AS-BUILT BASELINE MONITORING REPORT
FINAL
UT to Falls Lake (McDaniel Farm)
Riparian Buffer and Nutrient Offset Mitigation Project
Durham County, North Carolina
NC Division of Mitigation Services Project #: 95389

Neuse River Basin
03020201

DWR #: 2015-0634

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

June 2016

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1.0 PROJECT SUMMARY

NC Division of Mitigation Services (DMS) implemented the **UT to Falls Lake (McDaniel Farm) Project** (Project) to fulfill riparian buffer mitigation needs in the Neuse 03020201 Catalog Unit and nutrient offset mitigation needs in the Upper Falls Lake Watershed in accordance with the NC Division of Water Resources (DWR) Temporary Buffer Mitigation Rule (15A NCAC 02B .0295) effective October 24, 2014.

This project site is located off Benny Ross Road in Durham County approximately 7.5 miles east of the City of Durham and is within the Upper Falls Lake Watershed (Appendix B, Figure 1). The site is within the Lick Creek watershed (HU 3020201050030) which is comprised of sub-watersheds draining to Lick Creek, its tributary Rocky Branch, Laurel Creek, and unnamed tributaries to Falls Lake. Falls Lake is a drinking water supply watershed with additional nutrient restrictions regulated by the North Carolina Division of Water Resources. The site is in NC DWR's 03-04-01 sub-basin.

Riparian buffer mitigation activities occurred along the Project from top of bank and extending out to 200 feet, resulting in a maximum of 9.67 acres (421,385 ft^2) of riparian buffer and/or nutrient offset mitigation through planting and preservation of 10.86 acres of forested buffer easement along the main unnamed tributary to Falls Lake and several water conveyances that flow to UT to Falls Lake. Refer to Appendix A, Table 1 for project mitigation components and Appendix B, Figure 2 for the project component/asset map. Due to the site's location within the Upper Falls Lake Watershed, nutrient offset mitigation from this site can only be provided to offset impacts from development within the Falls Lake Watershed. In addition, riparian buffer mitigation from this site can be used to offset permitted impacts according to the Temporary Rule (15A NCAC 02B .0295) effective October 24, 2014.

The following goals of this riparian buffer/nutrient offset mitigation project are to address stressors identified in the Project watershed through the restoration of riparian buffers along the UT and its conveyances.

- Removing nonpoint sources of pollution associated with agricultural activities
- Reducing sedimentation onsite and downstream

The success of these goals are based on the following objectives;

- Removal of horses and goats from riparian areas;
- Reducing the application of agricultural materials into and adjacent to streams;
- Establishing a vegetative buffer adjacent to streams to treat surface runoff, which may contain pollutants such as sediment and/or agricultural pollutants from the adjacent landscape;
-
- Reducing bank erosion associated with a lack of vegetative cover; and
- Planting a diverse hardwood vegetative buffer adjacent to Site tributaries.

The mitigation plan was prepared by DMS staff and submitted to DWR for review and approval in August 2015. The final mitigation plan was approved by DWR in September 2015. The minor grading for diffuse flow, mowing of existing herbaceous vegetation, thinning of select small pines and installation of livestock exclusion fencing was completed by Wright Contracting, LLC in March 2016. The planting was completed by Bruton Natural Systems, Inc. in March 2016. Refer to Appendix A, Tables 2, 3 and 4 for detailed project activity, reporting history, project contact information and project baseline information and attributes.

Directions to the Project from Raleigh: Take US 70 West/Glenwood Avenue toward Durham. Turn Right on NC 50 North/Creedmoor Road. Exit onto NC 98 West. Turn Right onto Southview Road and follow to T intersection. Turn Right onto Baptist Road. Turn right onto Benny Ross Road Site. Travel approximately 0.3 mile to gate on the left. Access is by foot through the gate and 50 ft. access easement See Appendix D, As-Built Sheets). Coordinates: 35.998142, -78.742794

2.0 PERFORMANCE STANDARDS

Performance standards were established for native forest development and diffuse flow through the riparian buffer in accordance with DWR's Administrative Code 15A NCAC 02B.0295 (Mitigation Program Requirements for Protection and Maintenance of Riparian Buffers) (NCDWR 2014 Temporary Rule). Performance standards are dependent upon the density

and survival of characteristic forest species. After five years of monitoring, an average density of 260 woody stems per acre must be surviving and diffuse flow maintained.

3.0 MONITORING PLAN

3.1 Reporting

Annual monitoring data will be reported following DMS's Riparian Buffer and Nutrient Offset Buffer Annual Monitoring Report Template (ver. 1.0) dated Feb. 2, 2014. The monitoring report shall provide a project data chronologyand assist in decision making regarding project close-out. The following table outlines monitoring requirements and parameters for this project.

Required	Parameter	Quantity	Frequency	Notes
Yes	Vegetation	Quantity and location of vegetation plots will be determined by Division of Mitigation Services	Annual	Vegetation will be monitored for a period of five years or until success criteria are met. During years 2, 3 and 5 random plots will be used. Visual monitoring of the site will be done all five years
Yes	Project boundary		Annual	Locations of fence damage, vegetation damage, boundary encroachments, etc. will be mapped

3.2 Vegetation Monitoring

To monitor the vegetation at this site, the NC Division of Mitigation Services will use a combination of visual monitoring and random vegetation plots. Visual monitoring will be conducted during all five years of monitoring to assess vegetative cover, diffuse flow and easement integrity. DMS will monitor ten (10) rotating, random 1,500 square foot vegetation plots in years 2, 3 and 5 to assess vegetative success representative of the entire mitigation area from top of bank to 200 feet from each tributary/conveyance. These ten (10) plots will provide coverage of 3% of the site each year used. In each sample plot, monitoring parameters will include species composition and density. As it was done for this baseline data collection, the vegetation plots will be randomly selected using a grid and random number generator or similar methodfor each of the monitoring years 2, 3 and 5. Visual observations of the percent cover of shrub and herbaceous species, diffuse flow and easement integrity will be documented by photograph and site visits.

Monitoring of site restoration efforts will be performed for five years or until performance standards are met. The first annual monitoring assessment (MY1) will be completed in the fall of 2016. The vegetation will be monitored for a total of five years, with the final monitoring activities concluding in 2020. The close-out for the Site will be conducted in 2021 given that the performance criteria has been met.

4.0 MAINTENANCE AND CONTINGENCY PLAN

DMS shall monitor the site and conduct a physical inspection of the site a minimum of once per year throughout the post-construction monitoring period until performance standards are met. These site inspections may identify site components and features that require routine maintenance. Routine maintenance should be expected most often in the first two years following site construction and may include the following:

Component/Feature	Maintenance through project close-out	Remedial Measures
Vegetation	Vegetation shall be maintained to ensure survival. Routine vegetation maintenance and repair activities may include supplemental planting. The site will also be evaluated to ensure diffuse flow is still occurring.	Any remedial activities performed will be documented in the annual monitoring reports.
Site Boundary	Site boundaries shall be identified in the field to ensure clear distinction between the mitigation site and adjacent properties. Boundaries may be identified by fence, marker, bollard, post, tree-blazing, or other means as allowed by site conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as needed basis.	Any remedial activities performed will be documented in the annual monitoring reports.

5.0 BASELINE

Baseline monitoring (MY0) was conducted in May 2016. Upon the completion of planting in March 2016, initial plant stocking was performed to verify planting methods and to determine initial species composition and density. A total of 5,700 woody stems were planted by Bruton Natural Systems, Inc. in March 2016. See Table 6 in Appendix C for the list of species and number of each planted. In addition, DMS staff randomly selected ten (10) 1,500 square foot vegetation plots and collected species and density data. See Figure 2 in Appendix B and Table 7 in Appendix C.

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APPENDIX A

BACKGROUND TABLES

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Table 1: Project Mitigation Components
UT to Falls Lake (McDaniel Farm) DMS Project #95389

Mitigation Components*										
Project Component	Existing Buffer SF	Restored Buffer SF	Creditable Buffer SF	Restortion Level	Mitigation Ratio (X:1)	Riparian Buffer Mitigation Credits (SF)		Nutrient Offset Credits Nitrogen (lbs)	Nutrient Offset Credits Phosphous (lbs)	Notes/Comments
Buffer										
Riparian Buffer TOB-50' (Reaches A1, A2 & B) Subject Rural	0	49,393	49,393	R	1	49,393	**OR**	2,577.48	166.00	Restored riparian buffer for buffer or Nutrient Offset credit
Riparian Buffer 51-100' (Reaches A1, A2 & B) Subject Rural	0	82,083	82,083	R	1	82,083	**OR**	4,283.35	275.87	Restored riparian buffer for buffer or Nutrient Offset credit
Riparian Buffer 101-200' (Reaches A1, A2 & B) Subject Rural	0	149,557	149,557	R	1			7,804.36	502.64	Restored riparian buffer for Nutrient Offset credit only
Riparian Buffer TOB-200' Non-Subject Rural	0	72,392	72,392	R	1			3,777.65	243.30	Restored riparian buffer for Nutrient Offset credit only
Riparian Buffer TOB-100' (Reaches A1, A2 & B) Subject Rural	64,826	0	64,826	P	10	6,483				Preserved Riparain Buffer for Buffer Credit only
Riparian Buffer 101-200' (Reach A2) Subject Rural	3,134	0	3,134	P	20	157				Preserved Riparian Buffer for Buffer Credit only. Area in this zone is less than 10% of total Buffer Mitigation area. 20:1 ratio = 10:1 factoring in 50% reduction for preservation on a Subject Non-Urban stream.
		Totals	**421,385**			**138,115**		**18,442.85**	**1,187.82**	
*All assets and credits generated in accordance withDWR Temporary Buffer Mitigation Rule (15A NCAC 02B .0295) effective October 24, 2014.										

Length and Area Summations by Mitigation Category					
	Stream	Riparian Wetland		Non-riparian Wetland	Creditable Buffer
Restoration Level	(linear feet)	(acres)		(acres)	(square feet)
		Riverine	Non-Riverine		
Restoration					353,425
Enhancement					
Enhancement I					
Enhancement II					
Creation					
Preservation					67,960
High Quality Pres					

Overall Assets Summary	
Asset Category	**Overall Credits**
Buffer[1]	**138,115**
Nutrient Offset Nitrogen (lbs/ac/30 yr)	**18,442.85**
Nutrient Offset Phosphorus (lbs/ac/30 yr)	**1,187.82**

[1] Pursuant to 15A NCAC 02B .0295(n)(1) (2014 Temporary Rule), buffer mitigation credit used for buffer credit will not be used for nutrient offset credit

Table 2. Project Activity and Reporting History
UT to Falls Lake (McDaniel Farm) DMS Project #95389

Activity or Deliverable	Data Collection Complete	Completion or Delivery
Institution Date	NA	Jun-13
404 permit date	NA	NA
Restoration Plan	Jul-15	Sep-15
Final Design – Construction Plans	Jul-15	Sep-15
Construction	NA	Mar-16
Planting	Mar-16	Mar-16
Mitigation Plan / As-built (Year 0 Monitoring – baseline)	May-16	Jun-16
Year 1 Monitoring		
Year 2 Monitoring		
Year 3 Monitoring		
Year 4 Monitoring		
Year 5 Monitoring		

Table 3. Project Contacts Table
UT to Falls Lake (McDaniel Farm) DMS Project #95389

Designer	**NC Division of Mitigation Services**
	217 W Jones Street, Raleigh, NC 27603
Jeff Schaffer, DMS	(919) 707-8308
Construction Contractor	**Wright Contracting, LLC**
	PO Box 545, Siler City, NC 27344
Andrew Dimmette	(704) 219-0486
Planting Contractor	**Bruton Natural Systems, Inc.**
	PO Box 1197, Fremont, NC 27830
Charlie Bruton	(919) 242-6555
Monitoring Performers	**NC Division of Mitigation Services**
	217 W Jones Street, Raleigh, NC 27603
Jeff Schaffer, DMS	(919) 707-8308

Table 4: Project Attributes Table

UT to Falls Lake (McDaniel Farm) DMS Project #95389

Project Information				
Project Name		UT to Falls Lake (McDaniel Farm)		
County		Durham		
Project Area (acres)		10.86		
Project Coordinates (latitude and longitude)		35.998142, -78.742794		
Planted Acreage (Acres of Woody Stems Planted)		10.86		
Project Watershed Summary Information				
Physiographic Province				
River Basin		Neuse		
USGS Hydrologic Unit 8-digit	3020201	USGS Hydrologic Unit 14-digit	03020201050030	
DWR Sub-basin		03-04-01		
Project Drainage Area (acres)		21.5		
Project Drainage Area Percentage of Impervious Area		< 5%		
CGIA Land Use Classification		Majority Forested, some pasture		
Regulatory Considerations				
Parameters		**Applicable?**	**Resolved?**	**Supporting Docs?**
Water of the United States - Section 404		No		
Water of the United States - Section 401		No		
Endangered Species Act		No		
Historic Preservation Act		No		
Coastal Zone Management Act (CZMA or CAMA)		No		
FEMA Floodplain Compliance		No		
Essential Fisheries Habitat		No		

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APPENDIX B

VISUAL ASSESSMENT DATA

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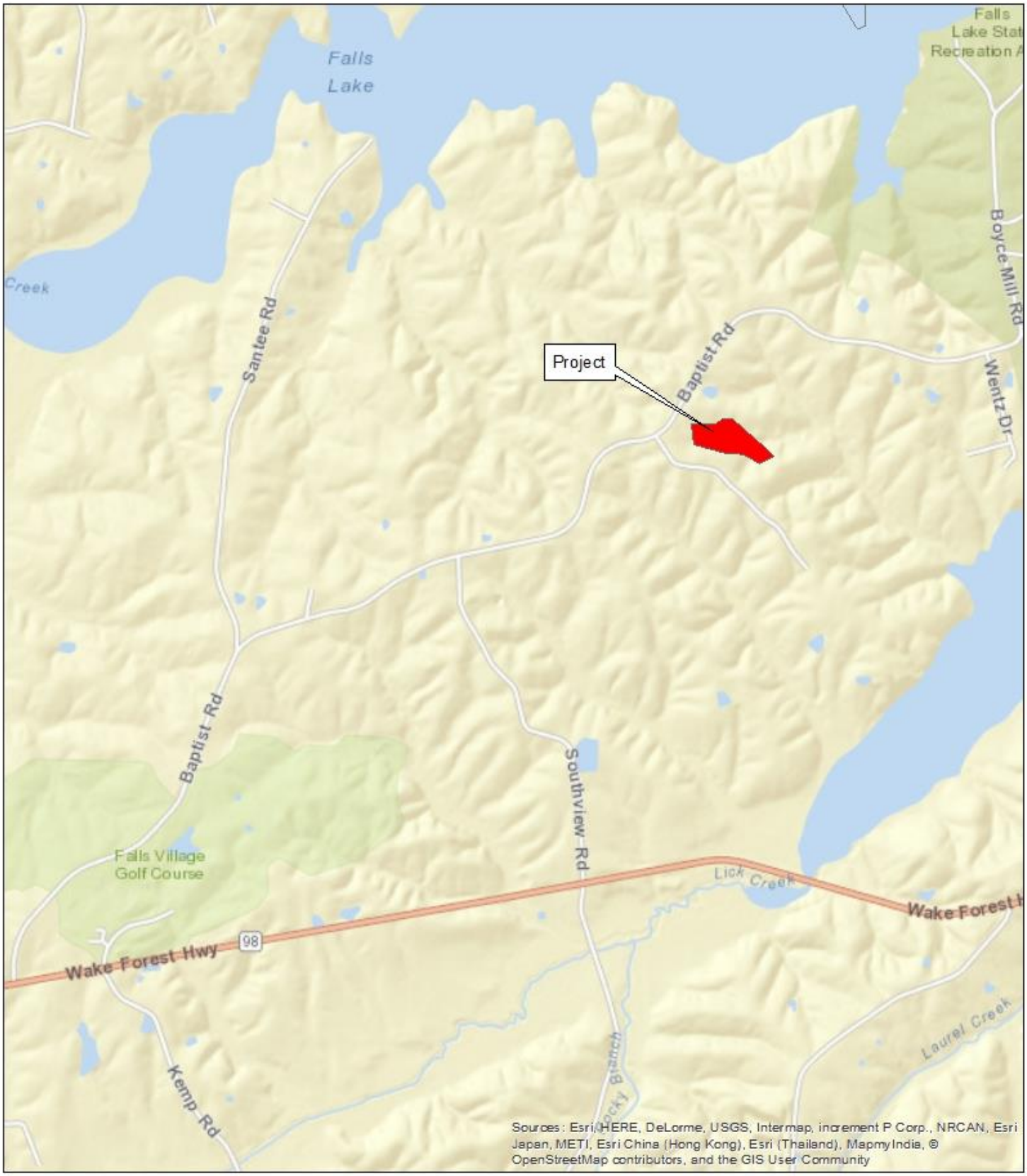
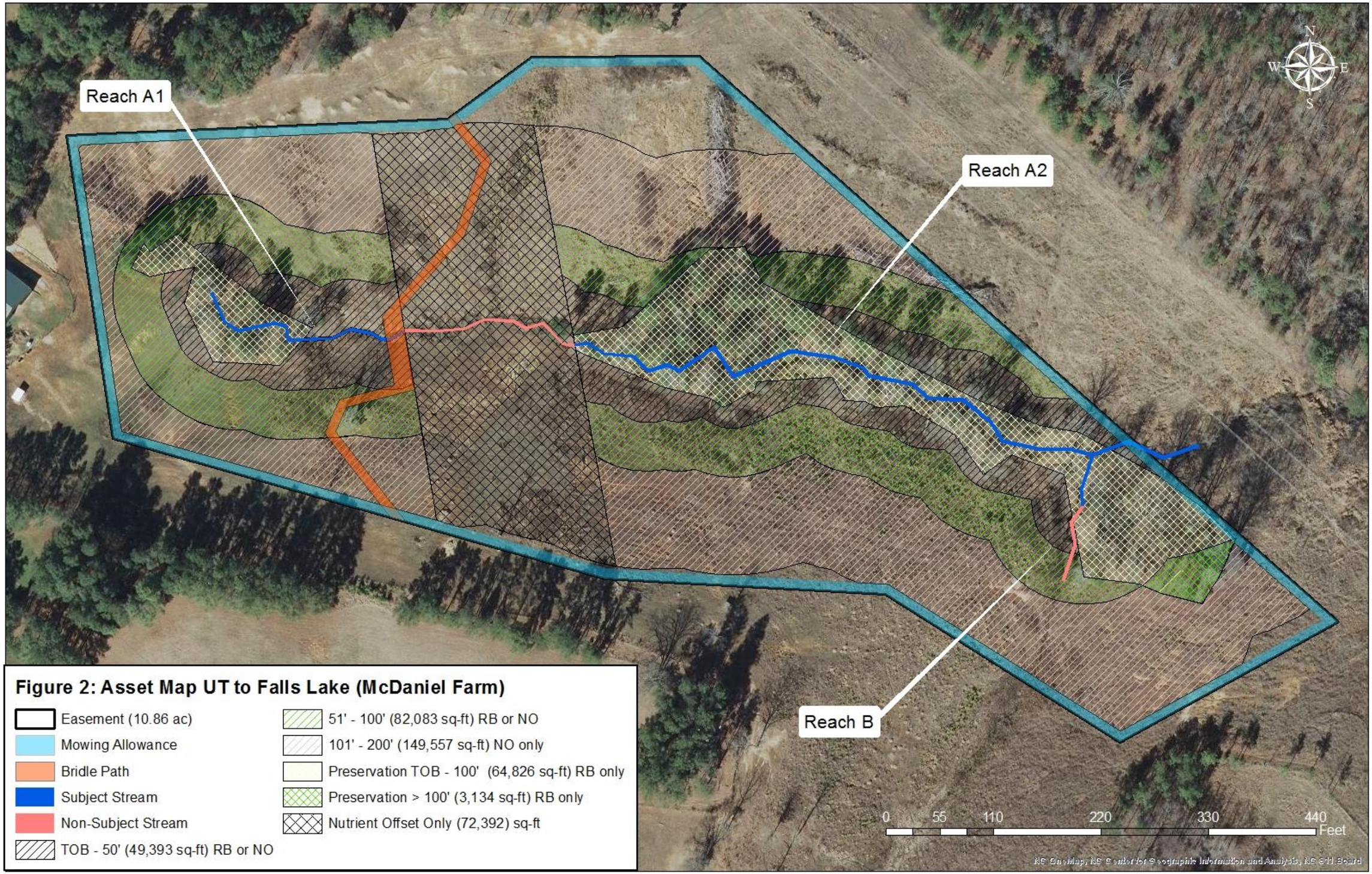
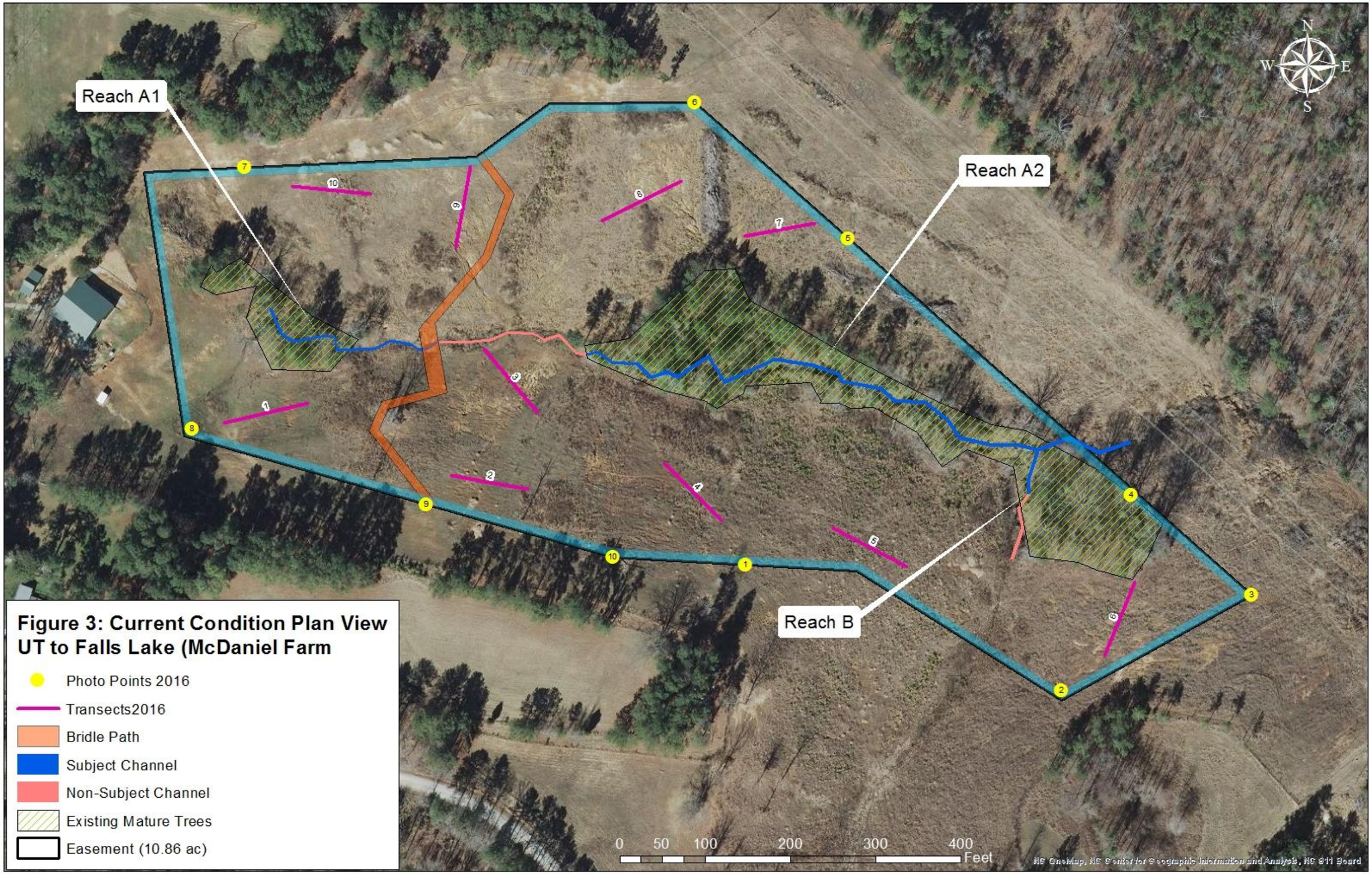


FIGURE 1
Project Location Map
UT TO FALLS LAKE (McDANIEL FARM)
Durham County, NC

0 0.25 0.5 0.75 1 Miles

N W E S


Reach A1
Reach A2
Reach B
N
W
E
S
0
55
110
220
330
440
Feet
Figure 2: Asset Map UT to Falls Lake (McDaniel Farm)
Easement (10.86 ac)
Mowing Allowance
Bridle Path
Subject Stream
Non-Subject Stream
TOB - 50' (49,393 sq-ft) RB or NO
51' - 100' (82,083 sq-ft) RB or NO
101' - 200' (149,557 sq-ft) NO only
Preservation TOB - 100' (64,826 sq-ft) RB only
Preservation > 100' (3,134 sq-ft) RB only
Nutrient Offset Only (72,392) sq-ft


Reach A1
Reach A2
Reach B
N
W
E
S
Figure 3: Current Condition Plan View
UT to Falls Lake (McDaniel Farm
Photo Points 2016
Transects2016
Bridle Path
Subject Channel
Non-Subject Channel
Existing Mature Trees
Easement (10.86 ac)
0 50 100 200 300 400
Feet
NC OneMap, NC Center for Geographic Information and Analysis, NC 911 Board

Site Photos

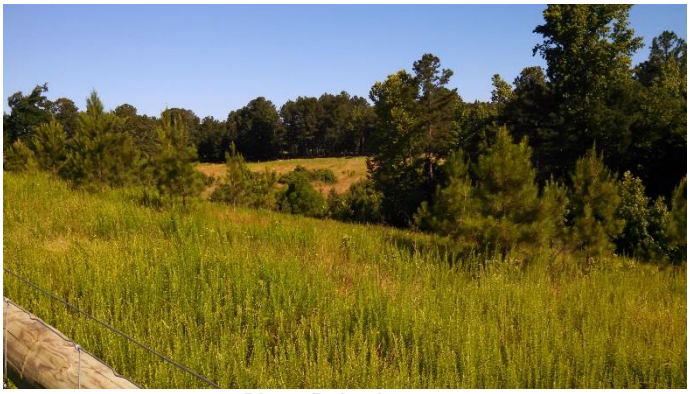


Photo Point 1

Photo Point 2A-NW

Photo Point 2B-NE

Photo Point 3A-SW

Photo Point 3B-NW

Photo Point 4

Photo Pont 5

Photo Point 6

Photo Point 7A-SE

Photo Point 7B-E

Photo Point 8A-NW

Photo Point 8B-SE

Photo Point 9

Photo Point 10

Table 5: Vegetation Condition Assessment
UT to Falls Lake (McDaniel Farm) DMS Project #95389
Planted Acreage **10.86**

Vegetation Category	Definitions	Mapping Threshold	CCPV Depiction	Number of Polygons	Combined Acreage	% of Planted Acreage
1. Bare Areas	Very limited cover of both woody and herbaceous material.	0.1 acres	Pattern and Color	0	0.00	0.0%
2. Low Stem Density Areas	Woody stem densities clearly below target levels based on MY3, 4, or 5 stem count criteria.	0.1 acres	Pattern and Color	0	0.00	0.0%
			Total	0	0.00	0.0%
3. Areas of Poor Growth Rates or Vigor	Areas with woody stems of a size class that are obviously small given the monitoring year.	0.25 acres	Pattern and Color	0	0.00	0.0%
			Cumulative Total	0	0.00	0.0%

Easement Acreage **10.86**

Vegetation Category	Definitions	Mapping Threshold	CCPV Depiction	Number of Polygons	Combined Acreage	% of Easement Acreage
4. Invasive Areas of Concern	Areas or points (if too small to render as polygons at map scale).	1000 SF	Pattern and Color	0	0.00	0.0%
5. Easement Encroachment Areas	Areas or points (if too small to render as polygons at map scale).	none	Pattern and Color	0	0.00	0.0%

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APPENDIX C

VEGETATION PLOT DATA

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BASELINE VEGETATION - AS-BUILT STEM COUNTS

Table 6: Planted Tree Species

UT to Falls Lake (McDaniel Farm) DMS Project #95389

Scientific Name	Common Name	Number Planted	% of Total
Acer rubrum	Red Maple	1,000	17.5%
Fraxinus pennsylvanica	Green Ash	1,000	17.5%
Platanus occidentalis	Sycamore	1,000	17.5%
Betula nigra	River birch	1,000	17.5%
Ulmus americana	American Elm	1,000	17.5%
Hamamelis virginiana	Witch hazel	700	12.3%
Total		**5,700**	**100%**

Table 7: Planted and Total Stems

UT to Falls Lake (McDaniel Farm) DMS Project #95389

			Current Year (MY0 - Baseline)																				Annual Means	
			VT1		VT2		VT3		VT4		VT5		VT6		VT7		VT8		VT9		VT10		MY0 (2016)	
Scientific Name	Common Name	Type	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T	P	T
Acer rubrum	Red Maple	Tree	2	2	2	2	4	4	1	1	3	3	2	2	3	3	4	4	3	3	2	2	3	3
Fraxinus pennsylvanica	Green Ash	Tree			3	3	2	2	4	4	1	1	6	6	3	3	4	4	1	1			3	3
Platanus occidentalis	Sycamore	Tree	2	2	1	1	4	4	3	3	4	4	3	3			1	1	3	3	5	5	3	3
Betula nigra	River birch	Tree	10	10	2	2	1	1	4	4	4	4	2	2	2	2			7	7			4	4
Ulmus americana	American Elm	Tree			4	4	2	2	2	2	3	3	6	6	4	4	6	6	4	4	4	4	4	4
Hamamelis virginiana	Witch hazel	Shrub	1	1	3	3	5	5	7	7	2	2	1	1	2	2	4	4	1	1	2	2	3	3
Pinus taeda	Loblolly pine	Tree				1		4				5		3		5				11				5
Liquidambar styraciflua	Sweet gum	Tree										25		4		5		4						10
	Unknown	Tree														1								1
		Stem count	15	15	15	16	18	22	21	21	17	47	20	27	14	25	19	23	19	30	13	13	19	35
		Plot size (acres)	0.034		0.034		0.034		0.034		0.034		0.034		0.034		0.034		0.034		0.034		0.034	
		Species Count	4	4	6	7	6	7	6	6	6	8	6	8	5	8	5	6	6	7	4	4	6	9
		Stems per ACRE	436	436	436	465	523	639	610	610	494	1,365	581	784	407	726	552	668	552	871	377	377	557	1,002

Type = Tree, Shrub, Livestake

P = Planted

T = Total

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%

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APPENDIX D

AS-BUILT PLAN SHEETS

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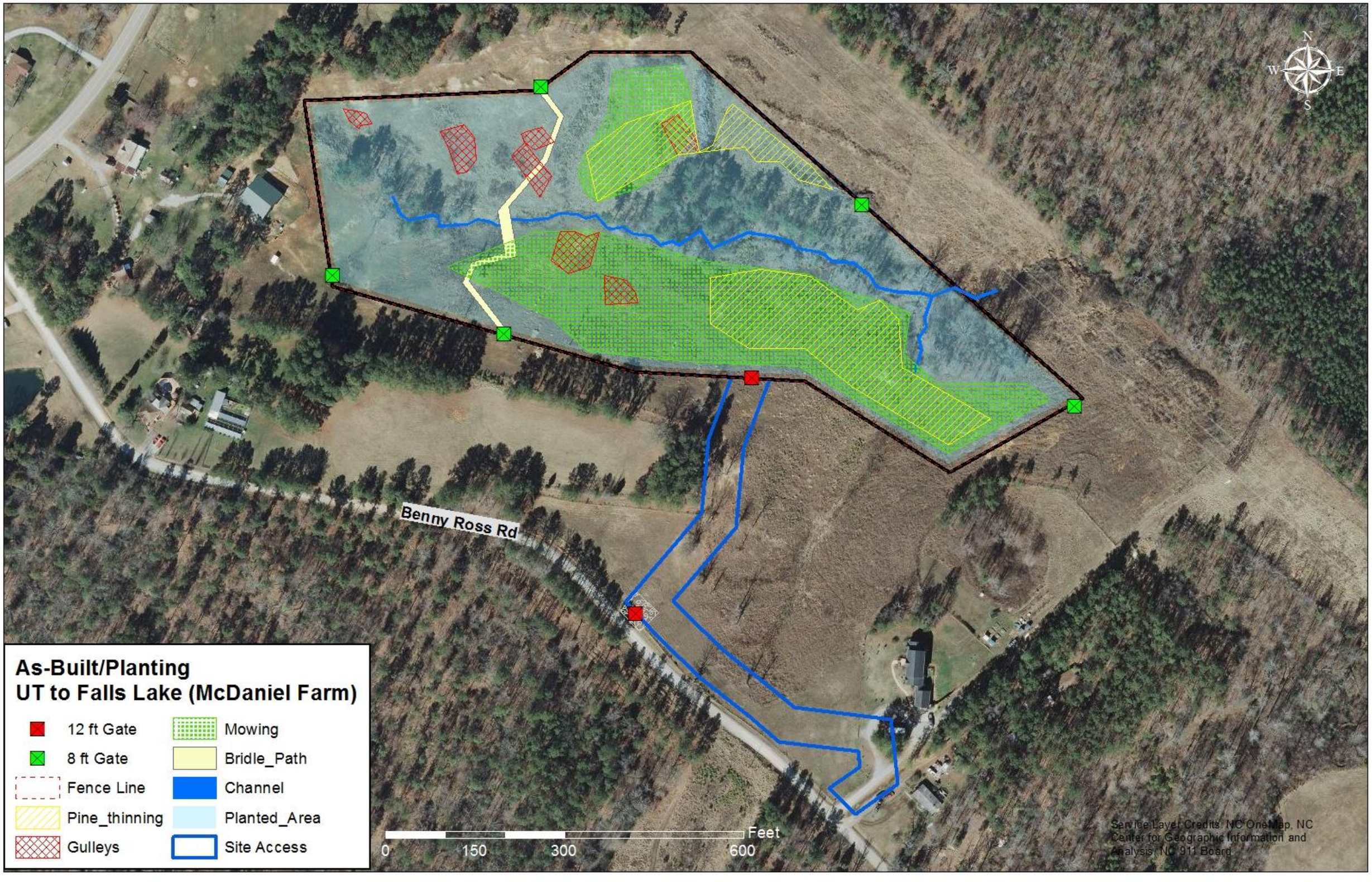
N
W
E
S
Benny Ross Rd
As-Built/Planting
UT to Falls Lake (McDaniel Farm)
12 ft Gate
8 ft Gate
Fence Line
Pine_thinning
Gulleys
Mowing
Bridle_Path
Channel
Planted_Area
Site Access
0
150
300
600
Feet
Service Layer Credits: NC OneMap, NC Center for Geographic Information and Analysis, NC 911 Board

APPENDIX E

DWR CORRESPONDENCE

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North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

September 4, 2015

DWR Project # 2015-0634
Durham County

Division of Mitigation Services
Attn: Jeff Schaffer
1652 Mail Service Center
Raleigh, NC 27699-1652
(via electronic mail)

Re: **Approval of NC DMS UT to Falls Lake (McDaniel Farm) Riparian Buffer and Nutrient Offset Mitigation Plan (DMS #95389)**
Durham County

Dear Mr. Schaffer,

On June 30, 2015, the Division of Water Resources (DWR) received the UT to Falls Lake (McDaniel Farm) Riparian Buffer and Nutrient Offset Mitigation Plan from the North Carolina Division of Mitigation Services (NCDMS) for review and approval for riparian buffer mitigation and nutrient offset. The plan was prepared by NCDMS. This site is located in Durham off Benny Ross Road in Durham County, North Carolina and is located within the 8-digit Hydrologic Unit Code (HUC) 03020201 of the Upper Falls Lake Watershed within the Neuse River Basin. Staff from DWR issued a site viability letter on July 19, 2012 as well as a buffer determination letter on August 8, 2012.

On August 3, 2015, Katie Merritt, with DWR, requested additional information as part of the review of the subject mitigation plan. The comments and recommendations provided to NCDMS were incorporated into the mitigation plan and submitted back to Ms. Merritt on August 31, 2015 for a final review. Based on the information above, DWR hereby approves the subject mitigation plan. NCDMS needs to obtain any and all applicable federal, state, and local documentation, permits, or authorizations needed to construct and maintain the mitigation area. The approval of mitigation plans by the DWR does not qualify as, or substitute for, such documentation, permit or authorization.

Riparian Buffer mitigation generated at this site may be provided for buffer impacts within the Neuse River Basin according to 15A NCAC 02B .0295 (effective October 24, 2014). Nutrient Offsets generated at the site may be provided for impacts in the Upper or Lower Falls Lake Watershed according to 15A NCAC 02B .0240 and 15A NCAC 02B .0282.

401 and Buffer Permitting Unit
1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-807-6494
Internet: www.ncwaterquality.org

Upon completion of the UT to Falls Lake/McDaniel Farm mitigation project, please submit an as-built report to DWR for review and approval. For any questions regarding this correspondence, please contact Katie Merritt at (919) 807-6371 or katie.merritt@ncdenr.gov.

Sincerely,

Karen Higgins

Karen Higgins, Supervisor
401 and Buffer Permitting Unit

KAH/*km*

Cc: File Copy (Katie Merritt)

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Water Quality
Charles Wakild, P.E.
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

July 19, 2012

Ms. Jessica Kemp
N.C. Ecosystem Enhancement Program
1652 Mail Service Center
Raleigh, NC 27699–1652

Re: Site Viability for Mitigation - McDaniel Farm
Durham County

Dear Jessica,

Lauren Witherspoon and Katie Merritt from the Division of Water Quality (DWQ) were asked by NCEEP to visit the above-referenced site on June 25, 2012. The focus of our review was to determine the site's potential for nutrient offset and Neuse riparian buffer restoration. Ms. Witherspoon performed a stream determination and will submit a separate letter to NCEEP showing all streams onsite that are subject to the Neuse River Buffer Rules. If approved, mitigating this site could provide both riparian buffer credits and nutrient offset credits within the 8-digit Hydrologic Unit Code (HUC) 03020201 of the Falls Watershed in the Neuse River Basin.

The site appeared to be a good candidate for planting Neuse riparian buffers (0-50 feet from the top of bank) for riparian buffer credits or nutrient offset credits. Additionally, there were other riparian areas (0-200 feet from top of bank) that were good candidates for nutrient offset only.

Please provide a mitigation plan detailing the buffer and nutrient offset restoration for review and approval prior to initiating the project. Once the project is complete, you must provide an as-built report showing the total of Neuse riparian buffer and nutrient offset credits that were generated. Please provide riparian buffer credits generated in both acres and square feet. Please provide nutrient offset credits generated in acres and pounds. Monitoring reports shall follow the as-built reports to provide DWQ a means of tracking the project's restoration success for a period of at least five years.

DWQ appreciates the opportunity to participate in up-front evaluations of potential buffer and nutrient offset projects.

Wetlands, Buffers, Stormwater Compliance & Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: Archdale Bldg., 9th Floor, 512 N. Salisbury St, Raleigh, NC 27604
Phone: 919-807-6300 \ FAX: 919-807-6494
Internet: http://portal.ncdenr.org/web/wq/swp/ws/webscape

We look forward to future participation with your program in our joint efforts to produce quality restoration sites that will help improve water quality.

Please feel free to contact Ms. Merritt at (919) 807-6371 if you have any questions.

Sincerely,

Karen Higgins

Karen Higgins
Wetlands, Buffers, Stormwater Compliance &
Permitting Unit

Cc: File Copy (Katie Merritt)
Lauren Witherspoon - RRO

NCDENR

North Carolina Department of Environment and Natural Resources
Division of Water Quality

Beverly Eaves Perdue
Governor

Charles Wakild PE
Director

Dee Freeman
Secretary

August 8, 2012

RECEIVED
AUG – 9 2012
NC ECOSYSTEM
ENHANCEMENT PROGRAM

Ruth McDaniel
277 Benny Ross Road
Durham, Nc 27703

NBRRO#12-156
Durham County

Determination Type:	
Buffer Call	Isolated or EIP Call
☒ Neuse (15A NCAC 2B .0233) ☐ Tar-Pamlico (15A NCAC 2B .0259) ☐ Jordan (15A NCAC 2B .0267)	☐ Ephemeral/Intermittent/Perennial Determination ☐ Isolated Wetland Determination

Project Name: McDaniel Farm

Location/Directions: East of the intersection of Benny Ross Road and Baptist Road in Durham

Subject Stream: UT to Falls Lake

Date of Determination: 6/25/2012

Feature	Not Subject	Subject	Start@	Stop@	Soil Survey	USGS Topo
A1		X	Start A1 – headcut	Stop A1 – rock outcrop	X	
A2		X	Start A2		X	
B		X	Start B		X	
C	X				X	

**E/I/P = Ephemeral/Intermittent/Perennial*

Explanation: The feature(s) listed above has or have been located on the Soil Survey of Durham, County, North Carolina or the most recent copy of the USGS Topographic map at a 1:24,000 scale. Each feature that is checked "Not Subject" has been determined not to be a stream or is not present on the property. Features that are checked "Subject" have been located on the property and possess characteristics that qualify it to be a stream. There may be other streams located on your property that do not show up on the maps referenced above but, still may be considered jurisdictional according to the US Army Corps of Engineers and/or to the Division of Water Quality.

This on-site determination shall expire five (5) years from the date of this letter. Landowners or affected parties that dispute a determination made by the DWQ or Delegated Local Authority may request a determination by the.

NorthCarolina *Naturally*

North Carolina Division of Water Quality
Internet: www.ncwaterquality.org

Raleigh Regional Office
1628 Mail Service Center

Surface Water Protection
Raleigh, NC 27699-1628

Phone (919) 791-4200
FAX (919) 571-4718

Customer Service
1-877-623-6748

Director. An appeal request must be made within sixty (60) days of date of this letter or from the date the affected party (including downstream and/or adjacent owners) is notified of this letter.
A request for a determination by the Director shall be referred to the Director in writing c/o Karen Higgins, DWQ WeBSCaPe Unit, 1650 Mail Service Center, Raleigh, NC 27699.

If you dispute the Director's determination you may file a petition for an administrative hearing. You must file the petition with the Office of Administrative Hearings within sixty (60) days of the receipt of this notice of decision. A petition is considered filed when it is received in the Office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00 am and 5:00 pm, except for official state holidays. To request a hearing, send the original and one (1) copy of the petition to the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. The petition may also be faxed to the attention of the Office of Administrative Hearings at (919) 733-3478, provided the original and one (1) copy of the document is received by the Office of Administrative Hearings within five (5) days following the date of the fax transmission. A copy of the petition must also be served to the Department of Natural Resources, General Counsel, 1601 Mail Service Center, Raleigh, NC 27699-1601.

This determination is final and binding unless, as detailed above, you ask for a hearing or appeal within sixty (60) days.

The owner/future owners should notify the Division of Water Quality (including any other Local, State, and Federal Agencies) of this decision concerning any future correspondences regarding the subject property (stated above). This project may require a Section 404/401 Permit for the proposed activity. Any inquiries should be directed to the Division of Water Quality (Central Office) at (919)-733-1786, and the US Army Corp of Engineers (Raleigh Regulatory Field Office) at (919)-554-4884.

Respectfully,

Lauren Witherspoon
Environmental Senior Specialist

cc: WeBSCaPe – 1650 Mail Service Center
RRO/SWP File Copy
Eddie Culberson – Durham Soil and Water, 721 Foster Street, Durham, NC 27701
Jessica Kemp – NCEEP, 1652 Mail Service Center, Raleigh, NC 27699-1652

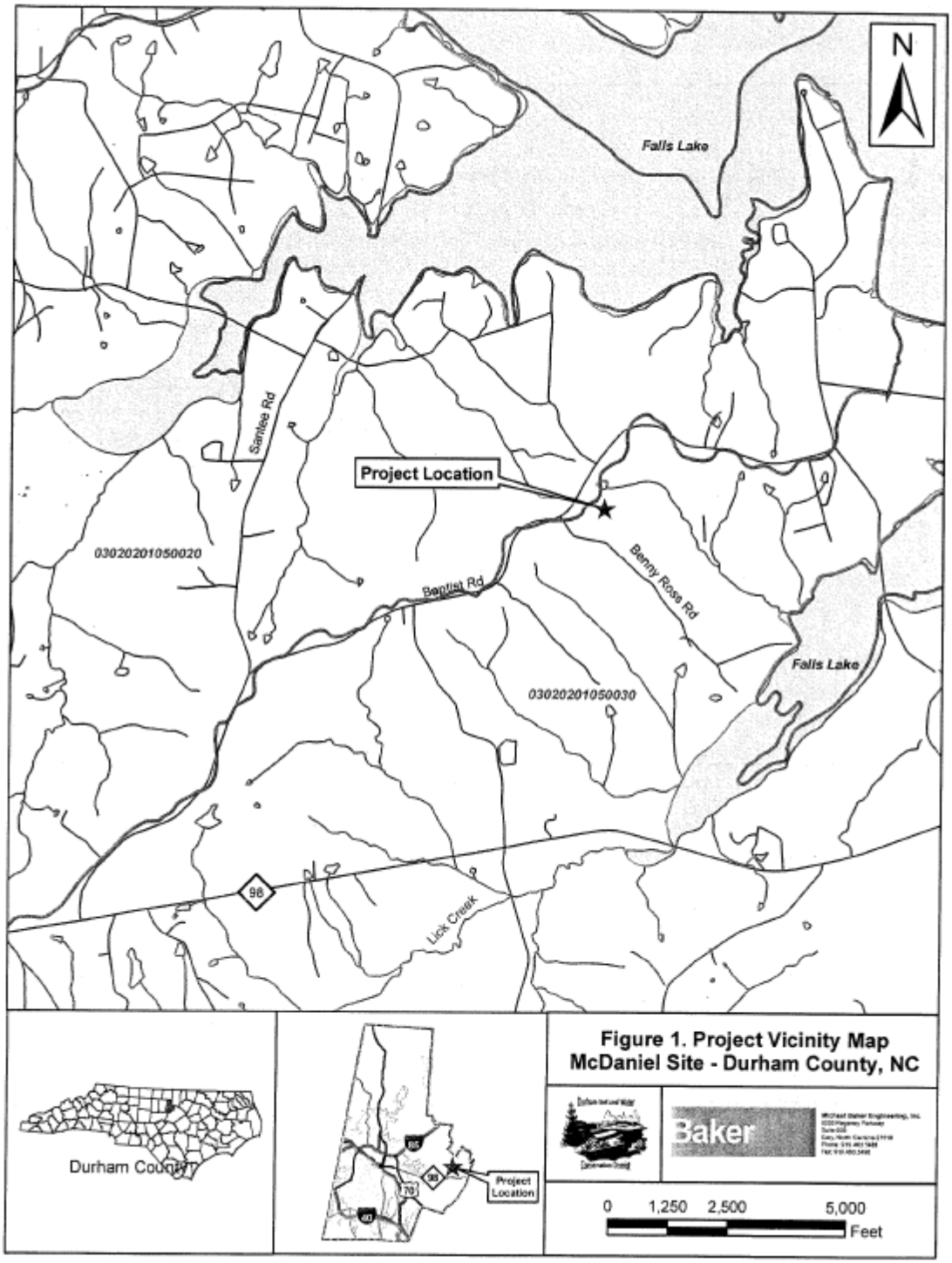
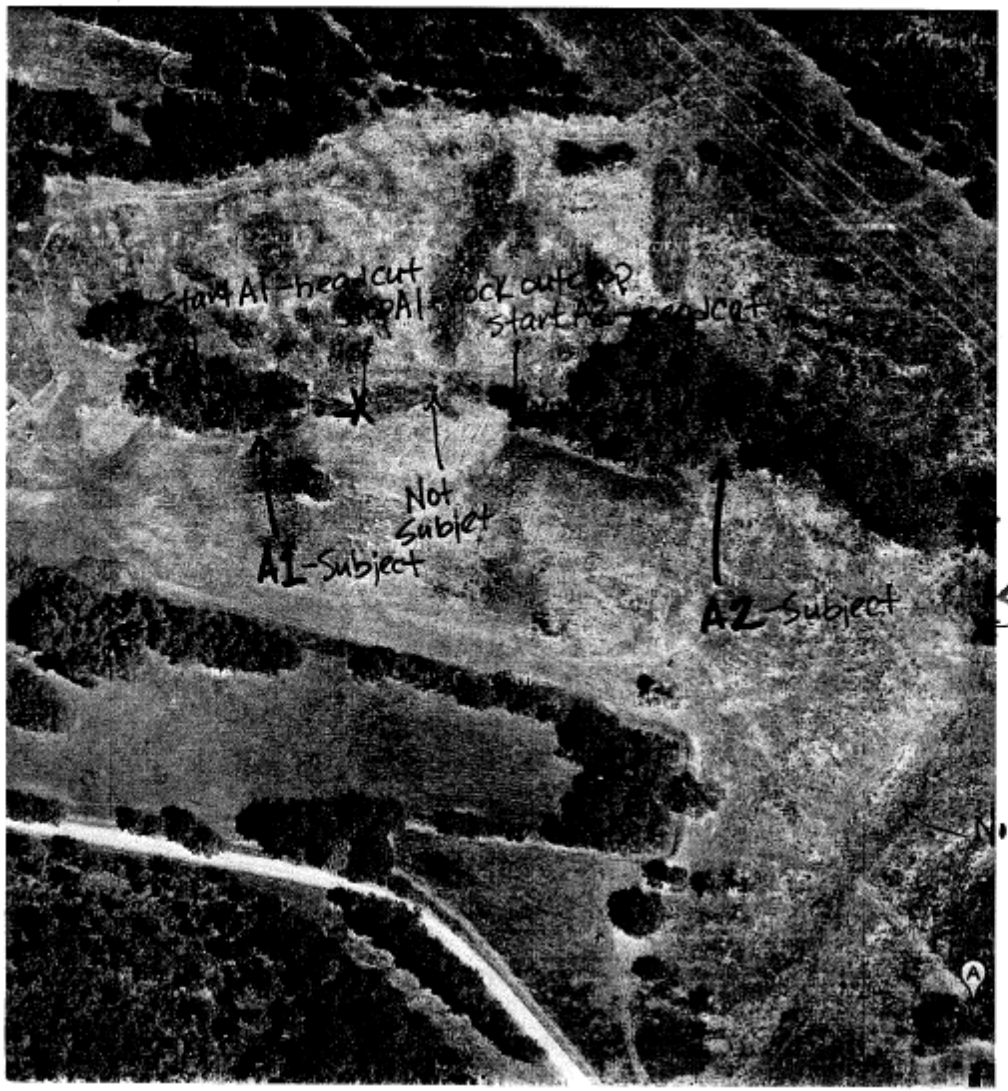
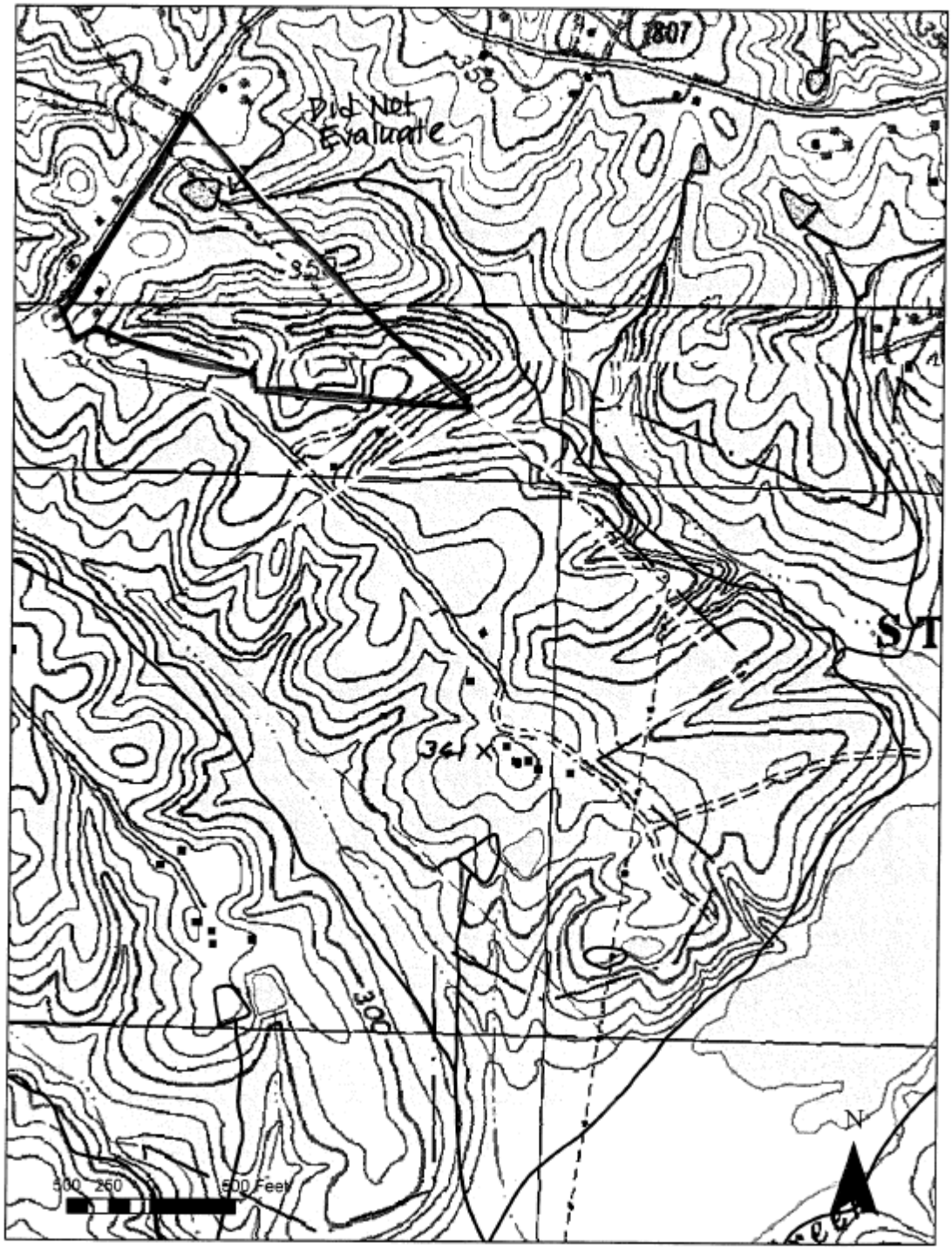


Figure 1. Project Vicinity Map
McDaniel Site - Durham County, NC


Start A1-headcut
Not Subject
A1-Subject
A2-Subject
B-Subject
Start B-headcut
Not Subject

McDaniel Farm - Property & 1:24,000 USGS



NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 6/25/12	Project/Site: A1	Latitude:
Evaluator: LCW	County: Durham	Longitude:
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 21.5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other *e.g. Quad Name:*

A. Geomorphology (Subtotal = 15.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

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

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

C. Biology (Subtotal = 4)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

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

Notes:

Sketch:

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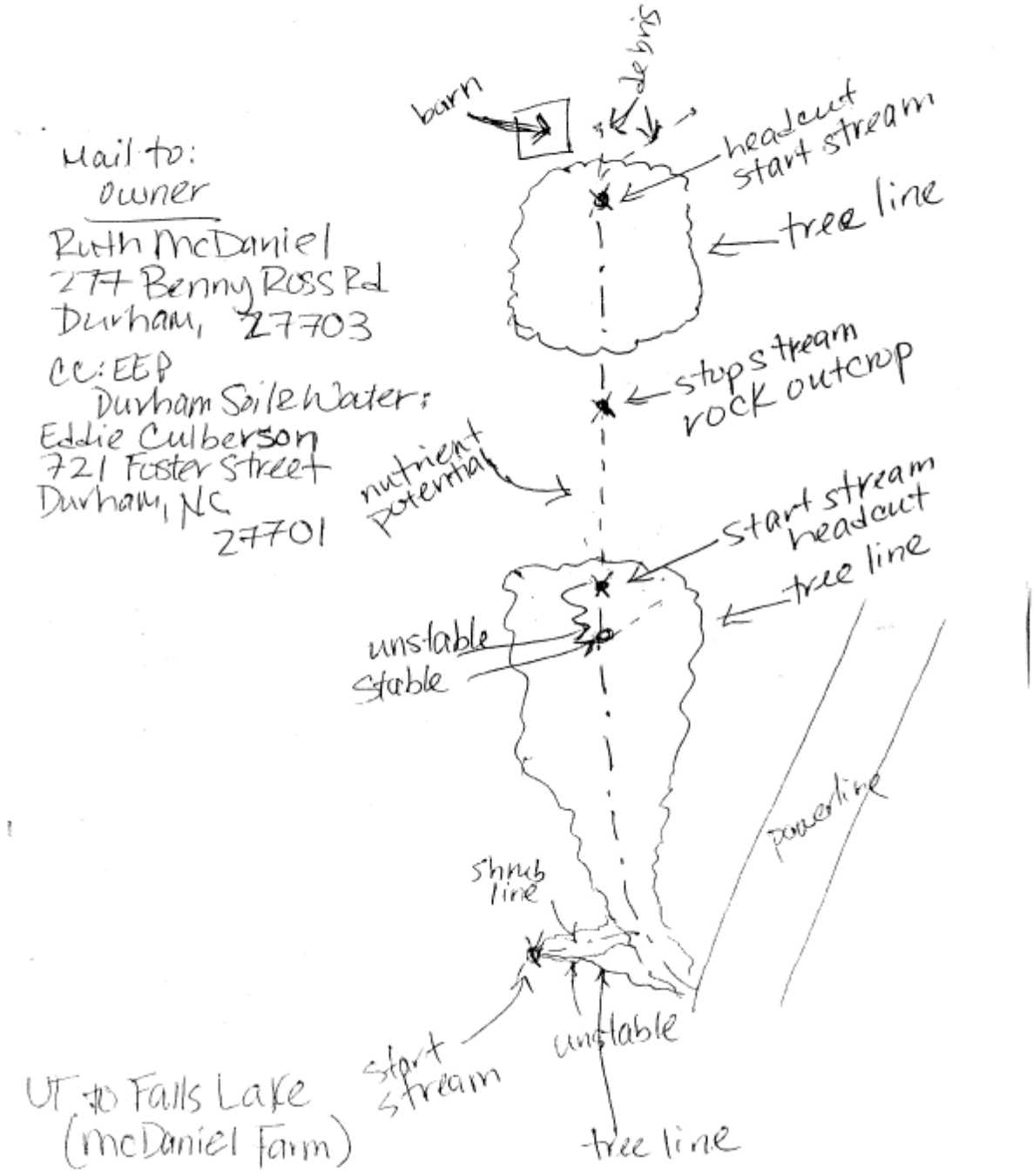
FALLS RESERVOIR
WAKE COUNTY
NEUSE RIVER
A2-Subject
C-Not Subject
Subject-A1
B-Subject
LCW 6/25/12
NBRRD 12-156


Mail to:
Owner
Ruth McDaniel
277 Benny Ross Rd
Durham, 27703
CC: EEP
Durham Soil & Water:
Eddie Culberson
721 Foster Street
Durham, NC
27701
barn
stop gap
headcut
start stream
tree line
stops stream
rock outcrop
nutrient
potential
start stream
headcut
tree line
unstable
stable
powerline
shrub
line
start
stream
unstable
tree line
UT to Falls Lake
(McDaniel Farm)