



Memorandum

To: NCDMS – Emily Dunnigan
From: Hannah Gadai, RES
Jamey McEachran, RES
Subject: Task 4 Draft Baseline Monitoring Report Comments – Chappels Creek Mitigation Project
(DMS #100179) - Comment Response Memo
Date: 10/6/2023
CC: N/A

1. CCPV: Veg plot numbers are difficult to read, please make them more legible.
[Vegetation plot numbers have been altered to make them for legible.](#)
2. CCPV: Please label the streams/ponds.
[Labels have been added to the streams and ponds.](#)
3. Vegetation Plot Mitigation Success Summary Table: Remove date of mowing. I believe this date is there if you mow in between rows of trees regularly.
[The date of mowing has been removed.](#)
4. Please provide a table that includes individual tree height data per plot (same as Pickle Creek). This will be required for all buffer/nutrient projects going forward.
[Tables including individual tree height for each vegetation plot have now been included in Appendix B.](#)

Please find enclosed the revised final As-Built submission with changes as noted above. Do not hesitate to reach out with any question or comments. Jamey can be reached by email at jmceachran@res.us or by phone at 919-623-9889.

Thank you,

Hannah Gadai
Ecologist

Jamey McEachran
Project Manager

As-Built Baseline Monitoring Report

FINAL

CHAPPELS CREEK MITIGATION PROJECT

NCDMS Project #100179 (Contract #0402-06)
RFP #16-20200402

Person County, North Carolina
Neuse River Basin
HUC 03020201



Provided by:



Resource Environmental Solutions, LLC
for Environmental Banc & Exchange, LLC (EBX)

Provided for:

NC Department of Environmental Quality
Division of Mitigation Services

October 2023

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Appendix A: Background Tables and Site Maps

Table 1: Buffer Project Areas and Assets
Table 2: Goals, Performance, and Results
Table 3: Project Attributes
Table 4: Project Timeline and Contacts
Figure 1: Project Vicinity Map
Figure 2: Current Conditions Plan View Map
Figure 3: As-Built Survey

Appendix B: Vegetation Assessment Data

Planted Species Summary
Stem Count Total and Planted by Plot Species
Vegetation Plot Mitigation Success Summary Table
Visual Vegetation Assessment Table

Appendix C: As-built Photos

General Site Photos
Vegetation Plot Photos
Maintenance Photos

1 Mitigation Project Summary

1.1 Project Location and Description

Environmental Banc & Exchange, LLC (EBX), a wholly-owned subsidiary of Resource Environmental Solutions (RES), is pleased to provide the Chappels Creek Mitigation Project (Project), a full-delivery buffer mitigation Project for the Division of Mitigation Services (DMS) (DMS Project #100179). The Chappels Creek Project is within the Neuse River Basin, United States Geological Survey (USGS) 8-digit HUC 03020201, within the Upper Falls Lake Watershed, 14-digit HUC 03020201010010, and DWR Sub-basin Number 03-04-01. The Project easement is located in Person County in the Flat River Township of North Carolina and can be accessed by US-501, off of Antioch Church Road, just south of Roxboro, NC (**Figure 1**). The Project coordinates are 36.322000, -78.945000.

This buffer Project provides riparian buffer mitigation credits for unavoidable impacts due to development within the Neuse River Basin, United States Geological Survey (USGS) 8-digit Cataloguing Unit 03020201 (Neuse 01), specifically the Upper Falls Lake Watershed (**Figure 1**). This Buffer Mitigation Plan is in accordance with the Consolidated Buffer Mitigation Rule 15A NCAC 02B .0295 and Nutrient Offset Credit Trading Rule 15A NCAC 02B .0703. The Chappels Creek Project consists of a 49.26-acre conservation easement, accompanied by a 0.75-acre access easement, which altogether are broken into seven sections. The Project includes a portion of the riparian area of Chappels Creek along with five of its unnamed stream tributaries. Chappels Creek is a USGS-named stream that drains to the North Flat River feeding into Falls Lake before entering the Neuse River. Pre-existing land use within the Project area was row crop production, fallow pasture, and disturbed riparian forest. Water quality stressors that have affected the Project prior to restoration included heavy manipulation and relocation of stream channels, nutrient loadings from active crop production, a loss of stabilizing vegetation due to clearing as a result of continued crop production, a lack of forested riparian buffers, and the presence of invasive species.

The Chappels Creek Project is composed of two perennial streams: Chappels Creek and JM1; four intermittent stream channels: JM2, EN1, EN2, and TH1; and two impoundments: Pond A and Pond B (**Figure 2**). Most of the streams have been straightened and manipulated for agricultural purposes, leaving much of the forested riparian buffer either cleared or disturbed. The fifty-foot riparian buffers of all but one stream channel and one pond were determined to be subject to the Neuse buffer protection rules ("Subject"); whereas EN2 and Pond B were determined to not be subject to the Neuse buffer protection rules ("Non-Subject").

The goal of the Project is to restore, enhance, and preserve ecological function to the existing streams, ponds, and their associated riparian buffer areas by establishing appropriate plant communities while minimizing temporal and land disturbing impacts. This is being accomplished through the planting, establishment, and protection of a native hardwood forest community. The result will be a riparian area that functions to mitigate nutrient and sediment inputs from the surrounding uplands. Buffer and surrounding riparian area improvements will filter runoff from agricultural fields, thereby reducing nutrient and sediment loads to Project channels and provide water quality benefit to the overall watershed. The Project will provide significant functional uplift to the watershed and will assist DMS with achieving its mitigation goals in the Neuse 01 Upper Falls Lake Watershed.

2 Regulatory Considerations

2.1 Determination of Credits

The Project has the potential to total up to 1,721,660.000 ft² (39.52 acres) of riparian buffer mitigation area, generating 1,009,110.686 riparian buffer mitigation credits, within a 49.26-acre conservation easement (not including a 0.75-acre access easement). These credits will be derived from buffer restoration (both subject and non-subject), buffer enhancement, and buffer preservation (both subject and non-subject). The riparian buffer mitigation credits generated will service the Neuse 01 watershed, specifically the Upper Falls Lake Watershed. The total potential buffer mitigation credits that the Chappels Creek Mitigation Project will generate are detailed in **Table 1, Appendix A**. Where viable, buffer mitigation credits can be converted to nutrient offset credit in accordance with the Nutrient Offset Credit Trading Rule, 15A NCAC 02B .0703. In accordance with 15A NCAC 02B .0295 (o)(4) and (5), "the area of preservation credit within a buffer mitigation site shall comprise of no more than 25% of the total area of buffer mitigation".

2.2 Asset Map

See **Figure 3, Appendix A**.

3 Baseline

3.1 Planting

The initial planting of bare root trees occurred on April 17-18, 2023. Site preparations included the mowing and spraying of row crops within the easement area prior to planting and seeding. Additionally, portions of the site, primarily within the parcels that were previously in row crop production, were ripped to encourage tree growth. No soil amendments were deemed necessary. All riparian restoration areas are planted from top of bank back at least 50 feet from streams with bare root tree seedlings on a nine by six-foot spacing to achieve an initial density of approximately 833 trees per acre (**Appendix B**). In addition, these areas were seeded with an herbaceous seed mix to provide rapid herbaceous cover and promote immediate buffer effectiveness as well as habitat for pollinators and other wildlife. The seed blend contains both temporary and permanent seed and includes taproot species. The seed was sown by way of broadcast seeding. Riparian enhancement areas are planted in two small patches along EN1 and Chappels Creek where non-native and nuisance species were heavily treated and will continue to be treated throughout the life of the Project. Species like box elder (*Acer negundo*) and sweet gum (*Liquidambar styraciflua*) were selectively removed throughout these enhancement areas, leaving larger trees to remain, but will be treated, as needed, to allow for establishment and growth of the planted bare root trees. Planting occurred in all areas proposed for riparian buffer restoration and enhancement and meets the performance standards outlined in Rule 15A NCAC 02B .0295. This includes treating invasive species and planting at least four species of native hardwood bare root trees. A Dry-Mesic Oak-Hickory Forest (Schafale 2012) is the target community type and was referenced for all planting areas within the Project. This community composition is highly diverse and is suitable given the Project's soil and landscape characteristics and will provide water quality and ecological benefits. The lists of planted bare root tree and seed mix species and their percentages of total species composition can be found in **Appendix B**. Wherever possible, mature vegetation has been preserved and incorporated into the buffer.

3.2 Other Activities

Other activities involved beaver dam removals in three different locations along Chappels Creek and JM1, in March 2023. All dam removal efforts were intended to target beaver dams built after Project establishment, avoiding any existing dams established prior to preliminary site evaluations. However, in attempts to remove a small beaver dam downstream of Pond A, which is made up of a series of in-line beaver impoundments, Pond A itself was also breached in order to locate and remove the beavers impounding the downstream, newly established dam. Due to the historic presence and size of Pond A any future dam built along Pond A will not be removed a second time, maintaining the pond footprint which represents the top of bank that flows into JM1. Downstream along Chappels Creek, south of the southernmost easement break, one dam was excavated out, restoring continuous water passage, and there have been no signs of dam re-establishment since. All removed beaver dam locations are shown in **Figure 2**.

4 Annual Monitoring

4.1 Methods

Annual vegetation monitoring and visual assessments will be conducted. Monitoring plots were installed a minimum of 100 meters squared in size and cover at least two percent of the planted mitigation area. These plots were randomly placed throughout the planted riparian buffer mitigation area (30.60 acres) and are representative of the riparian restoration and enhancement conditions. The following data is recorded for all trees in the plots: species, height, planting date (or volunteer), and grid location. All stems in plots are flagged with flagging tape. Data is processed using the "Vegetation Table Shiny Tool" made available by DMS in December 2021 and is reported in accordance with the most recent DMS requirements and templates. In the field, the four corners of each plot were permanently marked with PVC at the origin and metal conduit at the other corners. There are 25 fixed vegetation monitoring plots (**Figure 2**).

Photos are to be taken at all vegetation plot origins each monitoring year and be provided in the annual reports (**Appendix C**). Visual inspections and photos will be taken to ensure that areas are being maintained and compliant. The measures of vegetative success for the Project are the survival of at least four native hardwood tree species, where no one species is greater than 50 percent of stems, at a density of at least 260 stems per acre at the end of Year 5. Native volunteer species may be included to meet the performance standards as determined by NC Division of Water Resources (DWR).

A visual assessment of the conservation easement is also performed each year to confirm:

- Easement boundary markers/signage are in good condition throughout the site;
- No encroachment has occurred;
- No invasive species in areas where invasive species were treated;
- Diffuse flow is being maintained in the conservation easement areas;
- No new beaver dams have been established that would negatively affect the functionality of the buffer; and
- There has not been any cutting, clearing, filling, grading, or similar activities that would negatively affect the functionality of the buffer.

Component/ Feature	Monitoring	Maintenance through Project close-out
Vegetation	Annual vegetation monitoring	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 and nuisance plant species shall be treated by mechanical and/or chemical methods. Any vegetation requiring herbicide application will be performed in accordance with NC Department of Agriculture (NCDA) rules and regulations. Vegetation maintenance activities will be documented and reported in annual monitoring reports. Vegetation maintenance will continue through the monitoring period.
Invasive and Nuisance Vegetation	Visual Assessment	Invasive and nuisance species will be monitored and treated so that none become dominant or alter the desired community structure of the Project. Locations of invasive and nuisance vegetation will be mapped.
Project Boundary	Visual Assessment	Project boundaries shall be identified in the field to ensure clear distinction between the mitigation Project and adjacent properties. Boundaries are marked with signs identifying the property as a mitigation Project and will include the name of the long-term steward and a contact number. Boundaries may be identified by fence, marker, bollard, post, tree-blazing, or other means as allowed by Project conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as-needed basis. Easement monitoring and staking/signage maintenance will continue in perpetuity as a stewardship activity.
Beaver	Visual Assessment	Routine site visits and monitoring will be used to determine if beaver management is needed. If beaver activity poses a threat to Project stability or vegetative success, EBX will remove impoundments and supplementally plant as needed. All beaver management activities will be documented and included in annual monitoring reports. Beaver monitoring and management will continue through the monitoring period.

4.2 Tables

See **Appendix B**.

4.3 Results and Discussion

Establishment and monitoring of 25 fixed vegetation plots were completed on April 18th and 19th, 2023. Vegetation tables are in **Appendix B** and associated photos are in **Appendix C**. MY0 monitoring data indicates that all plots are exceeding the performance criteria of 260 planted stems per acre. Planted stem densities ranged from 526 to 1,052 planted stems per acre with a mean of 782 planted stems per acre across all plots. A total of 10 species were documented within the plots. Volunteer species were not noted at baseline monitoring but are expected to be established in upcoming years. The average tree height observed was 1.5 feet.

Visual assessment of vegetation outside of the monitoring plots indicates that the herbaceous vegetation is becoming well established throughout the Project. Invasive species observed on site include tree-of-heaven (*Ailanthus altissima*), Chinese privet (*Ligustrum sinense*), Callery pear (*Pyrus calleryana*), and multiflora rose (*Rosa multiflora*). Other nuisance species including box elder and sweet gum were also observed throughout the Project, but largely within the middle of the site. Treatment for these species was completed in March and April 2023, and mainly involved hack-and-squirt and basal bark treatment methods; some larger trees were removed via chainsaw to limit light competition for the newly planted bare root trees. While preliminary treatment took place throughout, monitoring, and additional treatment will continue throughout the life of the Project to ensure that the invasive and nuisance species are not compromising the growth and overall health of the native, planted trees. Easement boundary markers and signs are clearly visible and in good condition. Additionally, there has been no undocumented concentrated flow in the easement area.

4.4 Maintenance and Management

Invasive and nuisance species will be monitored and treated so that none become dominant or alter the desired community structure of the Project. The presence of box elder and sweet gum will be monitored and treated as necessary within planted areas (specifically the buffer enhancement areas). Beaver activity will also be monitored and addressed as needed throughout the life of the Project. The Project boundary will continue to be monitored for encroachment and conservation easement markings will be replaced if damaged.

5 References

NC Environmental Management Commission. 2014. Rule 15A NCAC 02B.0295 - Mitigation Program Requirements for the Protection and Maintenance of Riparian Buffers.

NC Environmental Management Commission. 2020. Rule 15A NCAC 02B.0714 – Neuse River Basin: Nutrient Sensitive Waters Management Strategy: Protection and Maintenance of Existing Riparian Buffers.

NC Department of Environmental Quality, Division of Mitigation Services. 2021. Vegetation Table Shiny Tool. https://ncdms.shinyapps.io/Veg_Table_Tool/.

Resource Environmental Solutions, LLC (2022). Chappels Creek Mitigation Project. Final Mitigation Plan.

Schafale, M.P. 2012. Classification of the Natural Communities of North Carolina, Fourth Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation, NCDENR, Raleigh, NC.

Appendix A

Background Tables & Site Maps

Table 2: Summary: Goals, Performance and Results

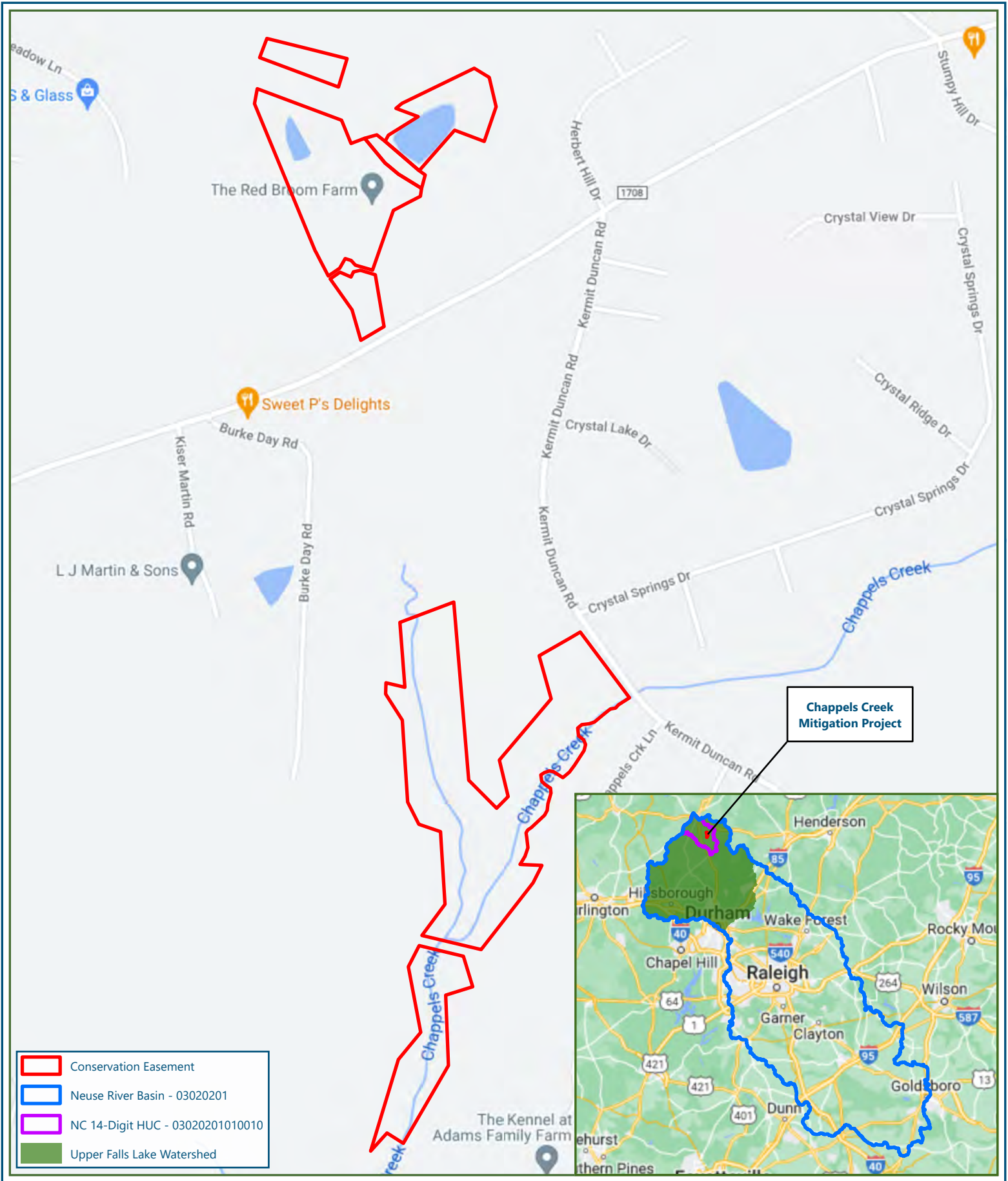
Goal	Objective/Treatment	Likely Functional Uplift	Performance Criteria	Measurement	Cumulative Monitoring Results
Restore, Enhance, and Preserve native vegetation.	<p>Established and increased forested riparian buffers to 50 feet and greater along both sides of the project reaches (within the conservation easement) and ponds with a hardwood riparian plant community;</p> <p>Treated and removed invasive and nuisance plant species that could negatively impact the health and success of planted vegetation.</p>	Reduction in floodplain sediment inputs from runoff, increased bank stability, increased LWD, and increased organic material in streams.	Survival of at least four native hardwood tree species, where no one species is greater than 50 percent of stems, at a density of at least 260 stems per acre at the end of MY5.	25 fixed vegetation plots.	All 25 plots met the success criteria of greater than 260 stems/acre, averaging 782 stems/acre. A total of 10 species were documented across all plots with an average height of 1.5 feet.

Table 3. Project Attribute Table			
Project Name	Chappels Creek Mitigation Project		
County	Person		
Project Area (acres)	49.26		
Planted Area (acres)	30.60		
Project Coordinates (latitude and longitude decimal degrees)	36.322000, -78.945000		
Project Watershed Summary Information			
Physiographic Province	Piedmont (Carolina Slate Belt)		
River Basin	Neuse		
USGS Hydrologic Unit 8-digit	3020201		
DWR Sub-basin	03-04-01		
Regulatory Considerations			
Parameters	Applicable?	Resolved?	Supporting Docs?
Water of the United States - Section 404	No	N/A	N/A
Water of the United States - Section 401	No	N/A	N/A
Buffer Authorization - Neuse Riparian Buffer Protection Rules	No	N/A	N/A
Endangered Species Act	Yes	Yes	Categorical Exclusion
Historic Preservation Act	Yes	Yes	Categorical Exclusion
Coastal Zone Management Act (CZMA or CAMA)	No	N/A	N/A
Essential Fisheries Habitat	No	N/A	N/A

Table 4. Project Timeline and Contacts

Activity or Deliverable	Data Collection Complete	Task Completion or Deliverable Submission
Project Instituted	N/A	Dec-20
Mitigation Plan Approved	N/A	Nov-22
Planting Completed	N/A	Apr-23
As-built Survey Completed	Apr-23	Apr-23
MY-0 Baseline Report	Apr-23	Jul-23
MY1+ Monitoring Reports	-	-
Remediation Items (e.g. beaver removal, supplements, repairs etc.)	N/A	Beaver Dam Removal Mar-23
Encroachment	-	-

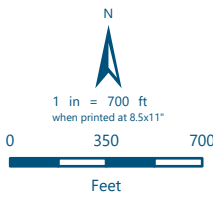
Chappels Creek #100179	
Provider	RES / 3600 Glenwood Ave., Suite 100, Raleigh, NC 27612
Mitigation Provider POC Monitoring POC	Jamey Mceachran (919) 623-9889 Emily Ulman (910) 274-8231
Designer	RES / 3600 Glenwood Ave., Suite 100, Raleigh, NC 27612
Primary project design POC	Frasier Mullen, PE (919) 412-3866
Construction Contractor	RES / 3600 Glenwood Ave., Suite 100, Raleigh, NC 27612
Construction contractor POC	Paul Dunn



- Conservation Easement
- Neuse River Basin - 03020201
- NC 14-Digit HUC - 03020201010010
- Upper Falls Lake Watershed

Figure 1
Project Vicinity

Chappels Creek
Person County, North Carolina
78.9431°W 36.322°N



Reference: This information is not to be used as final legal boundaries.
 Data Source: USGS, GoogleMaps
 Spatial Reference: NAD 1983 StatePlane North Carolina FIPS 3200

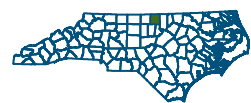
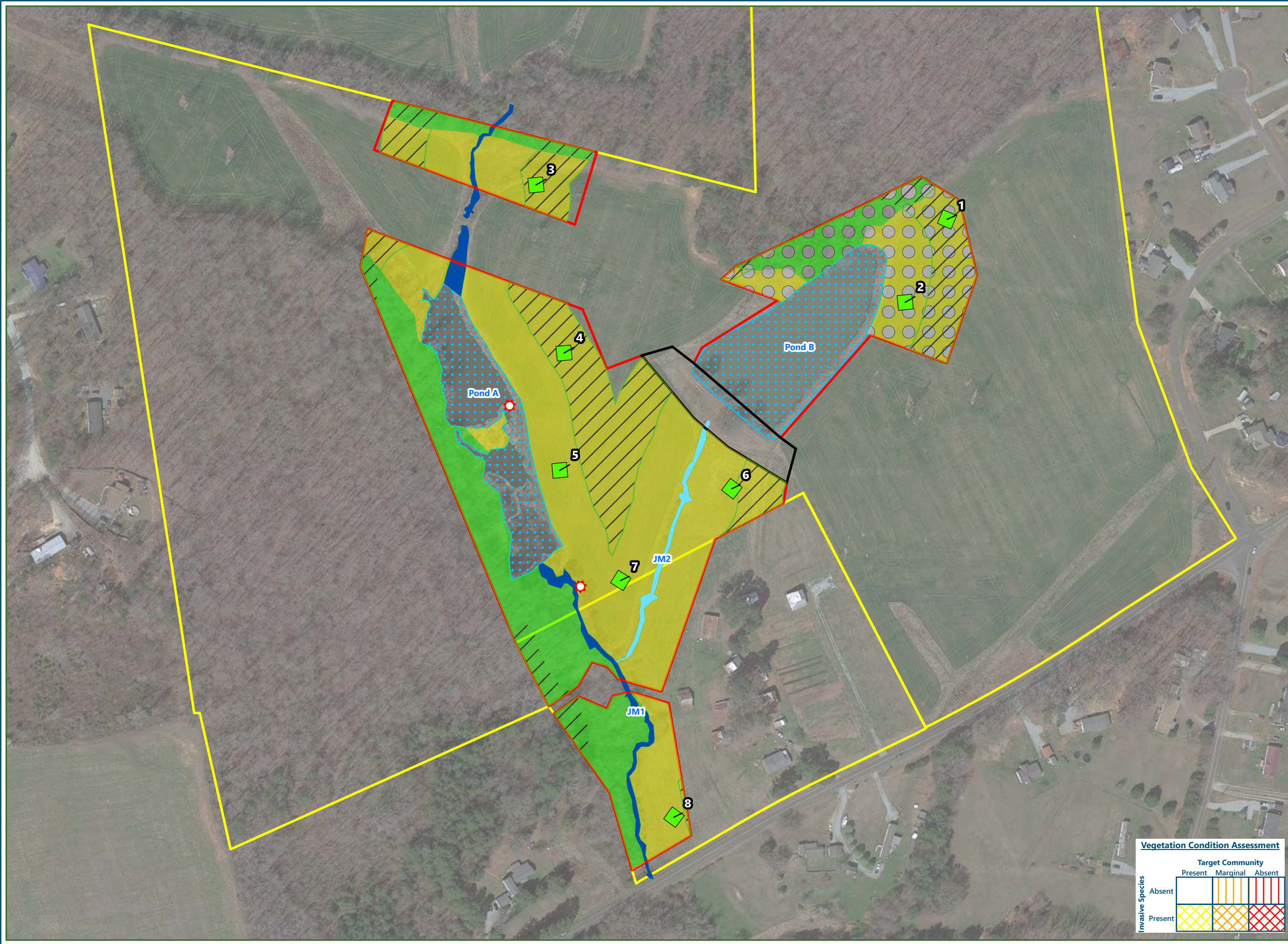


Figure 2
Current Conditions Plan View

MY0 2023

Chappels Creek

Person County, North Carolina
78.9457°W 36.3284°N



Conservation Easement

Access Easement

Project Parcel

Vegetation Plot (>260 Stems/Acre)

Riparian Buffer Mitigation

Restoration (0-100')

Restoration (101-200')

Non-Subject Restoration (0-100')

Non-Subject Restoration (101-200')

Enhancement (0-100')

Enhancement (101-200')

Preservation (0-100')

Preservation (101-200')

Non-Subject Preservation (0-100')

Non-Subject Preservation (101-200')

Non-Crediting

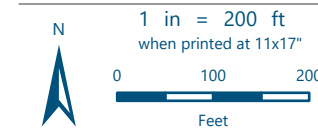
Project Stream

Perennial

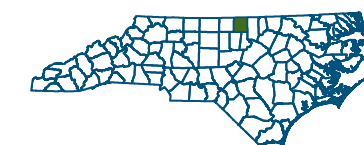
Intermittent

Pond

Beaver Dam Removed (March 2023)



Reference: This information is not to be used as final legal boundaries.
Imagery Source: Google Maps
Spatial Reference: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
Date Exported: 9/11/2023



Vegetation Condition Assessment

Invasive Species	Target Community		
	Present	Marginal	Absent
Absent			
Present			

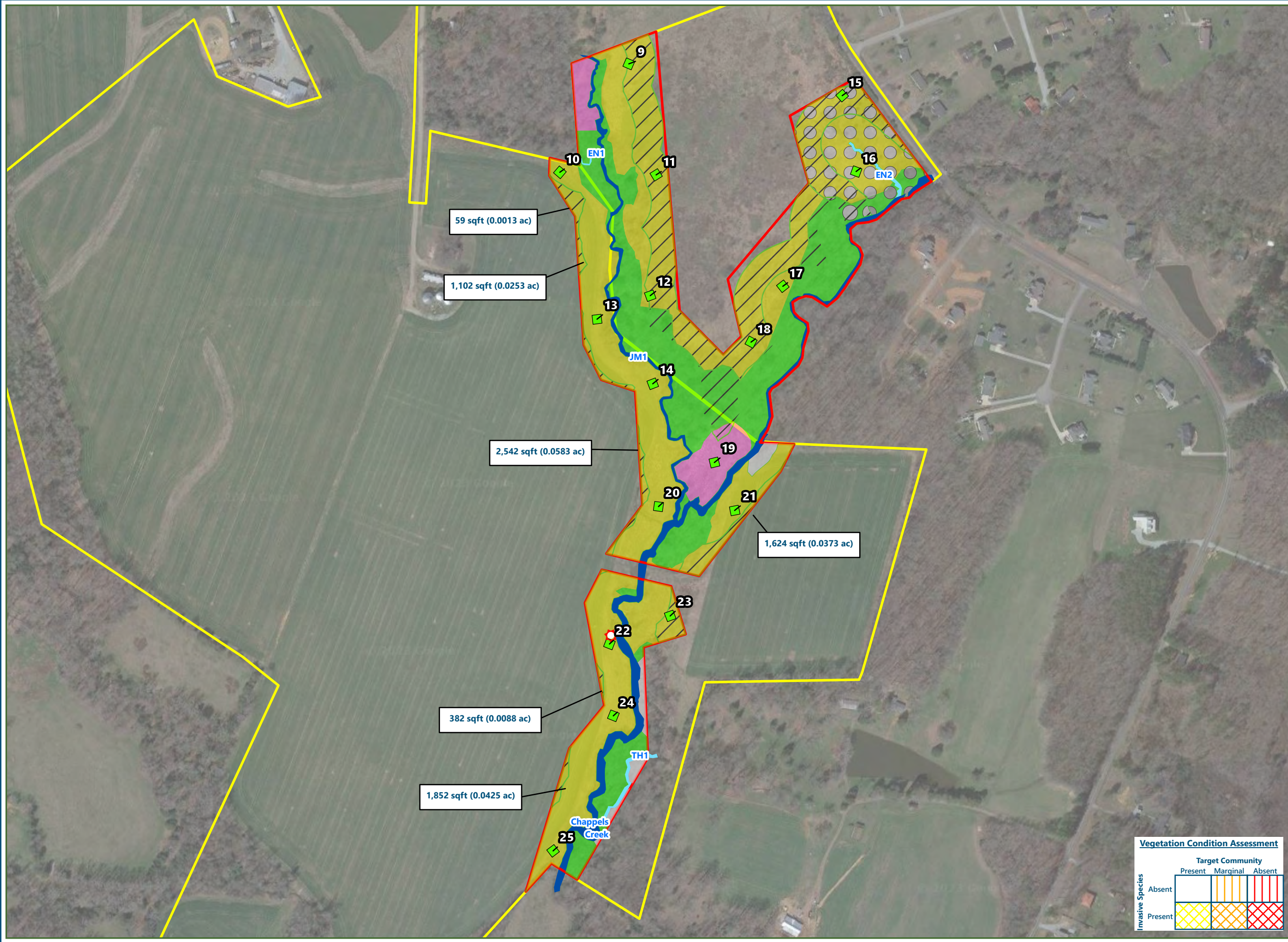


Figure 2
Current Conditions Plan View

MY0 2023

Chappels Creek

Person County, North Carolina
78.9441°W 36.3175°N



Conservation Easement

Access Easement

Project Parcel

Vegetation Plot (>260 Stems/Acre)

Riparian Buffer Mitigation

Restoration (0-100')

Restoration (101-200')

Non-Subject Restoration (0-100')

Non-Subject Restoration (101-200')

Enhancement (0-100')

Enhancement (101-200')

Preservation (0-100')

Preservation (101-200')

Non-Subject Preservation (0-100')

Non-Subject Preservation (101-200')

Non-Crediting

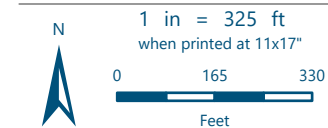
Project Stream

Perennial

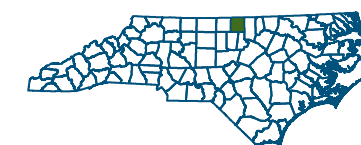
Intermittent

Pond

Beaver Dam Removed (March 2023)



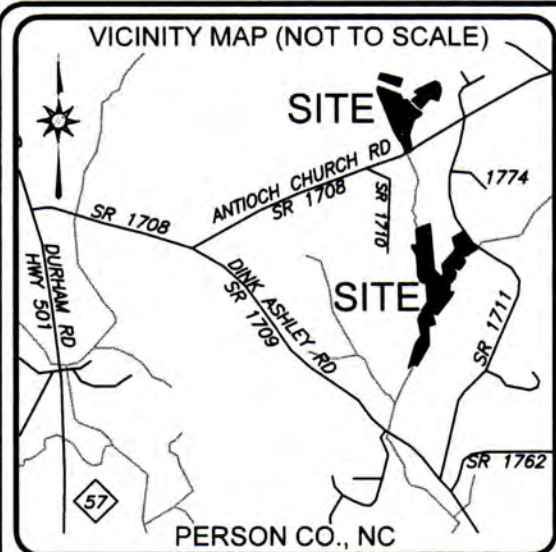
Reference: This information is not to be used as final legal boundaries.
Imagery Source: Google Maps
Spatial Reference: NAD 1983 StatePlane North Carolina FIPS 3200 Feet
Date Exported: 10/4/2023



Vegetation Condition Assessment

Invasive Species	Target Community		
	Present	Marginal	Absent
Absent	White	Yellow	Red
Present	Yellow with diagonal lines	Orange with diagonal lines	Red with diagonal lines





I, **ELISABETH G. TURNER**, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, CERTIFY THAT THIS BUFFER MAP WAS DRAWN UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, THAT THE EASEMENT BOUNDARY IS BASED ON PLAT BOOK SEE, PG NOTES RECORDED IN PERSON COUNTY REGISTER OF DEEDS OFFICE, AND THAT THE BUFFER AREAS SHOWN ARE CALCULATED FROM AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 17th DAY OF JULY, 2023.

Elisabeth G. Turner
 ELISABETH G. TURNER, P.L.S. #L-4440



FIGURE 3
CHAPPELS CREEK MITIGATION SITE

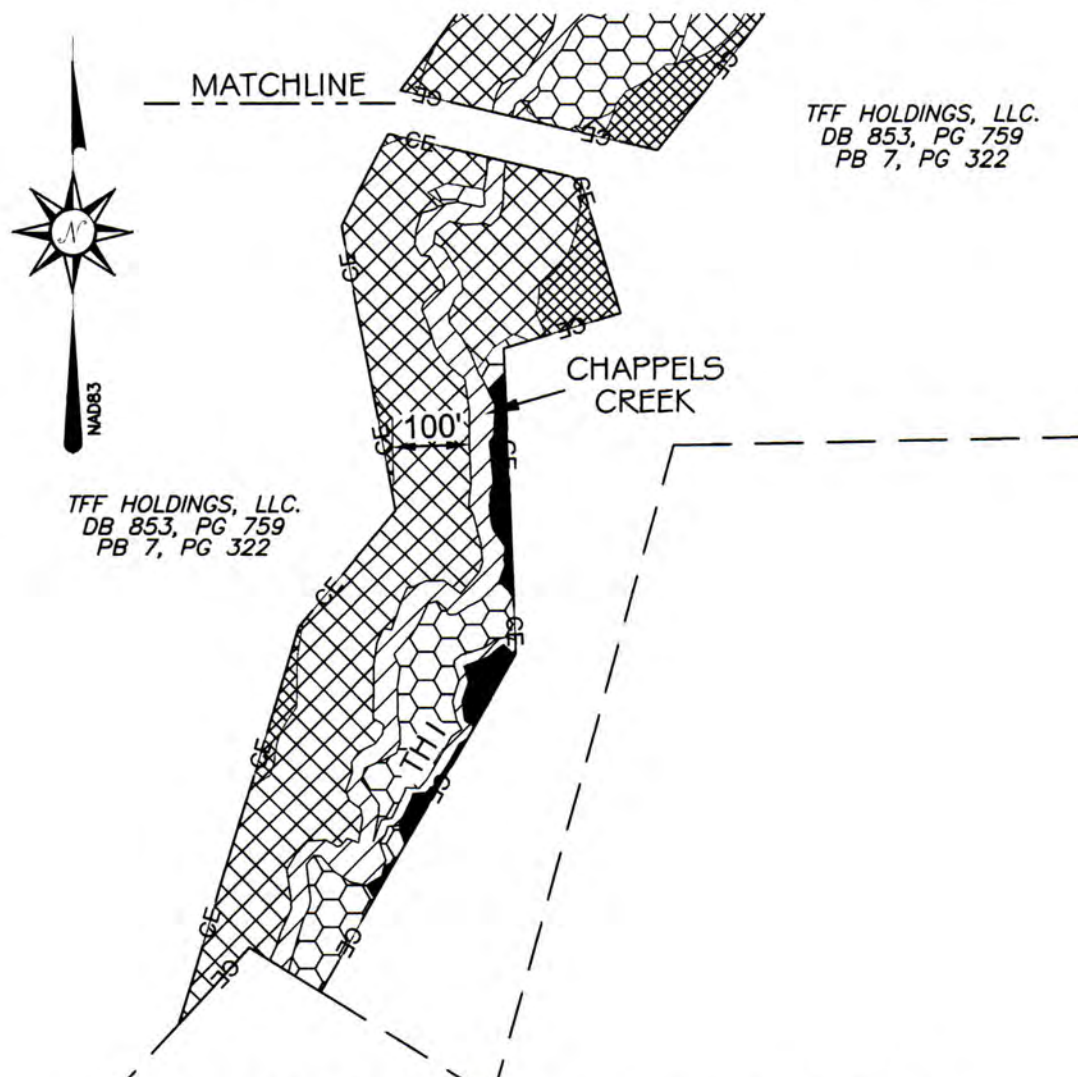
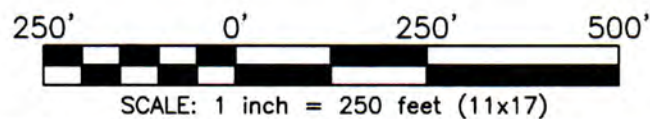
Riparian Buffer Credit:	SQ. FT.	Acres
Streams & Ponds	284,519	6.532
Riparian Restoration 0'-100' (Subject)	689,035	15.818
Riparian Restoration 101'-200' (Subject)	348,500	8
Riparian Restoration 0'-100' (Non-Subject)*	97,593	2.24
Riparian Restoration 101'-200' (Non-Subject)*	95,301	2.188
Riparian Enhancement 0'-100' (Subject)	58,222	1.337
Riparian Enhancement 101'-200' (Subject)	2,594	0.06
Riparian Preservation 0'-100' (Subject)	397,842	9.133
Riparian Preservation 101'-200' (Subject)	68,110	1.564
Riparian Preservation 0'-100' (Non-Subject)*	34,477	0.791
Riparian Preservation 101'-200' (Non-Subject)*	13,668	0.314
No Credit	55,692	1.278
Total CE Area	2,145,553	49.255

*Includes Non-subject Riparian Buffer of In-Line Pond

GENERAL NOTES:

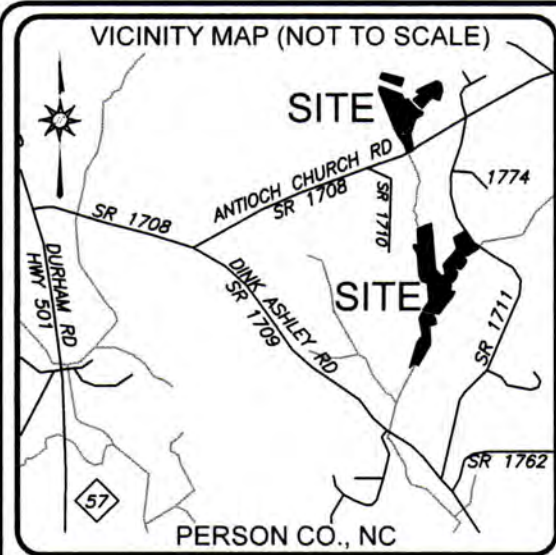
- ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
- THE BASIS OF BEARINGS IS NCGS STATE PLANE NAD83(2011) DATUM.
- THE AREA SHOWN HEREON WAS COMPUTED USING THE COORDINATE COMPUTATION METHOD.
- THE PURPOSE OF THIS MAP IS TO SHOW THE AS-BUILT AREAS FOR RIPARIAN BUFFER CREDITS WITHIN THE CONSERVATION EASEMENT. THIS PLAT IS NOT A BOUNDARY SURVEY. THE LAND PARCELS AND THEIR BOUNDARIES AFFECTED BY THIS CONSERVATION EASEMENT ARE NOT CHANGED BY THIS MAP.
- LINE NOT SURVEYED ARE SHOWN AS A DASHED LINETYPE AND WERE TAKEN FROM INFORMATION REFERENCED ON THE FACE OF THIS PLAT.
- SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND/OR ENCUMBRANCES THAT MAY AFFECT THE PROPERTY(S).
- CONSERVATION EASEMENT RECORDED IN D.B. 1144, PG. 534 AND PLAT BOOK 18, PG. 213-216, D.B. 1160, PG. 1 AND PLAT BOOK 18, PG. 332 IN THE PERSON COUNTY REGISTER OF DEEDS OFFICE.
- STREAM TOP OF BANK LINES TAKEN FROM TOPOGRAPHIC SURVEY BY MATRIX EAST PLLC.

LINE LEGEND:	
	CE — CONSERVATION EASEMENT
	— — — PROPERTY LINE
	- - - RIGHT OF WAY



THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.

SHEET 1 of 3	SCALE: 1" = 250'	FILE: CHAPPELS CK BUFFER AB	RES PROJECT: 103271	REVISED BY: EGT	DRAWN BY: EGT	SURVEYED BY: SEE NOTE #8	DATE: 7/17/2023	AS-BUILT SURVEY OF BUFFER AREAS FOR		REVISIONS, DATE AND INITIAL:	
								FIGURE 3 CHAPPELS CREEK MITIGATION SITE DMS PROJ. # 100179 FLAT RIVER TOWNSHIP PERSON COUNTY NORTH CAROLINA		 P.O. BOX 148 SWANNANOVA, NC 28778 (919) 829-9909 www.res.us F-1428	



I, **ELISABETH G. TURNER**, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, CERTIFY THAT THIS BUFFER MAP WAS DRAWN UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, THAT THE EASEMENT BOUNDARY IS BASED ON PLAT BOOK SEE, PG NOTES, RECORDED IN PERSON COUNTY REGISTER OF DEEDS OFFICE, AND THAT THE BUFFER AREAS SHOWN ARE CALCULATED FROM AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 17th DAY OF JULY, 2023.

Elisabeth G. Turner
 ELISABETH G. TURNER, P.L.S. #L-4440



GENERAL NOTES:

1. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES IN U.S. SURVEY FEET UNLESS OTHERWISE NOTED.
2. THE BASIS OF BEARINGS IS NCGS STATE PLANE NAD83(2011) DATUM.
3. THE AREA SHOWN HEREON WAS COMPUTED USING THE COORDINATE COMPUTATION METHOD.
4. THE PURPOSE OF THIS MAP IS TO SHOW THE AS-BUILT AREAS FOR RIPARIAN BUFFER CREDITS WITHIN THE CONSERVATION EASEMENT. THIS PLAT IS NOT A BOUNDARY SURVEY. THE LAND PARCELS AND THEIR BOUNDARIES AFFECTED BY THIS CONSERVATION EASEMENT ARE NOT CHANGED BY THIS MAP.
5. LINES NOT SURVEYED ARE SHOWN AS A DASHED LINETYPE AND WERE TAKEN FROM INFORMATION REFERENCED ON THE FACE OF THIS PLAT.
6. SUBJECT TO ALL EASEMENTS, RIGHT OF WAYS, AND/OR ENCUMBRANCES THAT MAY AFFECT THE PROPERTY(S).
7. CONSERVATION EASEMENT RECORDED IN D.B. 1144, PG. 534 AND PLAT BOOK 18, PG. 213-216, D.B. 1160, PG. 1 AND PLAT BOOK 18, PG. 332 IN THE PERSON COUNTY REGISTER OF DEEDS OFFICE.
8. STREAM TOP OF BANK LINES TAKEN FROM TOPOGRAPHIC SURVEY BY MATRIX EAST PLLC.

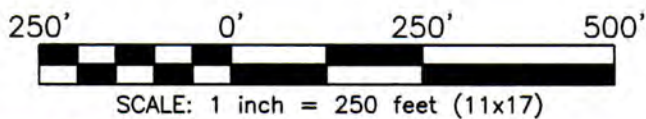
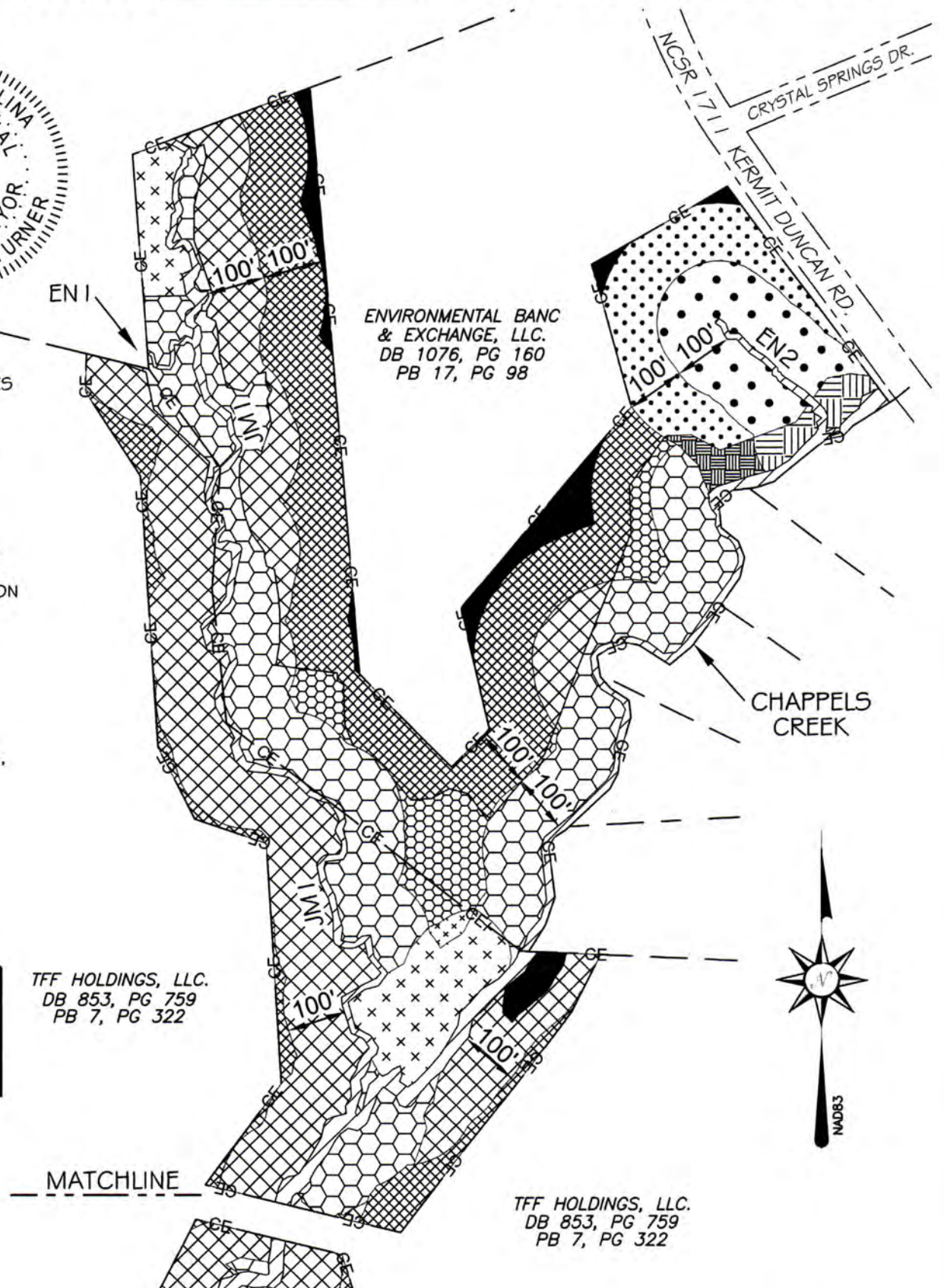
LINE LEGEND:

- CE — CONSERVATION EASEMENT
- — — PROPERTY LINE
- - - - - RIGHT OF WAY

**FIGURE 3
CHAPPELS CREEK MITIGATION SITE**

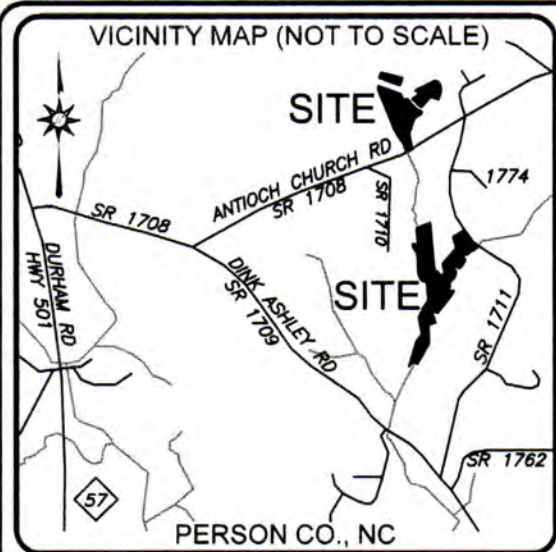
	Streams & Ponds		Riparian Preservation 0'-100' (Subject)
	Riparian Restoration 0'-100' (Subject)		Riparian Preservation 101'-200' (Subject)
	Riparian Restoration 101'-200' (Subject)		Riparian Preservation 0'-100' (Non-Subject)
	Riparian Restoration 0'-100' (Non-Subject)		Riparian Preservation 101'-200' (Non-Subject)
	Riparian Restoration 101'-200' (Non-Subject)		No Credit
	Riparian Enhancement 0'-100' (Subject)		
	Riparian Enhancement 101'-200' (Subject)		

SEE SHEET 1 FOR BUFFER AREA SUMMARY



THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.

SHEET 2 of 3	DATE: 7/17/2023 SURVEYED BY: SEE NOTE #8 DRAWN BY: EGT REVIEWED BY: EGT RES PROJECT: 103271 FILE: CHAPPELS CK BUFFER AB SCALE: 1" = 250'	AS-BUILT SURVEY OF BUFFER AREAS FOR FIGURE 3 CHAPPELS CREEK MITIGATION SITE DMS PROJ. # 100179 NEUSE RIVER BASIN FLAT RIVER TOWNSHIP PERSON COUNTY NORTH CAROLINA	REVISIONS, DATE AND INITIAL: P.O. BOX 148 SWANNANOVA, NC 28778 (919) 829-9909 www.res.us F-1428
	THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.		



I, ELISABETH G. TURNER, AS A DULY REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF NORTH CAROLINA, CERTIFY THAT THIS BUFFER MAP WAS DRAWN UNDER MY SUPERVISION, IS AN ACCURATE AND COMPLETE REPRESENTATION OF WHAT WAS CONSTRUCTED IN THE FIELD, THAT THE EASEMENT BOUNDARY IS BASED ON PLAT BOOK SEE, PG NOTES RECORDED IN PERSON COUNTY REGISTER OF DEEDS OFFICE, AND THAT THE BUFFER AREAS SHOWN ARE CALCULATED FROM AS-BUILT CONDITIONS EXCEPT WHERE OTHERWISE NOTED HEREON. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER, AND SEAL THIS 17th DAY OF JULY, 2023.

Elisabeth G. Turner
 ELISABETH G. TURNER, P.L.S. #L-4440



FIGURE 3
 CHAPPELS CREEK MITIGATION SITE

	Streams & Ponds		Riparian Preservation 0'-100' (Subject)
	Riparian Restoration 0'-100' (Subject)		Riparian Preservation 101'-200' (Subject)
	Riparian Restoration 101'-200' (Subject)		Riparian Preservation 0'-100' (Non-Subject)
	Riparian Restoration 0'-100' (Non-Subject)		Riparian Preservation 101'-200' (Non-Subject)
	Riparian Restoration 101'-200' (Non-Subject)		No Credit
	Riparian Enhancement 0'-100' (Subject)		
	Riparian Enhancement 101'-200' (Subject)		

SEE SHEET 1 FOR
 BUFFER AREA SUMMARY

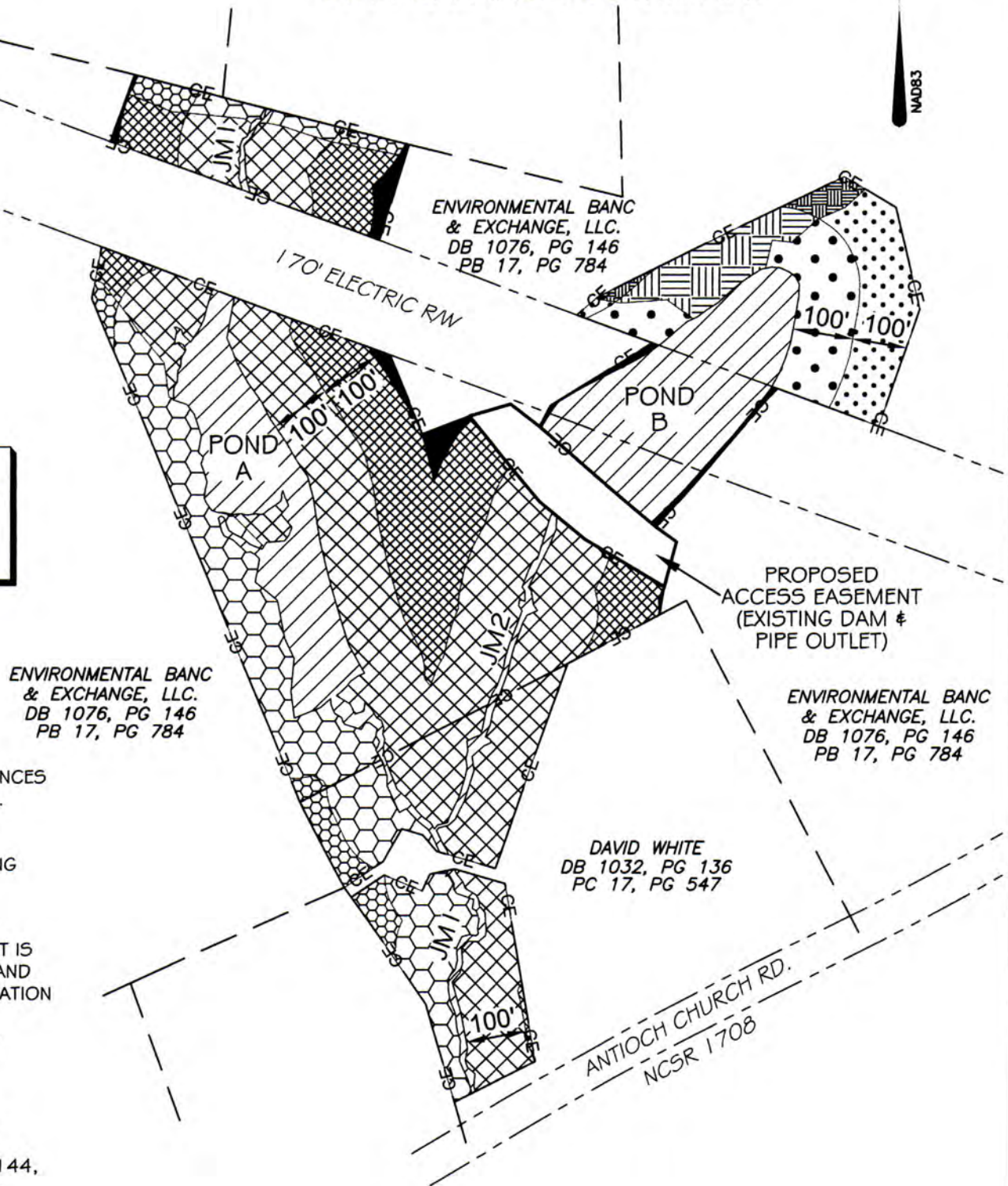
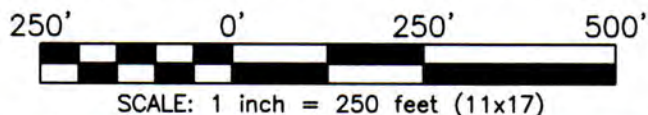


LINE LEGEND:

	CE	CONSERVATION EASEMENT
		PROPERTY LINE
		RIGHT OF WAY

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- STREAM TOP OF BANK LINES TAKEN FROM TOPOGRAPHIC SURVEY BY MATRIX EAST PLLC.



THIS MAP IS NOT FOR RECORDATION, SALES, OR CONVEYANCES AND DOES NOT COMPLY WITH G.S. 47-30 MAPPING REQUIREMENTS.

SHEET 3 of 3	DATE: 7/17/2023	AS-BUILT SURVEY OF BUFFER AREAS FOR	REVISIONS, DATE AND INITIAL:
	SURVEYED BY: SEE NOTE #8	FIGURE 3	
FILE: CHAPPELS_CK_BUFFER_AB	DRAWN BY: EGT	CHAPPELS CREEK MITIGATION SITE	P.O. BOX 148 SWANNANOVA, NC 28778 (919) 829-9909 www.res.us F-1428
SCALE: 1" = 250'	REVIEWED BY: EGT	DMS PROJ. # 100179	
	RES PROJECT: 102371	NEUSE RIVER BASIN	
		FLAT RIVER TOWNSHIP PERSON COUNTY NORTH CAROLINA	

Appendix B

Vegetation Assessment Data

Bare Root Tree Planting List

Common Name	Scientific Name	Mit Plan %	As-Built %	Total Stems Planted
American sycamore	<i>Platanus occidentalis</i>	15	15	3800
River birch	<i>Betula nigra</i>	15	15	3800
Willow oak	<i>Quercus phellos</i>	15	15	3800
Northern red oak	<i>Quercus rubra</i>	15	15	3800
White oak	<i>Quercus alba</i>	10	10	2550
Overcup oak	<i>Quercus lyrata</i>	10	10	2550
Tulip poplar	<i>Liriodendron tulipifera</i>	5	5	1300
Green Ash	<i>Fraxinus pennsylvanica</i>	5	5	1300
Persimmon	<i>Diospyros virginiana</i>	5	5	1300
Flowering dogwood	<i>Cornus florida</i>	5	5	1300
Total				25,500
Planted Area (Ac.)				30.6
As-Built Stems/Acre				833

Seed Mix List

Common Name	Scientific Name	% Composition
Virgina Wild Rye	<i>Elymus virginicus</i>	25%
Switchgrass	<i>Panicum virgatum</i>	25%
Big Bluestem	<i>Andropogon gerardii</i>	10%
Lanceleaf Coreopsis	<i>Coreopsis lanceolata</i>	10%
Little Bluestem	<i>Schizachyrium scoparium</i>	10%
Purple Coneflower	<i>Echinacea purpurea</i>	7%
Oxeye Sunflower	<i>Heliopsis helianthoides</i>	7%
Butterfly Milkweed	<i>Asclepias tuberosa</i>	3%
Narrowleaf Sunflower	<i>Helianthus angustifolius</i>	3%

Planted Acreage	30.6
Date of Initial Plant	2023-04-17
Date(s) of Supplemental Plant(s)	NA
Date(s) Mowing	NA
Date of Current Survey	2023-04-24
Plot size (ACRES)	0.0247

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 1 F		Veg Plot 2 F		Veg Plot 3 F		Veg Plot 4 F		Veg Plot 5 F		Veg Plot 6 F		Veg Plot 7 F		Veg Plot 8 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	<i>Betula nigra</i>	river birch	Tree	FACW	10	10	2	2	4	4			4	4	2	2	10	10	4	4
	<i>Cornus florida</i>	flowering dogwood	Tree	FACU					2	2	5	5			1	1	1	1		
	<i>Diospyros virginiana</i>	common persimmon	Tree	FAC	1	1			5	5	3	3	2	2	2	2	1	1	1	1
	<i>Fraxinus pennsylvanica</i>	green ash	Tree	FACW			4	4	1	1	3	3	1	1	1	1				
	<i>Liriodendron tulipifera</i>	tuliptree	Tree	FACU			1	1									2	2		
	<i>Platanus occidentalis</i>	American sycamore	Tree	FACW	2	2	5	5	5	5	2	2	1	1	2	2	2	2	3	3
	<i>Quercus alba</i>	white oak	Tree	FACU	5	5	4	4			4	4	3	3	2	2	1	1	2	2
	<i>Quercus lyrata</i>	overcup oak	Tree	OBL	3	3	2	2	1	1	1	1	2	2	1	1	2	2	3	3
	<i>Quercus phellos</i>	willow oak	Tree	FAC	2	2			3	3	5	5	3	3	2	2	3	3	4	4
	<i>Quercus rubra</i>	northern red oak	Tree	FACU	3	3	4	4	4	4	2	2	3	3	4	4			2	2
Sum	Performance Standard				26	26	22	22	25	25	25	25	19	19	17	17	22	22	19	19

Mitigation Plan Performance Standard	Current Year Stem Count				26	22	25	25	25	19	17	22	19
	Stems/Acre				1052	891	1012	1012	769	688	891	769	
	Species Count				7	7	8	8	8	9	8	7	
	Dominant Species Composition (%)				38	23	20	20	21	24	45	21	
	Average Plot Height (ft.)				1	1	2	1	1	2	1	2	
% Invasives				0	0	0	0	0	0	0	0		
Post Mitigation Plan Performance Standard	Current Year Stem Count				26	22	25	25	19	17	22	19	
	Stems/Acre				1052	891	1012	1012	769	688	891	769	
	Species Count				7	7	8	8	8	9	8	7	
	Dominant Species Composition (%)				38	23	20	20	21	24	45	21	
	Average Plot Height (ft.)				1	1	2	1	1	2	1	2	
% Invasives				0	0	0	0	0	0	0	0		

	Scientific Name	Common Name	Tree/Shrub	Indicator Status	Veg Plot 9 F		Veg Plot 10 F		Veg Plot 11 F		Veg Plot 12 F		Veg Plot 13 F		Veg Plot 14 F		Veg Plot 15 F		Veg Plot 16 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	<i>Betula nigra</i>	river birch	Tree	FACW			3	3					3	3	2	2	2	2	1	1
	<i>Cornus florida</i>	flowering dogwood	Tree	FACU	1	1													1	1
	<i>Diospyros virginiana</i>	common persimmon	Tree	FAC	2	2			2	2	5	5	1	1	2	2	1	1		
	<i>Fraxinus pennsylvanica</i>	green ash	Tree	FACW	1	1	1	1												
	<i>Liriodendron tulipifera</i>	tuliptree	Tree	FACU	1	1			3	3			3	3			2	2	2	2
	<i>Platanus occidentalis</i>	American sycamore	Tree	FACW	2	2	3	3	5	5	4	4	7	7			2	2	6	6
	<i>Quercus alba</i>	white oak	Tree	FACU	1	1	1	1	1	1	3	3	3	3	2	2	3	3	1	1
	<i>Quercus lyrata</i>	overcup oak	Tree	OBL			2	2	1	1	2	2	1	1	2	2	2	2	2	2
	<i>Quercus phellos</i>	willow oak	Tree	FAC	2	2			4	4	1	1			2	2	3	3	1	1
	<i>Quercus rubra</i>	northern red oak	Tree	FACU	4	4	4	4			8	8	2	2	7	7	5	5	1	1
Sum	Performance Standard				14	14	14	14	16	16	23	23	20	20	17	17	20	20	15	15

Mitigation Plan Performance Standard	Current Year Stem Count				14	14	16	16	23	23	20	20	17	17	20	20	15	15
	Stems/Acre				567	567	648	648	931	931	810	810	688	688	810	810	607	607
	Species Count				8	6	6	6	6	7	6	8	6	8	8	8	8	8
	Dominant Species Composition (%)				29	29	31	31	35	35	41	35	41	25	40	40	40	40
	Average Plot Height (ft.)				2	1	2	2	2	1	2	2	2	2	2	2	2	2
% Invasives				0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Post Mitigation Plan Performance Standard	Current Year Stem Count				14	14	16	16	23	23	20	20	17	17	20	20	15	15
	Stems/Acre				567	567	648	648	931	931	810	810	688	688	810	810	607	607
	Species Count				8	6	6	6	6	7	6	8	6	8	8	8	8	8
	Dominant Species Composition (%)				29	29	31	31	35	35	41	35	41	25	40	40	40	40
	Average Plot Height (ft.)				2	1	2	2	2	1	2	2	2	2	2	2	2	2
% Invasives				0	0	0	0	0	0	0	0	0	0	0	0	0	0	

- 1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
- 2). The "Species Included in Approved Mitigation Plan" section contains only those species that were included in the original approved mitigation plan. The "Post Mitigation Plan Species" section includes species that are being proposed through a mitigation plan addendum for the current monitoring year (bolded), species that have been approved in prior monitoring years through a mitigation plan addendum (regular font), and species that are not approved (italicized).
- 3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

	Scientific Name	Common Name	Tree/ Shrub	Indicator Status	Veg Plot 17 F		Veg Plot 18 F		Veg Plot 19 F		Veg Plot 20 F		Veg Plot 21 F		Veg Plot 22 F		Veg Plot 23 F		Veg Plot 24 F	
					Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total	Planted	Total
Species Included in Approved Mitigation Plan	<i>Betula nigra</i>	river birch	Tree	FACW	1	1	3	3	1	1	1	1	2	2	6	6	3	3	1	1
	<i>Cornus florida</i>	flowering dogwood	Tree	FACU																
	<i>Diospyros virginiana</i>	common persimmon	Tree	FAC	2	2			3	3	3	3	3	3	1	1	3	3	1	1
	<i>Fraxinus pennsylvanica</i>	green ash	Tree	FACW																
	<i>Liriodendron tulipifera</i>	tuliptree	Tree	FACU	1	1	1	1	3	3			3	3	1	1			1	1
	<i>Platanus occidentalis</i>	American sycamore	Tree	FACW	4	4	3	3	3	3	2	2	4	4	11	11	4	4	7	7
	<i>Quercus alba</i>	white oak	Tree	FACU							2	2					5	5	1	1
	<i>Quercus lyrata</i>	overcup oak	Tree	OBL	2	2	2	2	3	3	3	3	3	3	1	1	1	1		
	<i>Quercus phellos</i>	willow oak	Tree	FAC	1	1	3	3	4	4	3	3	3	3			3	3	4	4
	<i>Quercus rubra</i>	northern red oak	Tree	FACU	2	2	6	6	3	3	2	2	2	2	2	2	6	6	4	4
Sum	Performance Standard				13	13	18	18	20	20	16	16	20	20	22	22	22	22	23	23
Mitigation Plan Performance Standard	Current Year Stem Count					13	18	20	20	16	16	20	20	22	22	22	22	23	23	
	Stems/Acre					526	729	810	810	648	648	810	810	891	891	891	891	931	931	
	Species Count					7	6	7	7	7	7	7	7	6	6	6	6	7	7	
	Dominant Species Composition (%)					31	33	20	20	19	19	20	20	50	27	27	30	30	30	
	Average Plot Height (ft.)					2	2	2	2	2	2	1	1	1	2	2	1	1	1	
% Invasives					0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Post Mitigation Plan Performance Standard	Current Year Stem Count					13	18	20	20	16	16	20	20	22	22	22	22	23	23	
	Stems/Acre					526	729	810	810	648	648	810	810	891	891	891	891	931	931	
	Species Count					7	6	7	7	7	7	7	7	6	6	6	6	7	7	
	Dominant Species Composition (%)					31	33	20	20	19	19	20	20	50	27	27	30	30	30	
	Average Plot Height (ft.)					2	2	2	2	2	2	1	1	1	2	2	1	1	1	
% Invasives					0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Species Included in Approved Mitigation Plan	<i>Betula nigra</i>	river birch	Tree	FACW																
	<i>Cornus florida</i>	flowering dogwood	Tree	FACU																
	<i>Diospyros virginiana</i>	common persimmon	Tree	FAC																
	<i>Fraxinus pennsylvanica</i>	green ash	Tree	FACW																
	<i>Liriodendron tulipifera</i>	tuliptree	Tree	FACU																
	<i>Platanus occidentalis</i>	American sycamore	Tree	FACW	2	2														
	<i>Quercus alba</i>	white oak	Tree	FACU	2	2														
	<i>Quercus lyrata</i>	overcup oak	Tree	OBL	2	2														
	<i>Quercus phellos</i>	willow oak	Tree	FAC	4	4														
	<i>Quercus rubra</i>	northern red oak	Tree	FACU	5	5														
Sum	Performance Standard					15	15													
Mitigation Plan Performance Standard	Current Year Stem Count					15														
	Stems/Acre					607														
	Species Count					5														
	Dominant Species Composition (%)					33														
	Average Plot Height (ft.)					1														
% Invasives					0															
Post Mitigation Plan Performance Standard	Current Year Stem Count					15														
	Stems/Acre					607														
	Species Count					5														
	Dominant Species Composition (%)					33														
	Average Plot Height (ft.)					1														
% Invasives					0															

- 1). Bolded species are proposed for the current monitoring year, italicized species are not approved, and a regular font indicates that the species has been approved.
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- 3). The "Mitigation Plan Performance Standard" section is derived only from stems included in the original mitigation plan, whereas the "Post Mitigation Plan Performance Standard" includes data from mitigation plan approved, post mitigation plan approved, and proposed stems.

Vegetation Performance Standards Summary Table

	Veg Plot 1 F				Veg Plot 2 F				Veg Plot 3 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	1052	1	7	0	891	1	7	0	1012	2	8	0
	Veg Plot 4 F				Veg Plot 5 F				Veg Plot 6 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	1012	1	8	0	769	1	8	0	688	2	9	0
	Veg Plot 7 F				Veg Plot 8 F				Veg Plot 9 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	891	1	8	0	769	2	7	0	567	2	8	0
	Veg Plot 10 F				Veg Plot 11 F				Veg Plot 12 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	567	1	6	0	648	2	6	0	931	2	6	0
	Veg Plot 13 F				Veg Plot 14 F				Veg Plot 15 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	810	1	7	0	688	2	6	0	810	2	8	0
	Veg Plot 16 F				Veg Plot 17 F				Veg Plot 18 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	607	2	8	0	526	2	7	0	729	2	6	0
	Veg Plot 19 F				Veg Plot 20 F				Veg Plot 21 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	810	2	7	0	648	2	7	0	810	1	7	0
	Veg Plot 22 F				Veg Plot 23 F				Veg Plot 24 F			
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	891	1	6	0	891	2	6	0	931	1	7	0
	Veg Plot 25 F											
	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives	Stems/Ac.	Av. Ht. (ft)	# Species	% Invasives
Monitoring Year 7												
Monitoring Year 5												
Monitoring Year 3												
Monitoring Year 2												
Monitoring Year 1												
Monitoring Year 0	607	1	5	0								

*Each monitoring year represents a different plot for the random vegetation plot "groups". Random plots are denoted with an R, and fixed plots with an F.

Visual Vegetation Assessment**Planted acreage 30.6**

Vegetation Category	Definitions	Mapping Threshold	Combined Acreage	% of Planted Acreage
Bare Areas	Very limited cover of both woody and herbaceous material.	0.10 acres	0.00	0.0%
Low Stem Density Areas	Woody stem densities clearly below target levels based on current MY stem count criteria.	0.10 acres	0.00	0.0%
Total			0.00	0.0%
Areas of Poor Growth Rates	Planted areas where average height is not meeting current MY Performance Standard.	0.10 acres	0.00	0.0%
Cumulative Total			0.00	0.0%

Easement Acreage 49.26

Vegetation Category	Definitions	Mapping Threshold	Combined Acreage	% of Easement Acreage
Invasive Areas of Concern	Invasives may occur outside of planted areas and within the easement and will therefore be calculated against the total easement acreage- Include species with the potential to directly outcompete native, young, woody stems in the short-term or community structure for existing communities. Species included in summation above should be identified in report summary.	0.10 acres	0.00	0.0%
Easement Encroachment Areas	Encroachment may be point, line, or polygon. Encroachment to be mapped consists of any violation of restrictions specified in the conservation easement. Common encroachments are mowing, cattle access, vehicular access. Encroachment has no threshold value as will need to be addressed regardless of impact area.	none	# Encroachments noted	

Appendix C

As-built Photos

Chappels Creek General Site Photos MY0 2023



Crossing Along Chappels Creek (4/18/2023)



Easement Marker (4/18/2023)



General Site Condition (4/18/2023)



Cleared Area of Box Elder and Sweet Gum (5/1/2023)



Hack-and-Squirt Treatment on Box Elder (5/1/2023)



Basal Bark Treatment on Tree of Heaven (5/1/2023)



Pond A, Post-Beaver Dam Removal (4/17/2023)

Chappels Creek MY0 Vegetation Monitoring Plot Photos



Vegetation Plot 1 (4/18/2023)



Vegetation Plot 2 (4/18/2023)



Vegetation Plot 3 (4/18/2023)



Vegetation Plot 4 (4/18/2023)



Vegetation Plot 5 (4/18/2023)



Vegetation Plot 6 (4/18/2023)



Vegetation Plot 7 (4/18/2023)



Vegetation Plot 8 (4/18/2023)



Vegetation Plot 9 (4/19/2023)



Vegetation Plot 10 (4/19/2023)



Vegetation Plot 11 (4/19/2023)



Vegetation Plot 12 (4/19/2023)



Vegetation Plot 13 (4/19/2023)



Vegetation Plot 14 (4/19/2023)

This was erroneously labeled as "VP 19" on the PVC but represents VP 14.



Vegetation Plot 15 (4/19/2023)



Vegetation Plot 16 (4/19/2023)



Vegetation Plot 17 (4/19/2023)



Vegetation Plot 18 (4/19/2023)



Vegetation Plot 19 (4/18/2023)



Vegetation Plot 20 (4/19/2023)



Vegetation Plot 21 (4/18/2023)



Vegetation Plot 22 (4/18/2023)



Vegetation Plot 23 (4/18/2023)



Vegetation Plot 24 (4/18/2023)



Vegetation Plot 25 (4/18/2023)

Chappels Creek Maintenance Photos MY0 2023



Installed additional easement markers (9/21/2023)



Installed additional easement markers (9/21/2023)



Installed additional easement markers (9/21/2023)



Installed additional easement markers (9/21/2023)



Trash removal (9/27/2023)