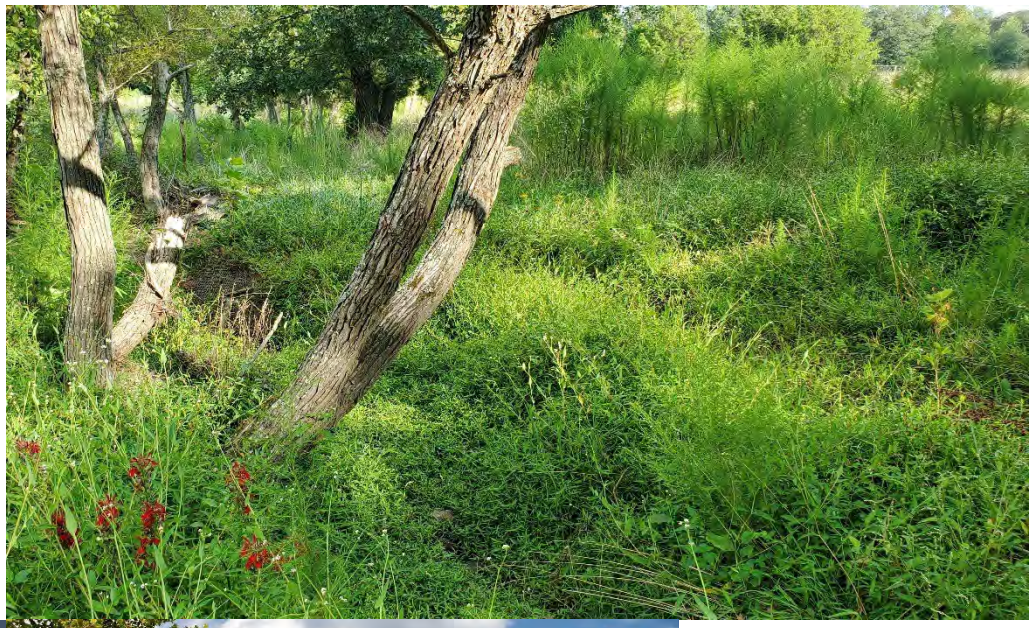
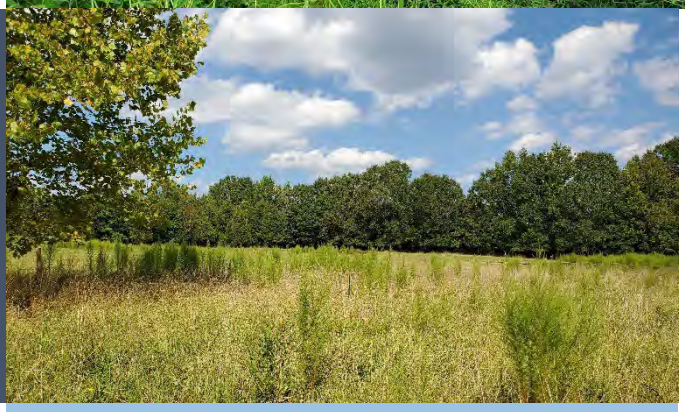




MY3 Monitoring Report

White Mitigation Project
Randolph County, NC
Cape Fear River Basin

NCDMS Project No. 100112
NCDMS Contract No. 7860
NC DWR Project No. 2019-0884
RFP No. 16-007703

Randleman Lake Watershed
12 Digit HUC: 030300030106

Construction Completed: 2021
Data Collected: August 23, 2023
Report Submitted: January 19, 2024

Prepared for:

NC Department of Environmental Quality
Division of Mitigation Services
1652 Mail Service Center
Raleigh, NC 27699-1652

Prepared by:

HDR Engineering
555 Fayetteville Street, Suite 900
Raleigh, NC 27601-3034

Davey Resource Group Contributing Staff: Ben Furr, Ryan Smith, Alex DiGeronimo, William Bailey, Yvette Mariotte, Michael Foster, Kevin Williams, Dana Willson

This MY3 Baseline Monitoring Report has been written in conformance with the requirements of the following:

NCAC rule 15A NCAC 02B .0295, effective November 1, 2015 and Nutrients Offset Credit Trading 15A NCAC 02B. 0703, effective April 1, 2020 and DWR – 1998, Methodology and Calculations for determining Nutrient Reductions associated with Riparian Buffer Establishment

January 19, 2024

North Carolina Department of Mitigation Services
217 W Jones St #3000a
Raleigh, NC 27603

Re: Task 7 Draft Monitoring Year 3 Report for the White Mitigation Project
Cape Fear River Basin; CU# 03030003
Randolph County, North Carolina
DMS ID No. 100112; Contract No. 7860

Ms. Dunnigan,

As per your letter concerning the DRAFT White Mitigation Project MY3 Report, we have updated the reviewed report and addressed your comments as follows:

Pg. 2, Section 2.2: Based on discussion in the field, please remove details of the fence removal from the narrative, this happened earlier in the project and hasn't resulted in any negative impact on assets.
RE: Details of the fence removal has been removed from the narrative.

Pg. 3, Section 2.3: The first two paragraphs seem redundant; please review and condense.
RE: Comply. The first two paragraph has been condensed.

Pg. 3, Section 2.3: The last paragraph regarding boundary marking can be moved to Section 2.2.
RE: Comply. The last paragraph regarding boundary has been moved to Section 2.2.

Appendix A, Table 1: The total area of buffer mitigation does not match those in the as-built credit table, these should not change from as-built, unless there is a reduction in credit based on DWR input. The Total Area column and Total Creditable Area of Buffer Mitigation column should match; please update.
RE: Comply. The Total Creditable Area of Buffer Mitigation spreadsheet has been revised to match the As-built table.

If you have any questions or need additional information, please do not hesitate to give me a call (843.830.1536).

Sincerely,

Davey Resource Group, Inc.

Alex DiGeronimo

Phone: 919.645.4350
3101 Poplarwood Court, Suite 120, Raleigh, NC 27604
daveyresourcegroup.com/carolinas

Contents

Figures

Tables

Appendices

1.0 Project Summary

1.1 Location and Background Information

The White Mitigation Project (Site) was selected by the NC Division of Mitigation Services (DMS) to provide Buffer Mitigation Units (BMUs) in the Randleman Lake Watershed (Hydrologic Unit Code 030300030106) (Figure 1). The Randleman Lake Watershed is located within the larger Cape Fear River Basin (Hydrologic Unit Code 03030003). The Site is located within the Southern Outer Piedmont, approximately 2.9 miles southeast of Archdale, NC (Figure 2). The 12.2 acre Site involved restoration and enhancement of 504,075 square feet of riparian buffers along Unnamed Tributary to (UT) Muddy Creek (UT MC) (UT MC, Index #17-9-(1)) and UT 1, UT 2, and UT 5 that were previously active cattle pasture (Table 1 and Figure 3).

Directions to the Site:

From Raleigh-Durham International Airport: I-40 west for 61.6 miles; keep left for I-85 S, go 17.6 miles to exit 113; turn left onto NC-62, go .2 miles; turn right onto Weant Rd, go to end; turn right onto Suits Rd, the project site will be on the left.

The final mitigation plan was submitted and accepted by North Carolina Division of Water Resources in November of 2020. Construction began in December 2020 and finished in March of 2021. Site planting finalized in February of 2021. LMG provided construction oversight services for the Site. LMG completed baseline vegetation monitoring on March 12, 2021.

Completed project activities, reporting history, completion dates, project contacts, and background information are summarized in Tables 2, 3, and 4 of Appendix A.

1.2 Project Goals and Objectives

The following goals and objectives address the primary issues within the watershed and assist DMS in meeting planning goals.

Primary goals for the Site, as detailed in the White Mitigation Project Mitigation Plan (HDR 2020) include:

1. Reduce water quality stressors associated with nutrient, sediment, and pathogen loading.
2. Enhance terrestrial and aquatic habitat.

The following objectives accomplish the goals listed above:

1. Reducing water quality stressors is directly tied to the following:
    a) Reducing non-point source (i.e., cattle accessing the channels, stormwater runoff through pastures and feeding stations) pollution associated with on-site agricultural operations from the installation of exclusionary fencing to remove cattle and machinery from on-site streams and riparian buffers.
    b) Reducing non-point pollution associated with on-site agricultural operations by the restoration and enhancement of riparian vegetative buffers on adjacent floodplains to treat surface water runoff from adjacent pastureland.
    c) Further removal of agricultural equipment and cattle by providing and improving culverted agricultural crossings.
    d) Treatment of pollution associated with off-site agricultural, institutional, and residential properties by the restoration and enhancement of riparian vegetative buffers on-site to attenuate nutrient and sediment laden floodwaters.

2. Enhancement of terrestrial and aquatic habitat is directly tied to
   a) Restoration of native vegetation to the previously maintained and highly impacted riparian corridors in order to diversify flora and created a protected habitat corridor that provides an abundance of available foraging and cover habitat for a multitude of mammals and birds. Additionally, establishment of woody vegetation in the riparian corridor provides direct inputs of woody debris to adjacent conveyances that assist in increasing biomass and cover habitat for aquatic species.

2.0 Annual Monitoring

2.1 Methods

Monitoring of the parameters listed in Table 5 (Appendix A) were conducted on August 22, 2023. Ten (10) permanent vegetation plots (totaling more than 2 percent of the planted area on Site) within the buffer restoration area were monitored using the Carolina Vegetation (CVS) protocols. Vegetative problem areas, invasive species, and project boundary encroachments have been mapped and included as part of Current Condition Plan View (CCPV, Figure 4.1-4.5, Appendix A). Year 4 vegetation survey is anticipated to occur in August/September 2024.

2.2 Results and Discussion

This section documents the conditions observed in Year 3 monitoring. Table 6 details specific vegetative data in relation to the Year 3 conditions (Appendix B).

The 1,830 feet of repaired stream bank has remained stable over the past year of monitoring. Livestakes and bare-root plantings along the stabilized streambanks have increased in vigor over the past monitoring year, including those planted along the 20-foot bare section of bank as reported in the MY2 report.

All vegetation plots are meeting or exceeding success criteria outlined in the Mitigation Plan of 260 stems per acre, averaging 364 stems per acre across the Site. Raw data from the CVS tool is included in Table 6 (Appendix B). Individual stem height data is also included in Appendix B

In MY2, dense herbaceous vegetation observed along the right bank of UT2 near VP5 choked out planted stems. After consulting with DMS, approximately 1 acre near VP5 was mowed on March 6, 2023 and replanted on March 7, 2023 at a density of 360 stems per acre. The replanted area is depicted in the CCPV (Figure 4.4). Table 7 outlines species and quantities planted based on the approved planting plan in the Mitigation Plan and can be found in Appendix D Adaptive Management Replant Plan.

During a site visit, DMS noted that the survey monuments delineating the conservation easement boundary corners were not visible and/or incorrectly marked. In accordance with Section 6 of the RFP, Davey Resource Group located and marked the easement corner monuments on October 16, 2023 with their corresponding corner number and coordinates (Northing & Easting; NAD 1983 State Plane North Carolina FIPS 3200, U.S. feet) from the survey coordinate table.

2.3 Adaptive Management Plan

Some areas of invasives that were treated in MY2 persisted into MY3. sporadic individuals of invasive species, mainly Chinese privet and multiflora rose, were spot treated using a 6% solution of aquatic glyphosate in August 2023. Areas treated in MY3 are depicted in the CCPV (Figures 4.1-4.5 [Appendix A]). It is important to note that the Site had dense growth of Chinese privet along the banks and floodplains of UT MC, UT 3, UT 4, and UT 5 that were treated and removed during construction. Much of the new and/or returning growth is a result of stump coppicing and sprouting from a prevalent seed bank. Invasive species will continue to be monitored and treated as needed in subsequent monitoring years.

Dense herbaceous vegetation observed along the right bank of UT2 near VP5 choked out planted stems in MY2 and was subsequently mowed and replanted on March 7, 2023. This area is depicted in the CCPV (Figure 4.1-4.5). Approximately 1 acre was replanted at a density of 360 stems per acre (Figure 6).

3.0 References

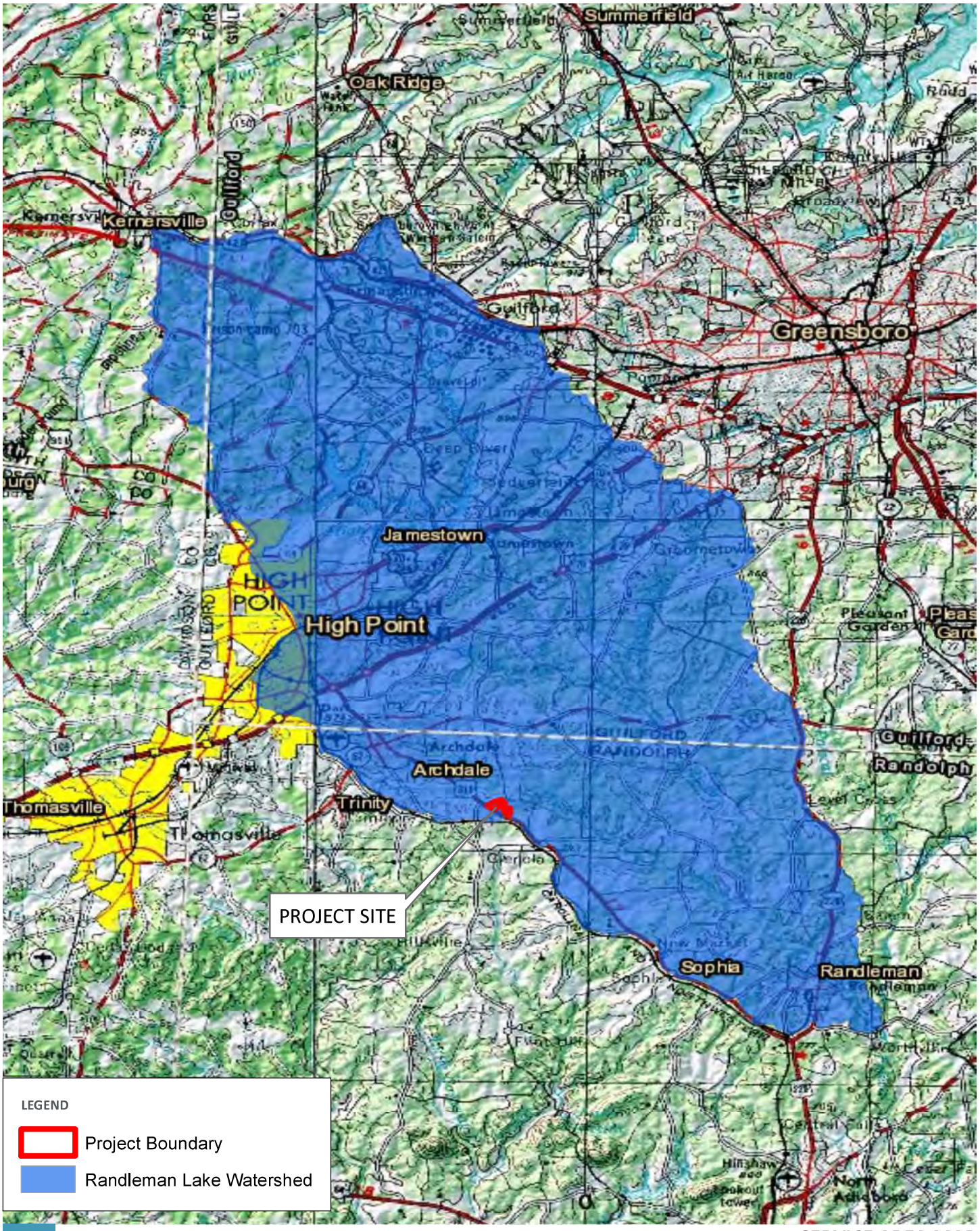
HDR Engineering Inc. of the Carolinas (HDR) 2020. Mitigation Plan White Mitigation Project. Randolph County, North Carolina. October 29, 2020.

Lee, Michael & Peet, Robert & D. Roberts, Steven & Wentworth, Thomas. 2018. *CVS-EEP Protocol for Recording Vegetation All Levels of Plot Sampling, Version 4.2*.

North Carolina Administrative Code (NCAC). Title 15A – Environmental Quality. Chapter 02 – Environmental Management. SubChapter B. 15A NCAC 02B .0295. *Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers.* Accessed on September 20, 2019. http://reports.oah.state.nc.us/ncac/title%2015a%20-%20environmental%20quality/chapter%2002%20-%20environmental%20management/subchapter%20b/15a%20ncac%2002b%20.0295.pdf

Schafale, M.P. and A.S. Weakley. 1990. Classification of the Natural Communities of North Carolina: Third Approximation. North Carolina Natural Heritage Program, Division of Parks and Recreation, North Carolina Department of Environment, Health, and Natural Resources. Raleigh, North Carolina.

Appendix A – Background Tables and Figures



0 4 8

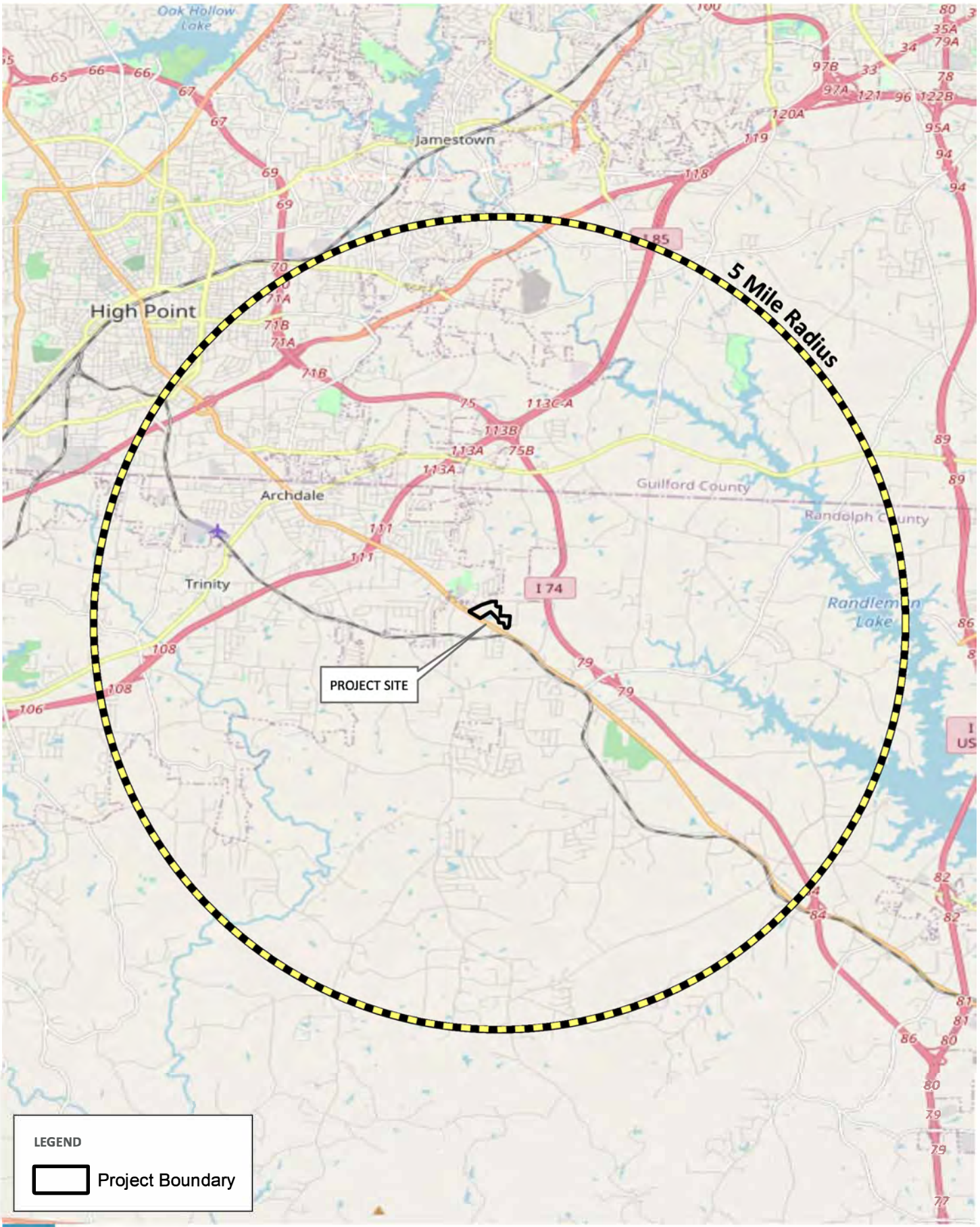
Miles

SERVICE AREA MAP

WHITE MITIGATION PROJECT

RANDOLPH COUNTY, NORTH CAROLINA

FIGURE 1



VICINITY MAP
WHITE MITIGATION PROJECT
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 2

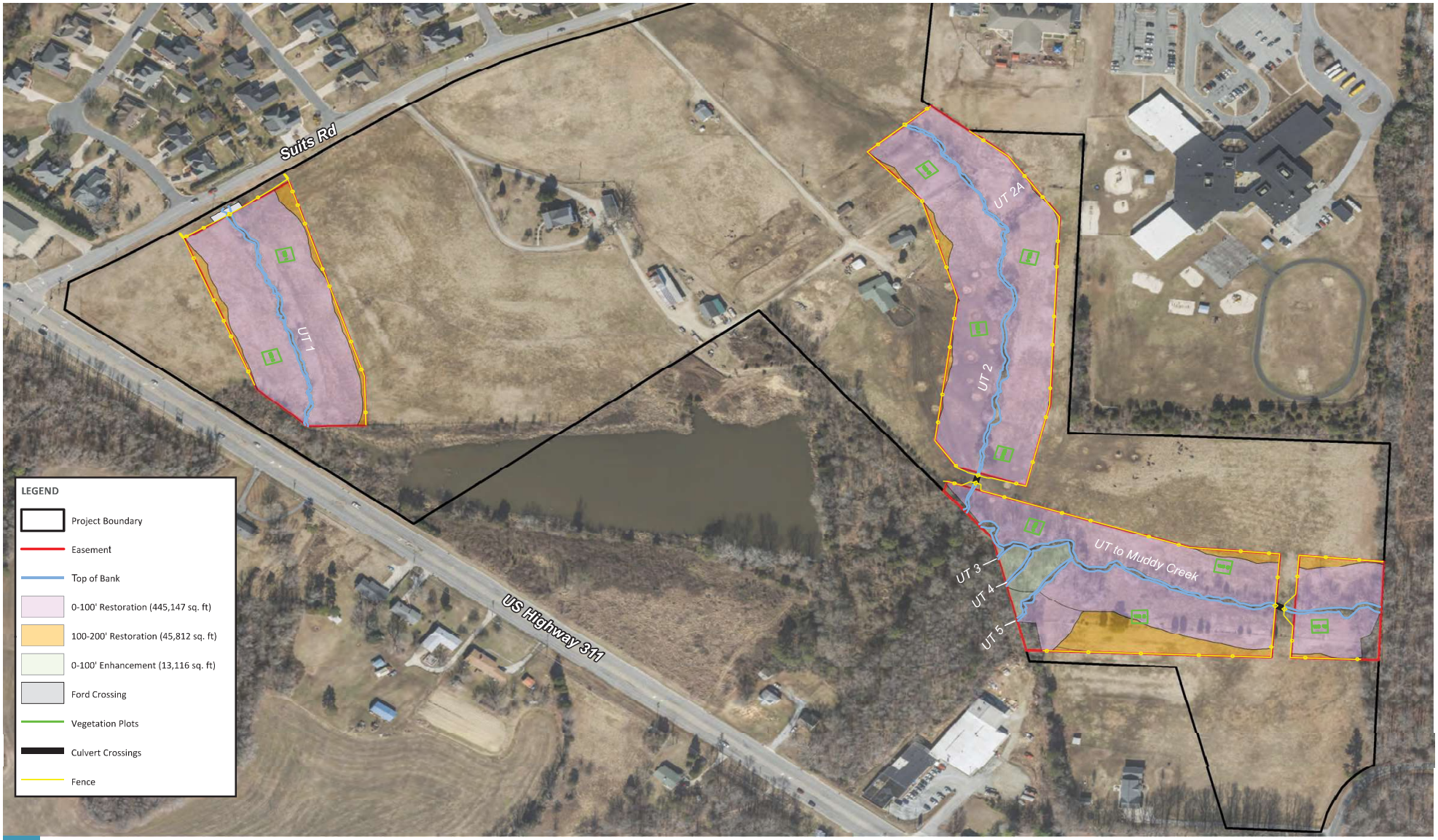


FIGURE 3. ASSET MAP
WHITE MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA

0 360 720 Feet

CCPV MAP YEAR 3
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.1

CCPV MAP YEAR 3
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.2

0 100 200 Feet

CCPV MAP YEAR 3
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.3

CCPV MAP YEAR 3
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.4

0 100 200 Feet

CCPV MAP YEAR 3
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.5

Table 1. White Farms Buffer Mitigation Site, DMS Project No. 100112, Project Credits

Cape Fear - Randleman	Project Area
N/A	N Credit Conversion Ratio (ft²/pound)
N/A	P Credit Conversion Ratio (ft²/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 (ft²)	Total (Creditable) Area of Buffer Mitigation (ft²)	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	0-100	UT to Muddy Creek, UT1, UT2, UT5	450,765	445,035	1	100%	1.00000	Yes	445,035.000	N/A	—	—
Buffer	Rural	Yes	I / P	Restoration	101-200	UT to Muddy Creek, UT1, UT2, UT5	46,268	45,924	1	33%	3.03030	Yes	15,154.935	N/A	—	—
Buffer	Rural	Yes	I / P	Enhancement via Cattle Exclusion	0-100	UT to Muddy Creek, UT5	13,174	13,116	2	100%	2.00000	Yes	6,558.000	N/A	—	—
													—		—	—
													—		—	—
													—		—	—
													—		—	—
													—		—	—
						Totals:	510,207	504,075								

Enter Preservation Credits Below

Eligible for Preservation (ft²): 168,025

Credit Type	Location	Subject?	Feature Type	Mitigation Activity	Min-Max Buffer Width (ft)	Feature Name	Total Area (sf)	Total (Creditable) Area for Buffer Mitigation (ft²)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Riparian Buffer Credits
Buffer				Preservation								—
												—
												—
												—
												—
												—
												—
												—
												—
												—
												—
						Preservation Area Subtotal (ft²):		0				
						Preservation as % Total Area of Buffer Mitigation:		0.0%				
						Ephemeral Reaches as % Total Area of Buffer Mitigation:		0.0%				

TOTAL AREA OF BUFFER MITIGATION (TABM)		
Mitigation Totals	Square Feet	Credits
Restoration:	490,959	460,189.935
Enhancement:	13,116	6,558.000
Preservation:	0	0.000
Total Riparian Buffer:	504,075	466,747.935
TOTAL NUTRIENT OFFSET MITIGATION		
Mitigation Totals	Square Feet	Credits
Nutrient Offset: Nitrogen:	0	0.000
Nutrient Offset: 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 04/23/2021

Table 2. Project Activity and Reporting History

Activity or Report	Data Collection Complete	Completion or Delivery
Mitigation Plan	August 2019	October 2020
Final Design – Planting and Construction Plans	November 2020	November 2020
Construction and Planting	March 2021	March 2021
Mitigation Plan/As-built (Year 0 Monitoring-Baseline)	March 12, 2021	March 22, 2021
Invasive Species Treatment		April 22, 2021
Year 1 Monitoring	September 9, 2021	
Invasive Species Treatment		October 22, 2021
MY1 Monitoring Report		November 2021
Year 2 Monitoring	July 28, 2022	
Invasive Species Treatment		May 22 & July 28, 2022
MY2 Monitoring Report		December 2022
Year 3 Monitoring		
Replanting and Mowing		March 6-7, 2023
Invasive Species Treatment		August 23, 2023
MY3 Monitoring Report	August 23, 2023	January 19, 2024
Year 4 Monitoring		
Year 5 Monitoring		

Table 3. Project Contacts Table

Designer	HDR Engineering 555 Fayetteville Street, Suite 900 Raleigh, North Carolina 27601-3034
Primary project design POC	Vickie Miller (919) 232-6600
Construction Contractor	KBS Earthworks, Inc. 5616 Coble Church Rd Julian, NC 27283
Construction Contractor POC	Chris Sizemore (336) 362-0289
Planting Contractor	KBS Earthworks, Inc. 5616 Coble Church Rd Julian, NC 27283
Planting Contractor POC	Chris Sizemore (336) 362-0289
Monitoring Performers	Davey Resource Group, Inc 3101 Poplarwood Court Raleigh, North Carolina 27604 Michael Foster and William Bailey
Vegetation Monitoring POC	Davey Resource Group, Inc 3101 Poplarwood Court Raleigh, North Carolina 27604 Alex DiGeronimo (843) 830-1536

Table 4. Project Information

Project Attributes	
Project Name	White Mitigation Project
County	Randolph
Project Area (acres)	12.2
Project Coordinates (latitude and longitude)	35.887369, -79.927081
River Basin	Cape Fear (03030003)
Service Area	Randleman Lake Watershed
14 digit HUC	03030003010060
EPA level IV Ecoregion	Southern Outer Piedmont
BMUs	466,747.935

Table 5. Monitoring Plan Components

Parameter	Monitoring Method	Quantity	Frequency	Notes
Vegetation	CVS Level 2	10 Vegetation plots (10 x 10 meter)	Annual	Vegetation will be monitored using the Carolina Vegetation Survey (CVS) Level 2 protocols. Data to be collected are the following: planted stem density, planted stem height and planted stem vigor.
Invasive and nuisance vegetation	Visual	---	Semi-annual	Locations of exotic and nuisance vegetation will be mapped and treated as necessary.
Project Boundary	Visual	---	Semi-annual	Mapping of fence damage, vegetation damage, boundary encroachments, etc. will be mapped and addressed as necessary

Appendix B – Vegetation Plot Data and Site Photographs

Table 6: Vegetation Monitoring Report

EEP Project Code 20.003. Project Name: White Buffer

			Current Plot Data (MY3 2022)																											Annual Means								
			20.003-01-0001			20.003-01-0002			20.003-01-0003			20.003-01-0004			20.003-01-0005			20.003-01-0006			20.003-01-0007			20.003-01-0008			20.003-01-0009			20.003-01-0010			MY3 (2023)			MY2 (2022)			MY1 (2021)			MY0 (2021)		
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	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T	PnoLS	P-all	T
Apocynum cannabinum	Indianhemp																																				1					
Betula nigra	river birch	Tree				1	1	1				1	1	1				1	1	1	1	1	1	3	3	3	2	2	2	1	1	1	10	10	10	10	10	11	12	12	12	14	14	14
Carpinus caroliniana	American hornbeam	Tree	1	1	1				2	2	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	12	12	12	10	10	10	11	11	12	13	13	13
Carya cordiformis	bitternut hickory	Tree																			1	1	1				1	1	1	1	1	1	3	3	3	4	4	4	5	5	5	13	13	13
Carya ovata	shagbark hickory	Tree	1	1	1							1	1	1										1	1	1				1	1	1	4	4	4	2	2	2	3	3	3	11	11	11
Cornus florida	flowering dogwood	Tree										1	1	1				1	1	1													2	2	2	2	2	2	5	5	5	12	12	12
Fraxinus pennsylvanica	green ash	Tree	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	1	1	1	2	2	2				1	1	1	12	12	12	14	14	14	12	12	12	14	14	14
Liquidambar styraciflua	sweetgum	Tree																																				1					
Liriodendron tulipifera	tuliptree	Tree																																					2	2	2	12	12	12
Platanus occidentalis	American sycamore	Tree	1	1	1	3	3	3	1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	14	14	14	10	10	11	14	14	14	14	14	14
Quercus nigra	water oak	Tree	1	1	1	1	1	1	1	1	1	1	1	1	4	4	4	1	1	1	1	1	1				2	2	2				12	12	12	7	7	8	8	8	8	10	10	10
Quercus phellos	willow oak	Tree	2	2	2	2	2	2	1	1	1	1	1	1	2	2	2							1	1	1	2	2	2				11	11	11	7	7	8	7	7	9	10	10	10
Salix nigra	black willow	Tree																																		2	2	2	2	2	2	2	2	2
Ulmus americana	American elm	Tree	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1	1	1	1	1	1	1	2	2	2	1	1	1	10	10	10	11	11	13	13	13	14	15	15	15
Stem count			8	8	8	9	9	9	7	7	7	9	9	9	11	11	11	9	9	9	7	7	7	10	10	10	11	11	11	9	9	9	90	90	90	79	79	87	94	94	98	140	140	140
size (ares)			1			1			1			1			1			1			1			1			1			1			10			10			10			10		
size (ACRES)			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.02			0.25			0.25			0.25			0.25		
Species count			7	7	7	6	6	6	6	6	6	9	9	9	5	5	5	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	10	10	10	11	11	13	12	12	12	12	12	12
Stems per ACRE			323.7	323.7	323.7	364.2	364.2	364.2	283.3	283.3	283.3	364.2	364.2	364.2	445.2	445.2	445.2	364.2	364.2	364.2	283.3	283.3	283.3	404.7	404.7	404.7	445.2	445.2	445.2	364.2	364.2	364.2	364.2	364.2	364.2	319.7	319.7	352.1	380.4	380.4	396.6	566.6	566.6	566.6

Color for Density

- Exceeds requirements by 10%
- Exceeds requirements, but by less than 10%
- Fails to meet requirements, by less than 10%
- Fails to meet requirements by more than 10%

Figures 5.1 - 5.12 Vegetation Plots and Site Photographs

Figure 5.1 Vegetation Plot 1 (08/23/2023)

Figure 5.2 Vegetation Plot 2 (08/23/2023)

Figure 5.3 Vegetation Plot 3 (08/23/2023)

Figure 5.4 Vegetation Plot 4 (08/23/2023)

Figure 5.5 Vegetation Plot 5 (08/23/2023)

Figure 5.6 Vegetation Plot 6 (08/23/2023)

Figures 5.1 - 5.12 Vegetation Plots and Site Photographs

Figure 5.7 Vegetation Plot 7 (08/23/2023)

Figure 5.8 Vegetation Plot 8 (08/23/2023)

Figure 5.9 Vegetation Plot 9 (08/23/2023)

Figure 5.10 Vegetation Plot 10 (08/23/2023)

Individual Stem Height Data by Plot

White Buffer Plot 1							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
433	Quercus phellos	b	R	0.5	2.7	110.0	/
436	Fraxinus pennsylvanica	g	R	9.6	5.2	100.0	/
438	Ulmus americana	d	R	5.0	7.6	75.0	/
820	Carya ovata	g	R	9.7	5.2	46.0	/
831	Quercus nigra	a	U	0.2	7.4	85.0	/
912	Carpinus caroliniana	f	R	8.7	9.0	70.0	/
913	Platanus occidentalis	e	U	7.5	9.0	70.0	/
914	Quercus phellos	c	R	4.0	5.5	88.0	/
	# stems:	8					

White Buffer Plot 2							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
440	Ulmus americana	b	R	1.7	2.9	85.0	/
441	Fraxinus pennsylvanica	a	R	0.7	6.2	134.0	/
443	Platanus occidentalis	d	R	3.8	7.7	100.0	/
444	Quercus phellos	c	R	3.9	4.1	137.0	/
447	Quercus nigra	f	R	6.6	4.4	150.0	0.5
448	Betula nigra	g	R	6.6	7.6	61.0	/
451	Quercus phellos	i	R	9.6	2.0	140.0	/
830	Platanus occidentalis	e	U	5.0	10.0	180.0	0.8
916	Platanus occidentalis	h	U	9.4	2.4	100.0	/
	# stems:	9					

White Buffer Plot 3							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
452	Carpinus caroliniana	a	R	0.2	2.0	210.0	1.0
454	Fraxinus pennsylvanica	e	R	6.6	2.0	185.0	1.0
455	Quercus phellos	g	R	9.8	2.0	168.0	/
459	Quercus nigra	b	R	0.9	4.2	208.0	0.8
463	Ulmus americana	h	R	9.9	6.7		
465	Carpinus caroliniana	f	R	6.6	9.2	50.0	
466	Carya cordiformis	d	R	3.4	9.2		
467	Platanus occidentalis	c	R	0.9	9.2	160.0	
	# stems:	8					

White Buffer Plot 4							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
482	Quercus nigra	g	R	6.4	0.7	190.0	0.5
483	Betula nigra	i	R	9.2	1.3	205.0	1.0
484	Carya ovata	a	R	0.0	2.2	40.0	/
485	Cornus florida	c	R	2.2	2.6	70.0	/
486	Ulmus americana	e	R	6.1	3.0		
489	Fraxinus pennsylvanica	f	R	6.0	5.6	80.0	/
491	Platanus occidentalis	b	rr	1.6	7.8	160.0	0.5
492	Quercus phellos	d	R	5.7	8.3	200.0	1.0
493	Carpius caroliniana	h	R	8.9	8.7	190.0	/
	# stems:	9					

Individual Stem Height Data by Plot

White Buffer Plot 5							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
474	Carpinus caroliniana	f	R	3.6	5.0		
475	Fraxinus pennsylvanica	c	R	2.1	5.5		
917	Fraxinus pennsylvanica	h	P	5.0	1.9	150.0	0.5
918	Platanus occidentalis	b	P	2.0	1.9	150.0	/
919	Platanus occiedntalis	l	P	9.2	1.9	170.0	/
920	Carpinus caroliniana	i	P	5.0	4.5	50.0	/
921	Quercus phellos	e	P	3.5	4.0	160.0	/
922	Quercus phellos	a	P	1.2	4.0	150.0	/
923	Carpinus caroliniana	d	P	3.0	6.8	70.0	/
924	Quercus nigra	g	R	4.8	6.5	50.0	/
925	Quercus nigra	m	R	9.2	7.0	185.0	/
926	Quercus nigra	k	R	8.0	9.0	170.0	/
927	Quercus nigra	j	R	6.0	9.0	165.0	/
	# stems:	13					

White Buffer Plot 6							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
494	Cornus florida	b	R	1.2	1.0	140.0	0.8
495	Ulmus americana	f	R	4.7	0.7	90.0	/
497	Carpinus caroliniana	c	R	1.6	3.2	158.5	/
498	Fraxinus pennsylvanica	e	R	4.2	3.0	95.0	/
499	Fraxinus pennsylvanica	h	R	6.8	3.1	190.0	0.8
500	Fraxinus pennsylvanica	i	R	9.2	3.0	110.0	/
502	Quercus nigra	d	R	3.9	5.9	76.0	/
505	Betula nigra	a	R	0.4	8.5	200.0	0.8
507	Platanus occidentalis	g	R	5.1	8.3	185.0	0.8
	# stems:	9					

White Buffer Plot 7							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
510	Fraxinus pennsylvanica	e	R	8.0	0.8	170.0	0.8
513	Quercus nigra	d	R	6.4	3.1	215.0	1.0
517	Carpinus caroliniana	c	R	6.1	5.6	170.0	0.8
518	Platanus occidentalis	f	R	9.1	5.4	458.0	5.0
519	Betula nigra	a	R	0.7	8.3	305.0	2.5
520	Ulmus americana	b	R	3.6	8.5	195.0	0.8
522	Carya cordiformis	g	R	9.5	8.1	174.0	2.0
	# stems:	7					

Individual Stem Height Data by Plot

White Buffer Plot 8							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
523	Fraxinus pennsylvanica	a	R	0.7	2.0	100.0	/
525	Betula nigra	b	R	1.2	3.9	214.0	1.5
526	Betula nigra	f	R	6.6	1.8	205.0	3.5
527	Quercus phellos	h	R	9.4	1.6	210.0	1.0
528	Platanus occidentalis	c	R	1.9	4.0	300.0	2.0
529	Carpinus caroliniana	d	R	4.2	4.7	120.0	0.8
531	Betula nigra	i	R	9.6	5.0	355.0	4.0
534	Fraxinus pennsylvanica	g	R	6.6	9.0	215.0	1.0
535	Ulmus americana	j	R	9.7	8.2	75.0	/
536	Carya ovata	e	R	6.5	7.5	100.0	/
	# stems:	10					

White Buffer Plot 9							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
538	Ulmus americana	a	R	0.1	1.5	120.0	0.8
539	Quercus nigra	e	R	2.7	1.5	158.0	0.8
540	Quercus phellos	i	R	5.8	1.3	68.0	/
541	Platanus occidentalis	j	R	8.9	1.1	185.0	1.0
542	Betula nigra	f	R	2.6	3.4	240.0	1.5
543	Carya cordiformis	h	R	5.6	3.3		
545	Quercus nigra	l	R	9.7	3.4		
546	Quercus phellos	d	R	1.8	6.0	85.0	/
547	Fraxinus pennsylvanica	g	R	4.8	6.0		
549	Betula nigra	b	R	0.1	6.0	270.0	1.0
550	Ulmus americana	c	R	0.4	8.4	50.0	/
553	Carpinus caroliniana	k	R	9.4	8.7	185.0	0.8
	# stems:	12					

White Buffer Plot 10							
ID	**Species Name**	**Map Char**	**Source**	**X 0.1m**	**Y 0.1m**	**Height 1cm**	**DBH 1cm**
555	Ulmus americana	b	R	2.5	3.9	68.0	/
556	Carpinus caroliniana	c	R	2.4	6.3	245.0	1.0
557	Carya cordiformis	a	R	2.3	9.3		
558	Carya ovata	e	R	4.9	0.6		
559	Betula nigra	f	R	4.9	3.0	238.0	1.5
560	Fraxinus pennsylvanica	d	R	4.7	6.2	259.0	2.0
561	Carpinus caroliniana	g	R	4.8	9.1	240.0	1.0
563	Platanus occidentalis	h	R	7.4	5.0	335.0	2.5
565	Platanus occidentalis	i	R	9.9	3.0	350.0	2.5
	# stems:	9					

Appendix C – Regulatory Considerations

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

NORTH CAROLINA
Environmental Quality

November 16, 2020

Division of Mitigation Services
Attn: Jeremiah Dow/Kelly Phillips
(via electronic mail: jeremiah.dow@ncdenr.gov, Kelly.Phillips@ncdenr.gov)

Re: **White Farms Riparian Buffer Mitigation Plan Approval**

Dear Mr. Dow,

The Division of Water Resources (DWR) received a draft Mitigation Plan (Plan) from the Division of Mitigation Services (DMS) for the White Farms site (Site) in 2020. The Plan was submitted to DWR for review and approval under 15A NCAC 02B .0295 to be used as a buffer mitigation project. DWR reviewed the Plan and provided comments and recommendations. DMS submitted a revised Plan that addressed all comments and recommendations provided by DWR. The table below summarizes the timeline of the Plan:

Project Site Name	DWRProject ID#	Initial Mitigation Plan Received	Revised Buffer Plan Received (Final Draft)	Location/HUC
White Farms	20 l9-0884v1	July 20, 2020	November 10, 2020	Randleman Lake Watershed

By copy of this letter, the Final Draft of the Plan is *approved. A* copy of the final draft can be found online at:
https:/ /edocs.deq.nc.gov /Water Resources /DocView.aspx?id=13 49646&dbid =O&repo= WaterResources

Please feel free to call (919) 707-3637 if you have any questions regarding this correspondence.

Sincerely,

DocuSigned by:
A43C72700BD543E...

Katie Merritt
401 & Buffer Permitting Branch

cc: DWR File Copy

Appendix D –Adaptive Management Plan

Table 7. Replant Area Species, Source, and Quantities

Species Planted	Plant Source	Quantity Planted
Platanus occidentalis	Bare Root (3'-4')	50
Betula nigra	Bare Root (3'-4')	50
Ulmus americana	Bare Root (3'-4')	50
Fraxinus pennsylvanica	Bare Root (3'-4')	25
Quercus phellos	Bare Root (3'-4')	50
Quercus nigra	Bare Root (3'-4')	50
Carpinus caroliniana	1 Gallon Pot	20
Quercus phellos	1 Gallon Pot	20
Quercus nigra	1 Gallon Pot	50