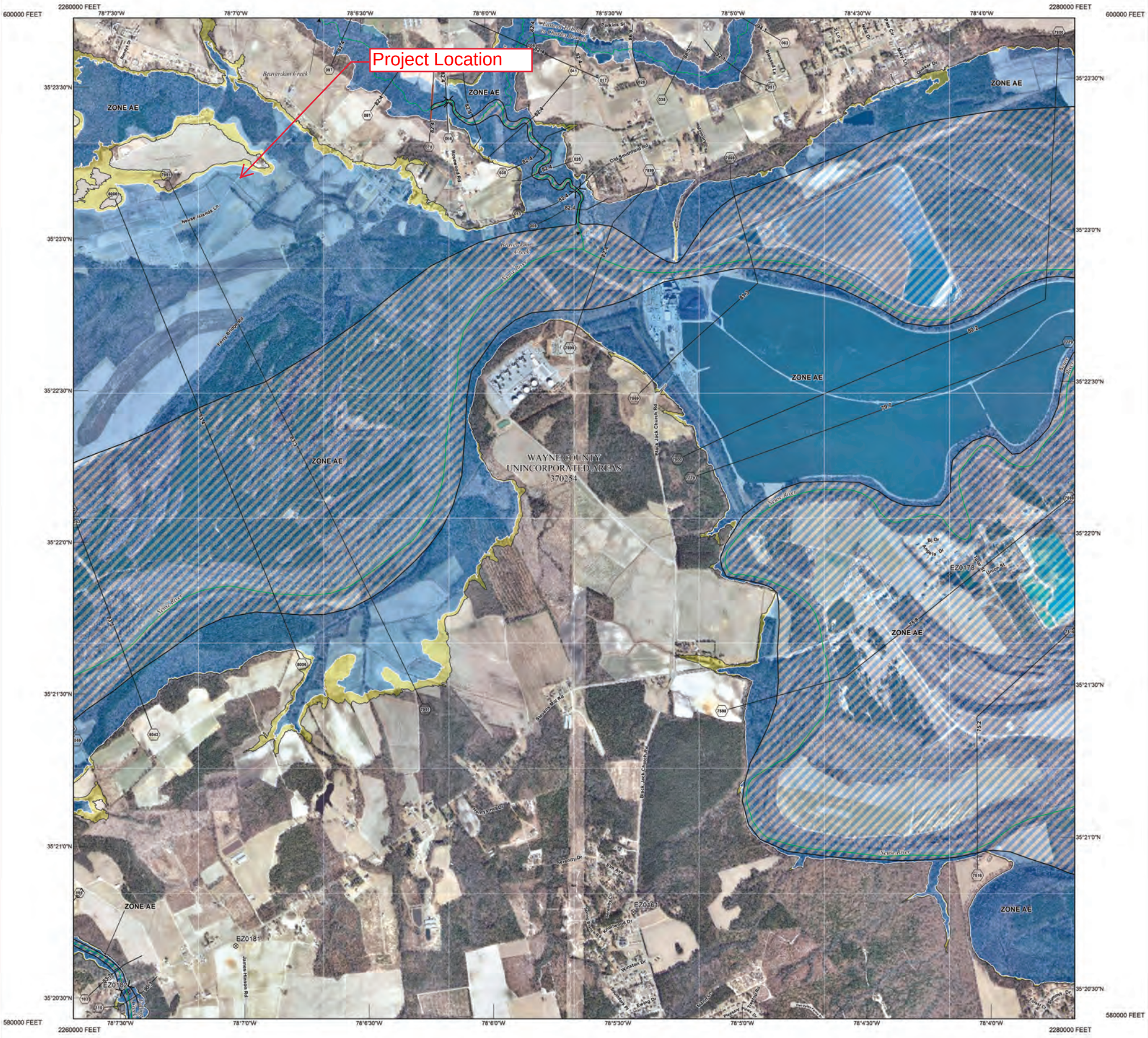
☐ Other Requirements

List other requirements:

Comments:

Name: Berry Gray Signature: BG

Title: Planning Director Date: 8/9/21



Cooperating Technical State

This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Management Agency (FEMA). The State of North Carolina has implemented a long term approach to floodplain management to decrease the costs associated with flooding. This is demonstrated by the State's commitment to map flood hazard areas at the local level. As a part of this effort, the State of North Carolina has joined in a Cooperating Technical State agreement with FEMA to produce and maintain this digital FIRM.

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTP://FRIS.NC.GOV/FRIS

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A,V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with Average Depth Less Than One Foot or With Drainage Areas of Less Than One Square Mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*

OTHER AREAS
- Areas Determined to be Outside the 0.2% Annual Chance Floodplain *Zone X*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Accredited or Provisionally Accredited Levee, Dike, or Floodwall
- Non-accredited Levee, Dike, or Floodwall
- BM5510 North Carolina Geodetic Survey bench mark
- BM5510 National Geodetic Survey bench mark
- BM5510 Contractor Est. NCFMP Survey bench mark
- 012 18.2 Cross Sections with 1% Annual Chance Water Surface Elevation (BFE)
- 8 Coastal Transect

OTHER FEATURES
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this map, available products associated with this FIRM including historic versions of this FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Map Service Center website at http://msc.fema.gov. An accompanying Flood Insurance Study report, Letter of Map Revision (LOMR) or Letter of Map Amendment (LOMA) revising portions of this panel, and digital versions of this FIRM may be available. Visit the North Carolina Floodplain Mapping Program website at http://www.ncfloodmaps.com, or contact the FEMA Map Service Center.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in the community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Flood Insurance Study (FIS) means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations, flood hazard risk zones, and other flood data in a community issued by the North Carolina Floodplain Mapping Program (NCFMP). The Flood Insurance Study (FIS) is comprised of the following products used together: the Digital Flood Hazard Database, the Water Surface Elevation Rasters, the digitally derived, autogenerated Flood Insurance Rate Map and the Flood Insurance Survey Report. A Flood Insurance Survey is a compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. This report contains detailed flood elevation data, data tables and FIRM indices. When a flood study is completed for the NFIP, the digital information, reports and maps are assembled into an FIS. Information shown on this FIRM is provided in digital format by the NCFMP. Base map information shown on this FIRM was provided in digital format by the NCFMP. The source of this information can be determined from the metadata available in the digital FLOOD database and in the Technical Support Data Notebook (TSDN).

ACCREDITED LEVEE NOTES TO USERS: If an accredited levee note appears on this panel check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

PROVISIONALLY ACCREDITED LEVEE NOTES TO USERS: If a Provisionally Accredited Levee (PAL) note appears on this panel, check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.10 of the NFIP regulations. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicates the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at http://www.fema.gov/business/nfip/index.shtm.

LIMIT OF MODERATE WAVE ACTION NOTES TO USERS: For some coastal flooding zones the AE Zone category has been divided by a Limit of Moderate Wave Action (LiMWA). The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The effects of wave hazards between the VE Zone and the LiMWA (or between the shoreline and the LiMWA for areas where VE Zones are not identified) will be similar to, but less severe than those in the VE Zone.

Limit of Moderate Wave Action (LiMWA)

COASTAL BARRIER RESOURCES SYSTEM (CBRS) NOTE

This map may include approximate boundaries of the CBRS for informational purposes only. Flood insurance is not available within CBRS areas for structures that are newly built or substantially improved on or after the date(s) indicated on the map. For more information see http://www.fws.gov/cbra, the FIS Report, or call the U.S. Fish and Wildlife Service Customer Service Center at 1-800-344-WILD.

CBRS Area Otherwise Protected Area

SCALE

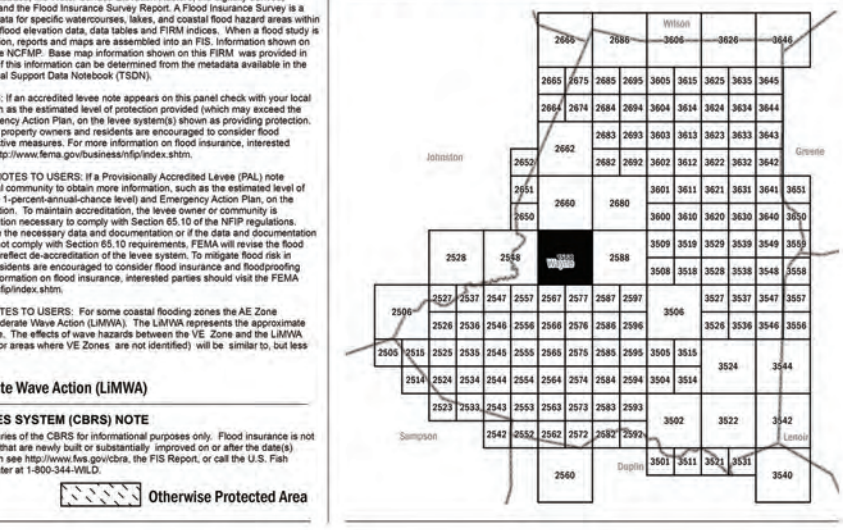
Map Projection:
North Carolina State Plane Projection Feet (Zone 3200)
Datum: NAD 1983 (Horizontal), NAVD 1988 (Vertical)

1 inch = 1,000 feet 1:12,000

0 500 1,000 2,000 Feet

0 150 300 600 Meters

PANEL LOCATOR



FEMA

National Flood Insurance Program

NORTH CAROLINA FLOODPLAIN MAPPING PROGRAM
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

NORTH CAROLINA

PANEL 2568

FEMA

Panel Contains:

COMMUNITY	CID	PANEL	SUFFIX
WAYNE COUNTY	370254	2568	K

VERSION NUMBER
2.3.3.2

MAP NUMBER
3720256800K

MAP REVISED
June 20, 2018