

MERGER TEAM MEETING – CONCURRENCE POINT 2A **BRIDGING DECISIONS AND ALIGNMENT REVIEW**

NC 73 IMPROVEMENTS – NC 16 TO NORTHCROSS DRIVE (SR 2316) LINCOLN AND MECKLENBURG COUNTIES STIP PROJECT NOS. R-5721 and U-5765

MARCH 22, 2018

PURPOSE OF THIS MEETING

The purpose of today's meeting is to provide the Merger team with a project update and to discuss bridging locations and preliminary alignment. Concurrence will be requested on bridging decisions and alignment review for Concurrence Point 2A (CP 2A).

PROJECT DESCRIPTION

North Carolina State Transportation Improvement Program (STIP) Project Nos. R-5721 and U-5765 consist of widening NC 73 from NC 16 to Northcross Drive (SR 2316), a distance of approximately 8.5 miles. These projects are included in the 2018-2027 STIP. The limits for each project are described as follows and are shown on Figure 1:

- R-5710 – Improve the intersection of NC 73 and NC 16 Business, Lincoln County. ****Deleted at the December 2017 Board of Transportation meeting. Improvements to be included under R-5721.****
- R-5721 – Widen NC 73 to multi-lanes from NC 16 to West Catawba Avenue (SR 5544), Lincoln and Mecklenburg Counties
- U-5765 – Widen NC 73 from West Catawba Avenue to Northcross Drive, Mecklenburg County

PROJECT SCHEDULE/COST

The right of way acquisition and construction schedule for the project in the 2018-2027 STIP is currently:

Begin Right of Way Acquisition: Fiscal Year (FY) 2020
Begin Construction: FY 2022

Estimated costs are described in Table 1.

Table 1: Cost Estimates (STIP)

	R-5721	U-5765
ROW	\$75,180,000	\$3,900,000
Utilities	\$7,100,000	\$500,000
Construction	\$70,350,000	\$7,000,000
Total Cost	\$152,630,000	\$11,400,000
Grand Total	\$164,030,000	

PROJECT PURPOSE & STUDY AREA

Formal concurrence on the purpose of the project (CP 1) was reached at a NEPA/404 Merger Team meeting held on August 9, 2017. Team members agreed on the following purpose statement for the project: *The purpose of the proposed project is to increase the traffic carrying capacity of NC 73 within the study area to operate at an acceptable level of service (LOS D or better) through the design year 2040 and preserve long-term mobility of the corridor. A secondary purpose is to safely accommodate multi-modal uses of the corridor.*

Since the CP 1 meeting, the study area was expanded to account for all intersecting roads that were included in the traffic forecast. It was also expanded in the vicinity of Duke Energy transmission towers on the west side of the Catawba River to allow for required fill slopes in this area. See Figures 2 and 3.1-3.3 for study area expansion.

ALTERNATIVES FOR DETAILED STUDY

Formal concurrence on the alternatives for detailed study (CP 2) was reached at a NEPA/404 Merger Team meeting held on August 9, 2017. Team members agreed on the study alternatives described below:

- No-Build Alternative
- Alternative 1: Best Fit Widening Along Existing NC 73
- Alternative 2: Best Fit Widening Along Existing NC 73 Realignment

Since the CP 2 meeting, Alternatives 1A, 1B, 1C, and 1D were developed in an effort to avoid or minimize impacts to Duke Energy assets, including transmission towers and a Federal Energy Regulatory Commission (FERC) recreation site. This recreation site is located on the south side of existing NC 73 on the west side of the Catawba River. The variation across the Alternative 1 alignments is located primarily at, and to the west of, the Catawba River.

- Alternative 1A closely follows existing NC 73, passes between transmission towers, crosses a railroad at grade, and extends across the Catawba River south of the existing bridge.
- Alternative 1B realigns NC 73 west of the river, passes between transmission towers, crosses a railroad at grade, and extends across the river adjacent to the existing bridge.

- Alternative 1C was developed to avoid impacts to the FERC recreation site and transmission towers by retaining existing NC 73 for the westbound travel lanes and realigning the eastbound travel lanes farther south of the existing road. It crosses a railroad at grade and includes a longer bridge across the river.
- Alternative 1D was developed as a hybrid of Alternatives 1A and 1B that minimizes impacts to the FERC recreation site as well as streams and wetlands, but requires the relocation of a transmission tower.

See attached Figures 4.1-4.4 for Alternatives 1A, 1B, 1C, and 1D.

At the CP 2 meeting, Alternative 2 was illustrated as a wide corridor that ranged in width between approximately 250 feet and 1,000 feet to allow flexibility in developing a variety of alignments within the corridor (see Figure 3.4). Based on input from the Merger Team, Alternative 2 was split into Alternatives 2A and 2B to include a more shallow realignment option.

- Alternative 2A (yellow) avoids or minimizes impacts to nearby residential development, transmission towers, a gas pipeline, and the stream and wetland system in the center of the study area. It resembles the alignment proposed in the Charlotte Regional Transportation Planning Organization *Comprehensive Transportation Plan* (2017) and updates to the Northwest Huntersville Transportation Plan.
- Alternative 2B (green) provides a shallower realignment that avoids or minimizes impacts to residential development, transmission towers, and a cemetery located on the south side of NC 73 west of Beatties Ford Road. Alternative 2B has less impacts on jurisdictional streams than Alternative 2A, but a greater impact on wetlands.

See Figure 3.2 for the Alternatives 2A and 2B potential impact areas that were presented to the public and Figures 4.5-4.6 for the designs that were subsequently developed.

Based on preliminary analyses, four-lane and six-lane typical sections are being considered to accommodate future traffic volumes in the area. A four-lane divided facility is proposed from NC 16 to West Catawba Avenue and a six-lane divided facility is proposed from West Catawba Avenue to Northcross Drive.

Preliminary requests for multi-modal accommodations include the following (refer to preliminary typical sections in the attached public meeting handout):

- Pedestrian accommodations (crosswalks) across the four legs of the NC 73/NC 16 Business intersection
- 12' multi-use path on one side of NC 73 from NC 16 Business east to Club Drive
- 12' multi-use paths on both sides of NC 73 from Club Drive east to Northcross Drive

The Alternatives are compared in Table 2.

PUBLIC INVOLVEMENT

A Public Meeting for STIP Project Nos. R-5721, U-5765, and I-5715 was held on February 5, 2018 at Meadowlake Church in Huntersville from 4 p.m. to 7 p.m. Approximately 271 people attended. A second Public Meeting for STIP Project Nos. R-5721 and U-5765 was held on February 6, 2018 at East Lincoln Community Center. Approximately 141 people attended. Comments pertained to the following major topics:

- Property impacts to homes, businesses, and other properties
- Access to residential developments
- Spacing and location of U-turn bulbs
- The need to address congestion in the area
- General support, but a few concerns for, the realignment options
- Bicycle/pedestrian accommodations
- Potential noise impacts

The Town of Huntersville held a meeting with the Birkdale neighborhood on March 7, 2018 to provide information and answer questions.

BRIDGING DECISIONS AND ALIGNMENT REVIEW

CP 2A consists of the identification of potential impacts to jurisdictional areas including streams, wetlands, and other surface waters based on the preliminary design. CP 2A also includes a discussion of NCDOT hydraulic requirements and potential bridging locations being proposed at major stream or wetland crossings. Water resources in the study area are part of the Catawba River Basin. Based on a preliminary hydraulic study, eight crossings require structures that are greater than 72 inches wide. All other crossings can be contained in smaller pipes. The structure locations and proposed structure treatments are described in Table 3 and illustrated on Figures 3.1-3.3 and 4.1-4.7. Jurisdictional areas have been surveyed and mapped using GPS. The impact area for streams and wetlands is defined as the slope stakes plus a 25-foot buffer area.

The Merger team's concurrence with the drainage structure recommendations included in this packet is requested.

DR/ws

Table 2. Detailed Study Alternative Comparison

Resource/Affected Environment	Alternative 1				Alternative 2 Combinations							
	Alt 1A	Alt 1B	Alt 1C	Alt 1D	Alt 2A + 1A	Alt 2A + 1B	Alt 2A + 1C	Alt 2A + 1D	Alt 2B + 1A	Alt 2B + 1B	Alt 2B + 1C	Alt 2B + 1D
General Project Information												
Length of Alternative	8.5	8.5	8.6	8.5	8.8	8.8	8.8	8.5	8.7	8.7	8.7	8.5
Cultural Resources												
NRHP (eligible sites, districts, etc.) (#)	Screening Completed, Sites To Be Confirmed											
Archaeology	Archaeological Survey Of Federalized Permit Areas Is Recommended Prior To Construction Activities.											
Human Environment												
Churches/Cemetery (#)*	3	3	3	3	2	2	2	2	3	3	3	3
Schools*	2	2	2	2	1	1	1	1	1	1	1	1
Public Parks	Blythe Landing Community Park											
Greenways, Game Lands, Land and Water Conservation Fund Properties, etc. (#)	3 – Highway 73 Access Area, Cowans Ford Waterfowl Refuge, McDowell Creek Greenway											
High % Special Populations	Language Assistance (Spanish)											
Natural Environment												
Threatened or Endangered Species with a 'No Effect' Biological Conclusion	4 – Dwarf-flowered heartleaf, Michaux's sumac, Schweinitz's sunflower, Smooth coneflower											
Threatened or Endangered Species Requiring Additional Surveys	2 – Northern long-eared bat, Carolina heelsplitter											
Streams (linear feet)	1,560	2,475	2,115	1,995	2,785	3,700	3,340	3,220	2,285	3,200	2,840	2,720
Wetlands (acres)	2.11	4.08	3.46	2.67	2.11	4.08	3.46	2.67	3.03	5.0	4.38	3.59
Critical Water Supply Watersheds	2 – Lake Norman, Mountain Island Lake											
Riparian Buffer Rules	Catawba River Basin											
Identified Critical Habitat/ESA Spp. (# known)	None known											
Physical Environment												
Hazardous Materials (# suspected/ known sites)	Impacts To Be Determined											
Utilities	McGuire Nuclear Station, electric, water, sewer, power transmission corridors and towers, phone											
Voluntary Agricultural District (VAD)	2 – VAD parcels (one operation)											
Noise	Impacts To Be Determined											
Federal Energy Regulatory Commission (FERC) Licensing												
3 – Highway 73 Access Area, Catawba Wateree FERC No. 2232 (Mountain Island Development), Lake Norman												

* Does not indicate relocation – only potential impact.

Table 3. Major Drainage Structures

SITE NUMBER	LOCATION	STREAM/WETLAND INFORMATION		EXISTING STRUCTURE	PROPOSED STRUCTURE (POTENTIAL STREAM IMPACT (LF))				Figure Nos.
		STREAM NAME / NCDWR INDEX # / CLASSIFICATION	NRTR MAP ID	STRUCTURE NO. SIZE, TYPE	Alt 1A Alt 1A + 2A Alt 1A + 2B	Alt 1B Alt 1B + 2A Alt 1B + 2B	Alt 1C Alt 1C + 2A Alt 1C + 2B	Alt 1D Alt 1D + 2A Alt 1D + 2B	
1	0.5 mi. west of Catawba River on NC 73	Catawba River Tributary 6	SDD	2@9' X 8' RCBC	2@9' x 10' RCBC (360)	2@9' x 10' RCBC (1,335)	Retain Existing 2@9' x 8' RCBC and Extend Upstream 2@9' x 10' RCBC (575)	2@9' x 10' RCBC (835)	3.1, 4.1-4.4
2	0.6 mi. east of Caswell Road (SR 1578)	Catawba River	Catawba River	Bridge No. 50 33' x 883'	Dual bridges 45' x 883' (0)	Dual bridges 45' x 883' (0)	Dual bridges 45' x 883' 45' x 1088' (0)	Dual bridges 45' x 883' (0)	3.1, 4.1-4.4
3	0.85 mi. west of I-77/NC 73 interchange	UT to McDowell Creek	SBB	72" diameter pipe	Retain Existing 72" pipe and Extend Upstream (10)				3.3, 4.7
4	0.2 mi. west of Northcross Drive on NC 73	McDowell Creek	McDowell Creek	Culvert #83 3@8' X 9' RCBC	Retain Existing RCBC and Extend Each Side (135)				3.3, 4.7
5	0.1 mi. west of Northcross Drive on NC 73	Caldwell Station Creek	Caldwell Station Creek	Culvert #84 2@10' X 9' RCBC	Retain Existing RCBC and Extend Each Side (345)				3.3, 4.7
6	0.04 mi. north of NC 73 on Northcross Drive	Caldwell Station Creek	Caldwell Station Creek	Culvert #16 2@10' X 8' RCBC	Retain Existing RCBC and Extend Each Side (205)				3.3, 4.7
7	0.2 mi. west of I-77 on NC 73	UT to Caldwell Station Creek	SCC	1@8' X 5' RCBC	Retain Existing RCBC and Extend Upstream (55)				3.3, 4.7
8	New location, 0.4 mi. south of NC 73 west of Beatties Ford Road	UT9 to Catawba River	SJ	N/A	1@10' x 7' RCBC (260) <i>Applies Only to Alternative 2 Realignment 2A Scenarios</i>				3.2, 4.5

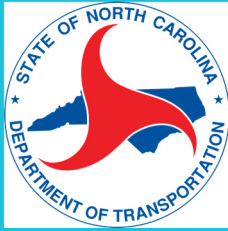
General Notes:

Other impacted streams that do not require a major drainage structure 72" or greater in diameter include: SD, SE, SF, SFF, SG, SI, and SK.

Impacted wetlands across all possible alternative scenarios include: WB, WS, WR, WN, WO, WQ, WL, WK, WI, and WJ.

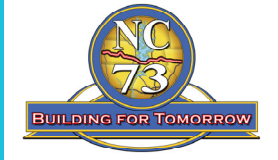
All impacted streams and wetlands are illustrated on Figures 3.1-3.3.

Alternative 2 realignment 2B does not involve crossings that require a major drainage structure.



STIP Project Nos. R-5721 and U-5765

N.C. 73 Improvements From N.C. 16 to Northcross Drive (S.R. 2316)



February 5 and 6, 2018

Project Description

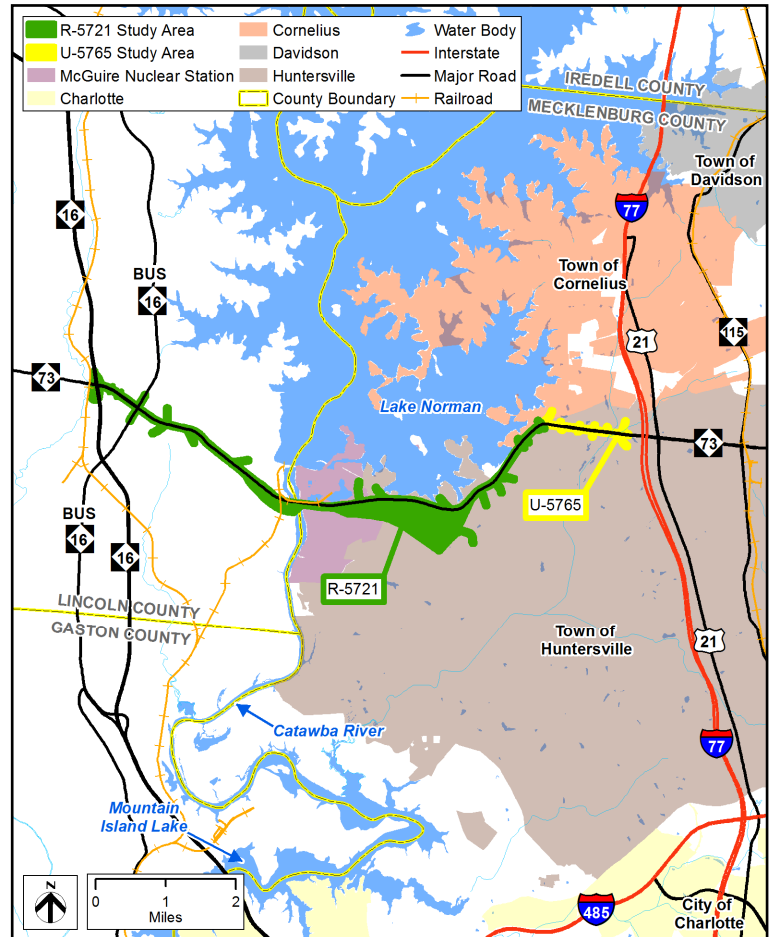
The N.C. Department of Transportation is proposing to improve 8.5 miles of N.C. 73 from N.C. 16 in Lincoln County to Northcross Drive (S.R. 2316) in Mecklenburg County. These improvements are included in the State Transportation Improvement Program (STIP) as two state-funded projects: R-5721 and U-5765. However, they are being studied and documented together in a single environmental document known as an Environmental Assessment (EA).

- ◆ R-5721 - Widen N.C. 73 to multi-lanes from N.C. 16 to West Catawba Avenue.
- ◆ U-5765 - Widen N.C. 73 from West Catawba Avenue to Northcross Drive.

Two alternatives are being developed:

- ◆ Alternative 1: Best-fit widening along existing N.C. 73.
- ◆ Alternative 2: Best-fit widening along existing N.C. 73 with realignment options south of existing N.C. 73.

Based on preliminary analyses, four-lane and six-lane roadway cross-sections are being considered to accommodate future traffic volumes in the area.



Purpose and Need

The purpose of the project is to increase the traffic carrying capacity of N.C. 73 within the study area to operate at an acceptable level of service through the design year 2040. A secondary purpose is to safely accommodate multi-modal uses of the corridor.

N.C. 73 is a regionally important route, being the only Catawba River crossing between N.C. 150 and N.C. 16. Without improvements, by the year 2040 traffic is projected to increase to approximately 23,900-45,500 vehicles per day (vpd) on N.C. 73 between N.C. 16 and West Catawba Avenue (S.R. 5544) and 55,000-60,000 vpd between West Catawba Avenue and Northcross Drive.

Project History

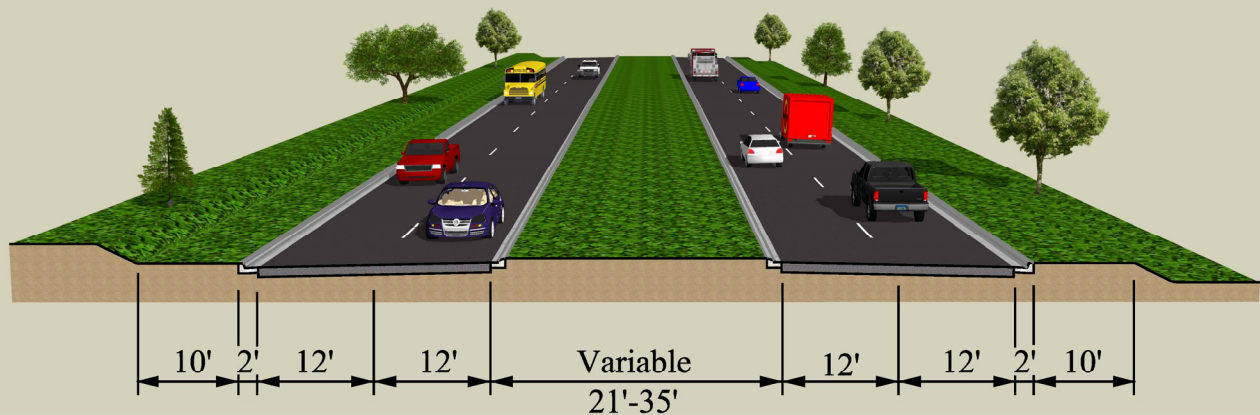
The 2004 *N.C. 73 Transportation/Land Use Corridor Plan* contains transportation recommendations for a 35 mile corridor of N.C. 73, including the segments of N.C. 73 to be improved under STIP Projects R-5271 and U-5765. The Mecklenburg-Union Metropolitan Planning Organization *Thoroughfare Plan* (2004) proposed new roadways and other improvements in Mecklenburg and Union Counties. It was amended in 2011 to include an N.C. 73/future Vance Road Extension. In 2007 the Town of Huntersville adopted the *Beatties Ford Road Small Area Plan*, which proposed new roadways and incorporate the future multi-lane Vance Road Extension that follows a portion of Gilead Road (S.R. 2136) near Beatties Ford Road (S.R. 2196). *Continued on the next page...*

Connecting people, products, and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina.

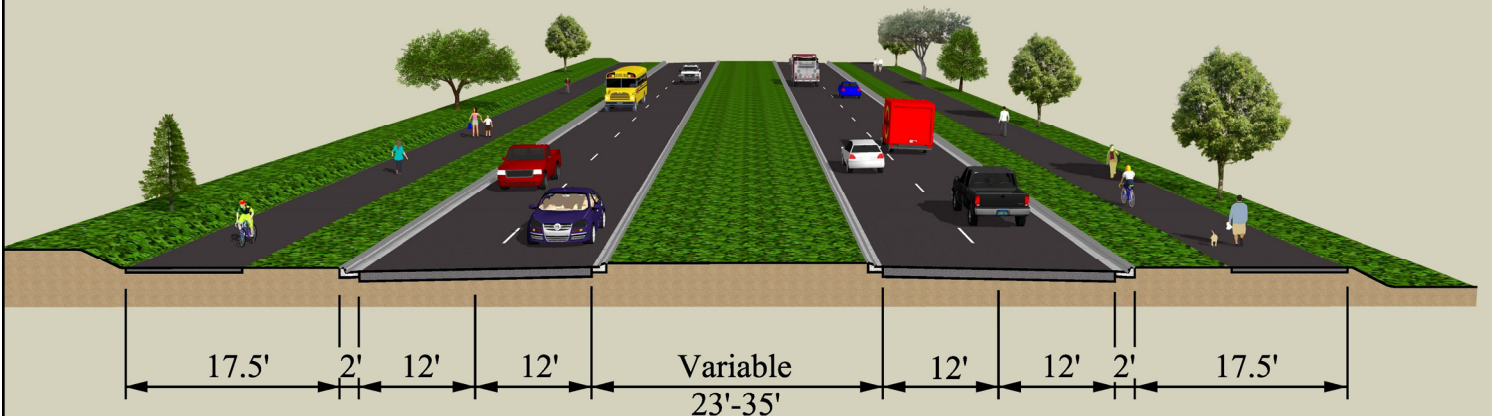
Project History (Continued)

The *Northwest Huntersville Transportation Study* (2011) combines the transportation recommendations contained in the *Beatties Ford Road Small Area Plan* and *Mecklenburg-Union Thoroughfare Plan*, including the realignment of N.C. 73 from the McGuire Nuclear Station east to Beatties Ford Road. This plan is currently being updated and is anticipated to be complete in early 2018. The Charlotte Regional Transportation Planning Organization *Comprehensive Transportation Plan* (2017) also includes the recommendation to realign N.C. 73. Project development studies for the N.C. 73 improvements began in 2016. NCDOT has collected detailed information, conducted informational studies, and met with various stakeholders to help define the project purpose, study area, and alternatives.

Potential Typical Section from N.C. 16 to Club Drive (S.R. 1395)*

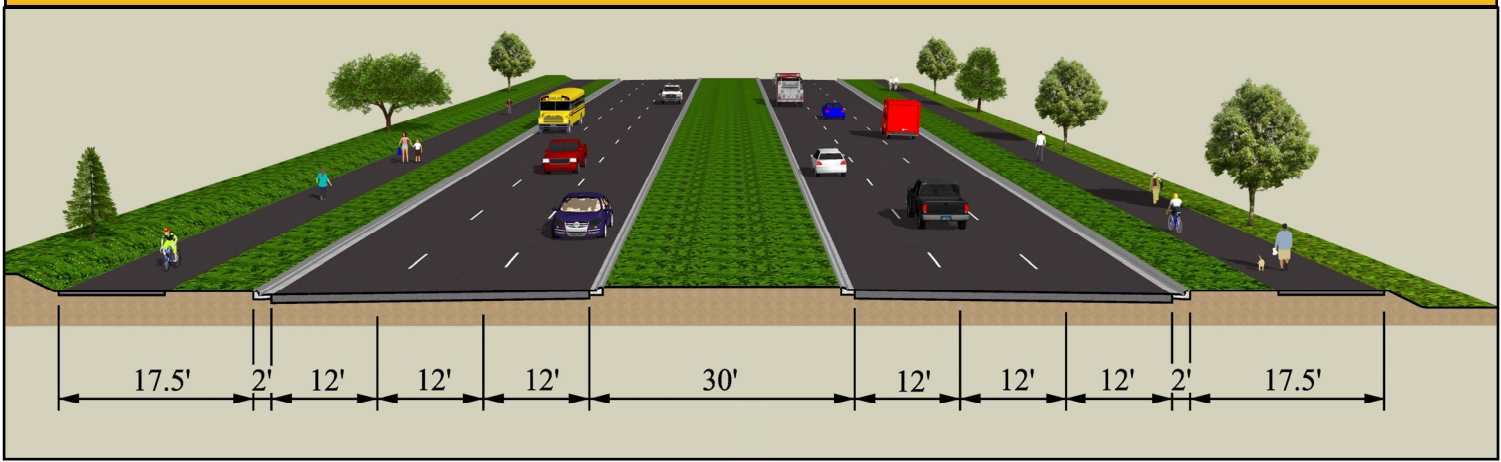


Potential Typical Section from Club Drive to West Catawba Avenue*



***Note:** Typical Sections and Multi-Modal Accommodations Will Be Considered in Coordination with Local Government Agencies and Contingent Upon Cost-Sharing Agreements.

Potential Typical Section from West Catawba Avenue to Northcross Drive*



Intersection Design Concepts

NCDOT is challenged to try modern approaches to relieving congestion and improving safety in developed areas. Congestion on urban and suburban arterials is a consequence of economic development within the state. Traditional intersections can create added congestion resulting in increasing delays in travel time. The superstreet is an innovative option the NCDOT has found beneficial.

Please visit the following link for additional information and benefits of the superstreet:

<https://www.ncdot.gov/download/projects/publichearings/ncdot-superstreetbrochure-2013-01.pdf>

Project Contact Information

Copies of the public meeting maps and project information can be viewed on the NCDOT websites at:

<https://www.ncdot.gov/projects/publicmeetings/>
https://www.publicinput.com/NC_73

If you need additional information or would like to discuss the project further, please contact the following project representative:

Wilson Stroud, CPM
NCDOT Central Project Management
1548 Mail Service Center
Raleigh, N.C. 27699-1548
Phone: (919) 707-6045
Email: wstroud@ncdot.gov

If you have transportation questions on other projects, call our Customer Service Center toll-free at 1-877-DOT-4YOU, or visit the NCDOT website at www.ncdot.gov.

Next Steps

Date*

Develop Design and Perform Environmental Studies	Early 2018
Evaluate Alternatives and Environmental Impacts	Spring 2018
Public Meeting	Spring 2018
Complete the Final Environmental Document	Summer 2018
Begin Right of Way Acquisition	2020
Begin Construction	2022

Estimated Costs (2018-2027 STIP)*

	R-5721	U-5765
Right of Way & Utilities	\$82.3 Million	\$4.4 Million
Construction	\$70.4 Million	\$7.0 Million
Total Cost	\$152.2 Million	\$11.4 Million

* Schedule and funding are subject to change

Interpretive Services

NCDOT will provide interpretive services upon request for persons who do not speak English, or have a limited ability to read, speak, or understand English. Kindly request it by calling 1-800-481-6494.

Aquellas personas que hablan español y no hablan inglés, o tienen limitaciones para leer, hablar o entender inglés, podrían recibir servicios de interpretación si los solicitan llamando al 1-800-481-6494.

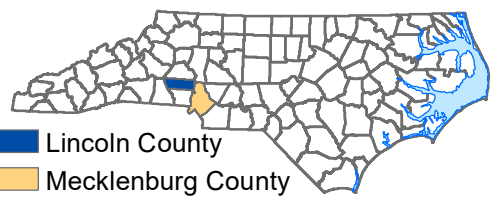
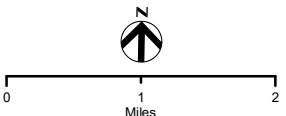
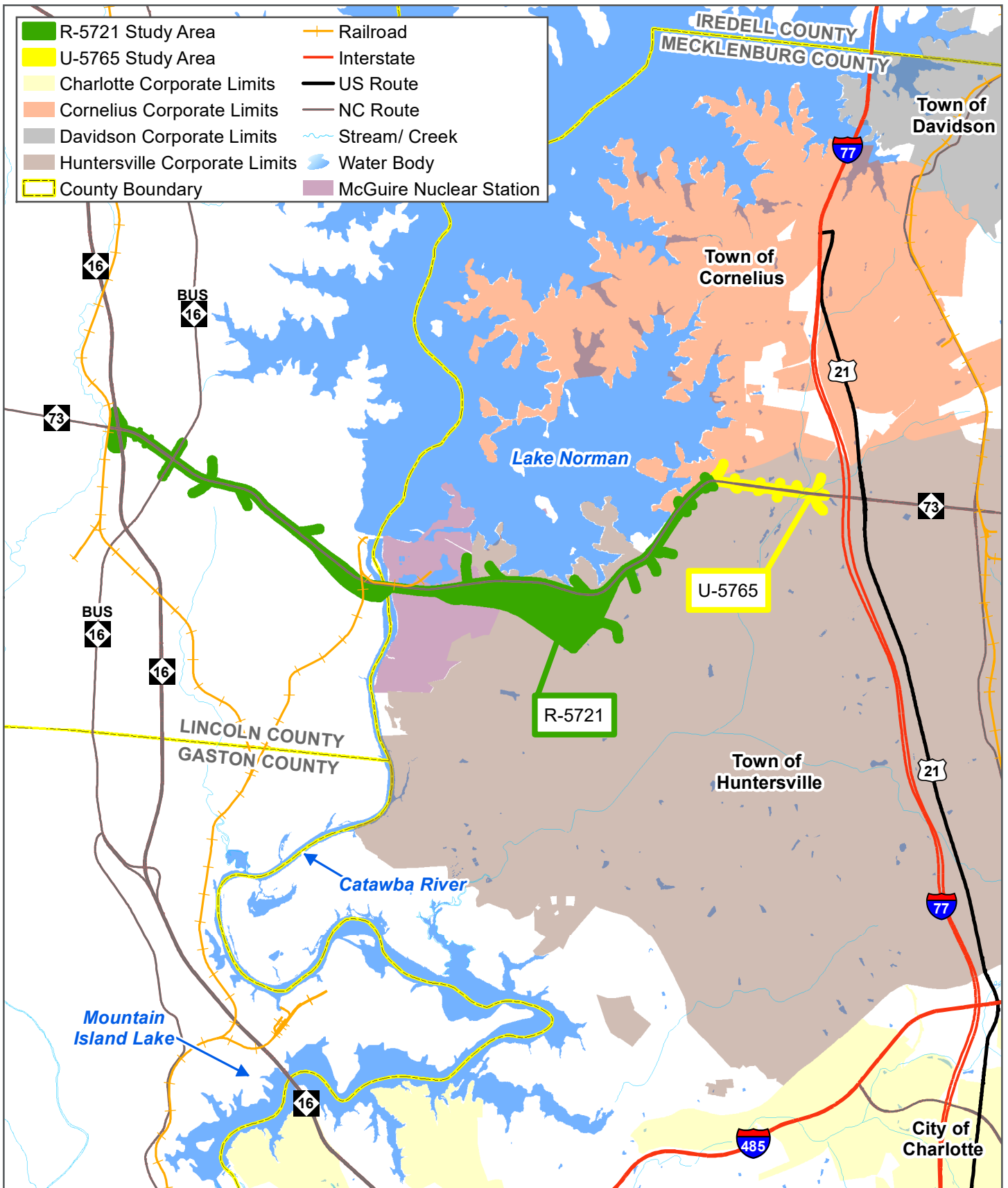
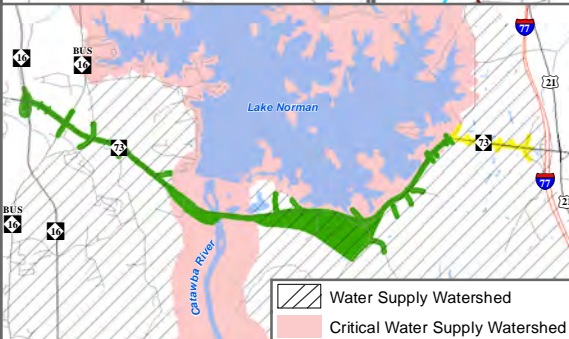
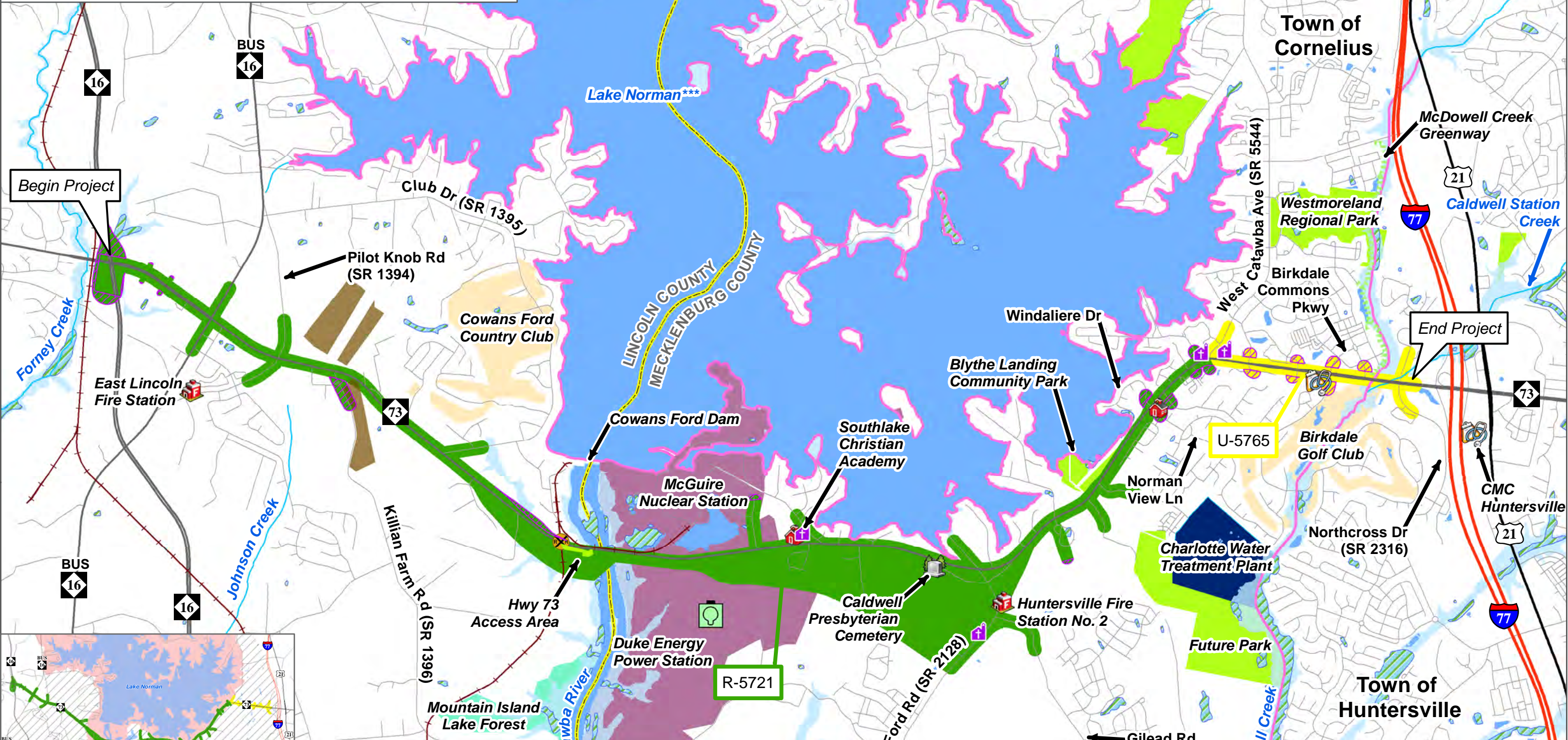


FIGURE 1
PROJECT VICINITY MAP
 R-5721 & U-5765
 LINCOLN AND
 MECKLENBURG COUNTIES



DATA SOURCES: Mecklenburg County, Lincoln County, NC OneMap, NCDOT GIS

MARCH 2018

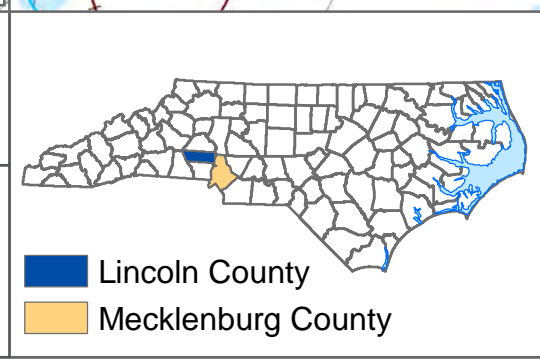


Scale: 0 to 1 Miles

Legend:

- Water Supply Watershed
- Critical Water Supply Watershed

Logos: STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION, HDR

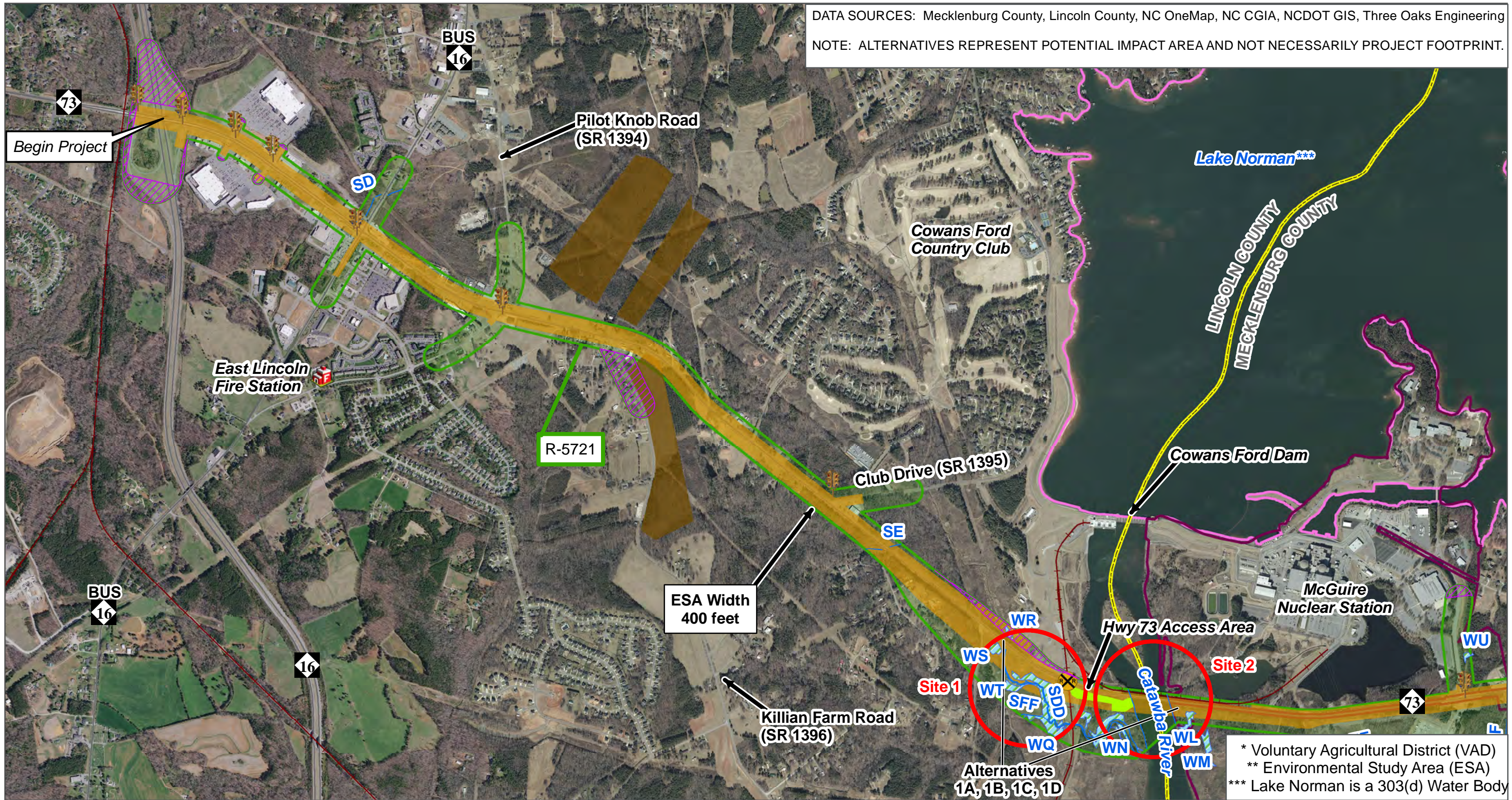


Educational Facility	Rail Crossing	100 Year Floodplain	NWI Wetland
Place of Worship	303(d) Water	Water Body	Study Area Expansion
Fire Station	Stream/ Creek	Natural Heritage Area	R-5721 ESA**
Power Station	Railroad	Park	U-5765 ESA**
Cemetery	Greenway	Golf Course	McGuire Nuclear Station
Medical Facility	VAD*	County Boundary	Water Treatment Facility

* Voluntary Agricultural District (VAD)
 ** Environmental Study Area (ESA)
 *** Lake Norman is a 303(d) Water Body

FIGURE 2
ENVIRONMENTAL STUDY
AREAS AND FEATURES
 R-5721 & U-5765
 LINCOLN & MECKLENBURG
 COUNTIES
 MARCH 2018

DATA SOURCES: Mecklenburg County, Lincoln County, NC OneMap, NC CGIA, NCDOT GIS, Three Oaks Engineering
 NOTE: ALTERNATIVES REPRESENT POTENTIAL IMPACT AREA AND NOT NECESSARILY PROJECT FOOTPRINT.

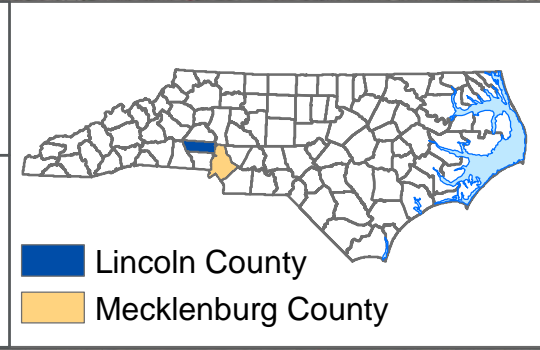


ESA Width
400 feet

Alternatives
1A, 1B, 1C, 1D

* Voluntary Agricultural District (VAD)
 ** Environmental Study Area (ESA)
 *** Lake Norman is a 303(d) Water Body

Scale: 0, 0.25, 0.5 Miles

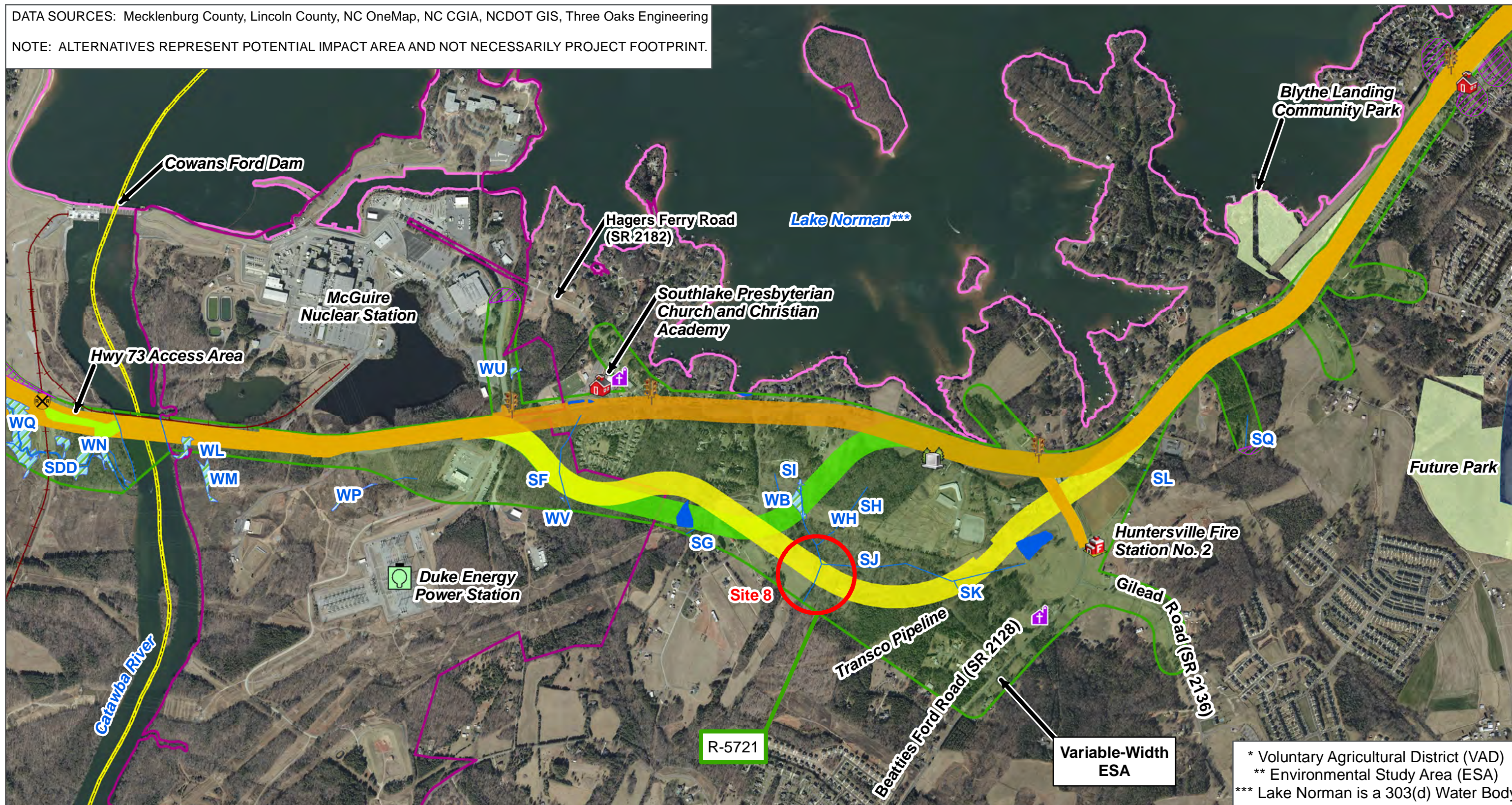


Educational Facility	Traffic Signal	Alternative 1	R-5721 ESA**
Place of Worship	Rail Crossing	Alternative 2A	U-5765 ESA**
Fire Station	303(d) Water	Alternative 2B	Park
Power Station	Stream/ Creek	Jurisdictional Pond	County Boundary
Cemetery	Railroad	Jurisdictional Wetland	McGuire Nuclear Station
Medical Facility	VAD*	Water Treatment	Study Area Expansion

FIGURE 3.1
ENVIRONMENTAL STUDY
AREA AND
PRELIMINARY ALTERNATIVES
 R-5721 & U-5765
 LINCOLN & MECKLENBURG
 COUNTIES
 MARCH 2018

DATA SOURCES: Mecklenburg County, Lincoln County, NC OneMap, NC CGIA, NCDOT GIS, Three Oaks Engineering

NOTE: ALTERNATIVES REPRESENT POTENTIAL IMPACT AREA AND NOT NECESSARILY PROJECT FOOTPRINT.



* Voluntary Agricultural District (VAD)
 ** Environmental Study Area (ESA)
 *** Lake Norman is a 303(d) Water Body

Scale: 0 to 0.5 Miles

Lincoln County
 Mecklenburg County

Educational Facility	Traffic Signal	Alternative 1	R-5721 ESA**
Place of Worship	Rail Crossing	Alternative 2A	U-5765 ESA**
Fire Station	303(d) Water	Alternative 2B	Park
Power Station	Stream/ Creek	Jurisdictional Pond	County Boundary
Cemetery	Railroad	Jurisdictional Wetland	McGuire Nuclear Station
Medical Facility	VAD*	Water Treatment	Study Area Expansion

FIGURE 3.2
ENVIRONMENTAL STUDY
AREA AND
PRELIMINARY ALTERNATIVES
 R-5721 & U-5765
 LINCOLN & MECKLENBURG
 COUNTIES
 MARCH 2018

DATA SOURCES: Mecklenburg County, Lincoln County, NC OneMap, NC CGIA, NCDOT GIS, Three Oaks Engineering

NOTE: ALTERNATIVES REPRESENT POTENTIAL IMPACT AREA AND NOT NECESSARILY PROJECT FOOTPRINT.



** Environmental Study Area (ESA)
 *** Lake Norman is a 303(d) Water Body

FIGURE 3.3
ENVIRONMENTAL STUDY
AREA AND
PRELIMINARY ALTERNATIVES
 R-5721 & U-5765
 LINCOLN & MECKLENBURG
 COUNTIES
 MARCH 2018

Scale: 0 to 0.5 Miles

Lincoln County
 Mecklenburg County

Educational Facility	Traffic Signal	Alternative 1	R-5721 ESA**
Place of Worship	Rail Crossing	Alternative 2A	U-5765 ESA**
Fire Station	303(d) Water	Alternative 2B	Park
Power Station	Stream/ Creek	Jurisdictional Pond	County Boundary
Cemetery	Railroad	Jurisdictional Wetland	McGuire Nuclear Station
Medical Facility	Greenway	Water Treatment	Study Area Expansion

U-5765

ESA Width 400 feet

McDowell Creek Greenway

West Catawba Avenue (SR 5544)

Kenton Drive

Birkdale Commons Parkway

Lindholm Drive

Winaliere Drive

Site 3 SBB

Site 4 WK

Site 5

Site 6 WJ

Site 7 SCB

End Project

Northcross Drive (SR 2316)

McDowell Creek

Birkdale Golf Club

Caldwell Station Creek

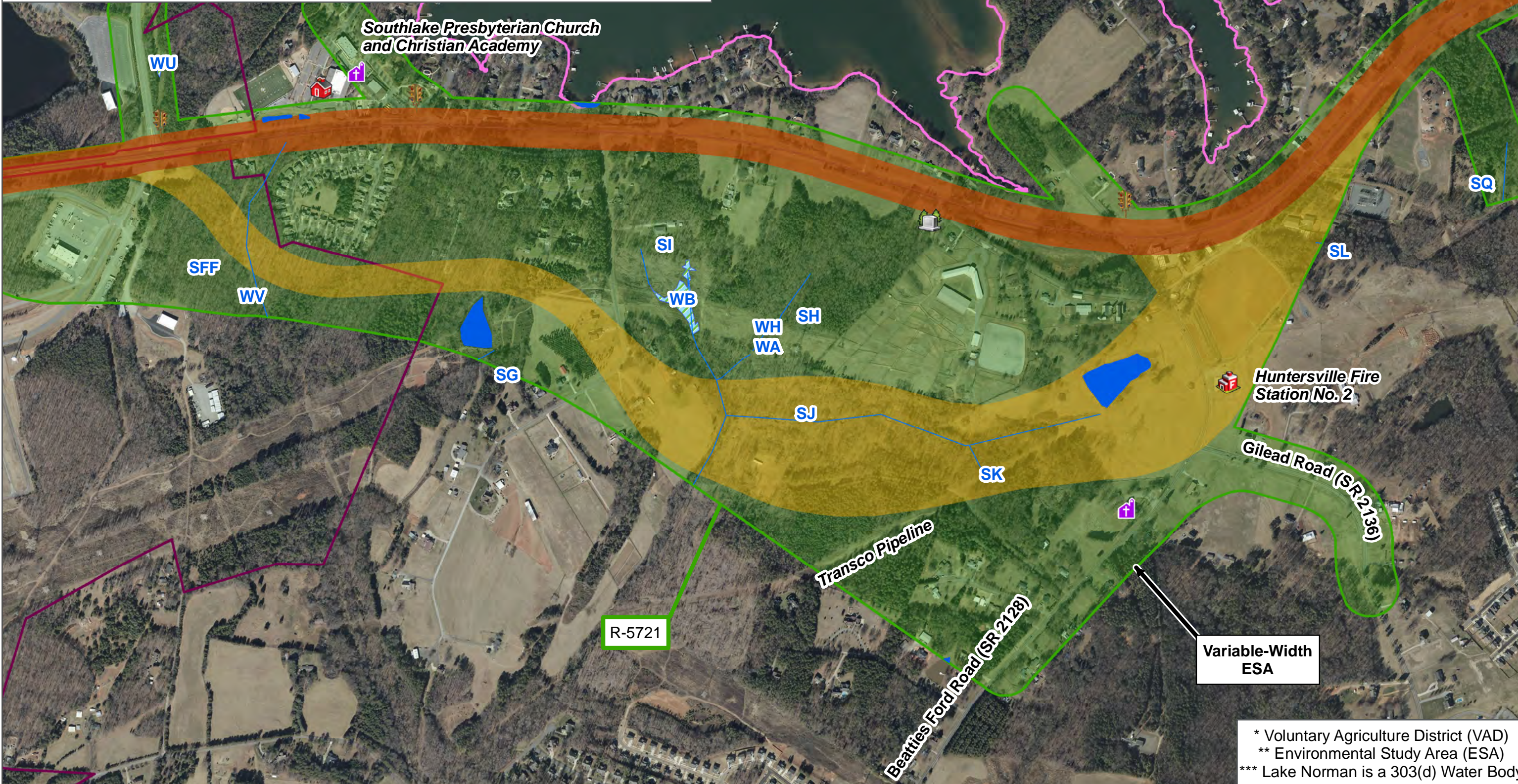
U-5721

Future Park

Charlotte Water Treatment Plant

Huntersville

CMC



0 500 1,000 Feet

Lincoln County
Mecklenburg County

- Educational Facility
- Place of Worship
- Fire Station
- Power Station
- Cemetery
- Medical Facility
- Traffic Signal
- Rail Crossing
- 303(d) Water
- Stream/ Creek
- Railroad
- VAD*
- Alternative 1
- Alternative 2
- Jurisdictional Pond
- Jurisdictional Wetland
- Park
- Water Treatment Facility
- R-5710 ESA**
- R-5721 ESA**
- U-5765 ESA**
- County Boundary
- McGuire Nuclear Station

R-5721

Transco Pipeline

Beatties Ford Road (SR 2128)

Huntersville Fire Station No. 2

Gilead Road (SR 2136)

Variable-Width ESA

* Voluntary Agriculture District (VAD)
 ** Environmental Study Area (ESA)
 *** Lake Norman is a 303(d) Water Body

FIGURE 3.4
ESA AND PRELIMINARY
ALTERNATIVES AS
PRESENTED AT CP 1/2
 R-5721, R-5710, & U-5765
 LINCOLN & MECKLENBURG
 COUNTIES
 MARCH 2018



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

NC 73 FROM NC 16 TO NORTHCROSS DR (SR 2316)

FUNCTIONAL DESIGN ALT 1A



LEGEND

- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- EXISTING STRUCTURES TO BE REMOVED
- TRANSMISSION TOWER

200' 0' 200' 400'
GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015

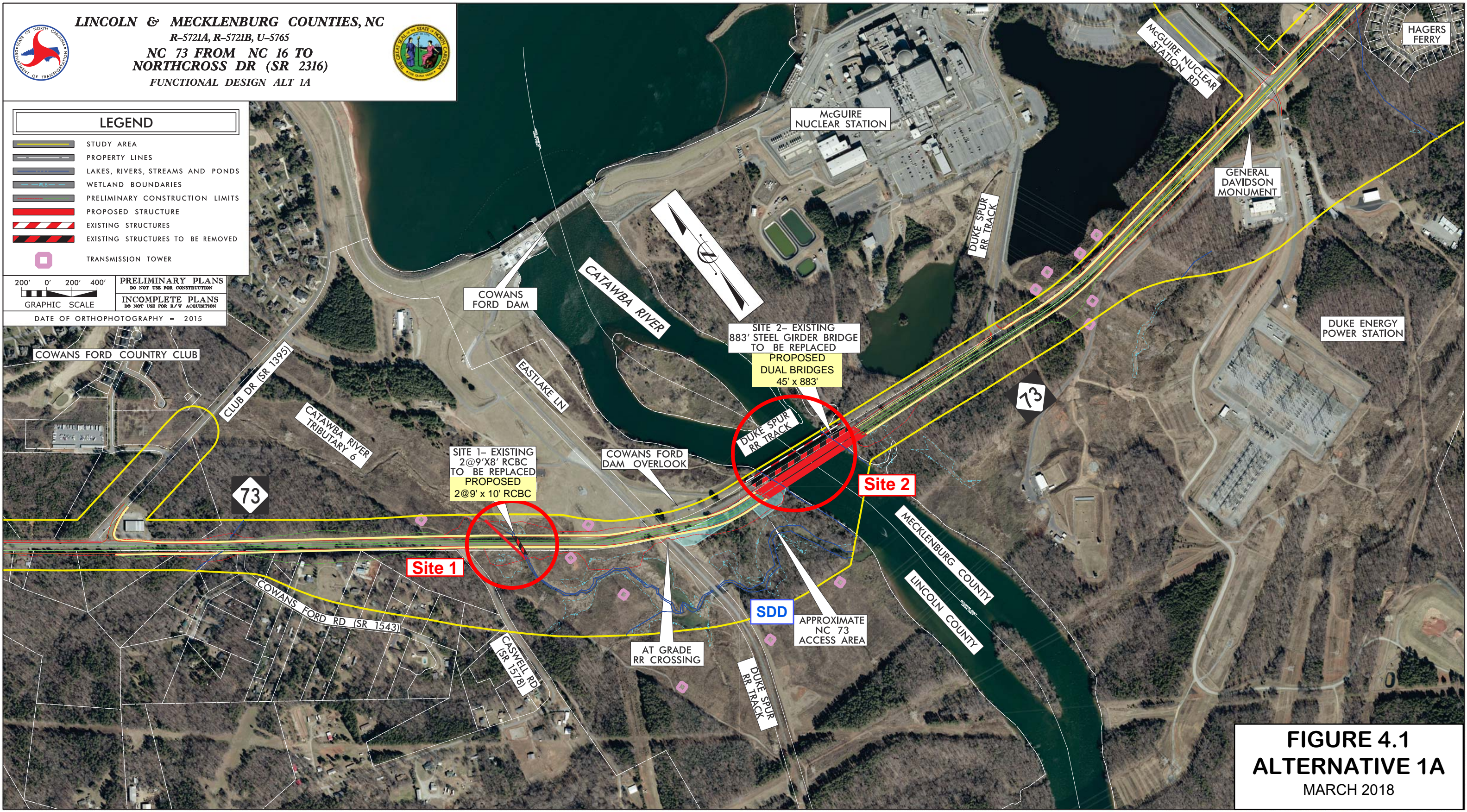


FIGURE 4.1
ALTERNATIVE 1A
MARCH 2018



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

NC 73 FROM NC 16 TO NORTHCROSS DR (SR 2316)

FUNCTIONAL DESIGN ALT 1B



LEGEND

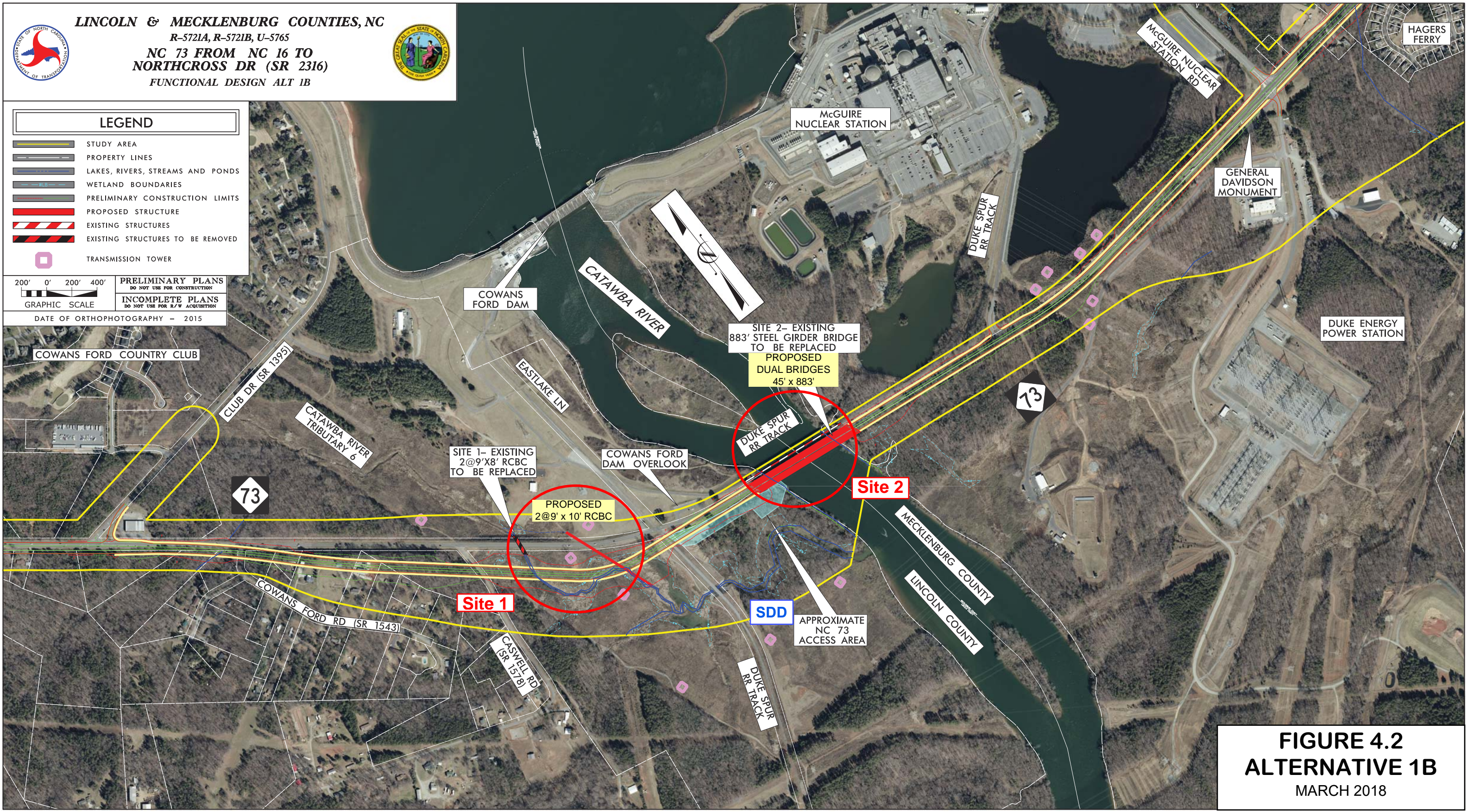
- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- EXISTING STRUCTURES TO BE REMOVED
- TRANSMISSION TOWER

200' 0' 200' 400'
GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015



Site 1
SITE 1- EXISTING
2@9'x8' RCBC
TO BE REPLACED

PROPOSED
2@9' x 10' RCBC

Site 2
SITE 2- EXISTING
883' STEEL GIRDER BRIDGE
TO BE REPLACED
PROPOSED
DUAL BRIDGES
45' x 883'

SDD
APPROXIMATE
NC 73
ACCESS AREA

**FIGURE 4.2
ALTERNATIVE 1B**
MARCH 2018



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

NC 73 FROM NC 16 TO NORTHCROSS DR (SR 2316)

FUNCTIONAL DESIGN ALT 1C



LEGEND

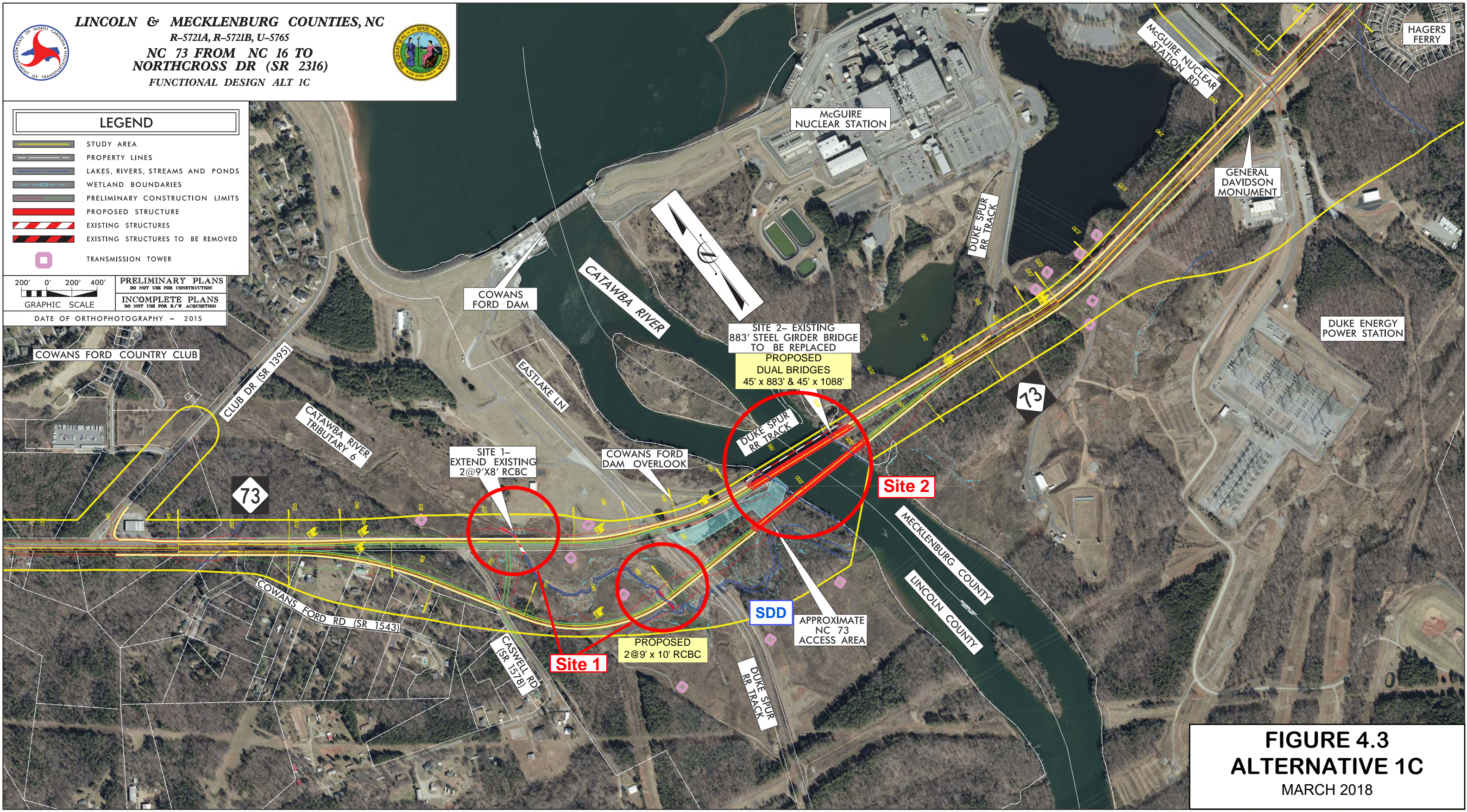
- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- EXISTING STRUCTURES TO BE REMOVED
- TRANSMISSION TOWER

200' 0' 200' 400'
GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015



Site 1
SITE 1-
EXTEND EXISTING
2@9'X8' RCBC

Site 2
SITE 2- EXISTING
883' STEEL GIRDER BRIDGE
TO BE REPLACED
PROPOSED
DUAL BRIDGES
45' x 883' & 45' x 1088'

SDD
APPROXIMATE
NC 73
ACCESS AREA

**FIGURE 4.3
ALTERNATIVE 1C
MARCH 2018**



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

**NC 73 FROM NC 16 TO
NORTHCROSS DR (SR 2316)**

FUNCTIONAL DESIGN ALT ID



LEGEND

- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- EXISTING STRUCTURES TO BE REMOVED
- TRANSMISSION TOWER

200' 0' 200' 400'
GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015



FIGURE 4.4
ALTERNATIVE 1D
MARCH 2018



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

**NC 73 FROM NC 16 TO
NORTHCROSS DR (SR 2316)**

FUNCTIONAL DESIGN ALT 2A



LEGEND

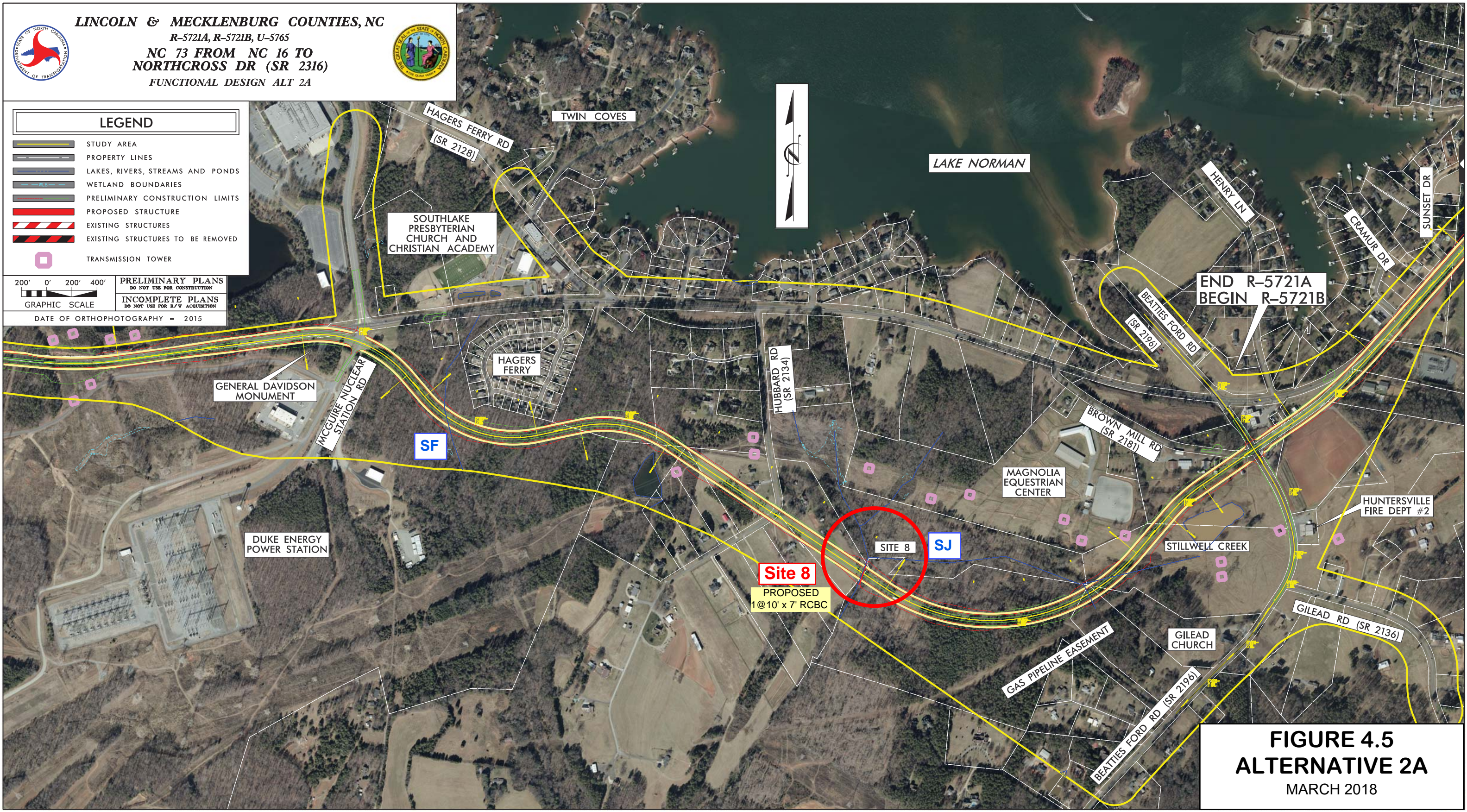
- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- EXISTING STRUCTURES TO BE REMOVED
- TRANSMISSION TOWER

200' 0' 200' 400'
GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015



**FIGURE 4.5
ALTERNATIVE 2A**
MARCH 2018



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

**NC 73 FROM NC 16 TO
NORTHCROSS DR (SR 2316)**

FUNCTIONAL DESIGN ALT 2B



LEGEND

- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- EXISTING STRUCTURES TO BE REMOVED
- TRANSMISSION TOWER

200' 0' 200' 400'
GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015



FIGURE 4.6
ALTERNATIVE 2B
MARCH 2018



LINCOLN & MECKLENBURG COUNTIES, NC

R-5721A, R-5721B, U-5765

NC 73 FROM NC 16 TO NORTHCROSS DR (SR 2316)

FUNCTIONAL DESIGN ALT 1



LEGEND

- STUDY AREA
- PROPERTY LINES
- LAKES, RIVERS, STREAMS AND PONDS
- WETLAND BOUNDARIES
- PRELIMINARY CONSTRUCTION LIMITS
- PROPOSED STRUCTURE
- EXISTING STRUCTURES
- TRANSMISSION TOWER

200' 0' 200' 400' GRAPHIC SCALE

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DATE OF ORTHOPHOTOGRAPHY = 2015

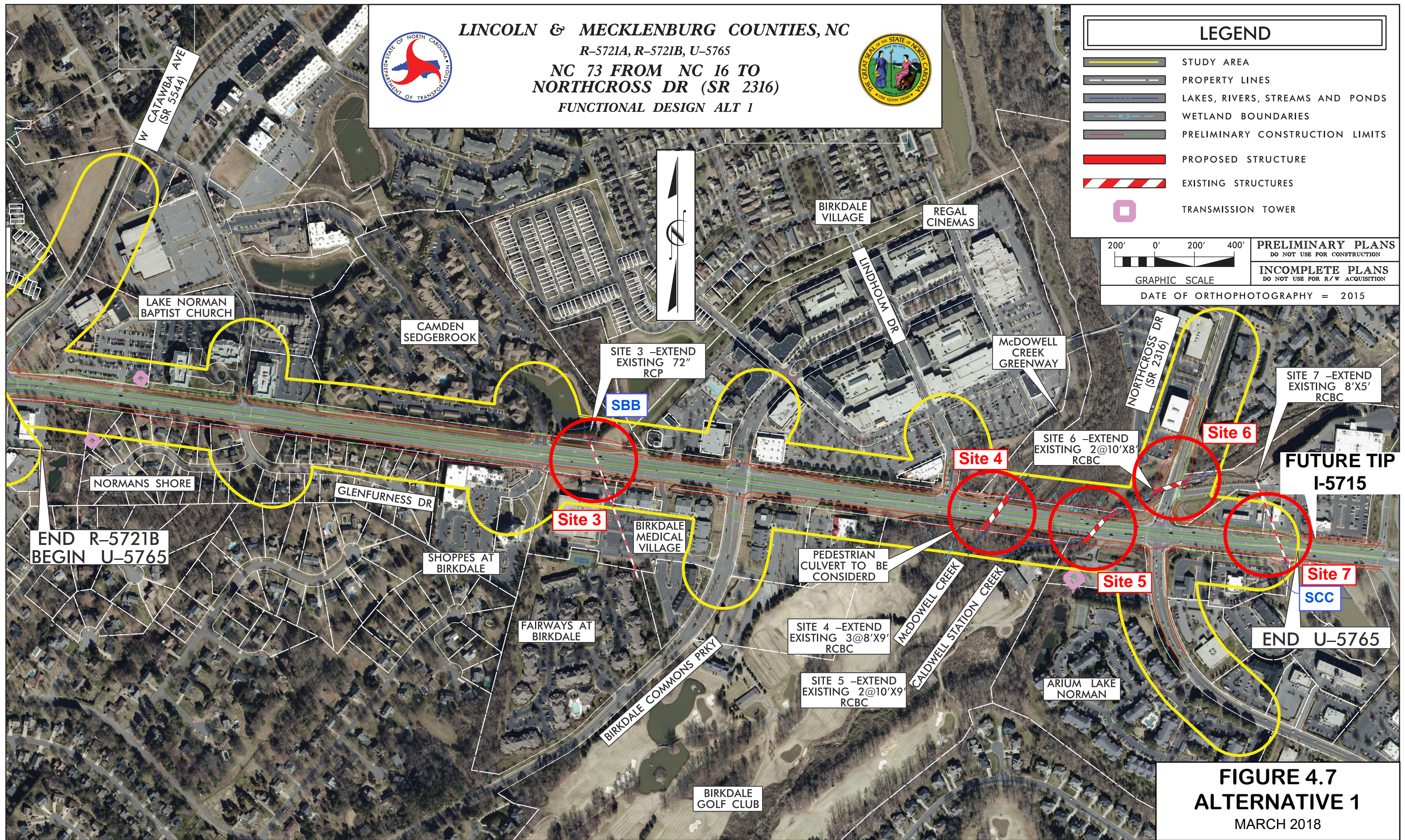


FIGURE 4.7
ALTERNATIVE 1
MARCH 2018