MY1 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: September 07, 2021
Report Submitted: February 01, 2022

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

Land Management Group Contributing Staff: Ben Furr, Ryan Smith, Alex DiGeronimo, Chris Smith, Yvette Mariotte, Michael Foster, Kevin Williams

This MY1 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

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MARC RECKTENWALD
Director

NORTH CAROLINA
Environmental Quality

January 24, 2022

Vicki Miller
HDR Engineering
555 Fayetteville Street, Suite 900
Raleigh, NC 27601

Subject: Task 5 Draft Monitoring Year 1 Report for the
White Mitigation Project
Cape Fear River Basin; CU# 03030003
Randolph County, North Carolina
DMS ID No. 100112; Contract No. 7860

Dear Ms. Miller:

On December 3, 2021, the Division of Mitigation Services (DMS) received the DRAFT Monitoring Year 1 report for the White Mitigation Project from HDR Engineering (HDR). The anticipated mitigation for the site includes 504,075 square feet (SF) of riparian mitigation. The buffer mitigation areas consist of 490,960 (SF) of buffer restoration and 13,116 SF of buffer enhancement for a total of 469,459.424 Buffer Mitigation Units (BMUs) as established in the approved Mitigation Plan. DMS has completed our review and offer the following comments:

Title Page: Please add the DMS Contract No. (7860); RFP No, (16-007703); Cape Fear River Basin; and the year of completed construction (2021).

Section 2.2 Results and Discussion: Thank you for detailing the invasive control actions taken onsite. These efforts were evident during site inspection and the ongoing maintenance should be beneficial.

2.3 Adaptive Management Plan: Please document treatment areas and if maps are produced consider including the shapefiles in the report submittals.

Table 1 Project Credits: Please update the Total Area of Buffer Mitigation table (TABM) to include a row showing the "Mitigation Plan Approved Credits" from the mitigation plan (469,459.424 BMUs) and use as the credit total for the site. Any potential credit adjustment will be in response to IRT comment.

Digital files:

- Please ensure that all submitted photos are included in the report (e.g., Figs 5.2-5.6) and that all photos in the report are included in the digital submittal (e.g., Fig 5.16).

- Please submit the treated invasive species feature as a polygon and the minor erosion feature as a line in the digital deliverable.

At your earliest convenience, please provide an electronic response letter addressing the DMS comments. The comment response letter should be included in the Final MY1 revised report and included after the report cover page.

Please submit two (2) final hard copies and an electronic copy on USB drive to my attention at the address below (Mooresville Regional office). Please also include all final MY1 project support files on the USB drive. The final electronic monitoring report with all attachments should be named: ***WhiteMitigationProject_100112_MY1_2021.pdf***

If you have any questions, please contact me at any time at (919) 723-7565 or email me at kelly.phillips@ncdenr.gov.

Sincerely,

Kelly Phillips

Kelly Phillips
Project Manager
NCDEQ – Division of Mitigation Services
610 East Center Avenue
Suite 301
Mooresville, NC 28115
919-723-7565

cc: file

DAVEY Resource Group

February 1, 2022

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

Re: Task 5 Draft Monitoring Year 1 Report for the White Mitigation Project
Cape Fear River Basin; CU# 03030003
Randolph County, North Carolina
DMS ID No. 100112; Contract No. 7860

Mr. Phillips,

As per your letter concerning the White Mitigation Project MY1 Report, we have updated the reviewed report and addressed your comments as follows:

General Comments

Title Page: Please add the DMS Contract No. (7860); RFP No, (16-007703); Cape Fear River Basin; and the year of completed construction (2021).
RE: Comply. The DMS Contract No., RFP No., Cape Fear River Basin, and year of completed construction have been added to the title page.

Section 2.2 Results and Discussion: Thank you for detailing the invasive control actions taken onsite. These efforts were evident during site inspection and the ongoing maintenance should be beneficial.
RE: Understood.

2.3 Adaptive Management Plan: Please document treatment areas and if maps are produced consider including the shapefiles in the report submittals.
RE: Comply. Treatment areas have been further detailed in Section 2.3 and shapefile of treatment areas have been included in the electronic submittal.

Table 1 Project Credits: Please update the Total Area of Buffer Mitigation table (TABM) to include a row showing the "Mitigation Plan Approved Credits" from the mitigation plan (469,459.424 BMUs) and use as the credit total for the site. Any potential credit adjustment will be in response to IRT comment.
RE: Per our phone conversation today (February 1st, 2022), Table 1 has been updated to match the Asset Table included in the approved MY0 Report. It is worth noting that the original executed contract credit amount to be delivered by HDR is for 458,128 Riparian Buffer Credits. HDR proposed to deliver 469,459.424 Riparian Buffer Credits in the approved Mitigation Plan. After construction was completed and the As-Built survey was completed the reported credits were revised to 466,747.935. Table 1 has been revised to match the As-Built credits amount.

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

DAVEY
Resource Group

Digital Support File Comments:

Please ensure that all submitted photos are included in the report (e.g., Figs 5.2-5.6) and that all photos in the report are included in the digital submittal (e.g., Fig 5.16).

RE: Comply. All photos have been included in the digital submittal.

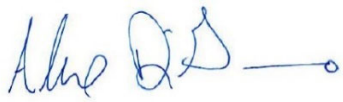
Please submit the treated invasive species feature as a polygon and the minor erosion feature as a line in the digital deliverable.

RE: Comply. All treated invasive species have been combined into one polygon shapefile. Minor erosion has been revised to a polyline.

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

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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 is 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 September 9, 2021. 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 (Figure 4.1-4.5, Appendix A). Year 2 vegetation survey is anticipated to occur in September 2022.

2.2 Results and Discussion

This section documents the conditions observed in Year 1 monitoring. Table 6 details specific vegetative data in relation to the Year 1 conditions (Appendix B).

The 1,830 feet of vertical stream bank stabilized during the construction stage of the project has remained stable over the past year of monitoring. Livestakes and bareroot plantings along repaired streams have established and are surviving. Repaired areas along UT MC between UT 3 and UT 5 are heavily shaded by the mature canopy and planted stems along the top of bank have shown stunted growth over the past year but were alive at the time of monitoring.

An area of minor erosion was observed below the culvert crossing on UT 2 and is depicted in Figure 4.4 and Figure 5.12. This area of minor erosion is likely the result of the removal an invasive species that was providing bank stability. A second area of minor erosion was observed along UT MC near the area where a crossing was removed during construction and is depicted in Figures 4.4 and 5.16. It is anticipated that these areas will stabilize naturally over time; however, both areas will be closely monitored in subsequent monitoring years.

Buffer restoration areas were planted with bare root species characteristic of a Piedmont/Low Mountain Alluvial Forest (Schafale and Weakley, 1990). Nine of the ten permanent vegetation plots established in February 2021 are meeting or exceeding success criteria outlined in the Mitigation Plan. Dense growth of fescue (*Festuca sp.*) and knotweed (*Polygonum sp.*) have overtopped bareroot plantings in vegetation plot 5. While several bareroot plantings are surviving, others were either dead or unable to be located due to the dense vegetative growth. Areas with dense fescue growth were treated in late October to relieve bareroot plantings of herbaceous competition. It is anticipated that bareroot plantings in these areas will resprout or re-emerge once the grass has died off from treatment. This area will be closely monitored in Year 2 to determine if additional action or treatment is necessary.

Several areas of Chinese privet (*Ligustrum sinense*) and multiflora rose (*Rosa multiflora*) were treated in April 2021. While the areas previously treated are dead, several new areas of invasive growth were

discovered during vegetation monitoring in September 2021 and are depicted in Figures 4.1-4.5. It is important to note that the Site had dense growth of Chinese privet along the banks and floodplain of UT MC, UT 3, UT 4, and UT 5 that were treated and removed during construction. Much of the new growth is a result of stump coppicing and sprouting from a prevalent seed bank. New areas of invasive species growth were treated in late October along with dense fescue and knotweed growth. Further details of invasive species management procedures can be found in Section 2.3 of this document.

2.3 Adaptive Management Plan

Approximately 38 areas of Chinese privet and multiflora rose were spot treated using a 10% solution of aquatic glyphosate. The majority of the spot treatments that took place were re-sprouts along UT Muddy which was densely populated with privet and multiflora rose prior to construction. Treatments were made during April 2021 and October 2021. Invasive species will be monitored and treated at the same rate as needed in subsequent monitoring years.

Approximately 0.86 acres of dense fescue and 0.13 acres of dense polygonum were treated with sethoxydum at a rate of 6 oz. per acre to allow for bare root establishment in these areas. One application was made in October 2021. These areas will be reassessed in Spring, 2022 to determine if a second application is necessary.

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

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

Cape Fear - Randleman	Project Area
N/A	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	0-100	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 (ft^2):** 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 (ft^2)	Initial Credit Ratio (x:1)	% Full Credit	Final Credit Ratio (x:1)	Riparian Buffer Credits
Buffer				Preservation								–
												–
												–
												–
												–
												–
												–
												–
												–
												–
												–
						Preservation Area Subtotal (ft^2):		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 01/17/2020

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		February 1, 2022
Year 2 Monitoring		
Year 3 Monitoring		
Year 4 Monitoring		
Year 5 Monitoring		

Table 3. Project Contacts Table

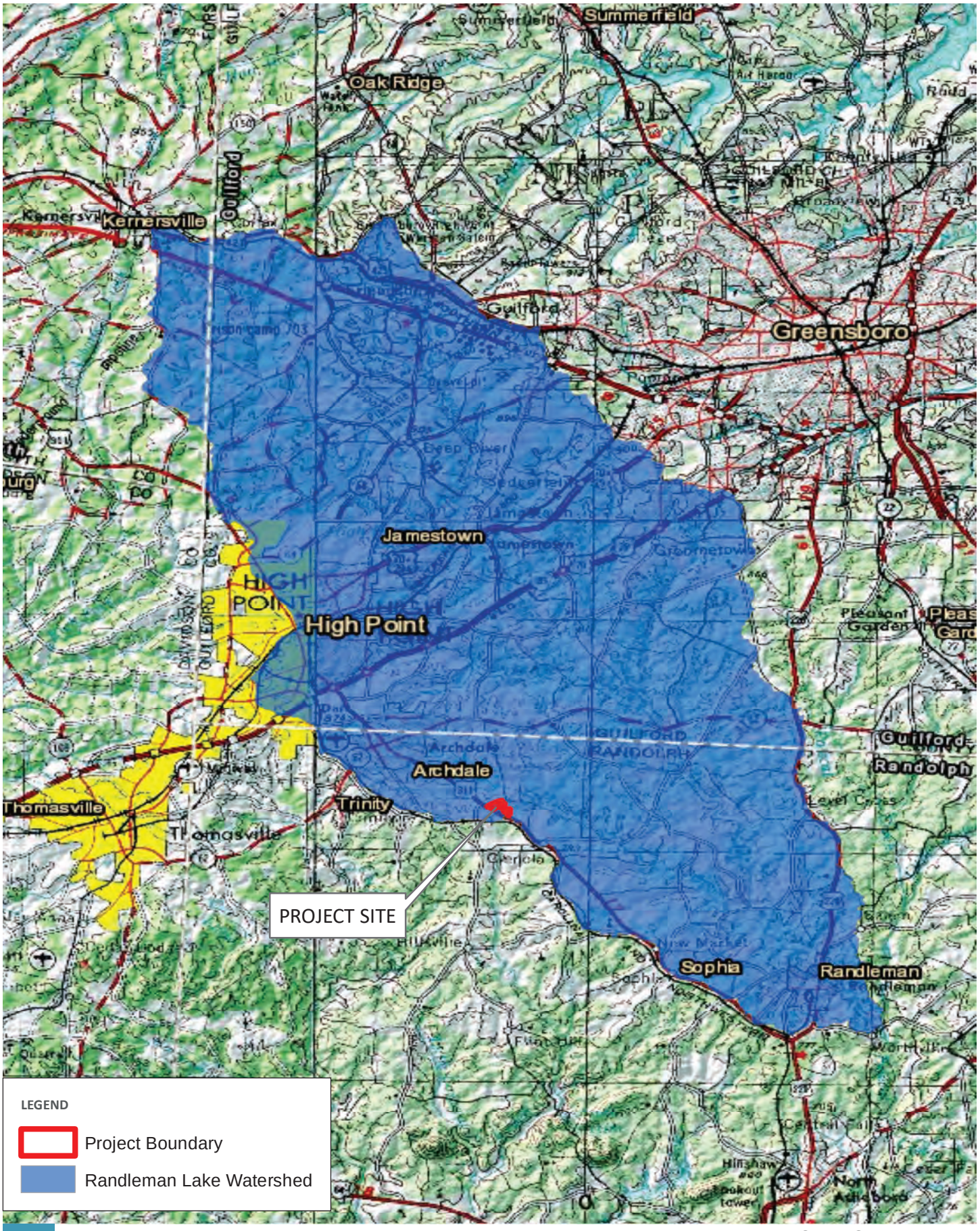
Designer Primary project design POC	HDR Engineering 555 Fayetteville Street, Suite 900 Raleigh, North Carolina 27601-3034 Vickie Miller (919) 232-6600
Construction Contractor Construction Contractor POC	KBS Earthworks, Inc. 5616 Coble Church Rd Julian, NC 27283 Chris Sizemore (336) 362-0289
Planting Contractor Planting Contractor POC	KBS Earthworks, Inc. 5616 Coble Church Rd Julian, NC 27283 Chris Sizemore (336) 362-0289
Monitoring Performers	Land Management Group, Inc 3101 Poplarwood Court Raleigh, North Carolina 27604
Vegetation Monitoring POC	Land Management 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 was monitored using the Carolina Vegetation Survey (CVS) Level 2 protocols. Data collected is 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 have been mapped and treated..
Fescue	Visual	--	Semi-annual	Areas of dense fescue were mapped and treated. Fescue will be monitored to ensure the survivability of planted stems. Fescue will be treated as necessary using herbicide in areas where fescue is out-competing planted stems.
Project Boundary	Visual	---	Semi-annual	Mapping of fence damage, vegetation damage, boundary encroachments, etc. is mapped and will be addressed as necessary

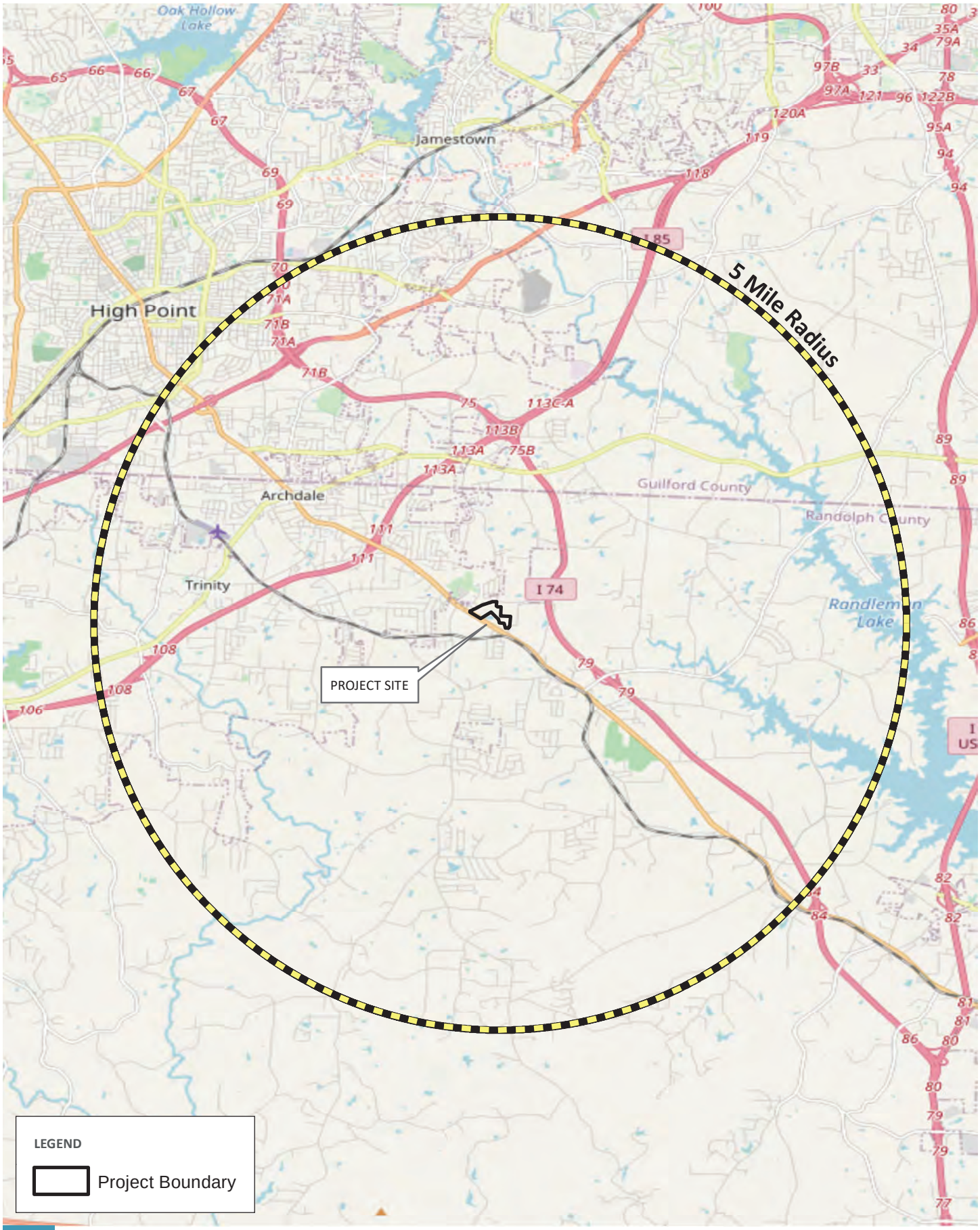


SERVICE AREA MAP

WHITE MITIGATION PROJECT

RANDOLPH COUNTY, NORTH CAROLINA

FIGURE 1



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

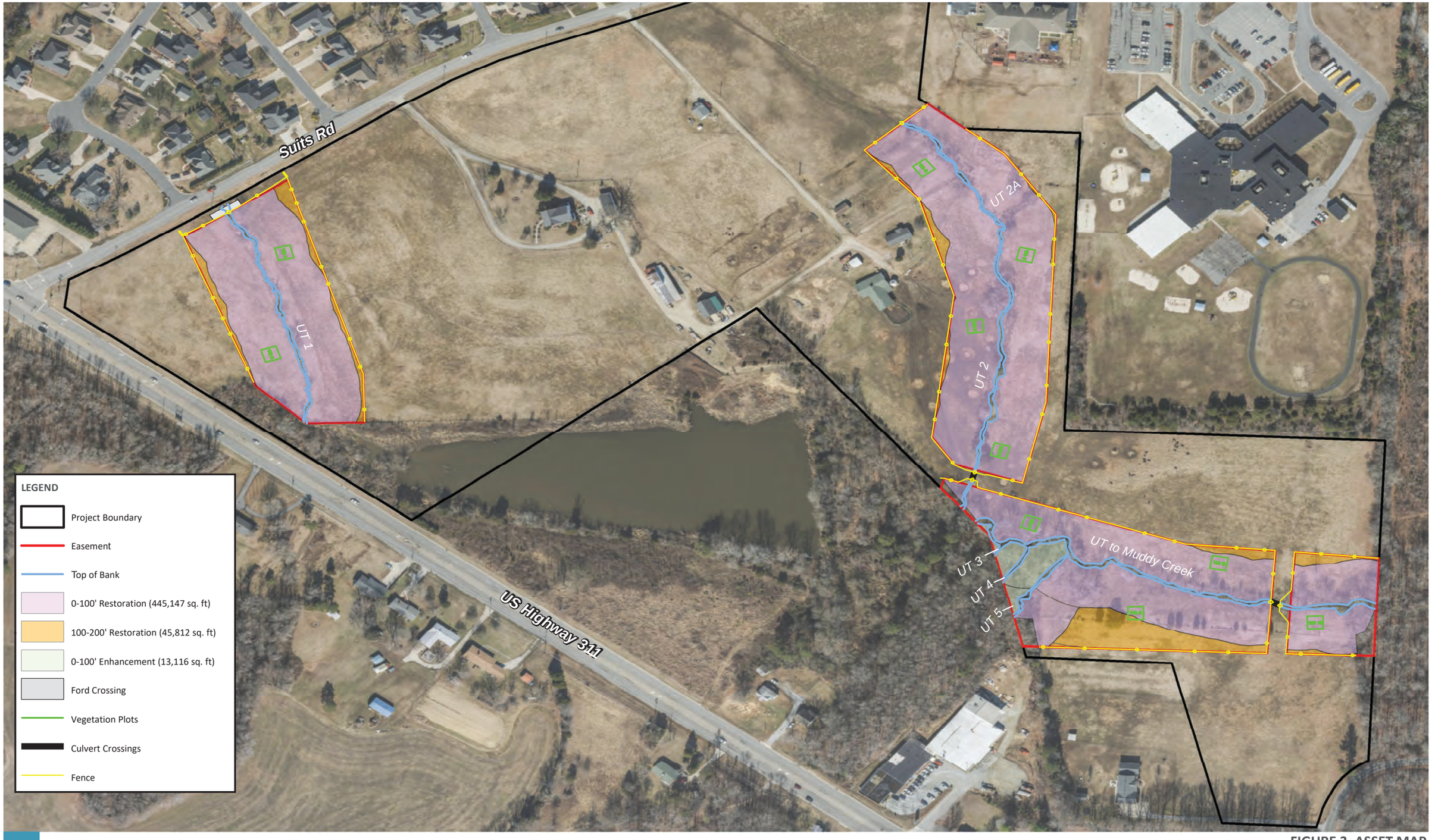


FIGURE 3. ASSET MAP
WHITE MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA

0 360 720 Feet

CCPV MAP YEAR 1
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.1

0 200 400 Feet

CCPV MAP YEAR 1
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.2

0 200 400 Feet

CCPV MAP YEAR 1
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.3

CCPV MAP YEAR 1
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.4

0 200 400 Feet

CCPV MAP YEAR 1
WHITE BUFFER MITIGATION SITE
RANDOLPH COUNTY, NORTH CAROLINA
FIGURE 4.5

Appendix B – Vegetation Plot Data and Site Photographs

Table 6: Monitoring Year 1 Vegetation Data
EEP Project Code 20.003. Project Name: White Buffer

			Current Plot Data (MY1 2021)																													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			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
Betula nigra	river birch	Tree				1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	2	2	2	1	1	1	12	12	12	14	14	14
Carpinus caroliniana	American hornbeam	Tree	1	1	1				2	2	2	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	11	11	12	13	13	13
Carya cordiformis	bitternut hickory	Tree							1	1	1										2	2	2				1	1	1	1	1	1	5	5	5	13	13	13
Carya ovata	shagbark hickory	Tree							1	1	1										1	1	1							1	1	1	3	3	3	11	11	11
Cornus florida	flowering dogwood	Tree							1	1	1	1	1	1				1	1	1				1	1	1				1	1	1	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	1	1	1	1	1	1	1	1	1	12	12	12	14	14	14
Liriodendron tulipifera	tuliptree	Tree							1	1	1				1	1	1																2	2	2	12	12	12
Platanus occidentalis	American sycamore	Tree	1	1	1	1	1	1	2	2	2	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	14	14	14	14	14	14
Quercus nigra	water oak	Tree	1	1	1	1	1	1	1	1	1	1	1	1				1	1	1	1	1	1				2	2	2				8	8	8	10	10	10
Quercus phellos	willow oak	Tree	1	1	3	2	2	2	1	1	1													1	1	1	2	2	2				7	7	9	10	10	10
Salix nigra	black willow	Tree										1	1	1							1	1	1										2	2	2	2	2	2
Ulmus americana	American elm	Tree	3	3	3	1	1	1	1	1	1	2	2	3				1	1	1	1	1	1	2	2	2	1	1	1	1	1	1	13	13	14	15	15	15
		Stem count	8	8	10	7	7	7	13	13	13	9	9	11	6	6	6	9	9	9	10	10	10	10	10	10	12	12	12	10	10	10	94	94	98	140	140	140
		size (ares)	1			1			1			1			1			1			1			1			1			1			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		
		Species count	6	6	6	6	6	6	11	11	11	8	8	8	5	5	5	7	7	7	9	9	9	7	7	7	8	8	8	8	8	8	12	12	12	12	12	12
		Stems per ACRE	323.7	323.7	404.7	283.3	283.3	283.3	526.1	526.1	526.1	364.2	364.2	445.2	242.8	242.8	242.8	364.2	364.2	364.2	404.7	404.7	404.7	404.7	404.7	404.7	485.6	485.6	485.6	404.7	404.7	404.7	380.4	380.4	396.6	566.6	566.6	566.6

Color for Density

Meeting success criteria
Not meeting success criteria

Figures 5.1 - 5.15 Vegetation Plots and Site Photographs

Figure 5.1 Vegetation Plot 1 (9/7/2021)

Figure 5.2 Vegetation Plot 2 (9/7/2021)

Figure 5.3 Vegetation Plot 3 (9/7/2021)

Figure 5.4 Vegetation Plot 6 (9/7/2021)

Figure 5.5 Vegetation Plot 5 (9/7/2021)

Figure 5.6 Vegetation Plot 6 (9/7/2021)

Figures 5.1 - 5.15 Vegetation Plots and Site Photographs

Figure 5.7 Vegetation Plot 7 (9/7/2021)

Figure 5.8 Vegetation Plot 8 (9/7/2021)

Figure 5.9 Vegetation Plot 9 (9/7/2021)

Figure 5.10 Vegetation Plot 10 (9/7/2021)

Figure 5.11 Bareroot and Livestake plantings along repaired section of UT 2 (9/7/2021)

Figure 5.12 Minor Erosion culvert crossing UT2 (9/7/2021)

Figures 5.1 - 5.15 Vegetation Plots and Site Photographs

Figure 5.13 Treated privet along UT MC (9/7/2021)

Figure 5.14 Minor erosion at removed crossing of UT MC (9/7/2021)

Figure 5.15 Stabilized section downstream UT MC (9/7/2021)

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	DWR Project ID #	Initial Mitigation Plan Received	Revised Buffer Plan Received (Final Draft)	Location/HUC
White Farms	2019-0884v1	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/WaterResources/DocView.aspx?id=1349646&dbid=0&repo=WaterResources

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

Sincerely,

DocuSigned by:
Katie Merritt
A43C72700BD543E...

Katie Merritt
401 & Buffer Permitting Branch

cc: DWR File Copy