SCOPING INFORMATION REPORT

STIP #: I-5962

I-77 at SR 1302 (Cornelius Road), Convert Grade Separation to Interchange Iredell County, NC WBS # 45912.1.1

Prepared for North Carolina Department of Transportation, Highway Division 12

Prepared by WSP, USA

July 2025

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1. Introduction

1.1 General Description

As part of State Transportation Improvement Program (STIP) Project I-5962, North Carolina Department of Transportation (NCDOT) proposes converting the existing grade separation at SR 1302 (Cornelius Road) over I-77 to an interchange, along with an extension of Exmore Road over I-77 to connect to SR 1395 (Bluefield Road). Modifications to Cornelius Road and Bluefield Road may be necessary to accommodate the new interchange. The proposed project would use NHP and other funds from the Town of Mooresville. The current (May 2025) version of the 2024-2033 STIP indicates that right-of-way starts in 2027 and construction in 2029, though the draft 2026-2035 STIP indicates ROW starts in 2028 and construction in 2031 (and total project cost of approximately $69 million).

This proposed project is located near Lake Norman and partially within the Town of Mooresville, in Iredell County. Land use in the area is mixed, but it's predominantly residential, with light industrial uses near Exmore Road.

The project study area is shown in the attached Site Location Map.

1.2 Long Range Planning

The Town of Mooresville CTP Addendum Report (2013) includes amendments for the realignment of Bluefield Road westward (for traffic safety purposes and accommodate a proposed interchange at I-77 and Cornelius Road), and a connection linking Exmore Road and Bluefield Road with a grade separation over I-77 (to take pressure off the intersection of Bluefield Road/Cornelius Road, especially if an interchange is constructed).

CRTPO's Comprehensive Transportation Plan (CTP), last revised in 2018, recommends a new 4-lane divided compressed diamond or partial cloverleaf interchange at this location, with bicycle and pedestrian accommodations. The CTP also recommends a grade separated crossing, called the "Exmore Road Flyover," which would be a 2-lane undivided road with multi-use path from Exmore Road, over I-77, to Bluefield Road. The CTP identifies the need for an improved Cornelius Road, and a recommended realignment of Bluefield Road to the west, and a bus stop in the northeastern quadrant at I-77 and Cornelius Road.

STIP Project I-5962 is included in horizon year 2035 of the Charlotte Regional Transportation Planning Organization (CRTPO) 2050 Metropolitan Transportation Plan (MTP). The project is intended to convert grade separation to interchange, and cost estimate in 2035 dollars is $25.06 Million.

North Carolina Department of Environmental Quality (NCDEQ) has indicated that all areas of the state are in attainment with all federal NAAQS.

1.3 Other Projects

Iredell County Planning & Development recently noted, as part of local official outreach conducted for the Community Impact Assessment, that the County rezoned 359 Cornelius Road to General Business; a developer plans to build a business park with three warehouse buildings. The Town of Mooresville Planning Department noted there is office/warehouse development under construction at Exmore Road and Cornelius Road, and muti-family development near Bluefield Road.

Other projects included in the STIP and adjacent to or within three miles of the project site are included in Table 1.

Table 1. Other STIP Projects in the Vicinity

County	STIP Project	Description	Schedule (ROW/Construction)
Iredell	W-5212J(A&B)	Construct intersection improvements at SR1303 at SR1378 and SR 1302	Construction 2022/2023
Iredell	I-5918	Mile marker 36.5 to mile marker 50.0, pavement rehabilitation	Construction 2024
Iredell	R-2307B	SR 1840 in Catawba Co to west of SR 1303/SR 1180 in Iredell County, widen to 4-lanes. SR 1303/SR 1180 to US 21 in Iredell Co, widen to 6-lanes.	ROW in progress; Construction 2025
Iredell	U-5816	Widen US-21 to SR 1474 to 3-lanes with overpass over I-77	ROW 2026; Construction 2029
Iredell	R-5100B	Widen SR1109 to 4-lanes from SR1100 to NC 150	ROW complete; Construction 2026
Iredell	U-6037	Widen US 21 to 4-lanes from NC 150 to SR 1245	Funded for PE only

1.4 Previous Studies

A feasibility study (FS-1512B) was prepared for the project in 2017. The study analyzed three alternatives for a new interchange, including a compressed diamond, a compressed diamond with roundabouts, and a partial cloverleaf. Traffic forecasts and analysis that were completed as part of the study determined that the construction of a new interchange would meet the project's purpose and need.

NCDOT Division 12 held a Scoping meeting for STIP Project I-5962 in December 2018, but project development paused in the summer of 2019 before completion of environmental documentation. At that time, Division 12 was evaluating three alternatives (compressed diamond, compressed diamond with roundabouts, and partial cloverleaf B/C), as well options for realigning Bluefield Road and extending Exmore Road over I-77. A preferred alternative was not selected, but because it appeared to have lower environmental impacts, cost estimates and an express design traffic report was completed on a diamond interchange with signals.

In February 2024, the Town of Mooresville prepared an Exit 38 Interchange Study which recommended an interchange concept which connects to both Cornelius Road and Exmore Road with one-way service roads on either side of I-77 and roundabouts at the Cornelius and Exmore Road intersections. The Town suggested that building the Exmore Road bridge first could help to better phase construction of the interchange project. This concept is identified as Alternative 3 in Section 3.

1.5 Purpose and Need

According to the 2017 feasibility study and the 2018 Scoping information, the proposed project is needed to:

- Offer a new connection to I-77, which will provide for efficient commercial and freight movement from Mooresville's employment centers on US 21, the Mooresville Business Park, and other existing and planned industrial and commercial uses along Mazeppa Road to the east.
- Provide an alternative to NC 150 (Plaza Drive).
- Improve the existing and future roadway capacity deficiencies in the project area, especially on Cornelius Road, Bluefield Road and NC 150.

The Project Initiation Form (2024) noted the same project need and indicated the purpose of the project is to provide planned access to I-77 and improve existing and future roadway capacity deficiencies on Cornelius Road and NC 150.

2. Alternatives

2.1 Alternatives for Study

NCDOT is currently designing and screening three alternatives described below and shown in the attached Alternative Map. The preferred alternative, following Scoping, screening, and public outreach, will be documented in a NCDOT Type III Categorical Exclusion.

- Alternative 1: Convert grade separation to diamond interchange with signalized intersections at ramp terminals on Cornelius Road. Widen and resurface I-77 as needed for acceleration and deceleration lanes for the ramps. Extend Exmore Road with bridge over I-77 connecting to Bluefield Road. Terminate Bluefield Road just south of Cornelius Road.
- Alternative 2: Convert grade separation to diamond interchange with roundabout intersections at ramp terminals on Cornelius Road. Widen and resurface I-77 as needed for acceleration and deceleration lanes for the ramps. Extend Exmore Road with bridge over I-77 connecting to Bluefield Road. Terminate Bluefield Road just south of Cornelius Road.
- Alternative 3: Convert grade separation to split diamond interchange - northern ramps (from SB I-77 and to NB I-77) connecting to Cornelius Road with roundabout intersections and southern ramps (from NB I-77 and to SB I-77) connecting to a new Bluefield/Exmore connector via roundabout intersections. Ramp terminals from Cornelius Road to ramp terminals on the Bluefield/Exmore connection to be linked via a new one-way pair. Widen and resurface I-77 as needed for acceleration and deceleration lanes for the ramps.

2.2 Alternatives Eliminated

The partial cloverleaf interchange was eliminated from study following conceptual design and previous environmental screening. Additionally, variations on the realignment of existing Bluefield Road to the west were studied but eliminated due to conflicting development and anticipated impacts to waters of the US.

2.3 Design Criteria

A current traffic forecast and capacity analysis will be prepared for the proposed project; however, information from the 2019 Traffic Forecast is included for reference (Table 2).

Table 2. 2019 Traffic Forecast Volumes & Truck Percentages

Route	Location	Forecasted Volumes: 2019 NB / 2045 NB	Truck Percentages (2019 Count): Duals / TT-ST
I-77	N of NC 150	61,200 / 76,400	N/A
Cornelius Road	E of Bluefield Road	10,800 / 10,000	5.4 / 1.0
Bluefield Road	S of Cornelius Road	9,600 / 10,000	3.3 / 0.4
Exmore Road	S of Cornelius Road	2,400 / 4,800	1.7 / 0.3

Reference attached proposed design criteria.

2.4 Typical Sections

Reference attached roadway functional typical sections.

3. Environmental Constraints

An ATLAS initial issues identification screening of the project study area was conducted in March 2025. It identified the EPA Level III and IV Ecoregions as Piedmont and Southern Outer Piedmont, the HUC8 as 03050101, applicability of the Catawba River Basin Riparian Buffers, and an airport within 4 miles. The project study area is not in a CAMA county.

The screening indicated that tribal coordination is needed with the Catawba Indian Nation and the Cherokee Nation. Within the project study area, there are two proposed bike facility lines, one bridge structure (480080), one NC Natural Heritage Program managed area (Iredell County Open Space), a WS-IV B critical area, three USFWS species (Bog turtle, Dwarf-flowered heartleaf, and Schweinitz's sunflower), one NCDEQ 2022 IR Water Quality rating exceeding criteria 5, and 10 USFWS NWI waters.

Although the project study area encroaches on the Catawba-Wateree FERC boundary, the project design is not anticipated to encroach on the FERC boundary (760 ft contour). Additional physical constraints include newly built development sites with parking lots and a pond on the east side of I-77 along Exmore Road.

3.1 Community Resources

NCDOT is currently preparing a short form Community Impact Assessment (CIA). The site visit and requests for input by local planners, school transportation officials, and EMS officials have been conducted. Local officials were generally positive about the proposed improvements, and Town of Mooresville representatives expressed preference for Alternative 3. Local planners were not aware of low-income, minority, or limited English-speaking populations in the project study area. Iredell Statesville Schools noted 27 buses/trips per day within the project study area during school hours. EMS officials were concerned about potential road closures, and indicated on-site detours would be needed to maintain travel from one side of I-77 to other, given the length of alternate detours.

A Community Context Map is attached for reference; it shows the larger Direct Community Impact Area (DCIA) used for the CIA, as opposed to the project study area. NCDOT has designated I-77 as a Strategic Transportation Corridor (G), as shown on the map. Two places of worship, the Lake City Church and Kingdom Hall of Jehovah's Witnesses, were identified in the DCIA. A Voluntary Agricultural District (VAD) is located just outside of the DCIA, but its buffer extends into the northern portion of the study area.

There is NC Natural Heritage Program Managed Area in the DCIA. In 2018, Iredell County officials said the property had previously been used as the Iredell County Outdoor Recreation Center; however, at the time, officials indicated it was used for storage only. In addition to Cornelius Park, where Town of Mooresville planners noted recreational activity, the Lake Norman Bicycle Route (a signed NCDOT route) is located along Bluefield Road and Cornelius Road. The Carolina Thread Trail Master Plan for Iredell County Communities (2011) recommended the Lake Norman Bike Route for Carolina Thread Trail designation. The Town of Mooresville planner noted the Pedal More(sville) Bike Plan (2023) recommends multi-use paths on Cornelius Road.

3.2 Cultural Resources

3.2.1 Historic Resources

In 2019, a NCDOT Architectural Historian reviewed the North Carolina State Historic Preservation Office (NC SHPO) HPOWEB GIS site and conducted a site visit to examine the McNeely-Kerr House (ID0784). The historian was able to confirm alterations to the house, and indicated the project would not have an effect on the house. The APE was expanded in March 2025, and no properties over 50 years of age in the expanded area warranted further evaluation. The project received a No Survey Required Form from NCDOT on March 13, 2025.

3.2.2 Archaeological Resources

Based on the fact that no archaeological sites have been recorded within one mile of the proposed project, review of HPOWEB GIS service and other maps and reports for environmental compliance, unfavorable conditions for resources, and reviews of the proposed project in 2018 and 2019, there is still a very low probability for significant prehistoric and/or historic archaeological materials to be present in the expanded project study area. The project received a No Archaeological Survey Required Form from NCDOT on April 1, 2025. A letter and copy of this form will be sent to the Catawba Indian Nation and the Cherokee Nation.

3.3 Natural Environment

The team is preparing a Preliminary Jurisdictional Determination (PJD) package for submittal to the US Army Corps of Engineers (USACE), and Natural Resources Technical Report (NRTR) for submittal to NCDOT. Field work was conducted in March and April 2025, and additional plant surveys are expected in August 2025. Field work had been conducted previously within a portion of the current study area in August 2018, March 2019, and May 2019.

3.3.1 Jurisdictional Features

Based on GIS data and recent delineations, 23 streams, 13 wetlands, and three surface waters (Lake Norman and two ponds) are identified in the project study area. Clean Water Act Section 404 approval is likely and assumed to qualify as under a Nationwide Permit (NWP) 14. Reference the attached National Wetland Inventory Map. Some water resources in the study area were previously verified by the USACE and the North Carolina Division of Water Resources (NCDWR), but the AJD is older than 5 years.

3.3.2 Protected Species

The United States Fish and Wildlife Service (USFWS) lists the following federally protected species under the Endangered Species Act (ESA) as potentially occurring within the project study area. For each species, a discussion of the presence or absence of suitable habitat will be included along with a Biological Conclusion rendered based on the results of habitat assessments and surveys conducted within the study area (Table 3).

Table 3. Federally Protected Species listed for Project Study Area

Common Name	Scientific Name	Federal Status
Bog turtle	*Glyptemys muhlenbergii*	SAT
Dwarf-flowered heartleaf	*Hexastylis naniflora*	T
Schweinitz's Sunflower	*Helianthus schweinitzii*	E

Source: IPaC, (USFWS, 3/18/25)

E=endangered; T=threatened; SAT=similarity of appearance (T)

Suitable habitat for dwarf-flowered heartleaf does occur within the study area, and the team conducted species-specific surveys from March 17 – March 19 and April 23, 2025; heartleaf was not found at that time. A review of NHP records on or updated April 14, 2025, indicates no known occurrences within 1.0 mile of the study area.

A desktop GIS assessment of the project study area and the area within a 1.13-mile radius of the project limits, was performed on March 14, 2025, using 2023 color aerials. Water bodies considered potential feeding sources were identified and foraging habitat was found. A survey of the project study area and the area within 660 feet of the project limits was conducted on April 23, 2025. No bald eagle nests were identified.

3.3.3 Federal Emergency Management Agency (FEMA) Resources

Based on a preliminary review of data available on the North Carolina Flood Risk Information System, there is FEMA Effective Flood Zone (AE) within the project study area, in the area where I-77 crosses Lake Norman. FEMA Hazard Mitigation Grant Program buyout properties have not been identified to date.

4. Approach

4.1 Environmental Documentation

NCDOT Division 12 plans to prepare a NCDOT Type III Categorical Exclusion (CE) that will be reviewed and signed by the Federal Highway Administration. FHWA agreed with class of action in February 2025 and noted that an IAJR may be required if Alternative 3 is selected as the preferred alternative, due to the change in interchange configuration. The current project schedule anticipates a completed CE in summer 2026, with ROW acquisition beginning in summer 2027

While conceptual designs, conceptual cost estimates, and environmental screening are being prepared for three alternatives, and this effort will be summarized in the CE, impacts of the preferred alternative alone will be documented in the CE. Additionally, the project is considered a Type I Project under NCDOT's noise policy, and the team will prepare a Traffic Noise Report for review by NCDOT staff. Section 404 approval is likely and assumed to qualify as under a Nationwide Permit (NWP) 14. While a portion of Lake Norman is located within the project study area, The US Coast Guard, in 2019, reviewed the proposed project and indicated that neither a Coast Guard bridge permit or navigational lighting at bridges would be required.

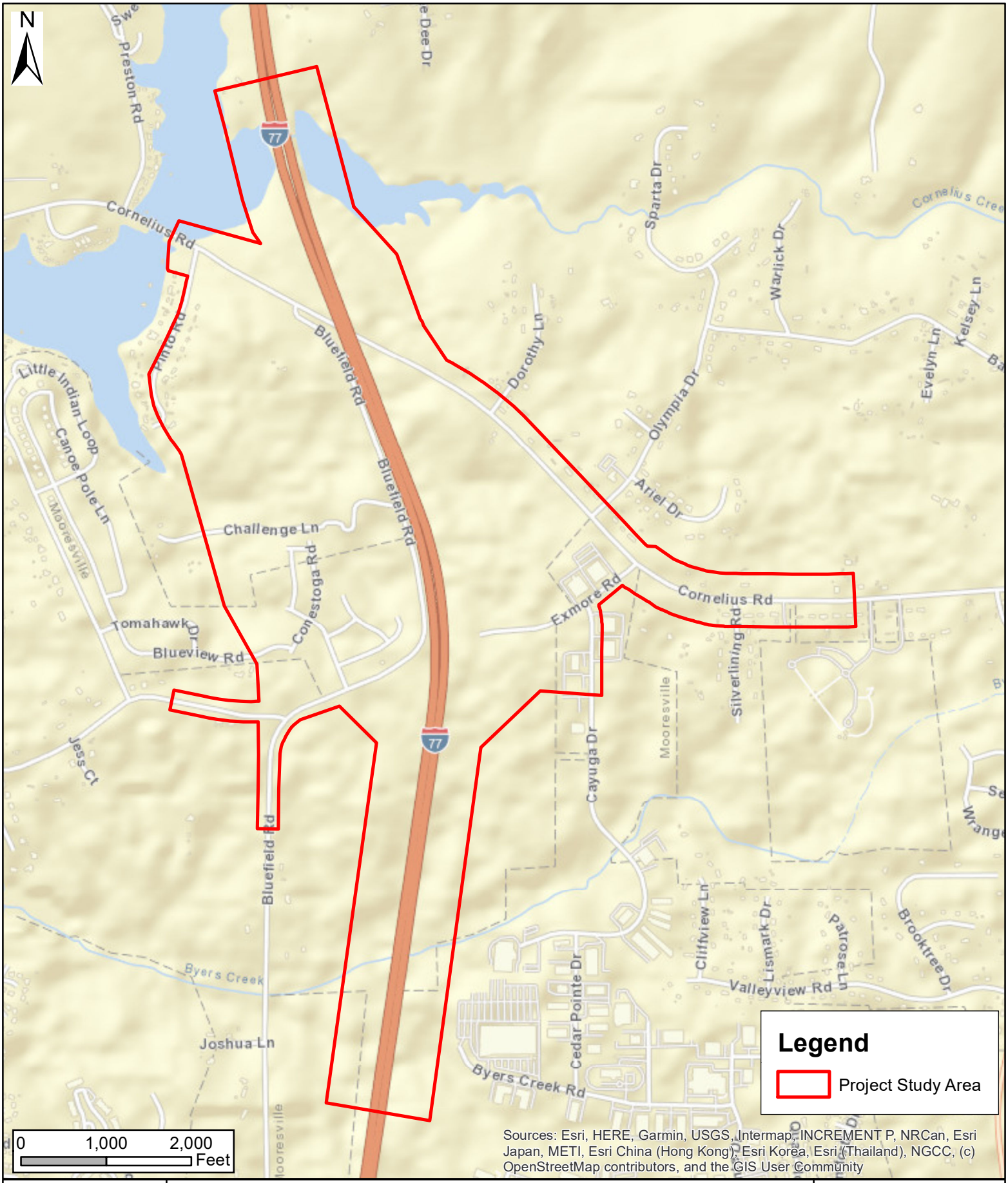
4.2 Stakeholder Coordination & Public Involvement

As mentioned previously, an internal/external Scoping meeting was held in December 2018. Updated local input forms and ETRACS requests were sent again in early 2025, and a virtual internal/external Scoping meeting is anticipated in June/July 2025. NCDOT Division 12 anticipates holding a public meeting in late summer or early fall of 2025.

4.3 Section 404 Merger Process

A Merger Pre-Screening Questionnaire was generated in ATLAS on March 6, 2025. There appear to be conflicting resources, resulting in a conclusion of yes, Merger Screening is recommended. The Environmental Policy Unit has not confirmed the conclusion yet. NCDOT Division 12 assumes the Environmental Policy Unit will confirm the Merger Pre-Screening conclusion, the Scoping meeting can be used as a Merger Screening meeting, and the project will be screened out of the Merger process. Decisions would be documented and logged into the ATLAS workbench, as appropriate.

ATTACHMENTS

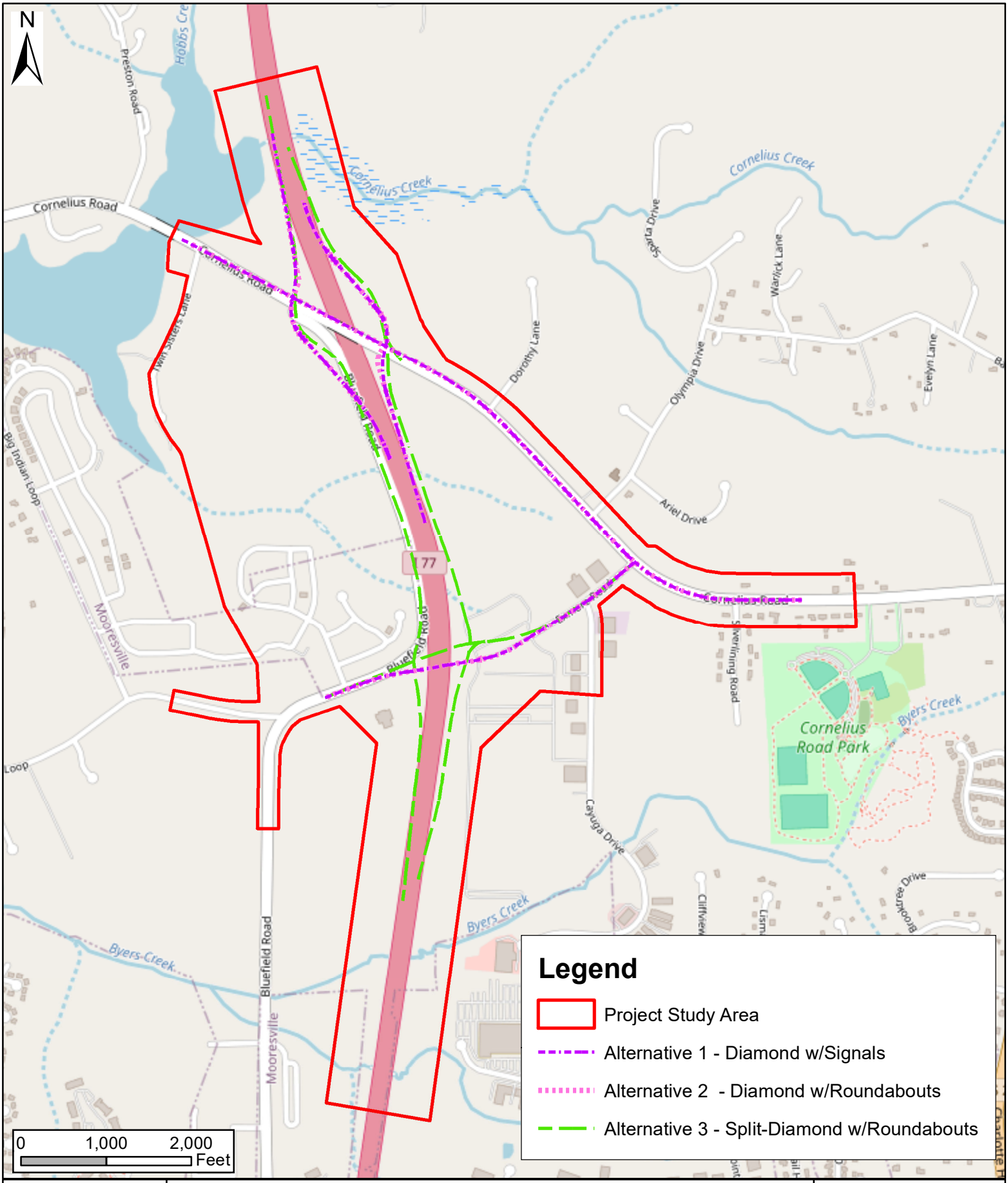


Site Location Map
I-77 at SR 1302 (Cornelius Road)
Convert Grade Seperation to Interchange
I-5962

Iredell County, North Carolina

June 2025

Figure 1



Alternative Map
I-77 at SR 1302 (Cornelius Road)
Convert Grade Separation to Interchange
I-5962

Iredell County, North Carolina

February 2025

PROPOSED DESIGN CRITERIA

STATE PROJECT: | **TIP:** I-5962
F. A. PROJECT: | **TIER:** STATE WIDE
COUNTY: Iredell
DIVISION: 12 | **PAGE:** 1 of 3
PROJECT DESCRIPTION: I-77 at Cornelius Rd. Convert Grade Separation to Interchange

PREPARED BY: WSP | **CHECKED BY:**
DATE: June 3, 2025 | **DATE:**

ROUTE				SR 1302	REFERENCE
ROAD NAME	I-77	I-77 Ramps	One-way Connectors	Cornelius Rd	OR
ALIGNMENT NAME					REMARKS
TRAFFIC DATA					
ADT LET YEAR = 2023	58,000	VARIES	8,000	11,500	Traffic Reports
ADT DESIGN YEAR =		VARIES			
K		VARIES			
D		VARIES			
TTST		VARIES			
DUALS		VARIES			
FUNCTIONAL CLASSIFICATION	INTERSTATE	RAMP	LOCAL	MINOR COLLECTOR	Planning doc/Go!NC
CONTEXT CLASSIFICATION	SUBURBAN	SUBURBAN	SUBURBAN	SUBURBAN	GB
TERRAIN TYPE	ROLLING	ROLLING	ROLLING	ROLLING	RDM 1, 2.3/GB 3.4.1
DESIGN SPEED (mph)	70	60	50	50	GB
POSTED SPEED (mph)	65	65	45	45	
TYPICAL SECTION TYPE	4 LANE DIVIDED	1 LANE SHOULDER	2 LANE SHOULDER	2 LANE SHOULDER	
CURB & GUTTER (LT, RT, BOTH, NONE)	NONE	NONE	NONE	NONE	
LANE WIDTH (ft)	12'	16'	12'	12'	GB
MEDIAN TYPE (RAISED OR DEPRESSED)	Depressed	N/A	N/A	RAISED	
MEDIAN WIDTH (ft)	VARIES	N/A	N/A	VARIES	RDM
MEDIAN PROTECT. (GR/BARRIER)	GUARDRAIL	N/A	N/A	NONE	RDM
SIDEWALK (LT, RT, BOTH, NONE)	None	NONE	NONE	NONE	
SIDEWALK WIDTH (ft)	N/A	N/A	N/A	N/A	
SIDE PATH (LT, RT, BOTH, NONE)	None	NONE	NONE	NONE	
SIDE PATH WIDTH (ft)	N/A	N/A	N/A	N/A	
BICYCLE LANE WIDTH (ft)	N/A	N/A	N/A	N/A	
RUMBLE STRIPS (Yes/No)	YES	YES	NO	NO	RDM 1, 4.4.7
PROPOSED R/W WIDTH (ft)	240'	VARIES	60'	100'	RDM 14.2.1
CONTROL OF ACCESS	FULL	FULL	PARTIAL	PARTIAL	
SHOULDER WIDTH (TOTAL)					
INSIDE or MEDIAN (ft)	8'	12'	N/A	N/A	RDM
OUTSIDE w/o GR (ft)	12'	14'	6'	6'	RDM 4.4.1
OUTSIDE w/ GR (ft)	15'	17'	9'	9'	
BERM WIDTH w/o GR (ft)	N/A	N/A	N/A	N/A	RDM 1, 4.7
BERM WIDTH w/ GR (ft)	N/A	N/A	N/A	N/A	RSD 862.01 (12 of 15)
PAVED SHOULDER WIDTH					
INSIDE or MEDIAN (ft)	4'	4'	N/A	N/A	RDM 1, 4.4.4
OUTSIDE (ft)	10'-12'	4'	4'	4'	
HORIZONTAL ALIGNMENT					
MAXIMUM SUPER (04, 06, 08, 10)	08	08	04	04	RDM 1, 3.4
MINIMUM RADIUS (ft)	1810'	1200'	926'	926'	GB
SPIRAL NEEDED (Yes/No)	YES	YES	NO	NO	RDM 1, 3.3.2
VERTICAL ALIGNMENT					
MAXIMUM GRADE	4%	5%	8%	8%	GB TBLS 5-2, 6-7, 8-1, RDM 9.4.1.8
MININIMUM GRADE	0.50%	0.50%	0.50%	0.50%	GB PG 3-130
MINIMUM CREST K FACTOR	247	151	84	84	GB, TBL 3-35
MINIMUM SAG K FACTOR	181	136	96	96	GB, TBL 3-37
CROSS SLOPES					
PAVEMENT	0.020	0.020	0.020	0.020	RDM 1 2.7.4
TURF SHOULDER INSIDE or MEDIAN	0.040	0.040	N/A	N/A	RSD 560.01
PAVED SHOULDER INSIDE or MEDIAN	0.020	0.020	N/A	N/A	
TURF SHOULDER OUTSIDE	0.040	0.040	0.040	0.040	
PAVED SHOULDER OUTSIDE	0.040	0.040	N/A	0.020	
BERM	N/A	N/A	N/A	N/A	RDM 1, 4.7
MEDIAN DITCH		N/A	N/A	N/A	RDM
DITCH TYPICAL (A or B)	A	A	B	A	RDM 1, 4.4.6
DITCH WIDTH (ft)	18'	18'	12'	18'	
CLEAR ZONE (ft)	30'	30'	20'	20'	RDM 1, 4.6.1
TYPICAL SECTION NO.					

LEGEND: GB = 2018 AASHTO GREEN BOOK RDM = ROADWAY DESIGN MANUAL RSD = 2024 ROADWAY STANDARD DRAWINGS

NOTES:

PROPOSED DESIGN CRITERIA

STATE PROJECT: **TIP:** I-5962
F. A. PROJECT: **TIER:** STATE WIDE

ROUTE	SR 1472	SR 1472			REFERENCE
ROAD NAME	Exmore Rd. /Bluefield Rd.	Exmore Rd.			OR
ALIGNMENT NAME					REMARKS
TRAFFIC DATA					
ADT LET YEAR =	N/A	N/A			Traffic Reports
ADT DESIGN YEAR =					
K					
D					
TTST					
DUALS					
FUNCTIONAL CLASSIFICATION	LOCAL	LOCAL			Planning doc/Go!NC
CONTEXT CLASSIFICATION	SUBURBAN	SUBURBAN			GB
TERRAIN TYPE	ROLLING	ROLLING			RDM 1, 2.3/GB 3.4.1
DESIGN SPEED (mph)	40	40			GB
POSTED SPEED (mph)	35	35			
TYPICAL SECTION TYPE	2 LANE SHOULDER	2 LANE CURB			
CURB & GUTTER (LT, RT, BOTH, NONE)	NONE	BOTH SIDES			
LANE WIDTH (ft)	12'	12'			GB
MEDIAN TYPE (RAISED OR DEPRESSED)	N/A	N/A			
MEDIAN WIDTH (ft)	N/A	N/A			RDM
MEDIAN PROTECT. (GR/BARRIER)	N/A	N/A			RDM
SIDEWALK (LT, RT, BOTH, NONE)	NONE	BOTH SIDES			
SIDEWALK WIDTH (ft)	N/A	5'			
SIDE PATH (LT, RT, BOTH, NONE)	NONE	NONE			
SIDE PATH WIDTH (ft)	N/A	N/A			
BICYCLE LANE WIDTH (ft)	N/A	N/A			
RUMBLE STRIPS (Yes/No)	NO	NO			RDM 1, 4.4.7
PROPOSED R/W WIDTH (ft)	50'	50'			RDM 2, 4.2
CONTROL OF ACCESS	NONE	NONE			
SHOULDER WIDTH (TOTAL)					
INSIDE or MEDIAN (ft)	N/A	N/A			RDM
OUTSIDE w/o GR (ft)	6'	N/A			GB TABLES
OUTSIDE w/ GR (ft)	9'	N/A			
BERM WIDTH w/o GR (ft)	N/A	10'			RDM 1, 4.7
BERM WIDTH w/ GR (ft)	N/A	12'			RSD 862.01 (12 of 15)
PAVED SHOULDER WIDTH					
INSIDE or MEDIAN (ft)	N/A	N/A			RDM 1, 4.4.4
OUTSIDE (ft)	4'	N/A			
HORIZONTAL ALIGNMENT					
MAXIMUM SUPER (04, 06, 08, 10)	04	04			RDM 1, 3.4
MINIMUM RADIUS (ft)	533'	533'			GB
SPIRAL NEEDED (Yes/No)	NO	NO			RDM 1, 3.3.2
VERTICAL ALIGNMENT					
MAXIMUM GRADE	7%	7%			GB
MININIMUM GRADE	0.50%	0.50%			GB PG 3-130
MINIMUM CREST K FACTOR	44	44			GB, TBL 3-35
MINIMUM SAG K FACTOR	64	64			GB, TBL 3-37
CROSS SLOPES					
PAVEMENT	0.020	0.020			RDM 1 2.7.4
TURF SHOULDER INSIDE or MEDIAN	N/A	N/A			RSD
PAVED SHOULDER INSIDE or MEDIAN	N/A	N/A			
TURF SHOULDER OUTSIDE	0.040	N/A			
PAVED SHOULDER OUTSIDE	0.040	N/A			
BERM	N/A	0.02			RDM 1, 4.7
MEDIAN DITCH	N/A	N/A			RDM
DITCH TYPICAL (A or B)	B	N/A			RDM 1, 4.4.6
DITCH WIDTH (ft)	12'	N/A			
CLEAR ZONE (ft)	16'	16'			RDM 1, 4.6.1
TYPICAL SECTION NO.					

LEGEND: GB = 2018 AASHTO GREEN BOOK RDM = ROADWAY DESIGN MANUAL RSD = 2024 ROADWAY STANDARD DRAWINGS

NOTES:

PROPOSED DESIGN CRITERIA
STRUCTURE SUMMARY SHEET

STATE PROJECT:
F. A. PROJECT:

TIP: I-5962
TIER: STATE WIDE

ROUTE	SR 1302	SR 1472			REFERENCE OR REMARKS
ALIGNMENT NAME	Y1 Cornelius Rd	Y3 Exmore Rd			
STRUCTURE NUMBER	80	No existing str			
STRUCTURE LOCATION	Over I-77	Over I-77			
STRUCTURE TYPE (BRIDGE or CULVERT)	BRIDGE	BRIDGE			
SINGLE or DUAL BRIDGE	SINGLE	SINGLE			
SIZE (LENGTH x WIDTH x HEIGHT)	57'x266'	40'x178'			
HORIZONTAL OFFSET ON BRIDGE	6'	6'			Fig 5-7, 5-8
HORIZONTAL CLEARANCE UNDER BRIDGE	18'	18'			RDM 1, 5.3.3
VERTICAL BRIDGE CLEARANCE	17'-0"	17'-0"			RDM 1, 5.3.4

ROUTE					REFERENCE OR REMARKS
ALIGNMENT NAME					
STRUCTURE NUMBER					
STRUCTURE LOCATION					
STRUCTURE TYPE (BRIDGE or CULVERT)					
SINGLE or DUAL BRIDGE					
SIZE (LENGTH x WIDTH x HEIGHT)					
HORIZONTAL OFFSET ON BRIDGE					
HORIZONTAL CLEARANCE UNDER BRIDGE					RDM 1, 5.3.3
VERTICAL BRIDGE CLEARANCE					RDM 1, 5.3.4

ROUTE					REFERENCE OR REMARKS
ALIGNMENT NAME					
STRUCTURE NUMBER					
STRUCTURE LOCATION					
STRUCTURE TYPE (BRIDGE or CULVERT)					
SINGLE or DUAL BRIDGE					
SIZE (LENGTH x WIDTH x HEIGHT)					
HORIZONTAL OFFSET ON BRIDGE					
HORIZONTAL CLEARANCE UNDER BRIDGE					RDM 1, 5.3.3
VERTICAL BRIDGE CLEARANCE					RDM 1, 5.3.4

ROUTE					REFERENCE OR REMARKS
ALIGNMENT NAME					
STRUCTURE NUMBER					
STRUCTURE LOCATION					
STRUCTURE TYPE (BRIDGE or CULVERT)					
SINGLE or DUAL BRIDGE					
SIZE (LENGTH x WIDTH x HEIGHT)					
HORIZONTAL OFFSET ON BRIDGE					
HORIZONTAL CLEARANCE UNDER BRIDGE					RDM 1, 5.3.3
VERTICAL BRIDGE CLEARANCE					RDM 1, 5.3.4

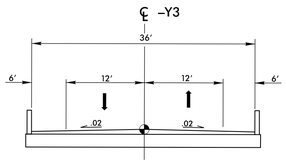
ROUTE					REFERENCE OR REMARKS
ALIGNMENT NAME					
STRUCTURE NUMBER					
STRUCTURE LOCATION					
STRUCTURE TYPE (BRIDGE or CULVERT)					
SINGLE or DUAL BRIDGE					
SIZE (LENGTH x WIDTH x HEIGHT)					
HORIZONTAL OFFSET ON BRIDGE					
HORIZONTAL CLEARANCE UNDER BRIDGE					RDM 1, 5.3.3
VERTICAL BRIDGE CLEARANCE					RDM 1, 5.3.4

ROUTE					REFERENCE OR REMARKS
ALIGNMENT NAME					
STRUCTURE NUMBER					
STRUCTURE LOCATION					
STRUCTURE TYPE (BRIDGE or CULVERT)					
SINGLE or DUAL BRIDGE					
SIZE (LENGTH x WIDTH x HEIGHT)					
HORIZONTAL OFFSET ON BRIDGE					
HORIZONTAL CLEARANCE UNDER BRIDGE					RDM 1, 5.3.3
VERTICAL BRIDGE CLEARANCE					RDM 1, 5.3.4

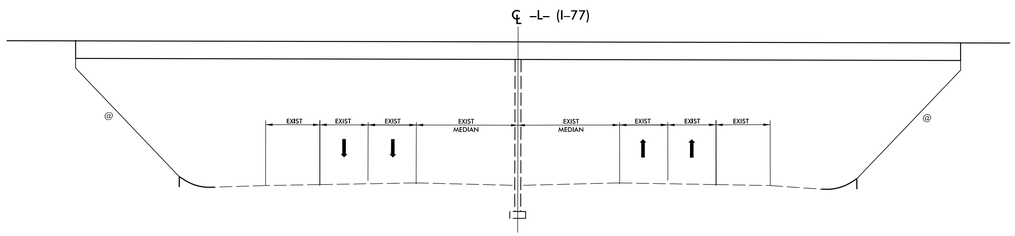
DESIGN DATA –Y3–
V = 40 MPH
FUNCTIONAL CLASS –Y3– = LOCAL
MINIMUM VERTICAL CLEARANCE = 17 FT.
FUNCTIONAL CLASS –L– = INTERSTATE

–Y3– ALT 1, 2, 3

STRUCTURE TYPICAL SECTION

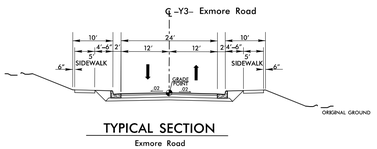


TYPICAL SECTION ON STRUCTURE

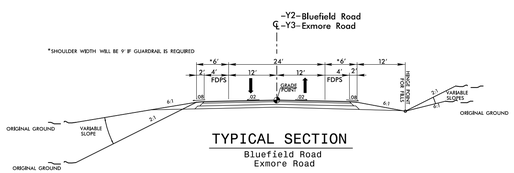


APPROXIMATE BRIDGE LENGTH = 178'

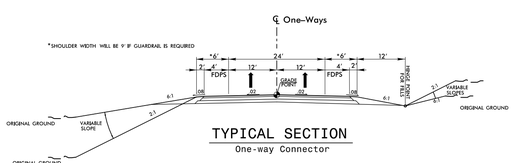
TYPICAL SECTION ON ROADWAY UNDER STRUCTURE



TYPICAL SECTION
Exmore Road



TYPICAL SECTION
Bluefield Road
Exmore Road

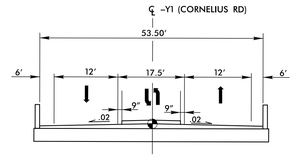


TYPICAL SECTION
One-way Connector

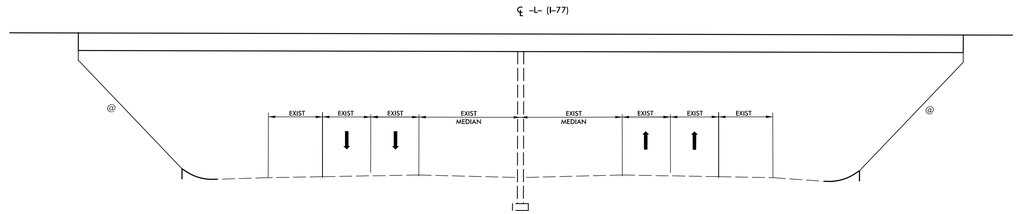
DESIGN DATA –Y1–
V = 50 MPH
FUNCTIONAL CLASS –Y1– = COLLECTOR
MINIMUM VERTICAL CLEARANCE = 17 FT.
FUNCTIONAL CLASS –L– = INTERSTATE

–Y1–ALT2

STRUCTURE TYPICAL SECTION

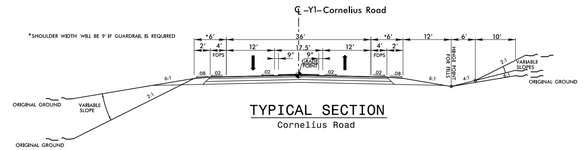


TYPICAL SECTION ON STRUCTURE

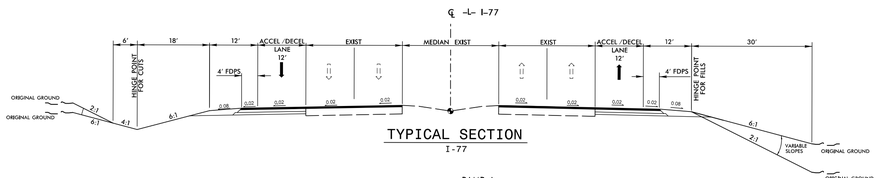


TYPICAL SECTION ON ROADWAY UNDER STRUCTURE

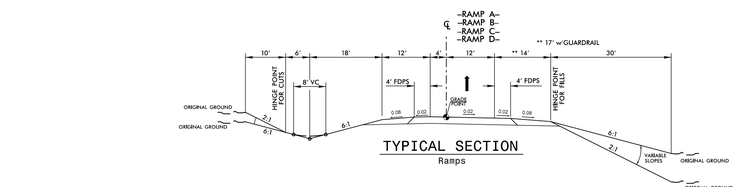
APPROXIMATE BRIDGE LENGTH = 295'



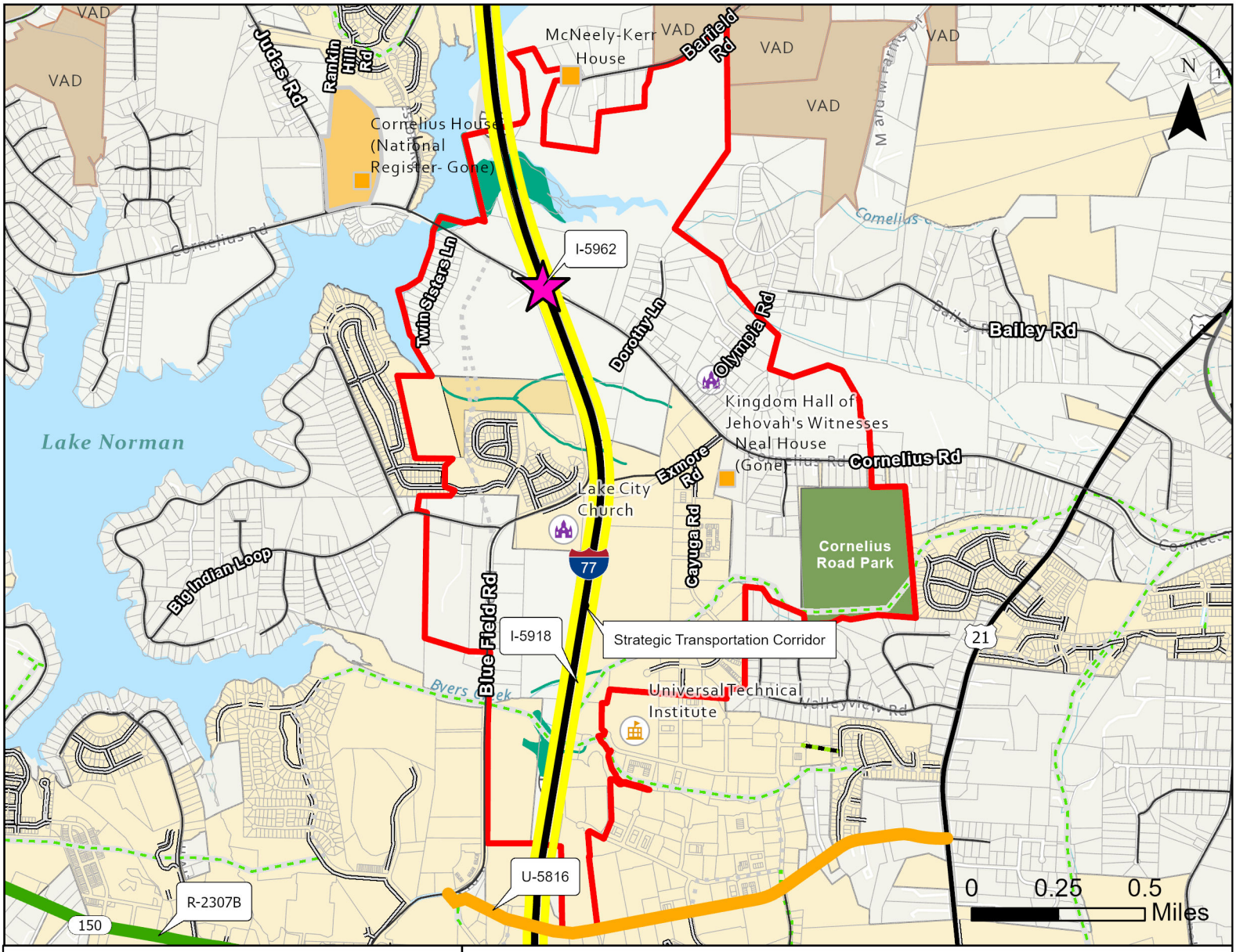
TYPICAL SECTION
Cornelius Road



TYPICAL SECTION
I-77



TYPICAL SECTION
Ramps



Community Context Map

I-77 at SR 1302 (Cornelius Road)
Convert Grade Separation to Interchange
Iredell County
STIP No. I-5962
April 2025

2024-2033 STIP Lines
- Regional Highway
- Division Highway
- IM
- Direct Community Impact Area

Roads
- Interstate
- US Route
- NC Route
- Secondary Route

Existing Pedestrian Facility Lines
- Sidewalk

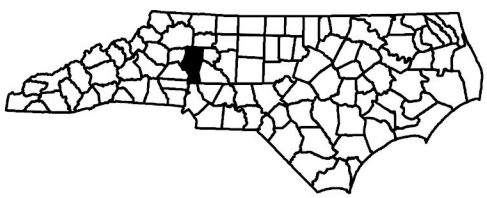
Existing Shared-Use Facility Lines
- Shared Use Path

Proposed Pedestrian Facility Lines
- Sidewalk

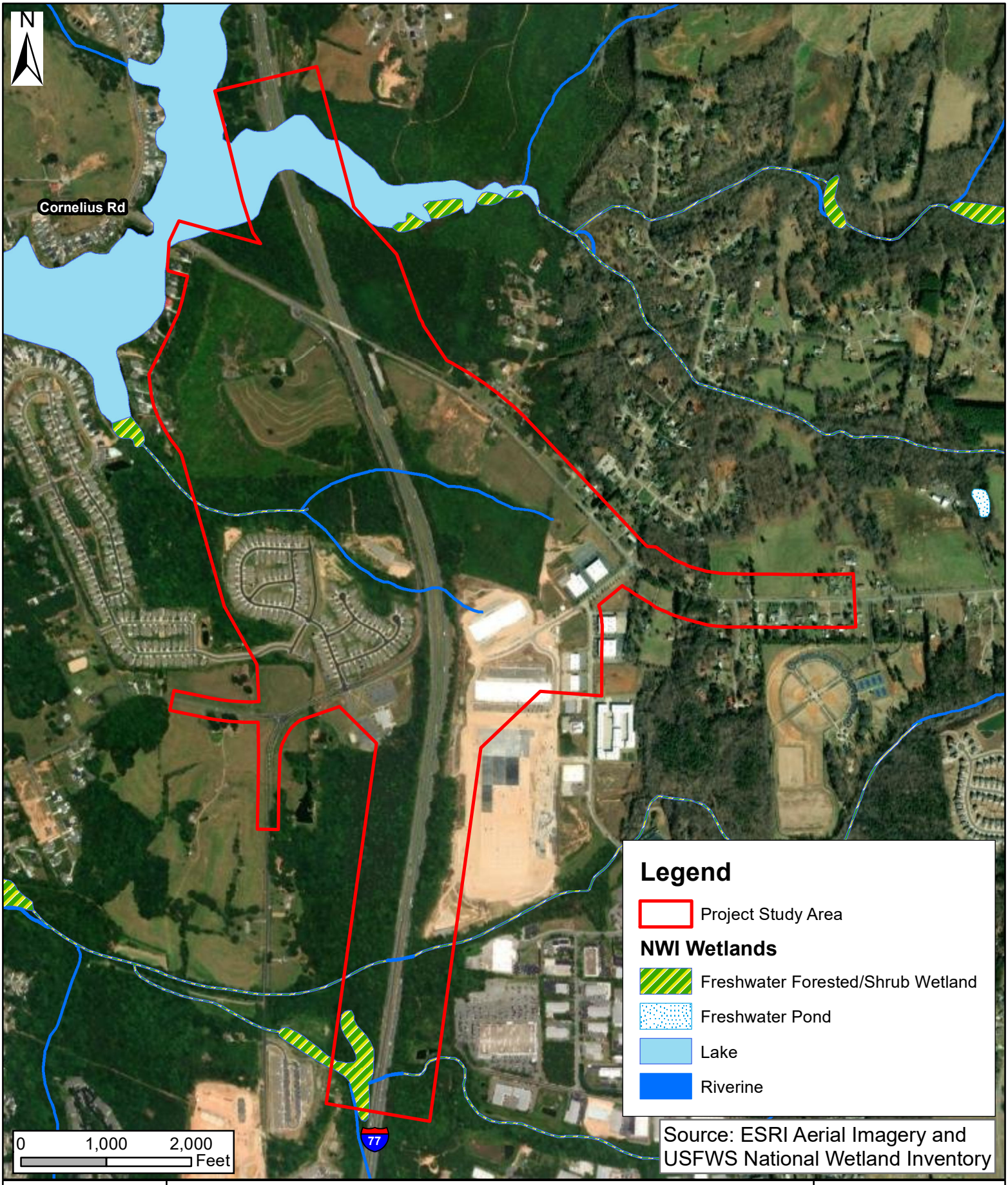
Proposed Shared-Use Facility Lines
- Shared Use Path

Proposed Bike Facilitiy Lines
- Other Planned Bicycle Feature
- Paved Shoulder

- Historic Site
- Place of Worship
- Universal Technical Institute
- Mooresville
- Park
- Farm District
- Natural Heritage Program Managed Areas
- USFWS National Wetland Inventory
- Streams



Site Visit: April 23rd, 2025
STIP Projects Source: Connect NCDOT (2025)
Road Source: Connect NCDOT (2025)
Municipal Boundary Source: Connect NCDOT (2025)
Bike and Trail Source: Connect NCDOT (2025)
Parcel Data Source: NC One Map (2025)
Farmland Source: NC Statewide Voluntary District GIS (2025)
Historic Data Source: NC HPO (2025)



National Wetland Inventory Map
I-77 at SR 1302 (Cornelius Road)
Convert Grade Seperation to Interchange
I-5962
Iredell County, North Carolina

June 2025

Figure 3