External Scoping and Section 404/NEPA Merger Project Team Meeting Concurrence Point 1 July 19, 2018

NC 73 Widening

From SR 2693 (Davidson-Concord Road) to US 29 (Concord Parkway) Mecklenburg and Cabarrus Counties, North Carolina – NCDOT Division 10 STIP Project No. R-5706 WBS No. 46378.1.1

Purpose of the Meeting

The purpose of today's meeting is to discuss the purpose of and need for the proposed project. Concurrence will be requested.

Project Description

STIP Project R-5706 proposes widening NC 73 (Davidson-Concord Road/Davidson Highway) from SR 2693 (Davidson-Concord Road) to US 29 (Concord Parkway) to four-lanes. The project is comprised of two segments: R-5706A and R-5706B. R-5706A extends from SR 2693 (Davidson-Concord Road) to SR 1394 (Poplar Tent Road) near the Mecklenburg County – Cabarrus County line. R-5706B extends from SR 1394 (Poplar Tent Road) to US 29 in Cabarrus County. The project will include bicycle and pedestrian accommodations. As currently included in the Charlotte Regional Transportation Planning Organization (CRTPO) 2045 Metropolitan Transportation Plan (MTP) and in the Cabarrus-Rowan Metropolitan Planning Organization 2045 MTP, NC 73 is planned to be widened from two to four lanes with a median, wide outside lanes, and sidewalks. The project vicinity is shown on Figure 1.

Project Setting and Study Area

NC 73 provides a critical transportation facility for the northern Charlotte region that is currently experiencing significant population and employment growth. I-85 crosses the eastern portion of the corridor, where a diverging diamond interchange at NC 73 was completed in 2015. NC 73 provides a key linkage between I-85 and Davidson-Concord Road during AM and PM peak hours. As one of the main arterials between the City of Concord and the Towns of Huntersville, Cornelius and Davidson, NC 73 also provides access to adjacent residential communities, community resources such as schools and places of worship, commercial/retail establishments, and major employment centers.

The study area is generally centered along NC 73 but is expanded south of Howell Reservoir to encompass alignment alternatives being considered south of the reservoir.

Project Status and Schedule

The project is listed in 2018-2027 State Transportation Improvement Program (STIP) as Project No. R-5706:

- Section A (Davidson-Concord Road to Poplar Tent Road) Funded
- Section B (Poplar Tent Road to US 29) Funded

The STIP has allocated \$20,600,000 for right-of-way acquisition, \$2,600,000 for utilities, and \$117,800,000 for construction. Right-of-way acquisition is planned to begin in fiscal year (FY) 2020 and construction is to begin in FY 2022. The project is state-funded and a State Environmental Assessment/Finding of No Significant Impact is being prepared in compliance with North Carolina's State Environmental Policy Act (SEPA).

Need for Project

The following conditions demonstrate the need for the project.

Lack of East-West Connectivity

- West of I-85, NC 73 provides the only direct route between the Davidson, Cornelius, Huntersville and western Kannapolis areas and I-85 north of I-485 in the Charlotte region. Other east-west connections are provided through local routes, but these are often indirect and primarily serve local traffic.
- East of I-85, NC 73 is a critical route serving Concord's and Kannapolis' mobility between I-85 and US 29.

Congested Conditions Impede Mobility and are Indicated by Increasing Traffic Volumes, Poor Levels of Service, and Crash Data.

- The current year (2017) annual average daily traffic (AADT) along NC 73 ranges from 12,800 vehicles per day (vpd) to 24,800 vpd. In 2040, NC 73 is expected to carry between 22,400 vpd and 46,800 vpd. Population and employment growth will increase travel demand along NC 73, with most sections of the roadway forecasted to increase in traffic volumes by approximately 30 percent in 2040.
- NC 73 is currently congested during peak commuting hours with poor level of service (LOS). The corridor currently operates at LOS E during AM and PM peak hours. Without the proposed improvements, the corridor will continue to operate at LOS E in 2040 during peak hours. With the proposed improvements, the corridor is expected to operate at LOS C during AM peak hour and LOS D during PM peak hour.
- The existing NC 73 corridor currently experiences safety issues likely associated with intersection conflicts and high traffic volumes. The total and non-fatal injury crash rates along NC 73 exceeded the statewide and critical crash rates for the five-year period analyzed (October 2012 to September 2017). The most widely-occurring type of crash along the corridor, including at signalized intersections, was rear-end crashes, which are typically associated with congested conditions.

Intersection crash data is provided in Table 1 and segment crash data comparisons are provided in Table 2.

Intersection	Crashes	Crashes per 100MVM	Rear End Crash Percentage
Davidson-Concord Road	17	46.11	53%
Ramah Church Road	35	94.01	67%
Bradford Park	8	21.92	75%
Poplar Tent Road	33	100.43	60%

Table 1. Intersection Crash Data (2012 to 2017)

Crusader Way/Meadow Crossing Drive	3	10.54	63%
Wellington Chase Drive /Village Commons Street	16	56.92	60%
Odell School Road	32	101.91	44%
Crisco/SR 1430/ Kannapolis Parkway	60	200.30	19%
Stanley Drive	12	45.03	42%
U-Turn	21	57.53	35%
Trinity Church Road/SR 1622	17	38.81	75%
I-85 SB Ramps	25	58.98	47%
I-85 NB Ramps	40	96.03	59%
International Drive/SR 1429/Rhylma Place	72	186.06	35%
Branson Road/ Westgate Circle	20	55.91	9%
Farrington Drive	5	14.42	30%
Winecoff School / SR 1790	35	100.92	43%
Central Drive / SR 1395	43	147.21	4%
US 29 Concord Parkway	33	200.56	60%

Table 2. Segment Crash Rate Comparison (2012 to 2017)

	Crashes	Crashes per 100MVM	Statewide Rate*	Critical Rate**	
NC 73 between Davidson-Concord Road and US 29					
Total	1209	332.97	241.37	258.91	
Fatal	3	0.83	1.31	2.82	
Non-Fatal Injury	415	114.29	75.62	85.54	

*2013-2015 statewide crash rate for statewide urban 2-lane undivided roads in North Carolina.

**Based on the statewide crash rate (95% level of confidence).

Source: NCDOT Traffic Safety Unit

Project Purpose

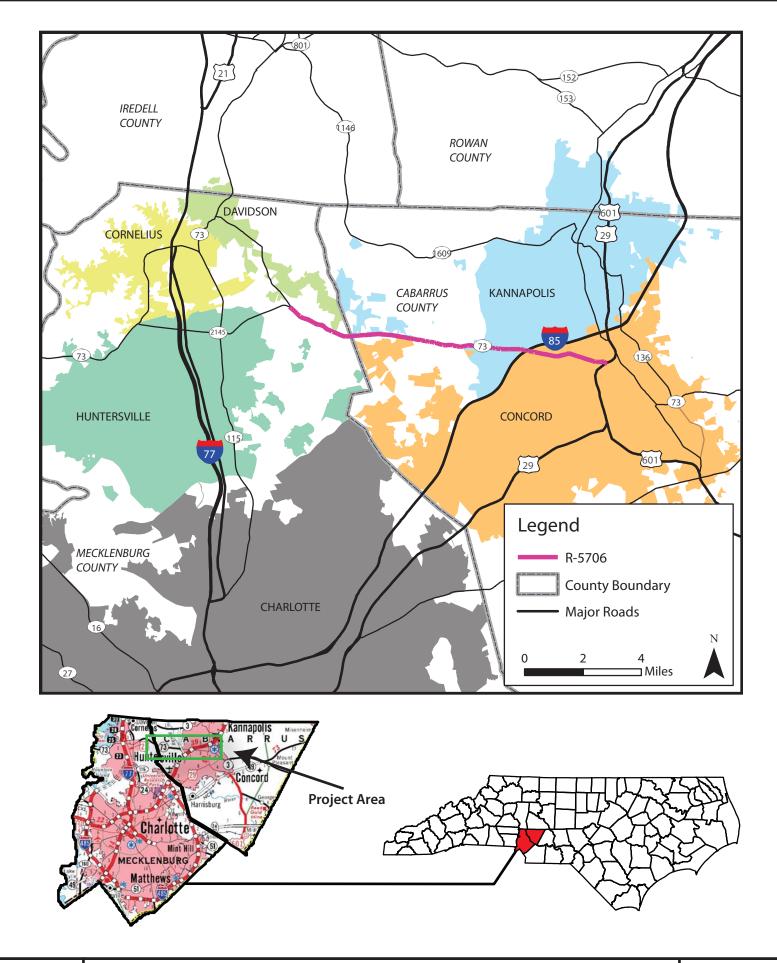
The purpose of the project is to increase mobility between the Davidson, Concord, Huntersville, Kannapolis and Concord areas to I-85, reduce congestion at the intersections, and improve traffic operations along NC 73, with an operational target of LOS D in the 2040 design year. A secondary project purpose is to enhance pedestrian and bicycle mobility.

Figures

- 1. Project Vicinity Map
- 2. USGS Quad and Study Area Map
- 3. Environmental Features and Study Area Map

Attachments

Project Data Sheet Traffic Volume Diagrams





Project Vicinity Map

Widening of NC 73 from Davidson - Concord Road to US 29, Mecklenburg and Cabarrus Counties STIP PROJECT R-5706

Figure 1

Legend

MECKLENBURG

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SOURCE:

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KANNAPOLIS, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) CORNELIUS, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) CONCORD, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) ENOCHVILLE, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) MOORESVILLE, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) CHINA GROVE, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) LAKE NORMAN NORTH, NC 7.5 MINUTE QUADRANGLE (USGS, 2016) LAKE NORMAN SOUTH, NC 7.5 MINUTE QUADRANGLE (USGS, 2016)

> 2 ⊐ Miles

EDELI

CABARRUS CO

* CAROLINE * NORTH CAROLINE * NO

USGS Map Widening of NC 73 from Davidson-Concord Road to US 29 TIP No: R-5706 WBS #: 46378.1.1

FIGURE 2

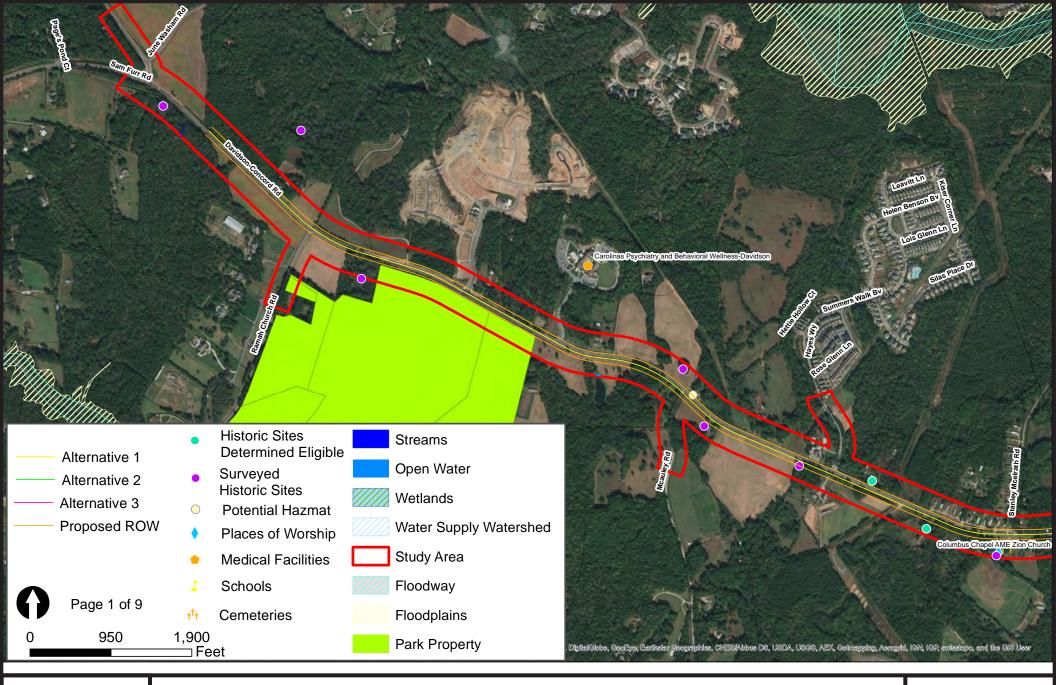
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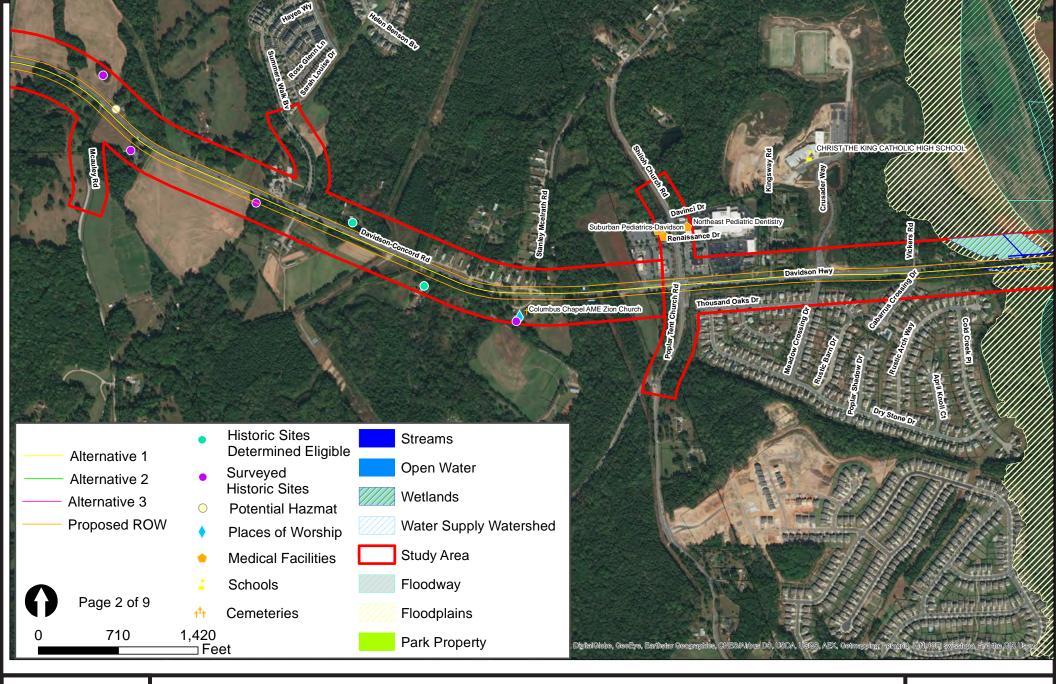
Enochville

Mecklenburg and Cabarrus Counties November 2017





WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties June 2018 **FIGURE 3A**

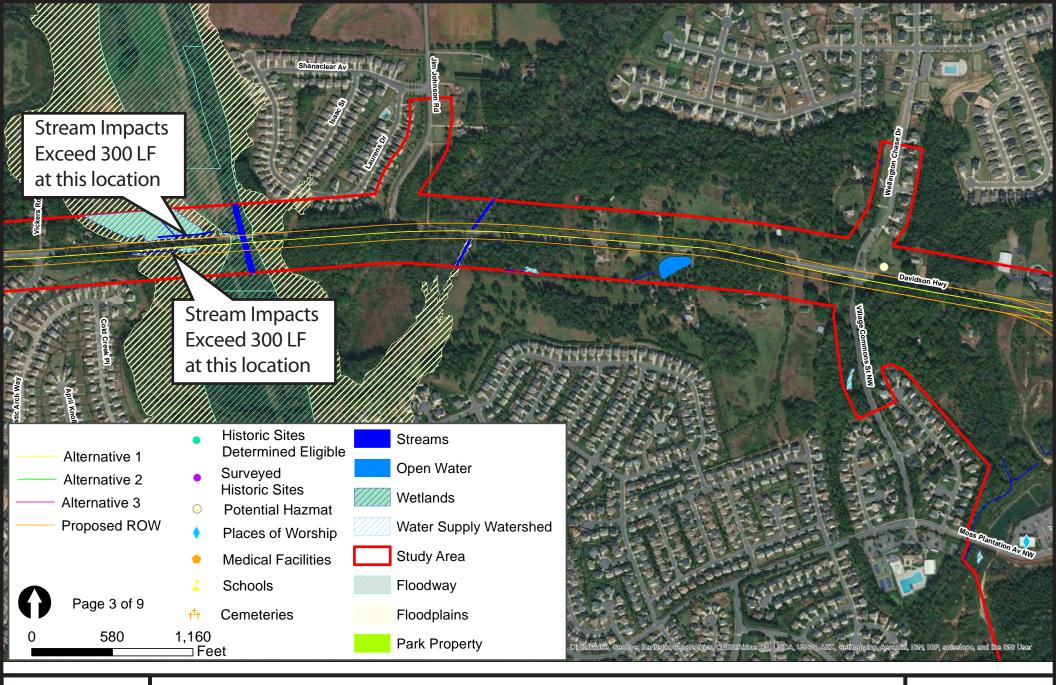




MBS #: 46378.1.1 Mecklenburg and Cabarrus Counties

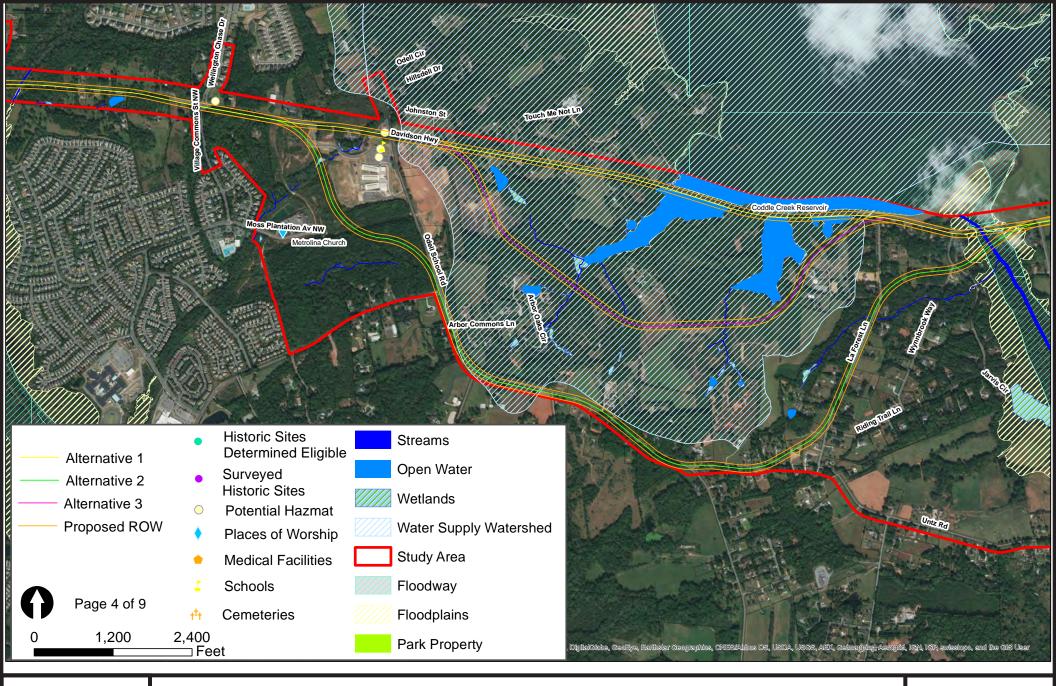
June 2018

FIGURE 3B



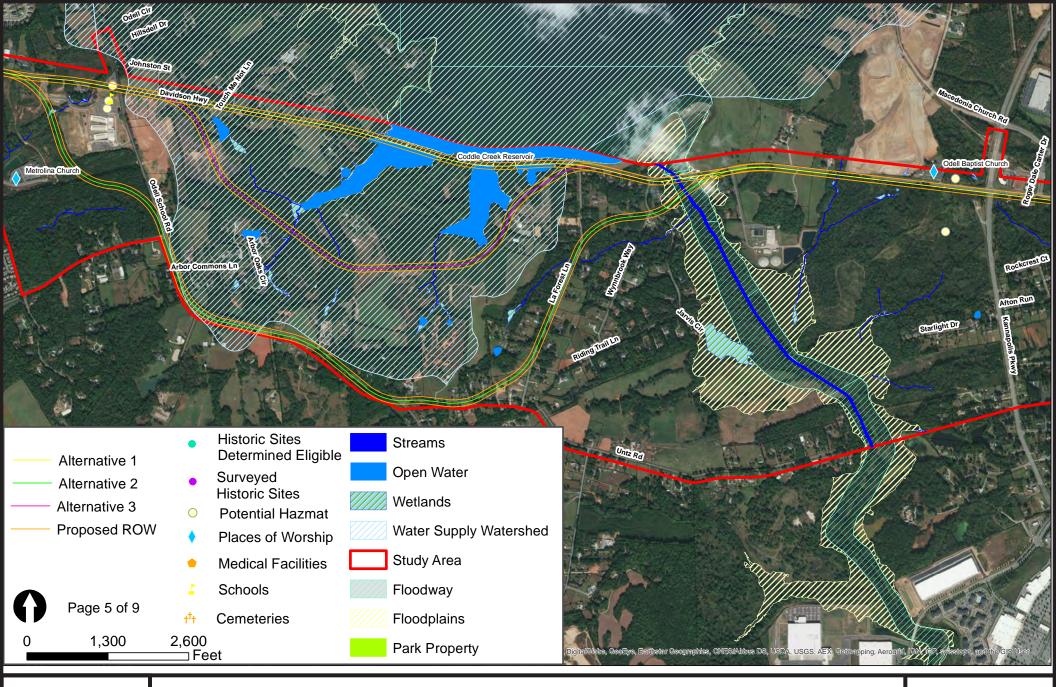


WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties June 2018 FIGURE 3C



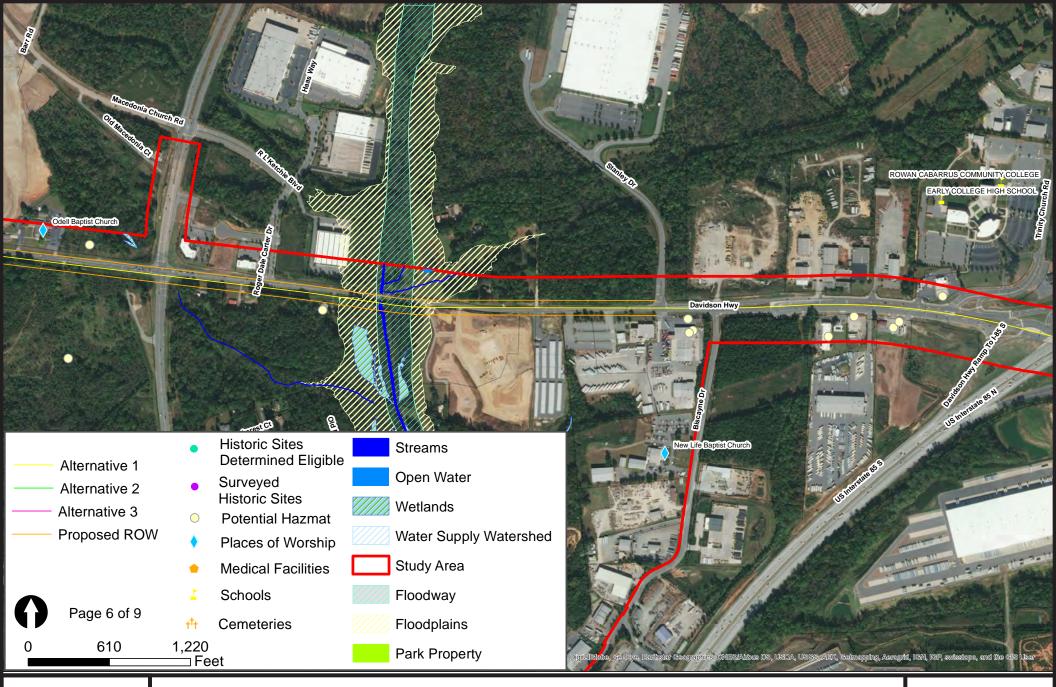


WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties June 2018 **FIGURE 3D**





WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties June 2018 FIGURE 3E



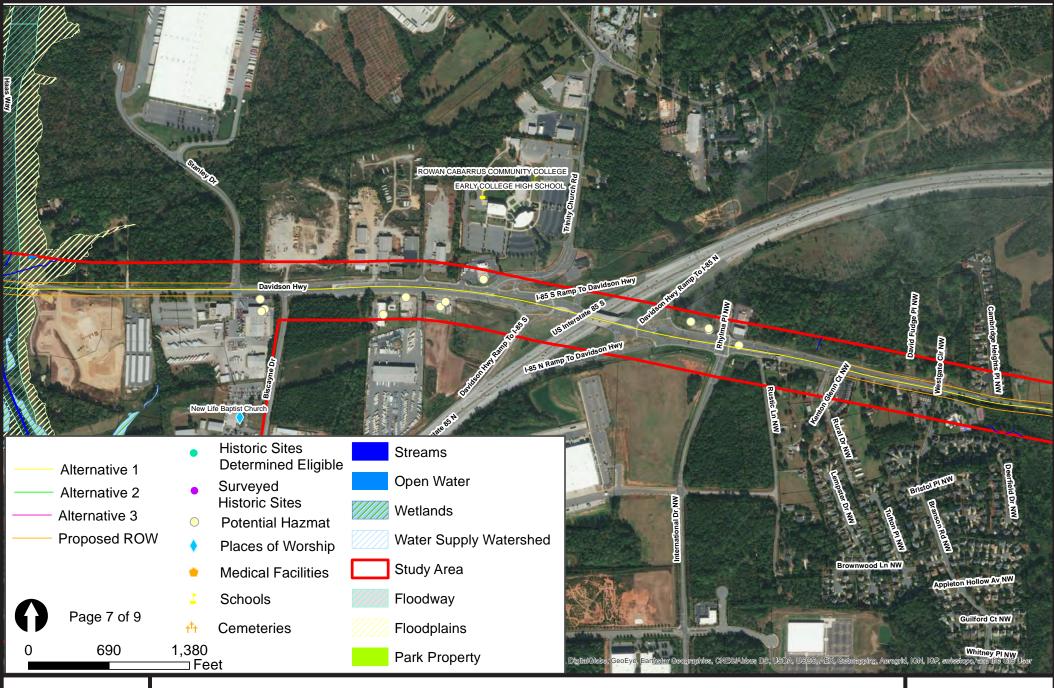
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Environmental Features Map Widening of NC 73 from Davidson-Concord Road to US 29 TIP No: R-5706 WBS #: 46378.1.1

FIGURE 3F

Mecklenburg and Cabarrus Counties

June 2018

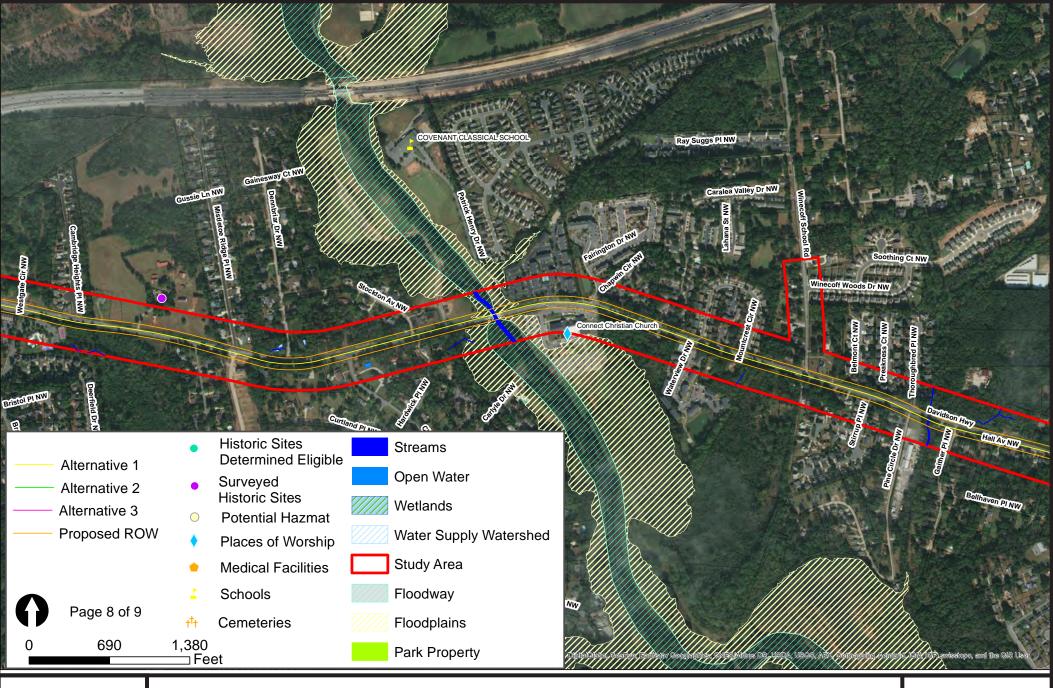


STATE OF NORTH CAROLINA *

Environmental Features Map Widening of NC 73 from Davidson-Concord Road to US 29 TIP No: R-5706 WBS #: 46378.1.1

FIGURE 3G

WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties June 2018

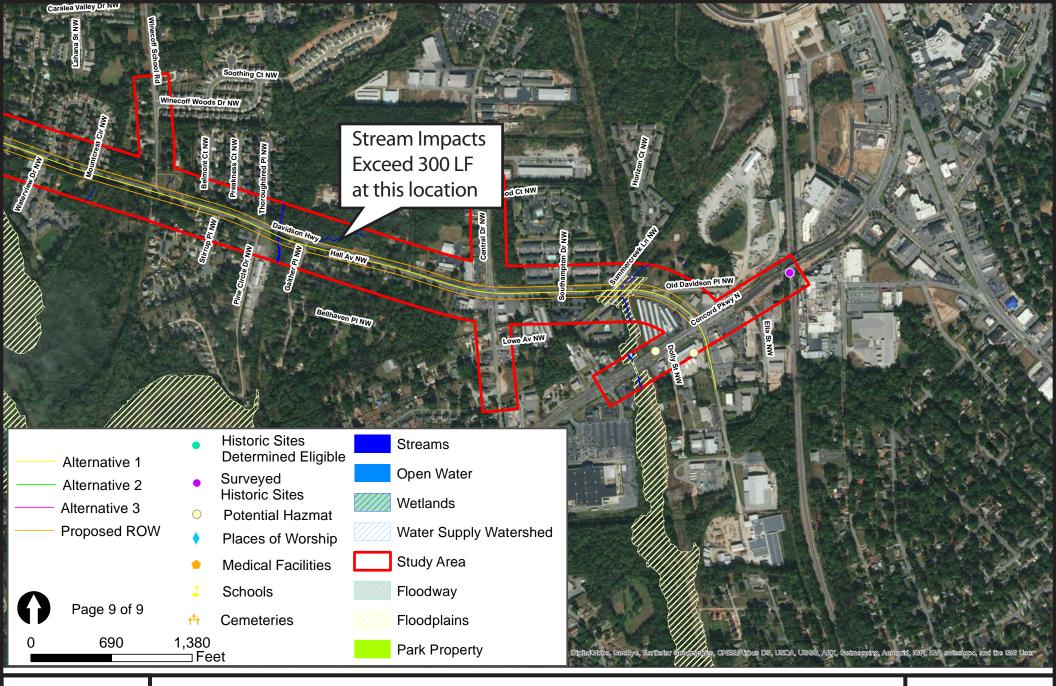




> WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties

> > June 2018

FIGURE 3H





WBS #: 46378.1.1 Mecklenburg and Cabarrus Counties June 2018 FIGURE 3I

EXTERNAL SCOPING INFORMATION SHEET

TIP No.:	R-5706	Sent Date:	07/13/2018
WBS No.:	46378.1.1	Revision Date:	
Federal Aid No.:	NA	Meeting Date:	07/19/2018
NCDOT Division:	10	County:	Mecklenburg/Cabarrus

Project Description

STIP Project R-5706 proposes widening NC 73 (Davidson-Concord Road/Davidson Highway) from SR 2693 (Davidson-Concord Road) to US 29 (Concord Parkway) to multilanes. The project will include bicycle and pedestrian accommodations.

General Project Need

West of I-85, NC 73 provides the only direct route between the Davidson, Cornelius, Huntersville and western Kannapolis areas and I-85 north of I-485 in the Charlotte region. Other east-west connections are provided through local routes, but these are often indirect and primarily serve local traffic. East of I-85, NC 73 is a critical route serving Concord's and Kannapolis' mobility between I-85 and US 29.

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Metropolitan / Rural Planning Organization Area:			Charlotte Regional Transportation Planning Organization (CRTPO)		
				arrus-Rowan Metropolitan Plannin nization (CRMPO)	g
NEPA / 404 Merger Candidate:	🛛 Yes		No	Not Sure	
Feasibility Study Completed:	🗌 Yes	\bowtie	No	Date	

Type of Environmental Documents to be Prepared / Project Schedule:

	Dates:	Type of Document:	
Environmental Document:	2019	Anticipated State EA/FONSI	
Right of Way: Let:	2020 2022		
Air Quality Status: 🗌 Non-attainme	ent 🛛 Maintenand	ce 🗌 Attainment	
Design Criteria			
Length of Project:	11.3 miles (Segment miles)	A = 2.4 miles; Segment B = 8.9	
Type of Access Control: (Existing / Proposed)	Existing: No access control except I-85 interchange Proposed: Partial Control		
Structure Inventory:	Rocky River BridgeCoddle Creek BridgeAfton Run CulvertI-85 BridgeIrish Buffalo Creek Bridge		
Functional Classification:	Other Principal Arterial on the Federal Functional Classification System.		
Strategic Highway Corridor Information:	Not included on the 2015 Strategic Transportation Corridors map.		
CTP/Thoroughfare Plan Designation: (Facility Type)	Boulevard Needs Improvement		
Roadway Typical Section: (Existing / Proposed)	Existing: Mostly 2-lane undivided Proposed: 4-lane divided		

Typical Section in Compliance with Conformity Determination:

🖂 Yes 🗌 No	
Right of Way: (Existing / Proposed)	Existing: Predominantly 60 feet with some short segments and at some intersections greater than 60 feet.
Existing Posted Speed:	Proposed: Between 102 feet and 114 feet. 55 mph from SR 2693 (Davidson-Concord Road) to 1,900 feet west of SR 1430 (Kannapolis Parkway). 45 mph from 1,900 feet west of SR 1430
Proposed Design Speed:	(Kannapolis Parkway) to US 29 (Concord Parkway). 50 mph between SR 2693 (Davidson-Concord Road) and I-85. 40-50 mph between I-85 and US 29.

1-3%, 1-3% 5-9%, 5-9% 8-10%, 7-10% 55-65, 55-65

Directional Split

Traffic Data (AADT)

Traffic Data (AADT)			% TTST:
Current Year:	2017	12,800-24,800	% Dual:
Design Year:	2040	22,400-46,800	% DHV:

Note: For 2017 No Build and 2040 Build Alternative

Source: NCDOT Traffic Estimate for R-5706 – September 27, 2017.

Design Standards Applicable: 🛛 AASHTO 🗌 3R

Railroad Involvement

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Cost Estimate	Construction	ROW and Utilities	Total Cost
TIP Estimate:	\$ 117,800,000	\$ 23,200,000	\$ 141,750,000

Other STIP Projects in the Area

R-2632AB: NC 73 Widening from NC 115 to Davidson-Concord Road (SR 2693).

B-5136: Bridge replacement on US 29/US 601 over Southern Railroad.

U-6029: Poplar Tent Road Widening from Derita Road to NC 73.

Long Range Plan History

Project R-5706 is located within the Charlotte Regional Transportation Planning Organization (CRTPO) and Cabarrus-Rowan Metropolitan Planning Organization (CRMPO) areas. The project from Davidson-Concord Road to Poplar Tent Road (Segment A) is listed in the CRTPO 2045 Metropolitan Transportation Plan (MTP) as a widening from 2 to 4 lanes, with median, wide outside lanes and sidewalks for horizon year 2025. The project from Poplar Tent Road to US 29 (Segment B) is listed in the CRMPO 2045 MTP as a widening from 2 to 4 lane, median-divided, with wide outside lanes and sidewalks for horizon year 2025.

Natural / Human Environment Information

Natural Environment (from 2017 Natural Resources Technical Report):

- 51 jurisdictional streams were identified and 4 potential streams may exist within the property to which biologists were denied access.
- 75 wetlands were identified.
- 12 open waters are located in the study area: 11 ponds and a portion of Coddle Creek Reservoir.
- No streams are subject to any North Carolina River Basin Buffer Rules.
- No streams are subject to Section 10 of the Rivers and Harbors Act.
- No designated Outstanding Resource Waters (ORW).
- Coddle Creek Reservoir is a High Quality Waters (HQW) and water supply watershed WS-II.
- The following waters are included in the North Carolina 2016 Final 303(d) lists of impaired waters:
 - Rocky River for benthos
 - Coddle Creek for benthos
 - o Irish Buffalo Creek for elevated levels of copper
- Neither Cabarrus nor Mecklenburg Counties are designated trout counties.
- Six terrestrial communities were identified within the study area.
- Fourteen species from the NCDOT Invasive Exotic Plant List for North Carolina. Five species are on the Threat list. Seven species are on the Moderate Threat list. Two species are on the Watch List.
- USFWS lists three federally protected species for Cabarrus County, six federally protected species for Mecklenburg County, and one Candidate species proposed for federal protection.

- Schweinitz's sunflower (Cabarrus and Mecklenburg); Biological Conclusion: No Effect.
- Rusty-patched bumble bee (Mecklenburg); Biological Conclusion: No Effect
- Smooth coneflower (Mecklenburg); Biological Conclusion: No Effect
- Michaux's sumac (Mecklenburg); Biological Conclusion: No Effect
- Carolina heelsplitter (Cabarrus and Mecklenburg); Biological Conclusion: No Effect
- Northern long-eared bat (Cabarrus and Mecklenburg); Biological Conclusion: Consistent with 4(D) Rule
- No known Georgia aster occurrences.
- Bald Eagle: One bald eagle was observed however no nests were observed during field survey. Due to the field survey results and minimal impact anticipated for this project, it has been determined that this project is unlikely to adversely affect this species.

Human Environment (from 2017 Community Characteristics Report):

- One public recreational facility (Bradford Park) adjacent to/accessed from the project corridor that is potential 4(f).
- · Several active agricultural operations.
- One transit route (Yellow Route) along NC 73 from Kannapolis Parkway to US 29.
- Several churches in the corridor.
- Notable economic resources:
 - Warehousing and distribution along the east end (Concord side) of NC 73.
- Moderate impact on emergency services and reasonable detour routes will need to be made available.
- Traffic challenges associated with NASCAR, NHRA, Carolina Rebellion, and Carolina Renaissance Fair during April, May, September, and October.
- 20 notable community resources.
- Local planning efforts focused on bike/ped facilities and "village" style development.
- Notable presence of minority and low-income populations but anticipated impacts do not appear to be disproportionately high and adverse.
- No disparate impacts are anticipated under Title VI and related statutes.
- Census data does not indicate Limited English Proficient (LEP) but does indicate a Spanish language-speaking population and Asian language-speaking population exceeding 50 persons.
- Node or facility that generates a notable level of vehicular or pedestrian traffic:
 - o Carolina Renaissance Fair
 - o NASCAR
 - o NHRA
 - o Carolina Rebellion

Historic and Archaeological Assessment

- Archaeological resource review, conducted by NCDOT archaeologist, determined that a survey would be required (October 9, 2017)
 - A map review and site file search was conducted
 - Recommendation for a visual inspection of the study area followed by a systematic excavation in areas of moderate to high archaeological probability and know historic resources.
 - o Cemeteries should be mapped and delineated

- Archeological Survey was conducted in the study area January 29,2018 to February 13, 2018.
 - Twelve new sites were identified; All were recommended as 'not eligible' for National Registry of Historic Places (NRHP)
 - Two previously recorded and unassessed historic cemeteries were noted. Recommended avoidance of cemeteries; if avoidance is not possible consultation with the State Historic Preservation Officer (HPO) required.
 - o NCDOT Archaeologist agreed with recommendations.
- No NRHP eligible archaeological sites located in study area
- Draft Historic Structures Report (April 2018)
 - o Eight previously evaluated properties and three surveyed properties
 - o The three surveyed properties determined not eligible
 - Of the eight previously evaluated properties, two remain eligible: Bradford House/Farm and Jesse and Mary K. Washam Farm

Project Location Map

