MERGER TEAM MEETING – CONCURRENCE POINT (CP) 3 AND CONCURRENCE POINT 4A

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

NOVEMBER 28, 2018

PURPOSE OF THIS MEETING

The purpose of today's meeting is to provide the Merger team with a project update and to discuss the Least Environmentally Damaging and Practicable Alternative (LEDPA) (CP 3) and Avoidance and Minimization (CP 4A). Concurrence will be requested on LEDPA and Avoidance and Minimization during today's meeting.

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-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

Table 1 outlines the next major milestones in the development of the project leading to right-of-way acquisition and construction. Table 2 provides the 2018-2027 State Transportation Improvement Program (STIP) project funding.

Table 1. Project Schedule

Next Steps	Date*
Complete Environmental Studies	Ongoing
Evaluate Environmental Impacts and Select Preferred Alternative	November 2018
Complete the Final Environmental Document	December 2018
Newsletter to Inform Public of Preferred Alternative	January 2019
Begin Final Design	Spring 2019
Begin Right-of-Way Acquisition	Spring 2020
Begin Construction	Spring 2022

Table 2. Cost Estimates (STIP)

	R-5721	U-5765
Project Development/Design	$2.3 Million	$0.5 Million
Right-of-Way & Utilities	$82.0 Million	$4.4 Million
Construction	$69.4 Million	$7.0 Million
Total Cost	$153.7 Million	$11.9 Million
Grand Total	$165.6 Million	

PROJECT PURPOSE (CP 1)

Formal concurrence on the project purpose was reached on March 22, 2018.

Purpose statement: 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.

ALTERNATIVES FOR DETAILED STUDY (CP 2)

Formal concurrence on the alternatives for detailed study was reached on March 22, 2018. Team members agreed on the study alternatives described below:

- No-Build Alternative
- Alternative 1: Best Fit Widening Along Existing NC 73
- Alternatives 2A and 2B: Best Fit Widening Along Existing NC 73 with Realignment in the Vicinity of the McGuire Nuclear Station and Beatties Ford Road
    - Alternative 2A resembles an alignment proposed in local and regional plans.
    - Alternative 2B provides a more shallow realignment than Alternative 2A.

The Alternatives are compared in Tables 4 and 5.

BRIDGING DECISIONS AND ALIGNMENT REVIEW (CP 2A)

Formal concurrence on bridging decisions was reached on June 6, 2018. Eight major stream crossings require structures that are 72 inches or greater in diameter. All other crossings can be contained in smaller pipes. Of these, six existing culverts along existing NC 73 are proposed to be retained and extended at Sites 1, 3, 4, 5, 6, and 7. The bridge over the Catawba River at Site 2 is proposed to be replaced with dual bridges (45'x883'). The only new major drainage structure is proposed at Site 8 under Alternative 2A. Table 3 provides additional detail on the existing and proposed major drainage structures.

Table 3. Existing and Proposed Major Drainage Structures

SITE NO.	MAP ID	EXISTING STRUCTURE NO., SIZE, TYPE	PROPOSED STRUCTURE SIZE, TYPE	
			Alt 1	Alt 2A
1	SDD	2@9'x8' RCBC	Replace with 2@9'x10' RCBC*	
2	Catawba River	Bridge No. 50, 33'x883'	Replace with Dual Bridges 45'x883'	
3	SBB	72" CMP	Retain Existing 72" CMP and Extend Upstream	
4	McDowell Creek	Culvert #83, 3@8'x9' RCBC	Retain Existing RCBC and Extend Each Side	
5	Caldwell Station Creek	Culvert #84, 2@10x8' RCBC	Retain Existing RCBC and Extend Each Side	
6	Caldwell Station Creek	Culvert #16, 2@10x8' RCBC	Retain Existing RCBC and Extend Each Side	
7	SCC	1@8'x5' RCBC	Retain Existing RCBC and Extend Upstream	
8	SJ	N/A		1@8'x7 RCBC

NOTES: CMP = Corrugated Metal Pipe, RCBC = Reinforced Concrete Box Culvert
See Figures 3.1-3.3 for Locations of Hydraulic Sites and Jurisdictional Streams/Wetlands
There Are No Major Drainage Structures for Alternative 2B.
* Current Design Proposes to Retain Existing RCBC and Extend Each Side (based on CP 2A Merger Meeting comments).

PUBLIC INVOLVEMENT

Initial public meetings were held on February 5, 2018 at Meadowlake Church (Huntersville) and on February 6, 2018 at East Lincoln Community Center (Denver). Approximately 271 people attended the meeting on February 5 and 141 people on February 6.

The Town of Cornelius hosted a meeting on March 12, 2018. The Birkdale Homeowner's Associated hosted a meeting on April 17, 2018. NCDOT gave a presentation at both of these meetings and answered questions from the public.

Design public meetings were held on October 16, 2018 at Lake Norman Baptist Church (Huntersville) and on October 18 at Unity Presbyterian Church (Denver). The meetings consisted of an open house and a formal presentation by NCDOT representatives. Approximately 294 people attended the meeting on October 16 and 152 people on October 18. The public meeting maps illustrated proposed right-of-way, easements, roadway improvements, and intersection treatments. Major topics of concern expressed through public comments include:

- Preferences for alternatives
- Property impacts
- Residential/business access
- Bicycle/pedestrian accommodations
- Proposed intersection configurations
- Superstreet design
- Traffic noise impacts

The USACE Public Notice has been posted and the 30-day comment period expires on December 7, 2018. Concurrence and signatures for CP 3/4A will need to be formally documented after the USACE comment period has ended.

CONCURRENCE POINT (CP) 3 – LEAST ENVIRONMENTALLY DAMAGING AND PRACTICABLE ALTERNATIVE

The alternatives that were evaluated are described below. Tables 4 and 5 present detailed comparisons of project impacts for various sections of the project corridor. Please note, Table 4 summarizes resources and impacts for the entire project corridor and Table 5 reflects the proposed improvements within the section of the project where the alternatives vary – between west of McGuire Nuclear Station Road and east of Beatties Ford Road. Figures 3.1-3.9 and Tables 6 and 7 illustrate and present individual stream and wetland impacts.

- No-Build Alternative

The No-Build Alternative assumes other nearby projects in the 2018-2027 STIP would be constructed. The No-Build Alternative would not provide any substantial improvements to the project corridor and would not increase the traffic carrying capacity through the design year 2040. It would not meet the Purpose and Need of the project.

- Alternative 1

Alternative 1 would utilize existing right-of-way along the project corridor to the greatest extent possible. The proposed design for this alternative has the least amount of stream impacts and the same amount of total wetland impacts (2.1 acres) as Alternative 2A (see Tables 4 and 5 Figures 3.1-3.9). Four public comments were submitted in favor of Alternative 1.

- Alternative 2A

Alternative 2A involves the longest distance of proposed new location roadway. This alternative has the highest total impact on streams and ponds and has the same amount of total wetland impacts (2.1 acres) as Alternative 1. Approximately 46 public comments indicated a preference for Alternative 2A. The most common reason for supporting Alternative 2A appears to be the potential for less property impacts to the residential properties along existing NC 73.

- Alternative 2B

Alternative 2B has the highest total impact on wetlands and the second highest total impact on streams and ponds. Four members of the public submitted comments that were in favor of Alternative 2B. The Town of Huntersville has submitted formal comments requesting that this alternative be removed from consideration.

Note: Right-of-way and construction cost estimates, as well as the number of relocations, for the section of the project where alternatives vary (McGuire Nuclear Station Road to Beatties Ford Road) will be available at the Merger Team meeting.

Table 4. Detailed Study Alternative Comparison

Resource/Affected Environment	Alternative 1	Alternative 2 Realignments*	
		Alt 2A	Alt 2B
General Project Information			
Length of Project (miles)	8.5	1.8 on New Location (8.8 total)	1.1 on New Location (8.7 total)
Cultural Resources			
Historic Properties	Stillwell-Hubbard Complex; Adverse Effect (Determined Eligible for National Register of Historic Places)		
Archaeology	*Archaeological Survey Of Federalized Permit Areas Is Recommended Prior To Permitting Activities.*		
Human Environment			
Churches/Cemetery (#)**	4	0	1
Schools**	2	0	0
Public Parks	Blythe Landing Community Park	0	
Greenways, Game Lands, Land and Water Conservation Fund Properties, etc. (#)	3 – Hwy 73 Access Area, Cowans Ford Waterfowl Refuge, McDowell Creek Greenway	0	
High % Special Populations	Language Assistance (Spanish)		
Traffic Noise	*Impacts To Be Determined*		
Relocations	*To Be Determined*		
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)	2,280	1,400 (3,495 total)	860 (2,955 total)
Wetlands (acres)	2.10	0.00 (2.10 total)	0.91 (3.01 total)
Ponds (acres)	0.00	1.71	0.97
Critical Water Supply Watersheds	2 – Lake Norman, Mountain Island Lake		
Riparian Buffer Rules	Catawba River Basin		
Identified Critical Habitat (# known)	None known		
Physical Environment			
Haz Mat (# suspected/known sites)	*Impacts To Be Determined*		
Utilities	McGuire Nuclear Station, electric, water, sewer, power transmission corridors and towers, phone		
Voluntary Agricultural District	1	0	
Federal Energy Regulatory Commission (FERC) Licensing			
3 – as part of the Catawba-Wateree Project – Hwy 73 Access Area, Mountain Island Development (Catawba River), and Cowans Ford Development (Hicks Crossroads Dike)	N/A		

Note: See Table 5 for impacts between defined, common end points of west of McGuire Nuclear Station Road and east of Beatties Ford Road.

** The impacts for the Alternative 2 realignment options in Table 4 reflect only the section of realignment between west of McGuire Nuclear Station Road and east of Beatties Ford Road.*

*** Does not indicate relocation – only potential impact.*

Table 5. Detailed Study Alternatives (McGuire Nuclear Station Road – Beatties Ford Road)*

Resource/Affected Environment	Alternative 1	Alt 2A	Alt 2B
General Project Information			
Length of Project (miles)	1.7	1.8 on New Location (2.0 in this section)	1.1 on New Location (1.9 in this section)
Right-of-Way and Construction Costs	*To Be Provided at Merger Team Mtg*	*To Be Provided at Merger Team Mtg*	*To Be Provided at Merger Team Mtg*
Cultural Resources			
Stillwell-Hubbard Historic Complex (DOE for NRHP)	Adverse Effect	Adverse Effect	Adverse Effect
Archaeology	*Archaeological Survey Of Federalized Permit Areas Is Recommended Prior To Permitting Activities.*		
Human Environment			
Churches/Cemetery (#)**	2	0	1
Schools**	1	0	0
High % Special Populations	Language Assistance (Spanish)		
Traffic Noise	*Impacts To Be Determined*		
Relocations	*To Be Provided at Merger Team Mtg*	*To Be Provided at Merger Team Mtg*	*To Be Provided at Merger Team Mtg*
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)	185	1,400	860
Wetlands (acres)	0.00	0.00	0.91
Ponds (acres)***	0.00	1.71	0.97
Critical Water Supply Watersheds	1 – Lake Norman		
Riparian Buffer Rules	Catawba River Basin	N/A	N/A
Physical Environment			
Haz Mat (# suspected/known sites)	*Impacts To Be Determined*		
Utilities	McGuire Nuclear Station, electric, water, sewer, power transmission corridors and towers, phone		

** The impacts presented in Table 4 reflect only those impacts between defined, common end points of west of McGuire Nuclear Station Road and east of Beatties Ford Road.*

*** Does not indicate relocation – only potential impact.*

**** Ponds 4 and 5 are impacted by Alternatives 2A and 2B, respectively.*

Table 6. Jurisdictional Stream Characteristics & Impacts*

Map ID	Figure 3 Sheet	Classification	Compensatory Mitigation Required	River Basin Buffer	Impacts (ft.)		
					Alt. 1	Alt. 2A	Alt. 2B
Caldwell Station Creek	3.9	Perennial	Yes	Not Subject	500	500	500
Catawba River	3.3	Perennial	Yes	Subject	0	0	0
McDowell Creek	3.8, 3.9	Perennial	Yes	Not Subject	125	125	125
SD	3.1	Perennial	Yes	Not Subject	475	475	475
SE	3.2	Perennial	Yes	Not Subject	225	225	225
SF	3.4, 3.5, 3.6	Intermittent	Yes	Not Subject	185	315	315
SG	3.4, 3.5, 3.6	Perennial	Yes	Not Subject	0	0	135
SH	3.4, 3.5, 3.6	I / P**	Yes	Not Subject	0	0	0
SI	3.4, 3.5, 3.6	I / P**	Yes	Not Subject	0	0	410
SJ	3.4, 3.5, 3.6	Perennial	Yes	Not Subject	0	920	0
SK	3.4, 3.5, 3.6	Intermittent	Yes	Not Subject	0	165	0
SL	3.7	Intermittent	Yes	Not Subject	0	0	0
SQ	3.7	Perennial	Yes	Not Subject	0	0	0
SBB	3.8, 3.9	Perennial	Yes	Not Subject	10	10	10
SCC	3.9	Perennial	Yes	Not Subject	50	50	50
SDD	3.2, 3.3	Perennial	Yes	Not Subject	710	710	710
SEE	3.3	I / P**	Yes	Not Subject	0	0	0
SFF	3.3	Perennial	Yes	Not Subject	0	0	0
TOTAL STREAM IMPACTS					**2,280**	**3,495**	**2,955**

** All streams are located in the Catawba River Basin.*
*** Indicates the presence of both Intermittent and Perennial-classified sections of stream.*

Table 7. Jurisdictional Wetland Characteristics & Impacts*

Map ID	Figure 3 Sheet	NCWAM Classification	NCDWR Wetland Rating	Impacts (ac.)		
				Alt. 1	Alt. 2A	Alt. 2B
WA	3.4, 3.5, 3.6	Headwater Forest	23	0.00	0.00	0.00
WB	3.4, 3.5, 3.6	Headwater Forest	29	0.00	0.00	0.91
WH	3.4, 3.5, 3.6	Headwater Forest	33	0.00	0.00	0.00
WI	3.9	Riverine Swamp Forest	51	0.10	0.10	0.10
WJ	3.9	Headwater Forest	29	0.05	0.05	0.05
WK	3.8, 3.9	Headwater Forest	27	0.01	0.01	0.01
WL	3.3	Bottomland Hardwood Forest	77	0.30	0.30	0.30
WN	3.3	Bottomland Hardwood Forest	83	0.00	0.00	0.00
WO	3.3	Bottomland Hardwood Forest	63	0.00	0.00	0.00
WQ	3.3	Non-tidal Freshwater Marsh	64	0.98	0.98	0.98
WR	3.3	Non-tidal Freshwater Marsh	44	0.26	0.26	0.26
WS	3.3	Non-tidal Freshwater Marsh	37	0.36	0.36	0.36
WT	3.3	Bottomland Hardwood Forest	40	0.00	0.00	0.00
WU	3.3	Headwater Forest	45	0.00	0.00	0.00
WV	3.4, 3.5, 3.6	Headwater Forest	28	0.00	0.00	0.00
WW	3.8, 3.9	Headwater Forest	25	0.04	0.04	0.04
TOTAL WETLAND IMPACTS				**2.10**	**2.10**	**3.01**

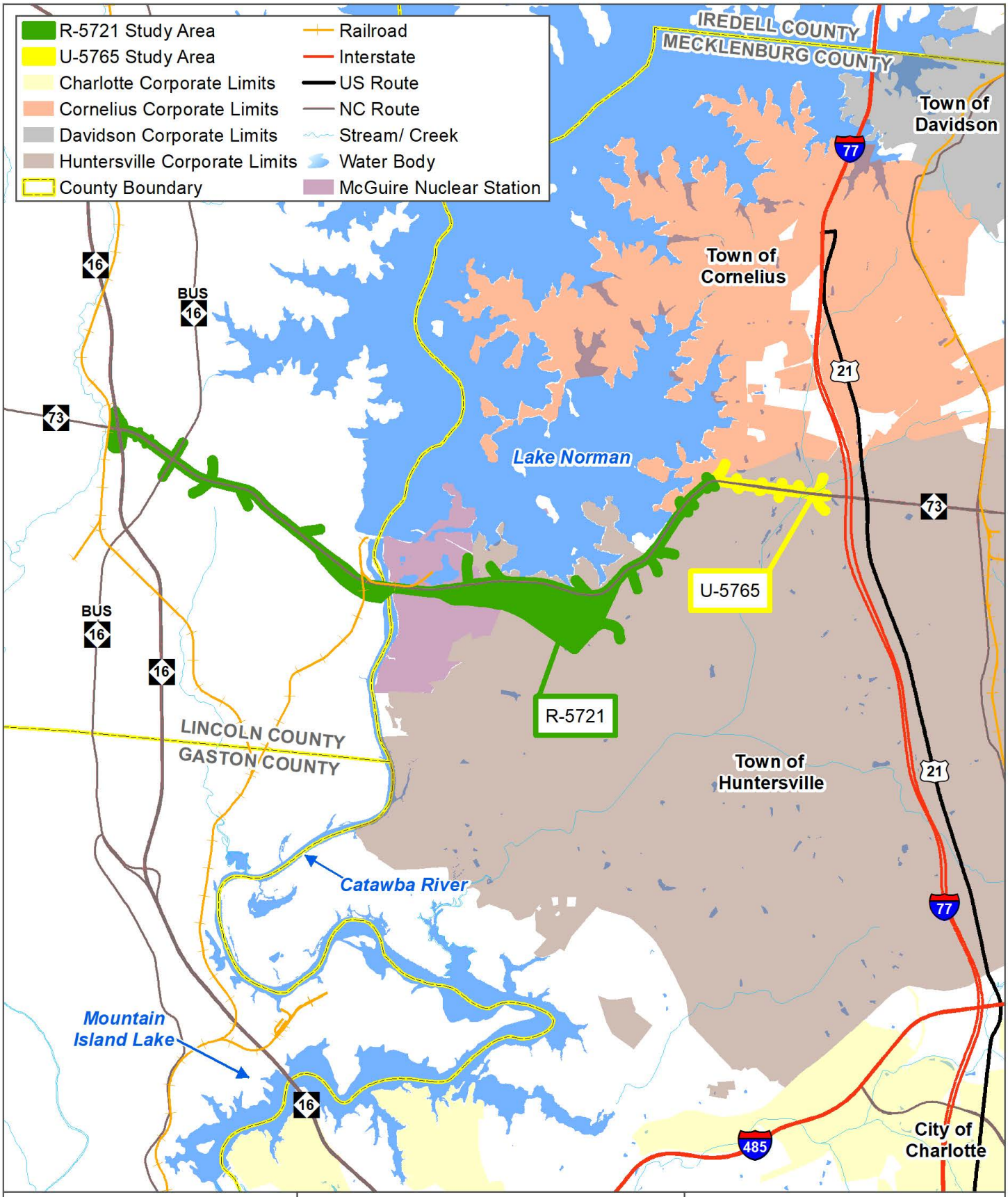
****** All wetlands are classified as riparian and are located in the Catawba River Basin.*
Note: Wetlands WM and WP (shown on Figure 3.3) are located outside the project study area.

CONCURRENCE POINT (CP) 4A – AVOIDANCE AND MINIMIZATION

Throughout the project development process the project team has examined ways to avoid and minimize impacts to the human and natural environment. These measures have been incorporated into the preliminary design. Avoidance and minimization efforts include:

- All alternatives were designed using best-fit widening to avoid and minimize impacts along the project corridor.
- Numerous innovative at-grade intersection configurations are proposed along the entire project corridor. These configurations, as opposed to conventional intersections, are proposed to minimize the number of lanes needed to increase the traffic carrying capacity of NC 73 to operate at an acceptable level of service through the design year 2040.
- The horizontal alignment just west of the Catawba River was located so that it minimizes impacts to jurisdictional resources, avoids impacts to large Duke Energy transmission towers, and minimizes impacts to Federal Energy Regulatory Commission (FERC) resources. It will reconfigure the Highway 73 Access Area on the west side of the Catawba River.
- The realignment of NC 73 proposed under Alternative 2A was shifted to the south so that it avoids impacts to the buildings associated with the Stillwell-Hubbard Complex, which has been determined eligible for listing on the National Register of Historic Places. The alignment of Beatties Ford Road was also shifted slightly to the east to minimize impacts to the historic complex.
- Under Alternatives 2A and 2B, the realignment was routed to avoid Duke Energy transmission towers, while simultaneously crossing jurisdictional streams as perpendicularly as possible.
- The median width was reduced along NC 73 between Blythe Landing Park and Windaliere Drive/Norman View Lane from 23 feet to 17.5 feet. Additionally, multi-modal accommodations that were being considered were revised from a 12-foot multi-use path on both sides of NC 73 to a 10-foot multi-use path on the north side of NC 73 and a six-foot sidewalk on the south side. The proposed U-turn bulb on the south side of NC 73 in this area was redesigned to accommodate passenger vehicles only. Through coordination with Duke Energy and FERC, the project team was able to determine how far north the widening occur towards the Hicks Crossroads Dike. The intent of these efforts was to minimize impacts to the residential properties located along Kelly Park Circle in the Birkdale neighborhood. Additional coordination with Duke Energy and FERC is needed during utility coordination and final design.

Additional minimization may be achieved during final design when final surveys are available and project hydraulic design (CP 4B and 4C) and utility relocation design commence.

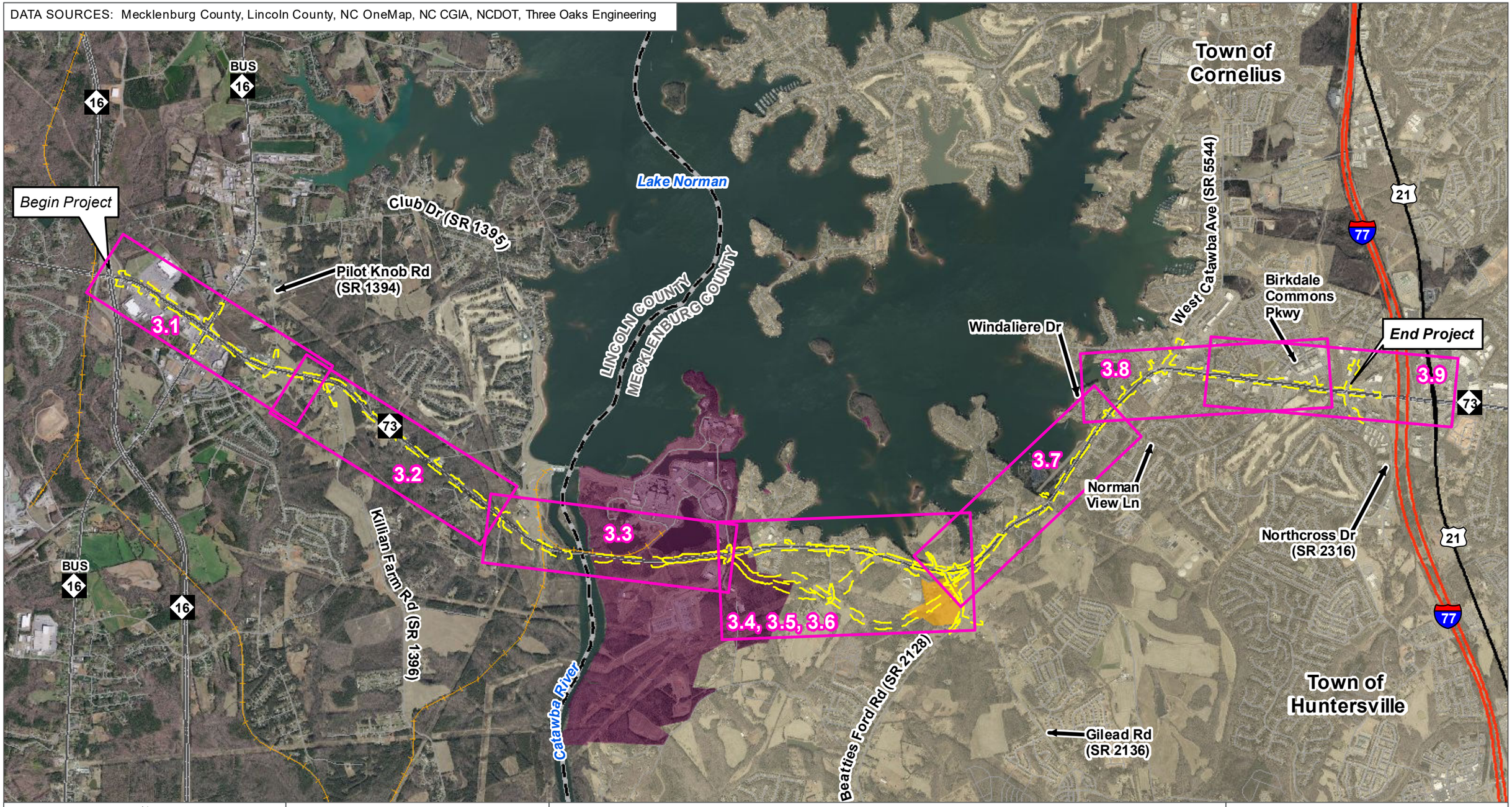


DATA SOURCES: Mecklenburg County, Lincoln County, NC OneMap, NCDOT GIS

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

NOVEMBER 2018

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



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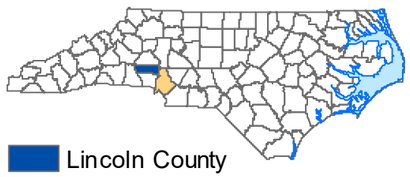
Miles



Lincoln County
Mecklenburg County

Slope Stakes Plus 25 Feet
Map Index
Interstate
US Route
NC Route
Railroad
County Boundary
Municipal Boundary
Stillwell-Hubbard Complex
McGuire Nuclear Station

FIGURE 2
STREAM AND WETLAND INDEX MAP

STIP R-5721 & U-5765
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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

BUS 16

Pilot Knob Road (SR 1394)

SD

73

Otts Circle (SR 1532)

73

16

BUS 16

Cross Center Road (SR 2040)

N

Feet

0 500 1,000

1 inch = 500 feet

Lincoln County

Mecklenburg County

Alternatives 1, 2A, and 2B

Proposed Edge of Travel

Slope Stakes Plus 25 Feet

Jurisdictional Stream

Impacted Stream

Jurisdictional Wetland

Impacted Wetland

FIGURE 3.1
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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

Treetops Drive

Club Drive (SR 1395)

SDD

SE

73

Otts Circle (SR 1532)

Killian Farm Road (SR 1396)

Cowans Ford Drive (SR 1543)

N

0 500 1,000 Feet

1 inch = 500 feet

Lincoln County

Mecklenburg County

Alternatives 1, 2A, and 2B

Proposed Edge of Travel

Slope Stakes Plus 25 Feet

Impacted Stream

Jurisdictional Stream

Impacted Wetland

Jurisdictional Wetland

VAD*

*VAD - Voluntary Agricultural District

FIGURE 3.2
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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

McGuire Nuclear Station

McGuire Nuclear Station Road

MECKLENBURG COUNTY
LINCOLN COUNTY

Caswell Road (SR 1578)

Catawba River

73

SDD
WR
Site 1
WS
WT
SFF
WQ
WO
SDD
WN
Site 2
WL
WM
WP
SEE
WU

N

Feet
0 500 1,000
1 inch = 500 feet

Lincoln County
Mecklenburg County

Alternatives 1, 2A, and 2B

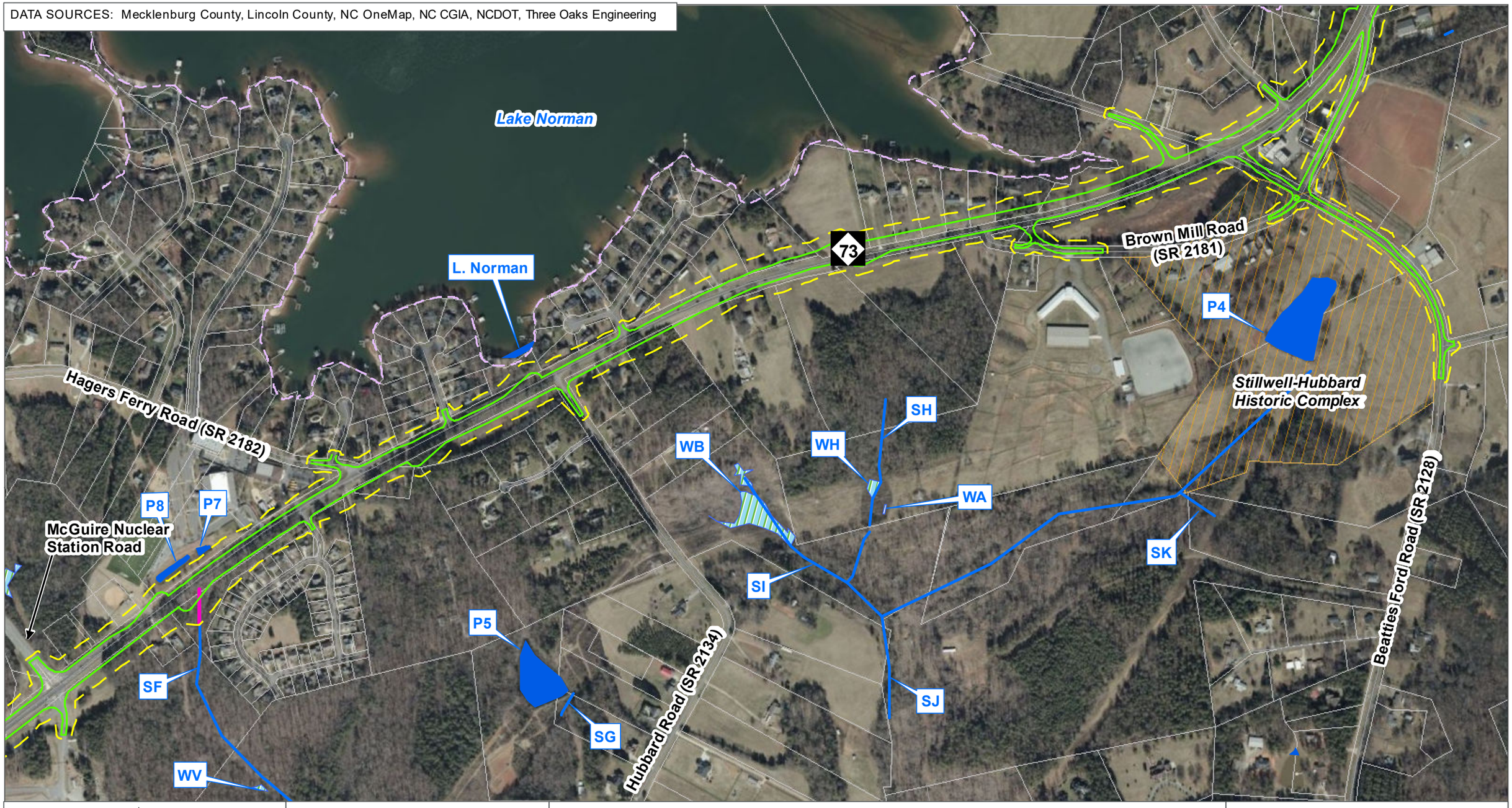
- Proposed Edge of Travel
- Slope Stakes Plus 25 Feet
- Proposed Structure
- Preliminary Major Hydraulic Crossing
- Jurisdictional Stream
- Impacted Stream
- FERC Boundary
- Jurisdictional Wetland
- Impacted Wetland
- County Boundary

FIGURE 3.3
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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



Feet
0 500 1,000
1 inch = 500 feet

Lincoln County
Mecklenburg County

Alternative 1

- Proposed Edge of Travel
- Slope Stakes Plus 25 Feet
- Stillwell-Hubbard Complex
- Jurisdictional Stream
- Impacted Stream
- FERC Boundary
- Jurisdictional Wetland
- Impacted Wetland
- Pond

FIGURE 3.4
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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

Lake Norman
L. Norman
73
Brown Mill Road (SR 2181)
Hagers Ferry Road (SR 2182)
P4
Stillwell-Hubbard Historic Complex
Beatties Ford Road (SR 2128)
WB
WH
SH
WA
SK
P8
P7
McGuire Nuclear Station Road
SI
Site 8
SF
P5
SG
Hubbard Road (SR 2134)
SJ
WV

Feet
0 500 1,000
1 inch = 500 feet

Lincoln County
Mecklenburg County

Alternative 2A

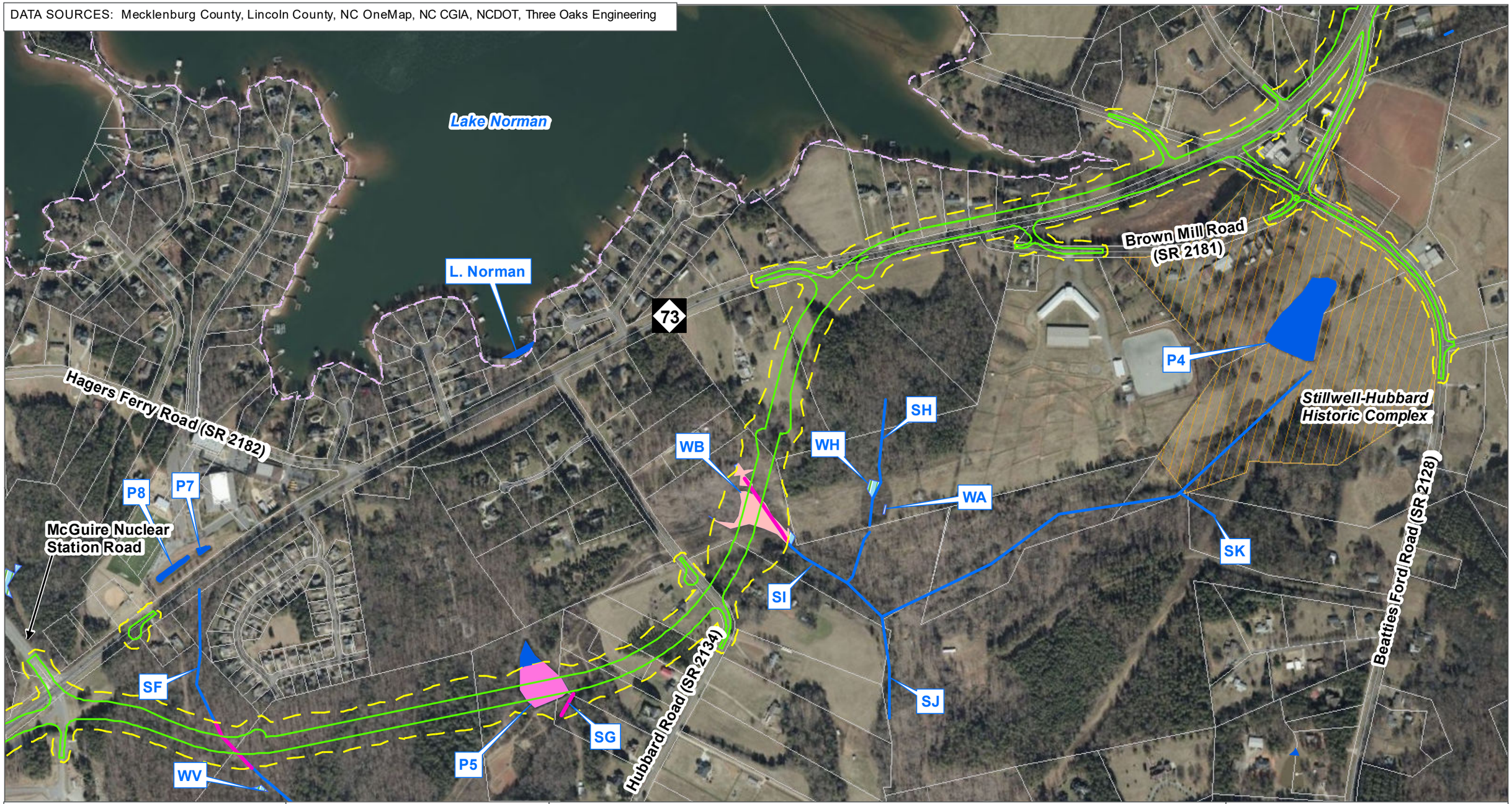
- Proposed Edge of Travel
- Slope Stakes Plus 25 Feet
- Preliminary Major Hydraulic Crossing
- Jurisdictional Stream
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland
- Pond
- Impacted Pond

FIGURE 3.5
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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



Feet
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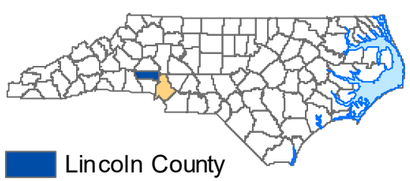
1 inch = 500 feet



Alternative 2B

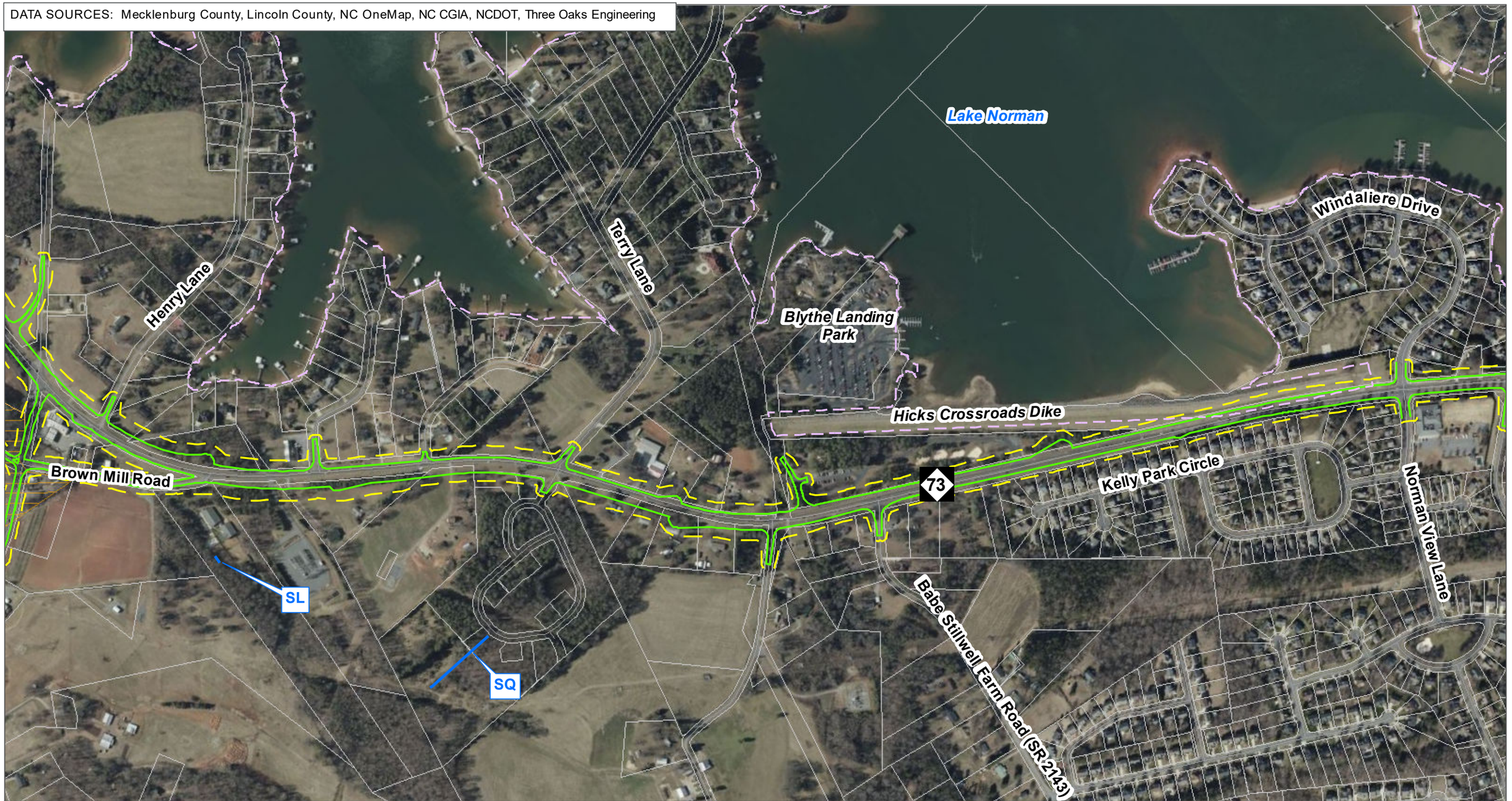
- Proposed Edge of Travel
- Slope Stakes Plus 25 Feet
- Jurisdictional Stream
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland
- Pond
- Impacted Pond

FIGURE 3.6
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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



Feet
0 500 1,000
1 inch = 500 feet

Alternatives 1 and 2B (Alternative 2A from east of Brown Mill Road)

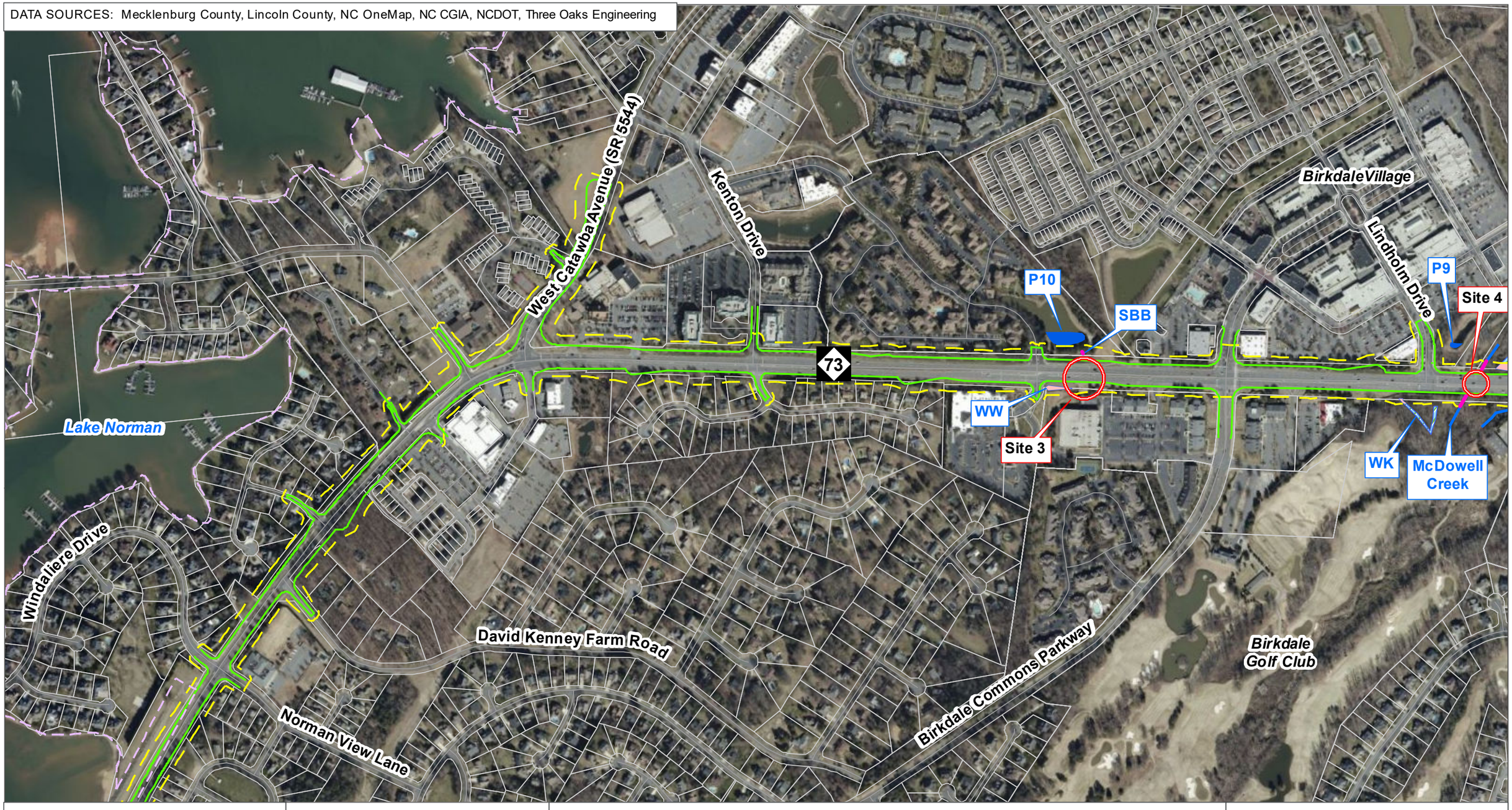
- Proposed Edge of Travel
- Slope Stakes Plus 25 Feet
- Stillwell-Hubbard Complex
- Jurisdictional Stream
- Impacted Stream
- FERC Boundary
- Jurisdictional Wetland
- Impacted Wetland

FIGURE 3.7
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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



N

0 500 1,000 Feet

1 inch = 500 feet

Lincoln County

Mecklenburg County

Alternatives 1, 2A, and 2B

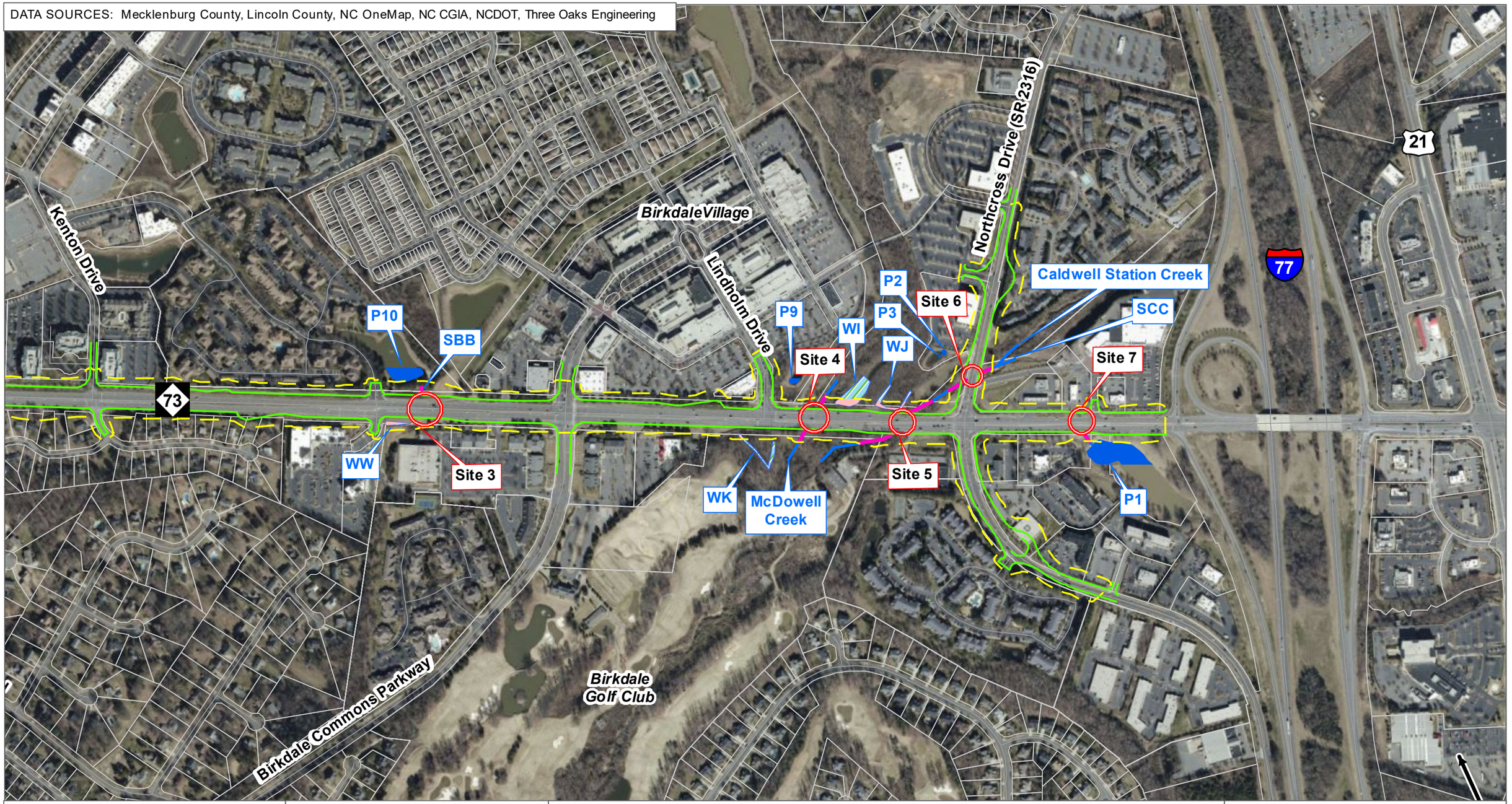
- Proposed Edge of Travel
- Slope Stakes Plus 25 Feet
- Preliminary Major Hydraulic Crossing
- Jurisdictional Stream
- Impacted Stream
- Jurisdictional Wetland
- Impacted Wetland
- Open Water

FIGURE 3.8
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018

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



N

Feet

0 500 1,000

1 inch = 500 feet

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

HDR

Lincoln County

Mecklenburg County

Alternatives 1, 2A, and 2B

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FIGURE 3.9
STREAM AND WETLAND IMPACT MAP

STIP R-5721 & U-5765
NC 16 TO NORTHCROSS DRIVE
LINCOLN & MECKLENBURG COUNTIES

NOVEMBER 2018