

Agency Coordination Meeting

Proposed US 601 Widening from I-74 to SR 1104 (Cody Trail)
Surry County

State Project No. 47106.1.1
NCDOT STIP Project No. R-5836

North Carolina Department of Transportation



July 19, 2023

Purpose of Today's Meeting

The purpose of today's meeting is to discuss the proposed project with agencies involved in the permitting process. Information concerning the project background, purpose and need, preliminary impacts, proposed hydraulic structures at major crossings, and the three Build alternatives is presented for review and discussion.

1. Introduction

Project Description

The North Carolina Department of Transportation (NCDOT) proposes to widen US 601 from I-74 to SR 1104 (Cody Trail) in Surry County to a four-lane, median divided highway. The proposed project is included in the NCDOT 2020-2029 Current STIP (May 2023) as Project No. R-5836. According to the STIP, the length of the proposed project is approximately 7.2 miles. Based on the preliminary design of the proposed project, the four-lane, median divided section on US 601 would extend slightly to the south of Cody Trail, and then fully taper back down to the existing two-lane highway approximately 0.4 mile south of the Cody Trail intersection. The project study area is shown on Figure 1 in the Appendix.

Project Study Area

The project study area developed to address the purpose and need of NCDOT STIP No. R-5836 is shown on Figure 1 in the Appendix. The study area is also shown on Figures 2 through 4 in the Appendix, along with the three Build alternatives.

The project study area is generally a 600-foot-wide corridor along existing US 601, but it widens out at intersections and interchanges along the corridor to account for any needed improvements to or realignments of intersecting roads. The study area is wider to the west (350 feet) of the centerline of existing US 601 than to the east (250 feet) because NCDOT already owns additional right-of-way along the western side of existing US 601. The study area begins to the south of the US 601/Cody Trail intersection and extends approximately 8.2 miles to the north along US 601 to just north of the US 601/I-74 interchange. The study area encompasses approximately 754.10 acres in total.

Merger Screening

A Merger Screening meeting was conducted for the proposed project on July 21, 2022. Representatives from the USACE, FHWA, NCDWR, and NCDOT (Division 11 and EPU) attended the meeting. It was determined that a modified Merger process would be used for the proposed project, consisting of exchanges of information and/or meetings to make sure the Project Team receives feedback at appropriate stages of project development from USACE and NCDWR. It was also discussed that not all of the Merger Team agencies need to necessarily be involved if there are no issues of concern to them, and that the modified process allows this smaller group to work together.

Project Status, Background, Schedule, and Cost Estimates

The proposed project is included in the NCDOT 2020-2029 Current STIP (May 2023) as Project No. R-5836 and will be managed by NCDOT Division 11. The proposed project is currently scheduled in the STIP for right-of-way acquisition starting in Fiscal Year (FY) 2024 and construction starting in FY 2026.

The proposed project, or portions of the project, are included in the following metropolitan and local transportation plans:

- The *1998 Mount Airy Thoroughfare Plan* first recommended the improvement of US 601 to a multi-lane facility.
- Surry County developed the *I-74/US 601 Small Area Plan* in 2003, which is also included in the *Surry County Land Use Plan 2040* (discussed below). The small area plan states that because the area around the I-74/US 601 interchange is currently served by public water and sewer and the interchange is only located approximately one mile from the City of Mount Airy, there is enormous potential for growth around the interchange. As a result, the small area plan recommended the expansion of US 601 to a four-lane divided, controlled access facility from I-74 to Old Cadle Ford Road (SR 1357) due to close proximity to existing and planned commercial and residential developments.
- The *Surry County Comprehensive Transportation Plan (CTP)* (April 2012) includes widening US 601 to a four-lane divided boulevard from south of I-74 to SR 1100 (Atkins Street) near Dobson as one of its major recommended highway improvements. The CTP indicates that the primary purpose of the project is to relieve congestion on existing US 601.
- The *Surry County Land Use Plan 2040* (November 2019) recommends that US 601 between Mount Airy and the US 601/NC 268 intersection be widened to a four-lane divided, controlled access facility. The 2040 Land Use Plan identifies US 601 between I-74 and Dobson as a rural growth area, and discusses that Surry County partnered with Dobson to provide a water line south along US 601 to Cody Creek. This improvement was intended to help provide needed urban services to areas near Dobson where commercial development has accelerated.
- The *Draft Davie, Yadkin, and Surry Counties Regional Comprehensive Transportation Plan (CTP)* (June 17, 2020) indicates that US 601 needs to be widened from I-74 to E. Atkins Street (SR 1100) in Dobson to address congestion and mobility deficiencies. The Regional CTP also indicates that the remainder of US 601 to the south of E. Atkins Street in Surry County, to N. Lee Avenue (SR 1134) in Yadkinville, needs to be modernized (e.g., widen lanes, add turn lanes, etc).

Public Involvement

NCDOT conducted a Public Meeting for the proposed project on November 1, 2018. A Local Officials Informational Meeting was conducted prior to the public meeting. Attendees at both meetings were given an opportunity to review project maps and displays, ask questions, provide comments, and discuss the project with project representatives. Seventy-nine citizens registered their attendance at the public meeting, and a total of 58 comments were received. Overall, there was general support for the project by both local officials and the general public. The primary comment expressed by both local officials and the general public was concern that full access was not being provided on US 601 at Temple Baptist Church (i.e., the project design only includes a northbound directional crossover on US 601 at the church).

Other STIP Projects in the Area

Other projects in NCDOT's approved 2020 to 2029 STIP in the vicinity of the proposed project include the following:

- R-5714: US 601 from US 52 to SR 1365 (Forrest Drive). Upgrade roadway. Right-of-way acquisition in FY 2020 and construction in FY 2025.
- I-5907: I-74 from I-77 to US 601. Pavement rehabilitation. Construction in FY 2024.

Project Schedule

The tentative project schedule is shown below. Dates are preliminary and subject to change:

- Final Categorical Exclusion Document – Spring 2024
- Right-of-way – FY 2024
- Construction – FY 2026

Project Costs

The total project costs as shown in NCDOT's approved 2020 to 2029 STIP are as follows:

- Right-of-Way – \$3,100,000
- Utilities – \$1,700,000
- Construction – \$76,000,000
- Prior Years – \$3,350,000
- Total – \$84,150,000

Human and Natural Environmental Resources

Human and natural environmental resources in the project study area are listed below in Table 1 and shown on Figures 2 through 4 in the Appendix. The jurisdictional features and terrestrial communities figures from the Final Natural Resources Technical Report (NRTR) (September 2022) are also included in the Appendix. The Appendix also includes the tables from the NRTR listing the characteristics of delineated streams, wetlands, and surface waters within the study area (Tables A-1 to A-4), as well as the federally-protected species in the study area (Table A-5).

Table 1. Environmental Resources within the Study Area

Cultural Resources	
Archaeology	No NRHP Eligible or Listed Archaeological Sites Present Form was received on 7/31/19
Historic Architecture	No Historic Properties Present or Affected Form was received on 5/28/20
Human Environment Resources	
Community Resources	3 Cemeteries (Bingman Cemetery, Hughes Burial Ground, and Church of God Cemetery)
	3 Churches (Church of God, Dobson Church of Christ, and Temple Baptist Church)
	2 Government Facilities (Surry County Service Center and Surry County Communications)
	1 Fire/EMS Station (Dobson Rescue Squad)
	1 Assisted Living Facility (Central Care, Inc.)
	1 Privately Owned R/V Park (Mayberry Campground)
	<ul style="list-style-type: none"> • 3 Schools are located adjacent to the study area along South Main Street in Dobson (Surry Central High School, Surry Early College High School, Surry Community College) • 2 Schools are located adjacent to the study area along Rockford Road (Salem Christian Academy and Rockford Elementary School) • 1 School is located adjacent to the study area along Cadle Ford Road (White Plains Elementary School)
Geoenvironmental Sites	7 sites (including five UST sites and two hazardous waste sites)
Potential Environmental Justice (EJ) Communities	Preliminary analysis using the 2022 NCDOT Demographic Snapshot Tool indicates the presence of notable minority, low-income, and Limited English Proficiency (LEP) populations within the project study area. As documented in the <i>R-5836 Indirect & Cumulative Effects Report</i> (January 2022), coordination with Surry County Development Services noted the presence of LEP populations along Andrew Lane, Nathan Lane, and Suburban Lane in the project study area.
Agricultural Resources	Project site visits and aerial imagery indicate the presence of multiple active agricultural operations along the project corridor. Input from the Surry Soil and Water Conservation District noted many of these farms have been in these communities for years and are mostly family operations that farm tobacco, corn, beans, hay, chicken, and cattle. Surry County GIS data shows the presence of one VAD parcel along the east side of US 601 near the Cody Trail intersection.
Multimodal	<u>Bicycle Routes</u> : NC Route 4 (North Line Trace) follows E. Atkins Street/Turkey Ford Road (SR 1100) through the study area and is carried across US 601 by a bridge. NC Route 4 runs for a length of approximately 400 miles east-west from the NC mountains to the NC coast along a route just south of and parallel to the state border with Virginia. SR 1100 is shown as a 'Needs Improvement' Bicycle Route in the <i>Surry County CTP</i> (2012). NC Route 4 is also referenced in the <i>Yadkin Valley Regional Bike Plan</i> (2020). An existing bicycle lane is present along the section E Atkins Street to the west of the US 601 interchange.

Table 1. Environmental Resources within the Study Area (continued)

Multimodal (continued)	<p><u>State and Local Bicycle/Pedestrian Plan Recommendations:</u> The <i>Surry County CTP</i> (2012) and the <i>Great Trails State Plan Final Report</i> (NCDOT, 2022) recommend a multiuse path along the Fisher River as it passes beneath US 601 in the study area. The <i>Great Trails State Final Report</i> also recommends a shared use path along US 601 from Mount Airy to the proposed multiuse path along the Fisher River. This would provide a connection along US 601 and the Fisher River from Mount Airy to the proposed Mountains-to-Sea State Trail (MST) in southern Surry County. The <i>Yadkin Valley Regional Bike Plan</i> (2020) and the <i>Davie-Surry-Yadkin Regional CTP Bike/Ped Map</i> (Draft, June 2020) recommend a separated bicycle lane along US 601 as part of the STIP No. R-5836 improvements.</p>
	<p><u>Blueways:</u> Mapping from the <i>Piedmont Triad Outdoor Recreation Plan</i> (2022) shows the segment of the Fisher River within the project study area as an existing blueway. The Fisher River blueway is 21 miles long, beginning just north of Dobson in Surry County at the Fisher River Park. There are four existing access points currently along the Fisher River before it feeds into the Yadkin River. As the river crosses beneath US 601, the nearest accesses are located at Fisher River Park (upstream of US 601) and along Old US 601 (downstream of US 601).</p>
Natural Environment Resources	
Delineated Streams	A total of 45 streams were delineated within the project study area (total of 24,569 linear feet), each of which has a Best Usage Classification of 'C'. Streams include Fisher River, 22 Unnamed Tributaries (UTs) to Fisher River, 13 UTs to Stewarts Creek, and 9 UTs to Jackson Creek. All water resources in the study area are part of the Yadkin River Basin (USGS Hydrologic Unit 03040201).
Delineated Wetlands	A total of 16 wetlands (totaling 1.93 acres) were delineated within the project study area.
Delineated Surface Waters	A total of 3 surface waters (totaling 0.74 acres) were delineated within the project study area.
Water Supply Watershed	There are no Water Supply Watershed Protected or Critical Areas within the project study area.
NCDOT Mitigation Sites	None
Riparian Buffer Rules	None
List of Protected Species and Biological Conclusions	<ul style="list-style-type: none"> • Gray bat (E) – Unresolved • Northern long-eared bat (T) – Unresolved • Bog turtle (SAT) – Not required • Schweinitz’s sunflower – May Affect, Not Likely to Adversely Affect

Water resources in the study area are part of the Yadkin River basin (U.S. Geological Survey Hydrologic Unit 03040201). No streams have been designated as an Outstanding Resource Water (ORW). There are no designated High Quality Waters (HQW) or water supply watersheds (WS-I or WS-II) within, or within 1.0 mile downstream of the study area. The North Carolina 2022 Final 303(d) list of impaired waters does not identify any streams within the study area as an impaired water.

The topography of the area is generally steep to broadly rolling hills, interspersed with narrow strips of level flood plain areas along the streams. There is guardrail along both sides of much of the existing US 601 corridor within the study area because of the steep drop offs along both sides of the road. The land adjacent to the US 601 corridor is predominantly mixed pine/hardwood forest, agricultural land, and maintained/disturbed land, interspersed with bottomland forest along the creeks and the Fisher River.

Existing Roadway Conditions and Classifications

US 601 in the project study area (to the south of I-74) is classified as a Minor Arterial in the Statewide Functional Classification System, and the speed limit is 55 miles per hour (mph). US 601 is a north-south Intrastate route that traverses North Carolina from US 52 in Mount Airy to the southern Union County line near Pageland, South Carolina. US 601 runs roughly north-south through central Surry County between Mount Airy and the Yadkin County Line at the Yadkin River. US 601 to the north of the I-74 interchange is classified as an Other Principal Arterial, and is a four-lane, divided facility with at-grade intersections and a speed limit of 55 mph, but the speed limit drops to 35 mph as the facility approaches the Mount Airy corporate limits.

There are no United States or North Carolina routes in the project study area other than US 601 and US 601 Business through Dobson. US 601 Business intersects US 601 twice: to the north of Dobson, just south of the Fisher River; and to the south of Dobson, just north of the project's southern terminus at Cody Trail. US 601 Business is classified as a Major Collector.

I-74 has an interchange with US 601 at the northern end of the project study area, and it runs roughly east-west across north-central Surry County between I-77 to the west and US 52 southeast of Mount Airy. I-74 is classified as an Interstate, and is a four-lane, divided freeway facility with a speed limit of 70 mph in the vicinity of the proposed project.

The remainder of the existing roadway network in the vicinity of the proposed project consists of North Carolina Secondary Roads (SRs) with functional classifications of Major Collector, Minor Collector, or Local Streets. Major Collectors intersecting US 601 along the project corridor include: Perry Taylor Road (SR 1357) and E. Atkins Street/Turkey Ford Road (SR 1100). E. Atkins Street/Turkey Ford Road has an interchange at US 601, and E. Atkins Street to the west of the interchange has relatively intensive commercial development between the interchange and the Dobson central business district. Minor Collectors intersecting the project corridor include: Old Cadle Ford Road (SR 1357), Cadle Ford Road (SR 1356), Old Highway 601 (SR 2258), and Rockford Road (SR 2221) to the east of US 601. The Local Streets intersecting US 601 within the project study area include: S. McKinney Road (SR 1359), Smith Road (SR 1354), Collins Road (SR 2220), Rockford Road to the west of US 601, and Cody Trail (SR 1104)/ Sugar Branch Road (SR 2273). All of these are two-lane roads within the study area.

2. Purpose and Need

Needs Addressed

The primary needs for the proposed US 601 widening project are:

- **Traffic Demand**

Traffic conditions along this section of US 601 are expected to approach or exceed the capacity limits for most of this facility in the design year (2045). The results of the design year No-Build US 601 mainline LOS analysis for the AM and PM peak periods are summarized in Table 2. The analysis results for design year (2045) No-Build conditions show that over two miles of this section of US 601 are anticipated to reach capacity (LOS E) in at least one of the peak periods. Four additional miles are anticipated to approach capacity conditions (LOS D) in at least one of the peak periods in the design year. The remaining segments (one mile) are anticipated to operate at LOS C or better.

Table 2. Design Year (2045) No-Build US 601 Mainline LOS Summary

US 601 Segment	Design Year (2045) No-Build			
	Southbound		Northbound	
	AM	PM	AM	PM
I-74 to SR 1359 (S. McKinney Road)	D	E	E	D
SR 1359 (S. McKinney Road) to SR 1357 (Perry Taylor Road)	D	E	E	D
SR 1357 (Perry Taylor Road) to SR 1356 (Cadle Ford Road)	D	D	D	D
SR 1356 (Cadle Ford Road) to SR 1354 (Smith Road)	E	D	D	E
SR 1354 (Smith Road) to US 601 Business/SR 2258 (Old US 601)	D	D	D	D
US 601 Business/SR 2258 (Old US 601) to SR 2220 (Collins Road)	D	C	C	D
SR 2220 (Collins Road) to SR 1100 (Turkey Ford Road/E. Atkins Stret)	D	C	C	D
SR 1100 (Turkey Ford Road/E. Atkins Street) to SR 2221 (Rockford Road)	C	C	C	C
SR 2221 (Rockford Road) to US 601 Business (S. Main Street)	B	B	B	B
US 601 Business (S. Main Street) to SR 2273 (Sugar Branch Road)/SR 1104 (Cody Trail)	C	C	C	C

The results of the design year (2045) No-Build intersection analysis for unsignalized intersections along the project corridor are summarized below in Table 3. Traffic movements at nine of the ten unsignalized intersections are projected to operate at LOS E or F in at least one of the peak hours for design year No-Build conditions.

Table 3. Design Year (2045) No-Build Unsignalized Intersection LOS and Delay (seconds/vehicle) Summary

Unsignalized Intersection	Movement	Design Year (2045) No-Build			
		AM		PM	
		Delay (sec/veh)	LOS	Delay (sec/veh)	LOS
US 601/I-74 WB Ramps	NB Left-Turn	11.8	B	10.2	B
	WB Thru/Left-Turn	935.7	F	1097.7	F
	WB Right-Turn	23.6	C	21.3	C
US 601/McKinney Road	NB Thru/Left-Turn	10.0	A	10.2	B
	EB Left/Thru/Right-Turn	82.9	F	82.9	F
	WB Left/Thru/Right-Turn	34.1	D	34.7	D
	SB Left-Turn	10.5	B	10.2	B
US 601/Old Cadle Ford Road/Perry Taylor Road	NB Left-turn	10.0	B	10.2	B
	EB Thru/Left-Turn	-	-	540.7	F
	EB Right-Turn	16.7	C	17.5	C
	WB Thru/Left-Turn	1228.1	F	-	-
	WB Right-Turn	17.2	C	16.2	C
US 601/Cadle Ford Road	SB Left-Turn	10.0	B	10.0	A
	NB Left-Turn	10.1	B	9.9	A
	EB Left/Thru/Right-Turn	1011.8	F	744.8	F
	WB Thru/Left-Turn	660.2	F	-	-
	WB Right-Turn	19.8	C	17.6	C
US 601/Smith Road	SB Left-Turn	9.8	A	10.8	B
	NB Left-Turn	10.5	B	9.8	A
	EB Left/Thru/Right-Turn	66.3	F	53.3	F
	WB Left/Thru/Right-Turn	85.0	F	65.3	F
US 601/Collins Road	SB Left-Turn	9.8	A	10.3	B
	NB Left-Turn	9.6	A	9.5	A
E. Atkins Street/US 601 SB Ramps	EB Left/Right-Turn	37.1	E	95.5	F
	WB Thru/Left-Turn	8.0	A	8.8	A
	SB Left/Thru	17.1	C	18.1	C
Turkey Ford Road/US 601 NB Ramps	SB Right-Turn	24.7	C	11.6	B
	NB Left-Turn	94.3	F	159.8	F
	NB Right-Turn	8.9	A	9.6	A
US 601/US 601 Business (S. Main Street)	EB Thru/Left-Turn	8.3	A	8.4	A
	NB Left-Turn	8.5	A	9.8	A
	EB Left-Turn	31.0	D	35.3	E
US 601/Cody Trail/Sugar Branch Road	EB Right-Turn	12.6	B	16.8	C
	NB Left/Thru/Right-Turn	8.4	A	9.0	A
	EB Left/Thru/Right-Turn	62.1	F	50.7	F
	WB Left/Thru/Right-Turn	21.0	C	20.7	C
	SB Thru/Left-Turn	9.0	A	8.4	A

The three signalized intersections along the project corridor (US 601/I-74 Eastbound Ramps, US 601/US 601 Business/Old US 601, US 601/Rockford Road) are projected to operate at LOS C or better in both peak hours under design year No-Build conditions.

- **Mobility and System Linkage**

The US 601 corridor is one of the County's major north-south thoroughfares. The corridor is the major connection between the City of Mount Airy, the County's largest municipality, and the Town of Dobson, the county seat. In addition, the corridor provides access to I-74 for Surry County, and to the Boonville and Yadkinville areas of Yadkin County. As such, several local and statewide plans include the US 601 corridor as an important and vital linkage for the County and region. Those plans recommend improvements to this corridor designed to maintain or improve mobility within the county and region.

The *1998 Mount Airy Thoroughfare Plan* first recommended the improvement of US 601 to a multi-lane facility. The *Surry County Comprehensive Transportation Plan (CTP)* (April 2012), as well as the *Draft Davie, Yadkin, and Surry Counties Regional Comprehensive Transportation Plan* (June 17, 2020), indicate that US 601 needs to be widened from I-74 to E. Atkins Street (SR 1100) in Dobson to address congestion and mobility deficiencies. The recommended improvement for this section of US 601 in the Surry County CTP is a four-lane boulevard. The Regional CTP also indicates that the remainder of US 601 to the south of E. Atkins Street in Surry County, to N. Lee Avenue (SR 1134) in Yadkinville, needs to be modernized (e.g., widen lanes, add turn lanes, etc). The *Surry County Land Use Plan 2040* (November 2019) recommends widening US 601 between Mount Airy and NC 268 to a four-lane, divided, controlled access highway.

In addition, US 601 is identified as a statewide level highway facility in the *North Carolina Transportation Network (NCTN) and Strategic Transportation Corridors Framework* (August 2015). NCDOT's NCTN includes a network of 25 key multimodal transportation corridors called Strategic Transportation Corridors (STC). The corridor profile for Corridor G (I-77 from South Carolina state line to Virginia state line) identifies US 601 as an "other parallel statewide level highway." Statewide level highway facilities are defined as "high volume facilities that provide a unique statewide function or address statewide economic development objectives." In addition, statewide level facilities are intended to provide the highest (i.e., unimpeded) level of mobility to meet their primary function of supporting high-value inter-regional movement of people and goods in pursuit of statewide economic development objectives. Statewide level highway facilities are generally higher speed/higher capacity facilities, and are envisioned to provide managed land access, as opposed to serving shorter distance trips and providing direct land access.

Project Purpose

The purposes of the proposed US 601 widening project are to:

- **Improve the traffic carrying capacity of the US 601 corridor in the study area.**

The majority of the project mainline is expected to approach or reach capacity (LOS D or E) by the design year 2045 without improvements. In addition, 9 of the 10 non-signalized intersections have movements that are anticipated to operate poorly (LOS E or F) in the design year. Improving US 601 to a four-lane divided facility in the project study area will address these concerns related to the traffic carrying capacity of the corridor. The proposed synchronized street design will also improve traffic flow by simplifying traffic signal phasing (e.g., eliminating the need for left-turn signals or cutting down on the time spent at a traffic light) and allowing both directions of traffic to move simultaneously.

- **Improve the transportation network in the study area to benefit regional mobility and connectivity.**

US 601 is a major north-south corridor in Surry County, connecting Mount Airy with rural areas in the county. US 601 is an important and vital transportation corridor for the county and region and local government plans have placed a priority on maintaining and improving the mobility along this corridor. US 601 is also a statewide level highway facility in NCDOT's North Carolina Transportation Network (NCTN). Statewide level highway facilities are intended to provide the highest (i.e., unimpeded) level of mobility to meet their primary function of supporting high-value inter-regional movement of people and goods in pursuit of statewide economic development objectives. Statewide level highway facilities are generally higher speed/higher capacity facilities, and are envisioned to provide managed land access, as opposed to serving shorter distance trips and providing direct land access. Improving US 601 to a four-lane divided facility between Mount Airy and Dobson will benefit regional mobility and connectivity.

Potential Additional Benefits of the Proposed Project

NCDOT maintains data through the North Carolina Highway Safety Improvement Program (HSIP) to identify hazardous intersections and road segments throughout the state. Current HSIP data (2022) identifies two hazardous intersections along the US 601 project corridor, as follows:

- US 601 at SR 1357 (Perry Taylor Road/Old Cadle Ford Road) meets the frontal impact warrant.
- US 601 at SR 1359 (McKinney Road) meets the frontal impact warrant.

The proposed designs at these two intersections along US 601 offers the potential to reduce the number and severity of vehicle crashes by eliminating through movements and left turns from the side streets, as well as by providing separate left-turn and right-turn lanes from US 601 to the side streets.

3. Build Alternatives

Proposed Typical Section

The proposed US 601 typical section is included in the Appendix. A Synchronized Street design is proposed for the widened facility. The proposed four-lane median-divided typical section has two 12-foot travel lanes in each direction and ten-foot outside shoulders (four-foot paved). It has a 46-foot median containing six-foot inside shoulders (four-foot paved) in each direction. It has a total pavement width of 64 feet (32 feet in each direction).

Build Alternatives

Three Build alternatives have been identified for the proposed project and a preliminary evaluation completed. The No-Build Alternative is the baseline comparative alternative for the design year (2045). The No-Build Alternative would not provide any substantial improvements to the US 601 corridor within the project study area, or any intersections therein, through the year 2045. Note that Alternative 2 was eliminated from further study in 2018. Alternative 2 included conventional intersections at the ramp terminals at the existing US 601/E. Atkins Street/Turkey Ford Road (SR 1100) interchange, whereas the three Build alternatives include proposed roundabouts at these ramp terminals. The three Build alternatives (see Figures 2 through 4 in the Appendix) include:

- Alternative 1 (West Side Widening) – This alternative assumes US 601 would be widened to the western side of the existing highway facility. NCDOT already owns additional right-of-way along the west side of the existing two-lane US 601 facility for most of the project corridor. In addition, the existing bridge at the US 601/E. Atkins Street/Turkey Ford Road interchange is already built to accommodate the US 601 widening to the west.
- Alternative 3 (East Side Widening) – This alternative assumes US 601 would be widened to the eastern side of the existing highway facility.
- Alternative 4 (Weaving Alignment) – This alternative “weaves” the widening of US 601 between west side widening and east side widening to optimize minimization of impacts to environmental features.

Preliminary Impacts of the Build Alternatives

The preliminary impacts of the three Build alternatives are summarized in Table 4. Impacts calculations are based on functional design slope stake limits plus a 25-foot buffer.

Table 4. Preliminary Impacts of the Build Alternatives¹

Resource	Alternative		
	Alternative 1 (West Side Widening)	Alternative 3 (East Side Widening)	Alternative 4 (Weaving Alignment)
Natural Environment Resources			
Delineated Wetlands (acres)	0.19	0.18	0.13
Delineated Streams (linear feet)	3,419	5,687	3,137
Delineated Ponds (acres)	0.00	0.00	0.00
Protected Species ²	<ul style="list-style-type: none"> • Schweinitz’s sunflower (May Affect, Not Likely to Adversely Affect) • Gray bat (Unresolved) • Northern long-eared bat (Unresolved) 		
100-Year Floodplain (acres)	2.05	2.85	2.05
Human Environment Resources			
Residential Displacements	3	3	3
Business Displacements ³	0	2	0
Historic Resources	0	0	0
Archaeological Resources	0	0	0
Cemeteries	1	1	1
Parks/Recreation Areas	0	0	0
Geoenvironmental Sites	2	3	2

¹Impact calculations are based on functional design slope stake limits plus 25-foot buffer.

²The Biological Conclusions shown are from the updated *Natural Resources Technical Report* (NV5, September 2022). An updated sunflower survey was completed in October 2021 for the updated NRTR. There were no changes to the boundaries of the known sunflower population and no new populations were found in the study area. Structure surveys for protected bat species were completed in August 2022, and the *Draft Federally Protected Bat Survey Report* (NV5, February 2023) is currently under review by NCDOT.

³Business displacements include non-profits.

The business relocations with Alternative 3 are the Dobson Rescue Squad (246 Rockford Road in Dobson) and the Dobson Church of Christ (165 Dobson Church of Christ Road in Dobson). The Hughes Burial Ground cemetery would be displaced by all three alternatives. The same three residences would also be displaced by all three alternatives.

The impacts at each individual stream and wetland for each alternative are shown on the first page of the Appendix, as well as on Figures 2 through 4 in the Appendix. The individual stream impacts were minimized for each alternative by including retaining walls, as feasible.

The Appendix also includes tables showing the preliminary hydraulic recommendations for major stream crossings (i.e., conveyance greater than a 72-inch pipe) for each alternative. These tables also include the total stream impacts at each hydraulic structure, which are measured from the slope stakes plus 25-foot buffer to the existing culvert ends.

4. NCDOT Preferred Alternative

Preliminary Impacts Comparison for the Build Alternatives

A comparison of the preliminary impacts of the three Build alternatives is shown above in Table 4. All three Build alternatives would displace the same three residences and the same cemetery (Hughes Burial Ground). They would also have the same impacts on protected species. Below is a discussion of the differing preliminary impacts between the three Build alternatives:

- Alternative 1 (West Side Widening) is expected to have the lowest right-of-way costs since it would be almost entirely constructed in existing NCDOT right-of-way. Alternative 1 would also be the easiest alternative to construct in terms of constructability/maintenance of traffic. Alternative 1 would have slightly higher delineated wetlands (0.19 acres) and delineated streams (3,419 linear feet) impacts than Alternative 4, but the stream impacts would be substantially lower than for Alternative 3.
- Alternative 3 (East Side Widening) would have substantially higher delineated streams (5,687 linear feet) impacts than the other two Build alternatives. It would also have the highest 100-year floodplain impacts (2.85 acres). It would also have the highest impacts to geoenvironmental sites and two business displacements, whereas the other Build alternatives would not displace any businesses.
- Alternative 4 (Weaving Alignment) would have the lowest delineated wetlands (0.13 acres) and delineated streams (3,137 linear feet) impacts of the three Build alternatives, but only slightly lower than the impacts to these features with Alternative 1. Because of the weaving alignment of Alternative 4, it would be the most difficult to construct in terms of constructability/maintenance of traffic.

NCDOT Preferred Alternative

Based on the comparison of the alternatives above, NCDOT's Preferred Alternative is Alternative 1 (West Side Widening) because it would have the lowest right-of-way costs and would be the easiest to construct. The delineated streams and delineated wetlands impacts for Alternative 1 would be only slightly higher than for Alternative 4.

Appendix

US 601 Widening from I-74 to SR 1104 (Cody Trail)
 STIP No. R-5836, Surry County

Stream Impacts - Minimized Design (slope stakes plus 25 feet)							
Stream ID	Figure Tile No.	Alternative 1 (linear feet)		Alternative 3 (linear feet)		Alternative 4 (linear feet)	
		Culvert	Relocation	Culvert	Relocation	Culvert	Relocation
SA1	G	79	0	82	221	101	0
SA2	G	160	0	99	170	157	0
SA3	G	175	0	190	0	175	0
SA4	H	38	0	88	0	38	0
SAA	C	27	0	81	63	42	0
SAB	C	0	0	45	0	0	0
SAC	C	0	0	194	0	0	0
SAE	C	111	0	164	0	111	0
SAG	C	0	0	0	8	0	0
SAH	B	106	0	97	0	106	0
SAI	B	77	0	88	0	77	0
SAL	B	0	48	0	0	0	48
SAM	D	112	0	7	0	0	0
SAO	D	187	0	156	0	123	0
SAS	E	0	0	0	36	0	0
SB	H	25	0	0	0	25	0
SC	H	59	0	0	0	59	0
SD	H	125	0	124	781	125	0
SE	H	167	0	0	0	167	0
SI	G	143	494	109	54	148	382
SJ	F	121	0	0	429	121	0
SK1	E	169	0	201	650	185	0
SK2	E	131	0	0	0	0	202
SL	F	99	0	61	0	67	0
SM	F	88	0	59	0	75	0
SN	E	44	0	0	0	40	0
SP	E	0	0	13	0	0	0
SQ	E	79	0	53	0	79	0
SS1	D	0	0	113	0	0	0
SS2	E	198	0	225	561	198	0
SS3	E	120	0	52	0	120	0
ST	E	0	0	0	176	0	0
SU	D	0	0	0	101	0	0
SV	D	0	0	0	6	0	0
SX	D	171	0	125	0	167	0
SY	C	42	0	7	0	0	0
SZ	C	3	20	0	0	0	0
Subtotal (linear feet)		2,857	563	2,431	3,257	2,505	632
Total (linear feet)		3,419		5,687		3,137	

Wetland Impacts - Minimized Design (slope stakes plus 25 feet)							
Wetland ID	Figure Tile No.	Alternative 1		Alternative 3		Alternative 4	
		Area (sq. ft.)	Area (acres)	Area (sq. ft.)	Area (acres)	Area (sq. ft.)	Area (acres)
WA	H	1,836	0.04	3,343	0.08	1,836	0.04
WB	H	1,001	0.02	0	0.00	1,001	0.02
WC	G	0	0.00	1,065	0.02	135	< 0.01
WD	F	0	0.00	726	0.02	0	0.00
WG	E	0	0.00	73	< 0.01	0	0.00
WH	D	0	0.00	342	0.01	0	0.00
WI	D	3,955	0.09	0	0.00	2,753	0.06
WJ	D	553	0.01	0	0.00	0	0.00
WK	C	887	0.02	454	0.01	0	0.00
WP	G	0	0.00	1,650	0.04	0	0.00
Total		8,231	0.19	7,653	0.18	5,725	0.13

PRELIMINARY HYDRAULIC RECOMMENDATIONS FOR MAJOR⁽¹⁾ CROSSINGS

ALTERNATIVE 1

DATE: 6/2/2023

PROJECT NUMBER: R-5836

WBS ELEMENT #: 47106.1.1

PROJECT DESCRIPTION: US 601 Widening from I-74 to SR 1104 (Cody Trail) in Surry County

NAME: NV5

SITE NUMBER	FIGURE NO.	ROUTE	STATION	STREAM/WETLAND ID	STREAM NAME	EXISTING STRUCTURE	MINIMUM RECOMMENDED STRUCTURE	Notes	Existing Culvert Length (feet)	Proposed Culvert Extension Length (feet)	Total Culvert Length (feet)	Total Stream Impacts (feet)
						Number, Size, Structure Type	Number, Size, Structure Type					
1	2B	US 601	92+00	SAI	Unnamed Tributary to Fisher River	51"x 60" CMP	84" Welded Steel Pipe.	Trenchless Installation.	207	0	207	77
2	2B	US 601	97+36	SAH	Unnamed Tributary to Fisher River	1 @ 6'x 6' RCBC	Retain and extend 62' U/S.	Repair outlet channel as necessary.	120	62	182	106
3	2C	US 601	142+55	SAC	Unnamed Tributary to Fisher River	2 @ 84" CMP	2 @ 84" Welded Steel Pipes.	Trenchless Installation.	395	0	395	0
4	2C	US 601	166+00	SY	Unnamed Tributary to Fisher River	54" CMP	60" & 48" Welded Steel Pipes.	Trenchless Installation.	250	0	250	42
5	2D	US 601	211+00	Fisher River	Fisher River	Bridge	Propose adjacent bridge.	Mill & overlay existing bridge.				0
6	2E	US 601	256+45	SP	Unnamed Tributary to Jackson Creek	78"x 88" CMP	84" Welded Steel Pipe.	Trenchless Installation.	244	0	244	0
7	2E	US 601	276+60	SK (SK1)	Unnamed Tributary to Jackson Creek	2 @ 7'x 8' RCBC	Retain and extend 110' D/S.	Add 1' sill to North barrel.	160	110	270	169
8	2G	US 601	368+15	SA (SA2)	Unnamed Tributary to Burkes Creek	1 @ 7'x 6' RCBC	Retain and extend 100' D/S.		147	100	247	160
9	2G	US 601	374+88	SA (SA3)	Unnamed Tributary to Burkes Creek	2 @ 6'x 7' RCBC	Retain and extend 65' U/S.	Repair outlet channel as necessary.	118	65	183	175
10	2H	US 601	415+50	SA (SA4)	Unnamed Tributary to Burkes Creek	2 @ 10'x 9' RCBC	Retain and extend 25' D/S.	Add 1' sill to South barrel. Repair inlet channel as necessary.	240	25	265	38

NOTES:

(1) Major Crossings - conveyance greater than 72" pipe

PRELIMINARY HYDRAULIC RECOMMENDATIONS FOR MAJOR⁽¹⁾ CROSSINGS

ALTERNATIVE 3

DATE: 6/2/2023

PROJECT NUMBER: R-5836

WBS ELEMENT #: 47106.1.1

PROJECT DESCRIPTION: US 601 Widening from I-74 to SR 1104 (Cody Trail) in Surry County

NAME: NV5

SITE NUMBER	FIGURE NO.	ROUTE	STATION	STREAM/WETLAND ID	STREAM NAME	EXISTING STRUCTURE	MINIMUM RECOMMENDED STRUCTURE	Notes	Existing Culvert Length (feet)	Proposed Culvert Extension Length (feet)	Total Culvert Length (feet)	Total Stream Impacts (feet)
						Number, Size, Structure Type	Number, Size, Structure Type					
1	3B	US 601	92+00	SAI	Unnamed Tributary to Fisher River	51"x 60" CMP	84" Welded Steel Pipe.	Trenchless Installation.	220	0	220	88
2	3B	US 601	97+36	SAH	Unnamed Tributary to Fisher River	1 @ 6'x 6' RCBC	Retain and extend 50' D/S.	Repair outlet channel as necessary.	120	50	170	97
3	3C	US 601	142+55	SAC	Unnamed Tributary to Fisher River	2 @ 84" CMP	2 @ 84" Welded Steel Pipes.	Trenchless Installation.	460	0	460	194
4	3C	US 601	166+00	SY	Unnamed Tributary to Fisher River	54" CMP	60" & 48" Welded Steel Pipes.	Trenchless Installation.	230	0	230	7
5	3D	US 601	211+00	Fisher River	Fisher River	Bridge	Propose adjacent bridge.	Mill & overlay existing bridge.				0
6	3E	US 601	256+45	SP	Unnamed Tributary to Jackson Creek	78"x 88" CMP	84" Welded Steel Pipe.	Trenchless Installation.	243	0	243	13
7	3E	US 601	276+60	SK (SK1)	Unnamed Tributary to Jackson Creek	2 @ 7'x 8' RCBC	Retain and extend 28' D/S & 46' U/S.	Add 1' sill to North barrel.	160	74	234	851
8	3G	US 601	368+15	SA (SA2)	Unnamed Tributary to Burkes Creek	1 @ 7'x 6' RCBC	Retain and extend 8' D/S & 77' U/S.		147	85	232	269
9	3G	US 601	374+88	SA (SA3)	Unnamed Tributary to Burkes Creek	2 @ 6'x 7' RCBC	Retain and extend 88' D/S.	Repair outlet channel as necessary.	118	88	206	190
10	3H	US 601	415+50	SA (SA4)	Unnamed Tributary to Burkes Creek	2 @ 10'x 9' RCBC	Retain and extend 45' U/S.	Add 1' sill to South barrel. Repair inlet channel as necessary.	240	45	285	88

NOTES:

(1) Major Crossings - conveyance greater than 72" pipe

PRELIMINARY HYDRAULIC RECOMMENDATIONS FOR MAJOR⁽¹⁾ CROSSINGS

ALTERNATIVE 4

DATE: 6/2/2023

PROJECT NUMBER: R-5836

WBS ELEMENT #: 47106.1.1

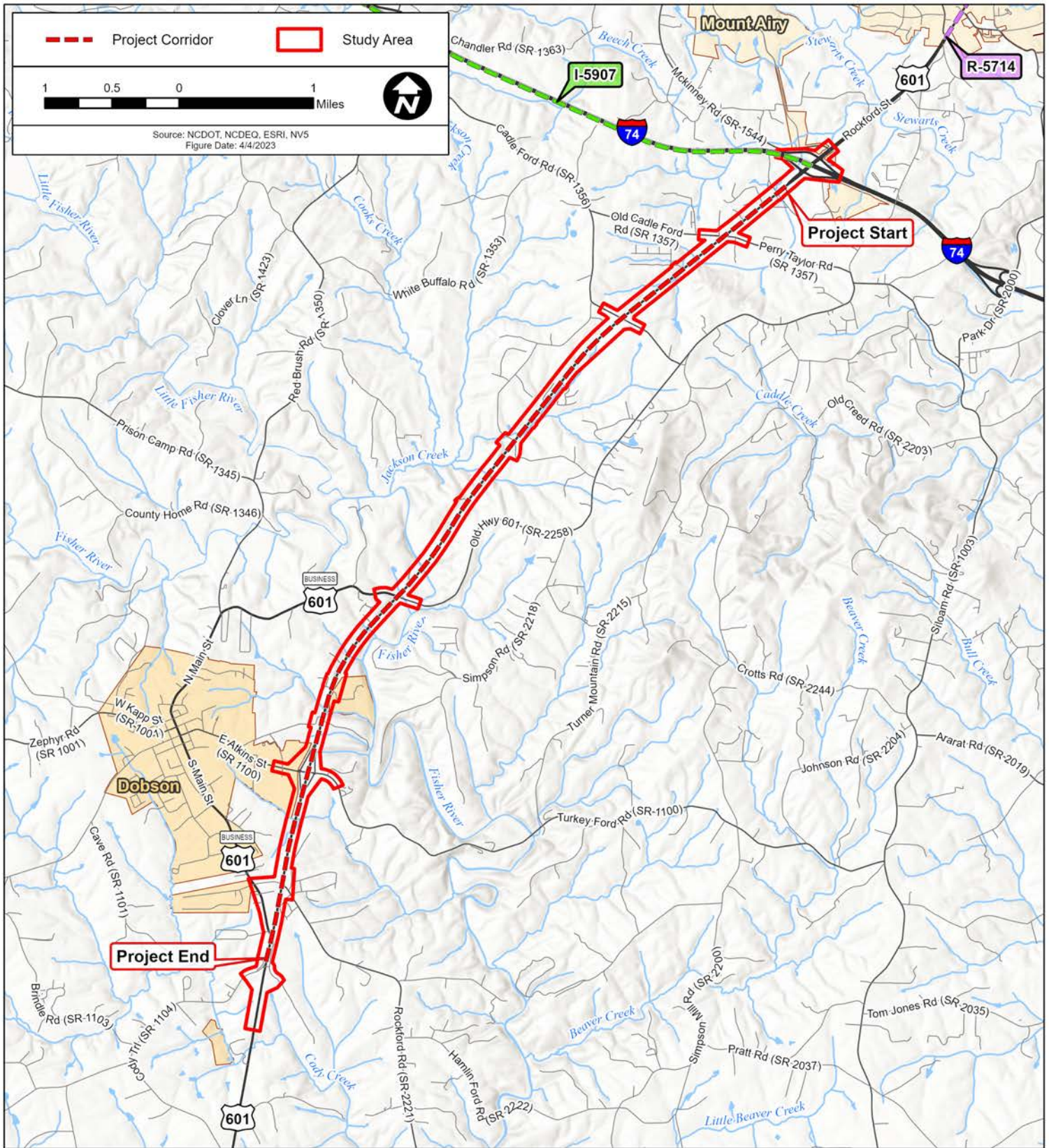
PROJECT DESCRIPTION: US 601 Widening from I-74 to SR 1104 (Cody Trail) in Surry County

NAME: NV5

SITE NUMBER	FIGURE NO.	ROUTE	STATION	STREAM/WETLAND ID	STREAM NAME	EXISTING STRUCTURE	MINIMUM RECOMMENDED STRUCTURE	Notes	Existing Culvert Length (feet)	Proposed Culvert Extension Length (feet)	Total Culvert Length (feet)	Total Stream Impacts (feet)
						Number, Size, Structure Type	Number, Size, Structure Type					
1	4B	US 601	92+00	SAI	Unnamed Tributary to Fisher River	51"x 60" CMP	84" Welded Steel Pipe.	Trenchless Installation.	220	0	220	77
2	4B	US 601	97+36	SAH	Unnamed Tributary to Fisher River	1 @ 6'x 6' RCBC	Retain and extend 64' U/S.	Repair outlet channel as necessary.	120	64	184	106
3	4C	US 601	142+55	SAC	Unnamed Tributary to Fisher River	2 @ 84" CMP	2 @ 84" Welded Steel Pipes.	Trenchless Installation.	395	0	395	0
4	4C	US 601	166+00	SY	Unnamed Tributary to Fisher River	54" CMP	60" & 48" Welded Steel Pipes.	Trenchless Installation.	230	0	230	0
5	4D	US 601	211+00	Fisher River	Fisher River	Bridge	Propose adjacent bridge.	Mill & overlay existing bridge.				0
6	4E	US 601	256+45	SP	Unnamed Tributary to Jackson Creek	78"x 88" CMP	84" Welded Steel Pipe.	Trenchless Installation.	243	0	243	0
7	4E	US 601	276+60	SK (SK1)	Unnamed Tributary to Jackson Creek	2 @ 7'x 8' RCBC	Retain and extend 102' D/S.	Add 1' sill to North barrel.	160	102	262	185
8	4G	US 601	368+15	SA (SA2)	Unnamed Tributary to Burkes Creek	1 @ 7'x 6' RCBC	Retain and extend 106' D/S & 30' U/S.		147	136	283	157
9	4G	US 601	374+88	SA (SA3)	Unnamed Tributary to Burkes Creek	2 @ 6'x 7' RCBC	Retain and extend 16' D/S & 74' U/S.	Repair outlet channel as necessary.	118	90	208	175
10	4H	US 601	415+50	SA (SA4)	Unnamed Tributary to Burkes Creek	2 @ 10'x 9' RCBC	Retain and extend 20' D/S.	Add 1' sill to South barrel. Repair inlet channel as necessary.	240	20	260	38

NOTES:

(1) Major Crossings - conveyance greater than 72" pipe



NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION 11

US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.


STIP Project R-5836



Surry County

Figure 1 - Project Vicinity



Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

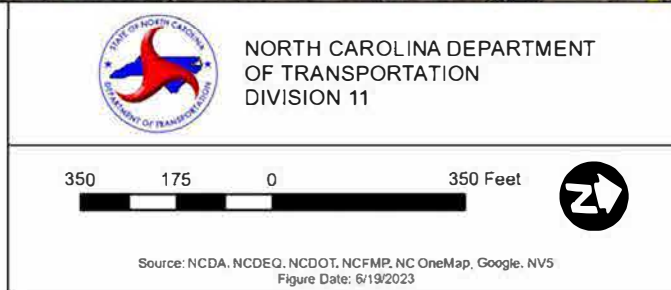
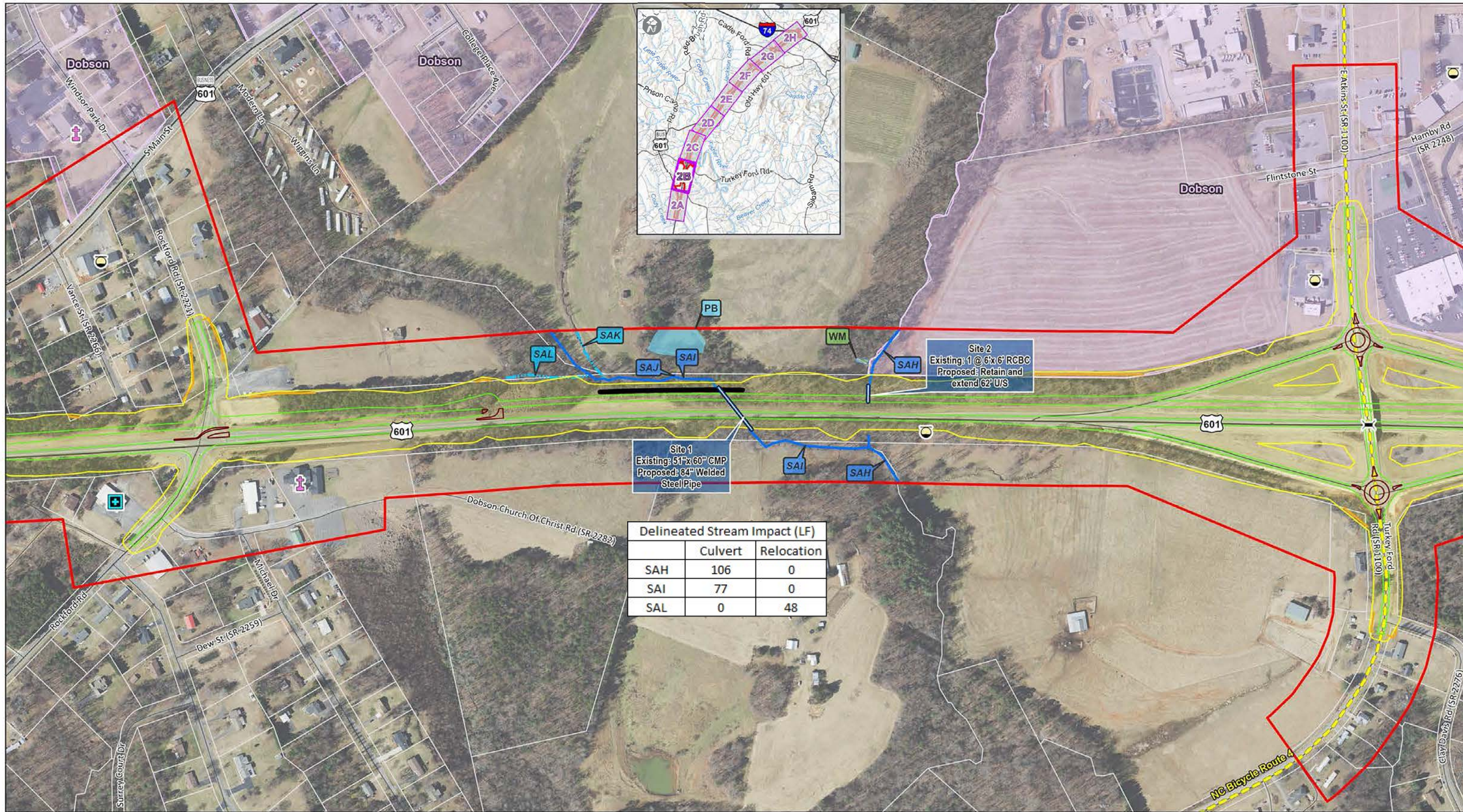



Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening
 Surry County

Figure 2A - Alternative 1

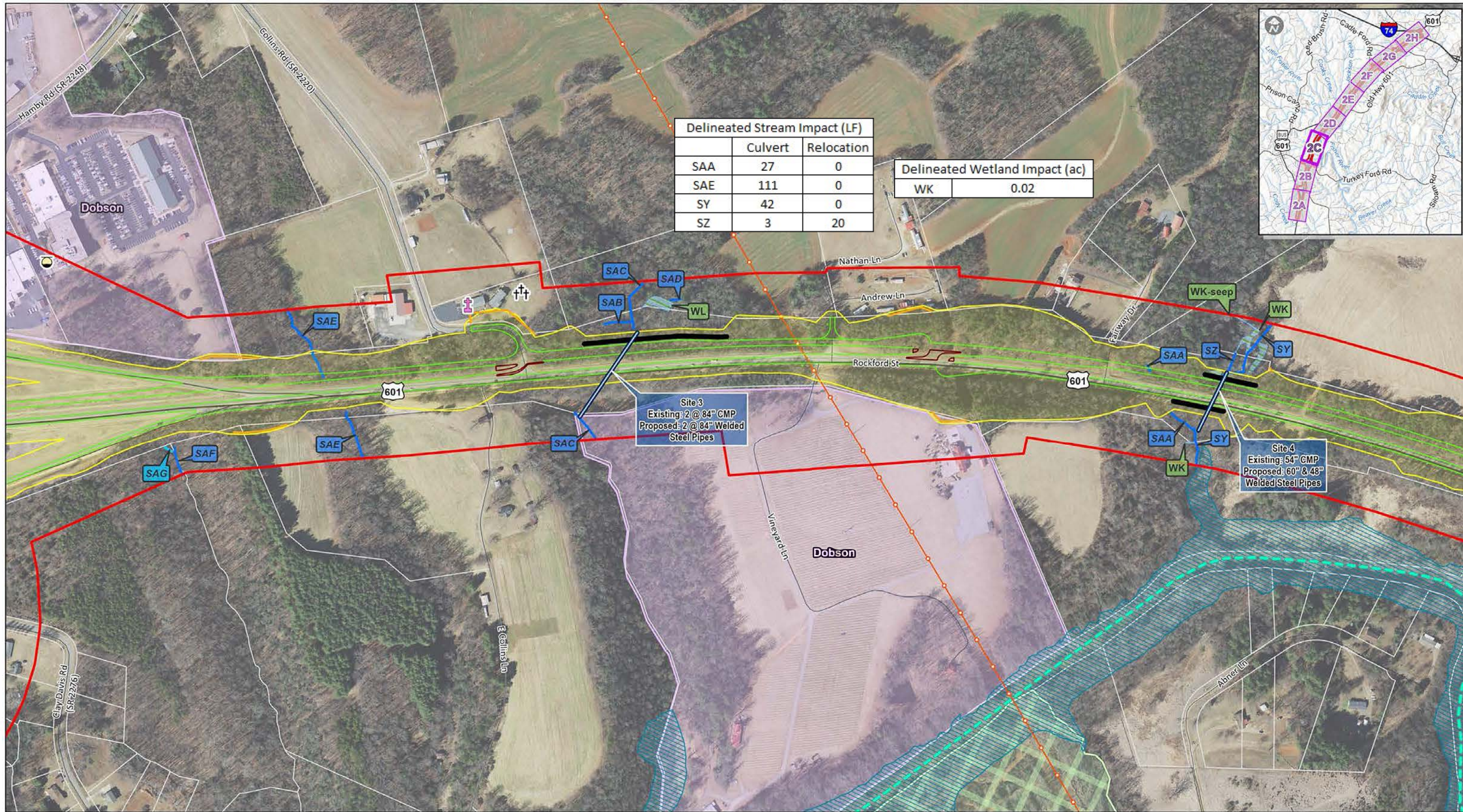


US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening

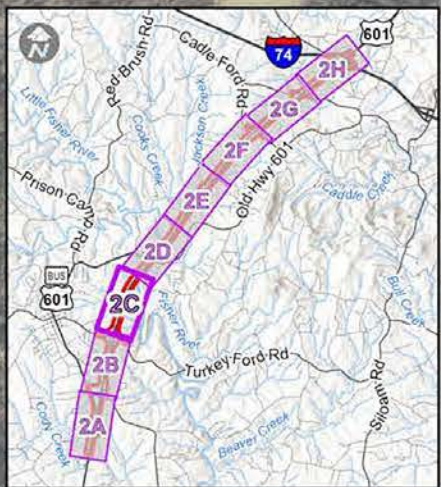
Surry County

Figure 2B - Alternative 1



Delineated Stream Impact (LF)		
	Culvert	Relocation
SAA	27	0
SAE	111	0
SY	42	0
SZ	3	20

Delineated Wetland Impact (ac)	
WK	0.02

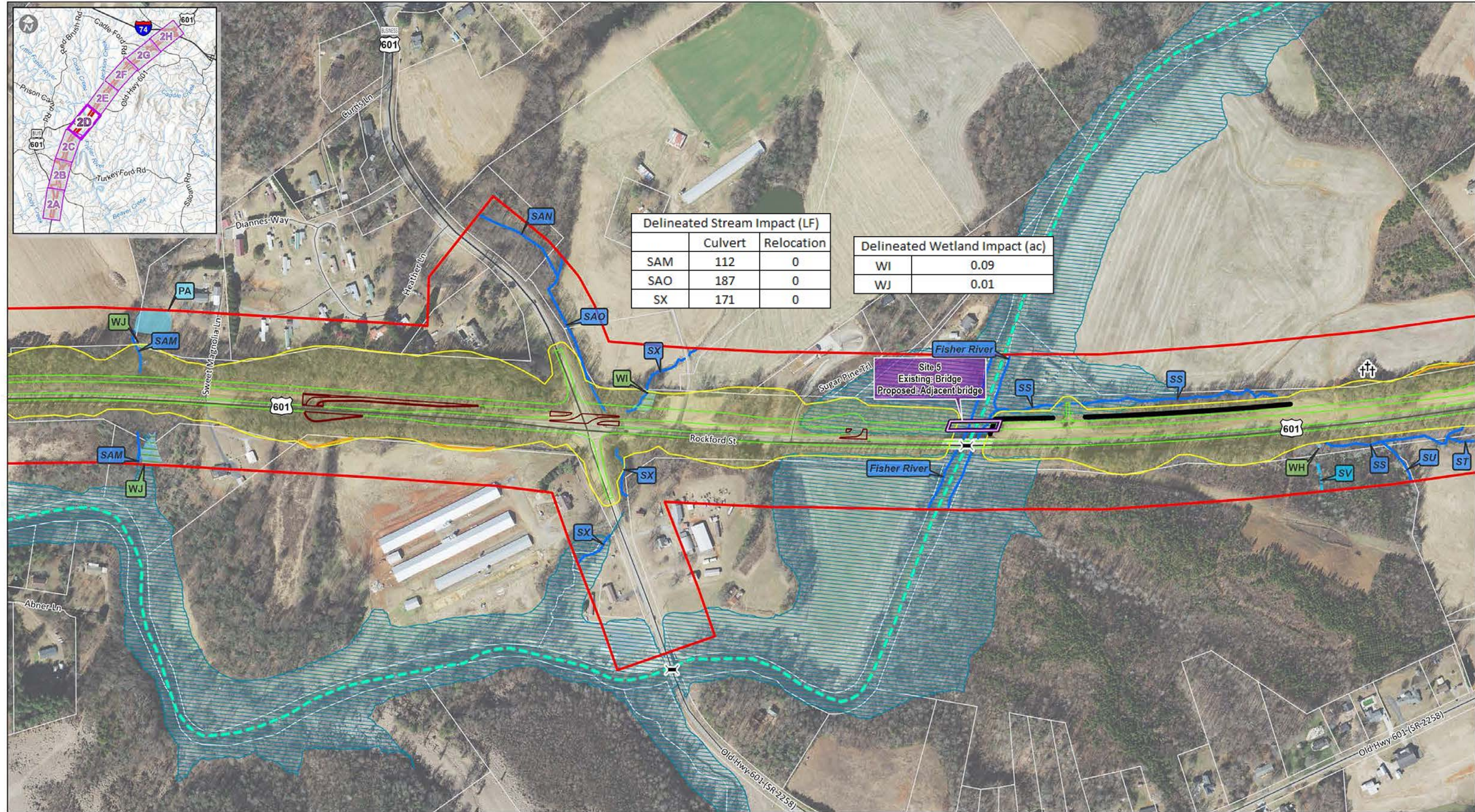


Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.
STIP Project R-5836
Preliminary Impact Screening
 Surry County
Figure 2C - Alternative 1



Delineated Stream Impact (LF)		
	Culvert	Relocation
SAM	112	0
SAO	187	0
SX	171	0

Delineated Wetland Impact (ac)	
WI	WJ
0.09	0.01

<p>Proposed Design</p> <ul style="list-style-type: none"> Bridge Culvert / Pipe Island Edge of Travel Right of Way Construction Easement Retaining Wall Slope Stakes + 25 ft 	<ul style="list-style-type: none"> Cemetery Church EMS Station Geoenvironmental Site Inactive Hazardous Waste Site Underground Storage Tank Bridge Road Transmission Line Bicycle Route 	<ul style="list-style-type: none"> Fisher River Blueway Intermittent Stream Perennial Stream Wetland Pond 100 Year Floodplain VAD Parcel Parcel Municipal Boundary Study Area
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

350 175 0 350 Feet

Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

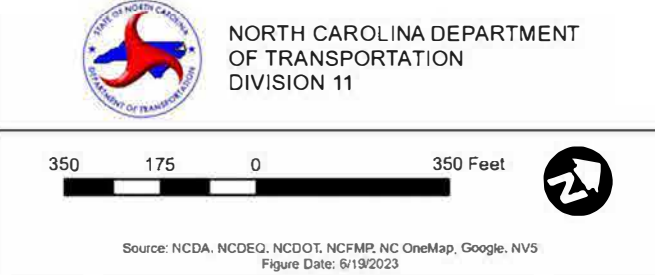
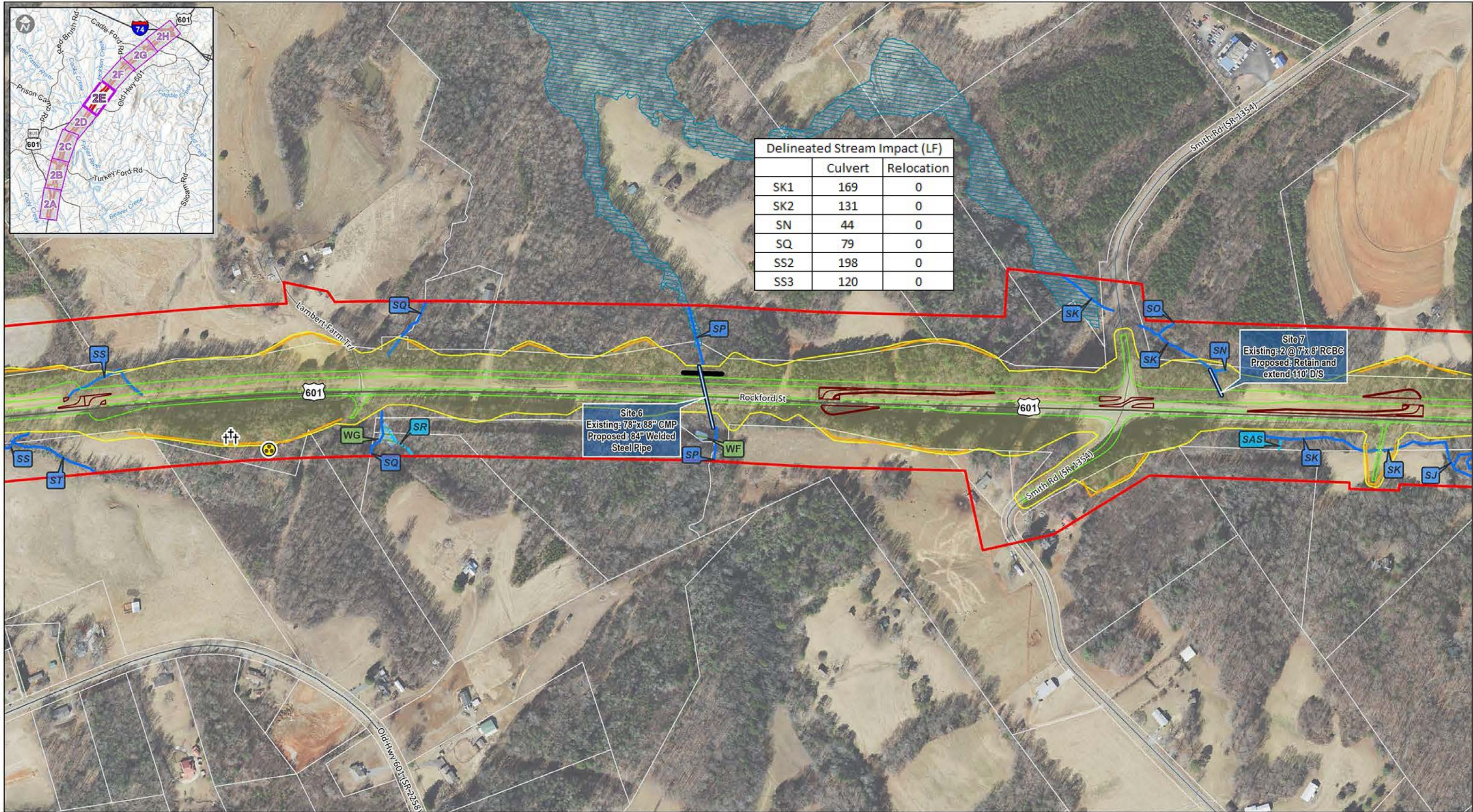
US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening
 Surry County

Figure 2D - Alternative 1



Delineated Stream Impact (LF)		
	Culvert	Relocation
SK1	169	0
SK2	131	0
SN	44	0
SQ	79	0
SS2	198	0
SS3	120	0

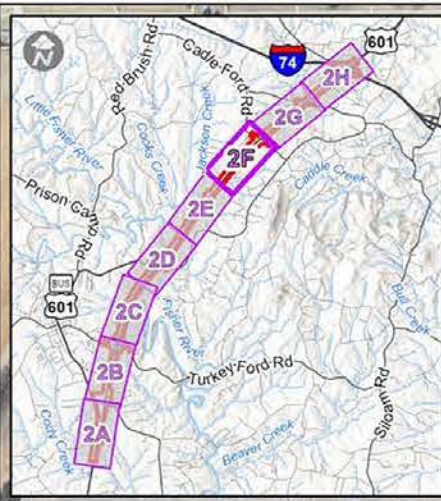


US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

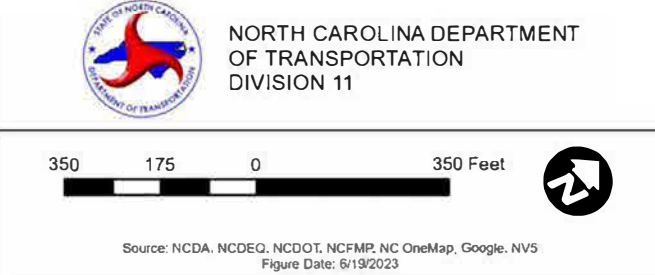
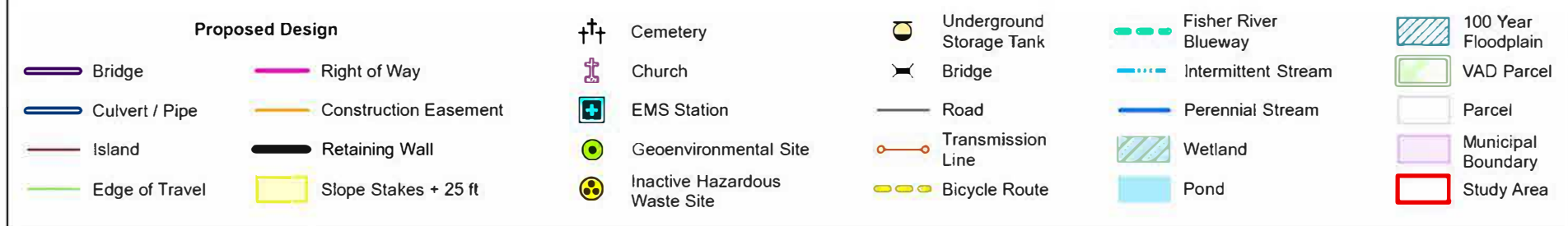
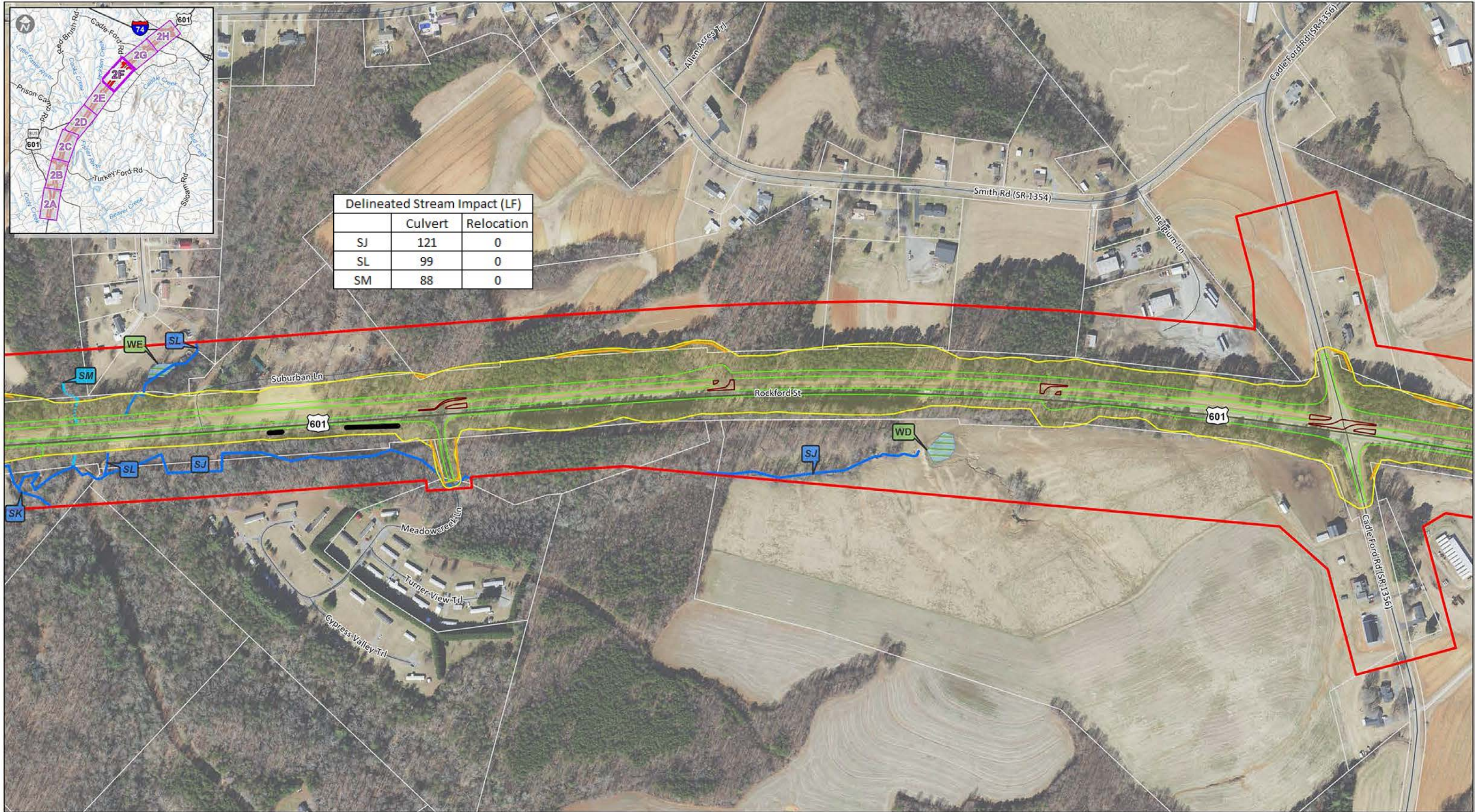
STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 2E - Alternative 1



Delineated Stream Impact (LF)		
	Culvert	Relocation
SJ	121	0
SL	99	0
SM	88	0

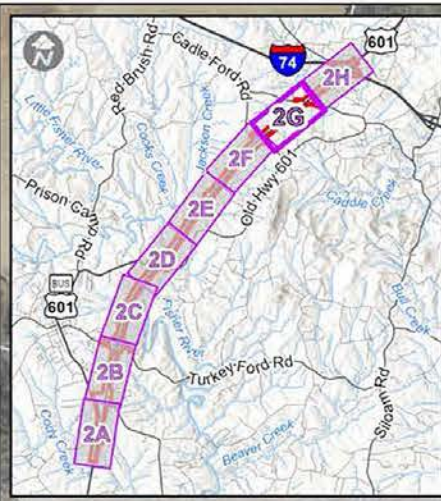


US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

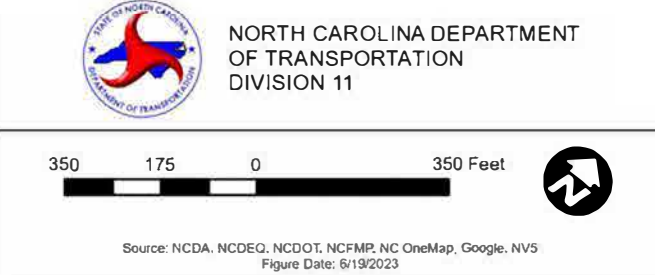
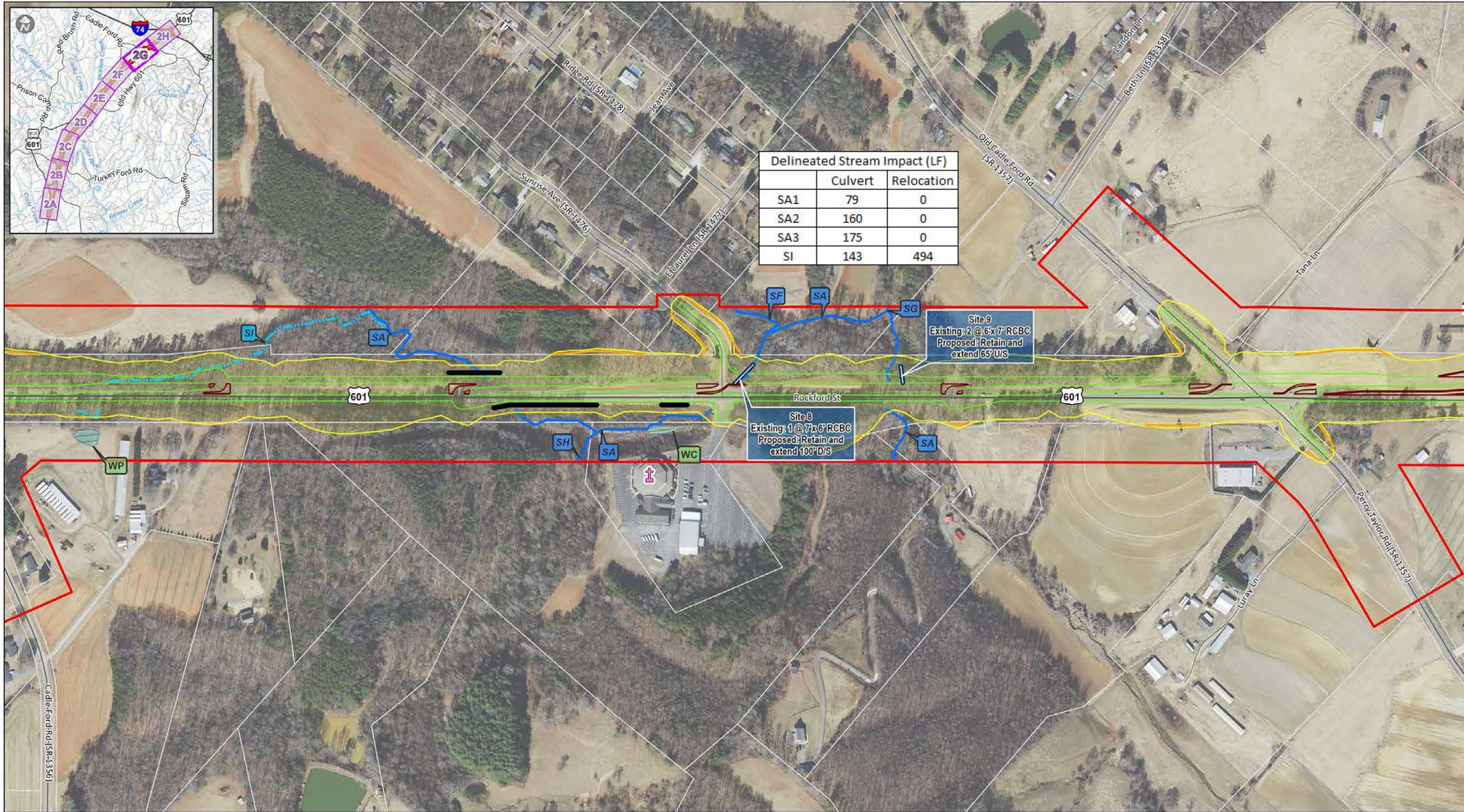
STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 2F - Alternative 1



Delineated Stream Impact (LF)		
	Culvert	Relocation
SA1	79	0
SA2	160	0
SA3	175	0
SI	143	494

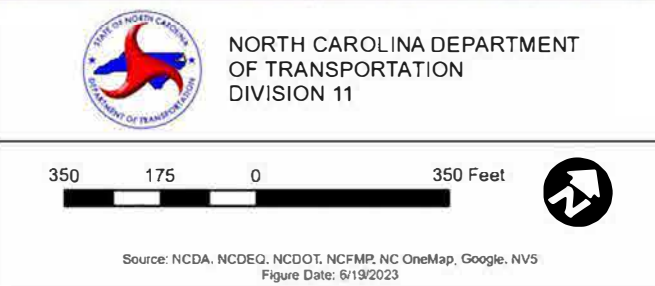
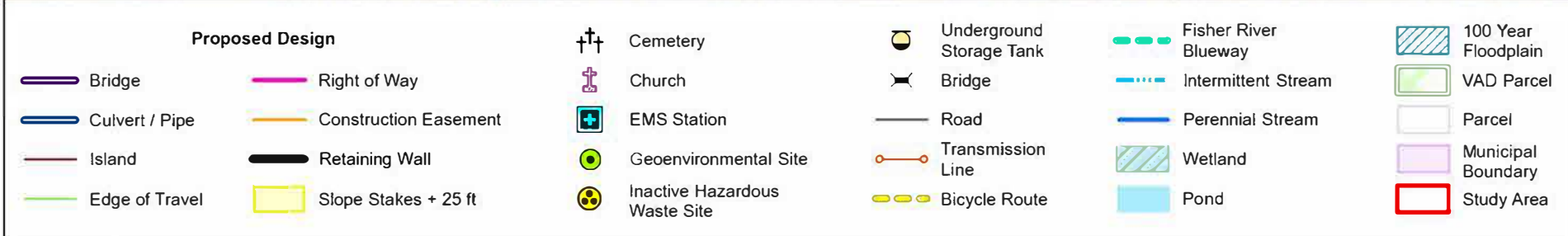
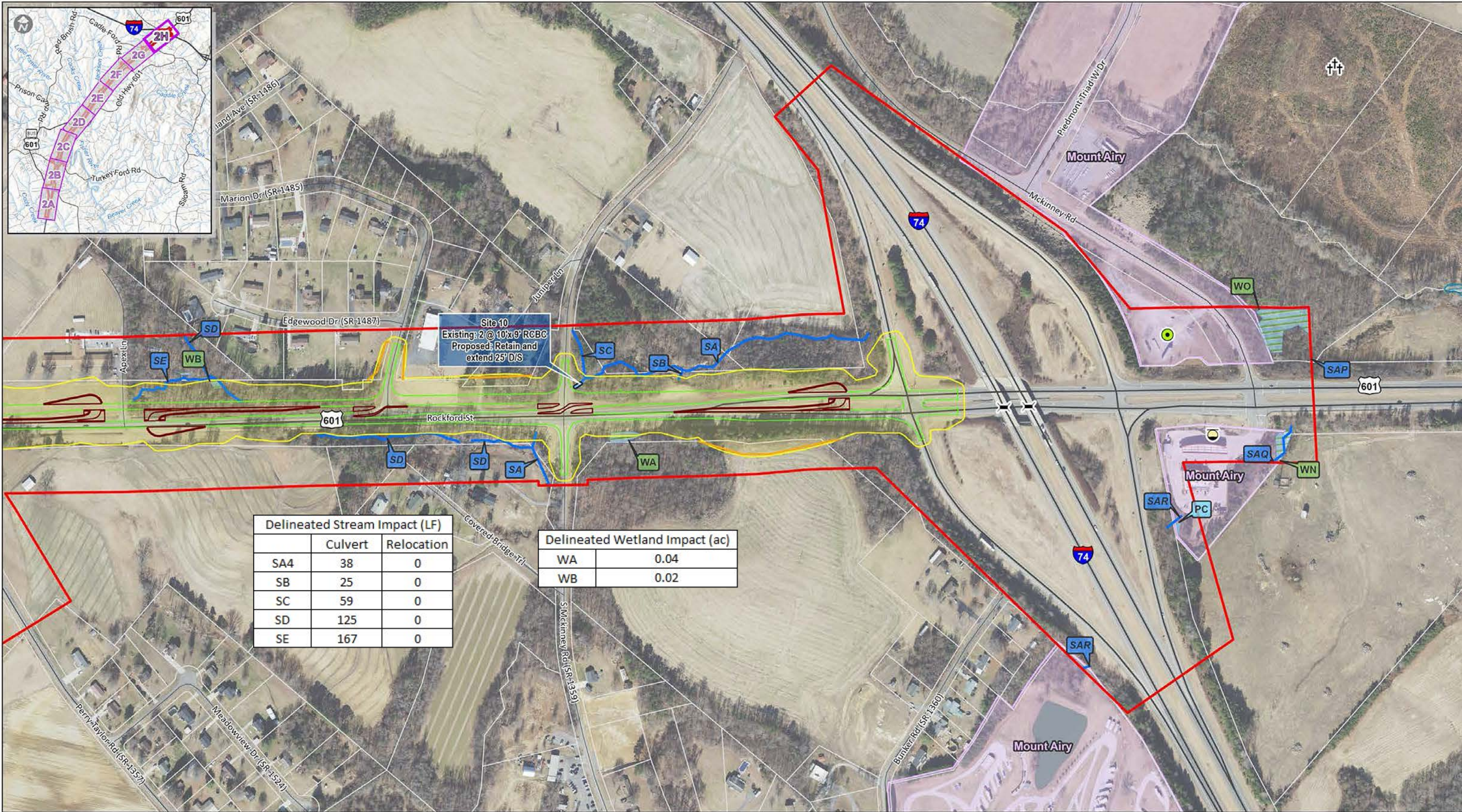


US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 2G - Alternative 1



US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.


STIP Project R-5836
Preliminary Impact Screening

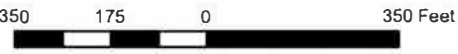

Surry County

Figure 2H - Alternative 1



Proposed Design		Other Features		Environmental Features	
Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

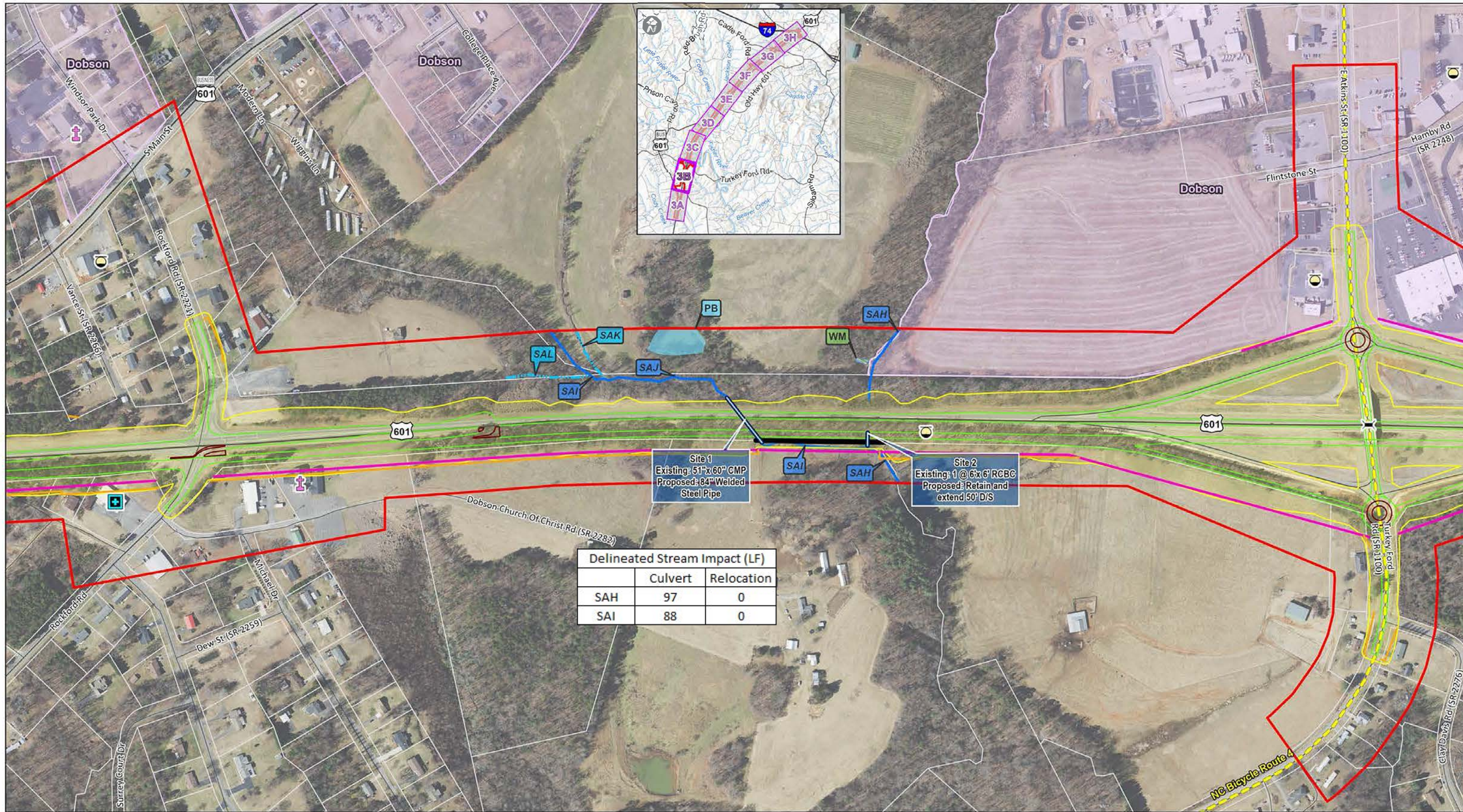



Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening
 Surry County

Figure 3A - Alternative 3



Delineated Stream Impact (LF)		
	Culvert	Relocation
SAH	97	0
SAI	88	0

Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

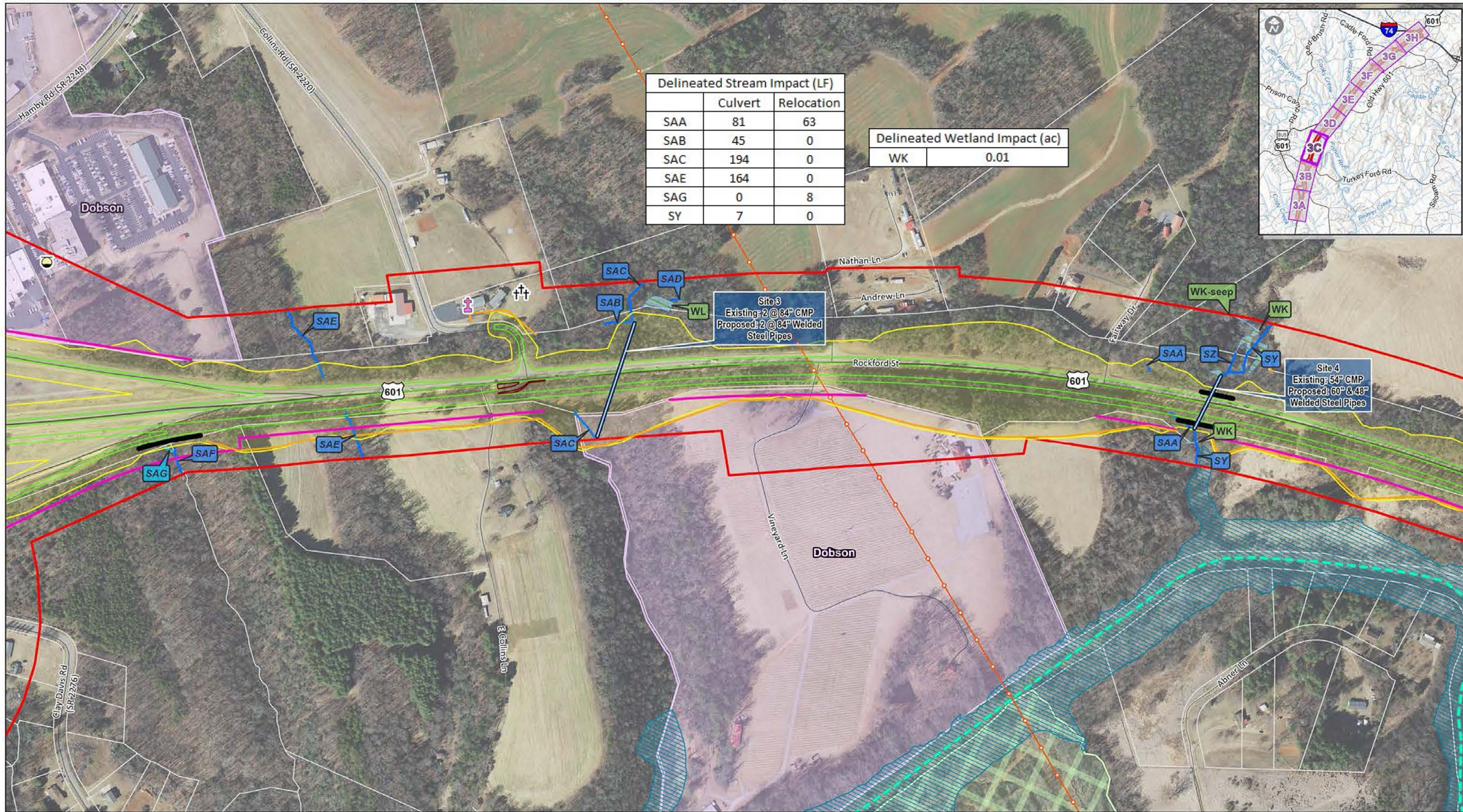
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Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

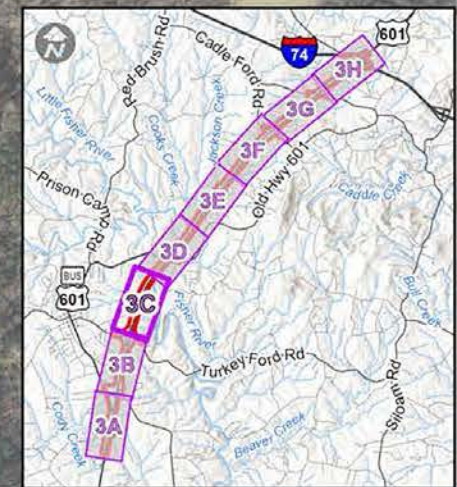
STIP Project R-5836
Preliminary Impact Screening
 Surry County

Figure 3B - Alternative 3




Delineated Stream Impact (LF)		
	Culvert	Relocation
SAA	81	63
SAB	45	0
SAC	194	0
SAE	164	0
SAG	0	8
SY	7	0

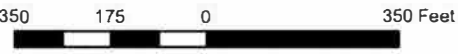
Delineated Wetland Impact (ac)	
WK	
	0.01




<p>Proposed Design</p> <ul style="list-style-type: none"> Bridge Culvert / Pipe Island Edge of Travel Right of Way Construction Easement Retaining Wall Slope Stakes + 25 ft 	<ul style="list-style-type: none"> Cemetery Church EMS Station Geoenvironmental Site Inactive Hazardous Waste Site 	<ul style="list-style-type: none"> Underground Storage Tank Bridge Road Transmission Line Bicycle Route 	<ul style="list-style-type: none"> Fisher River Blueway Intermittent Stream Perennial Stream Wetland Pond 	<ul style="list-style-type: none"> 100 Year Floodplain VAD Parcel Parcel Municipal Boundary Study Area
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION 11





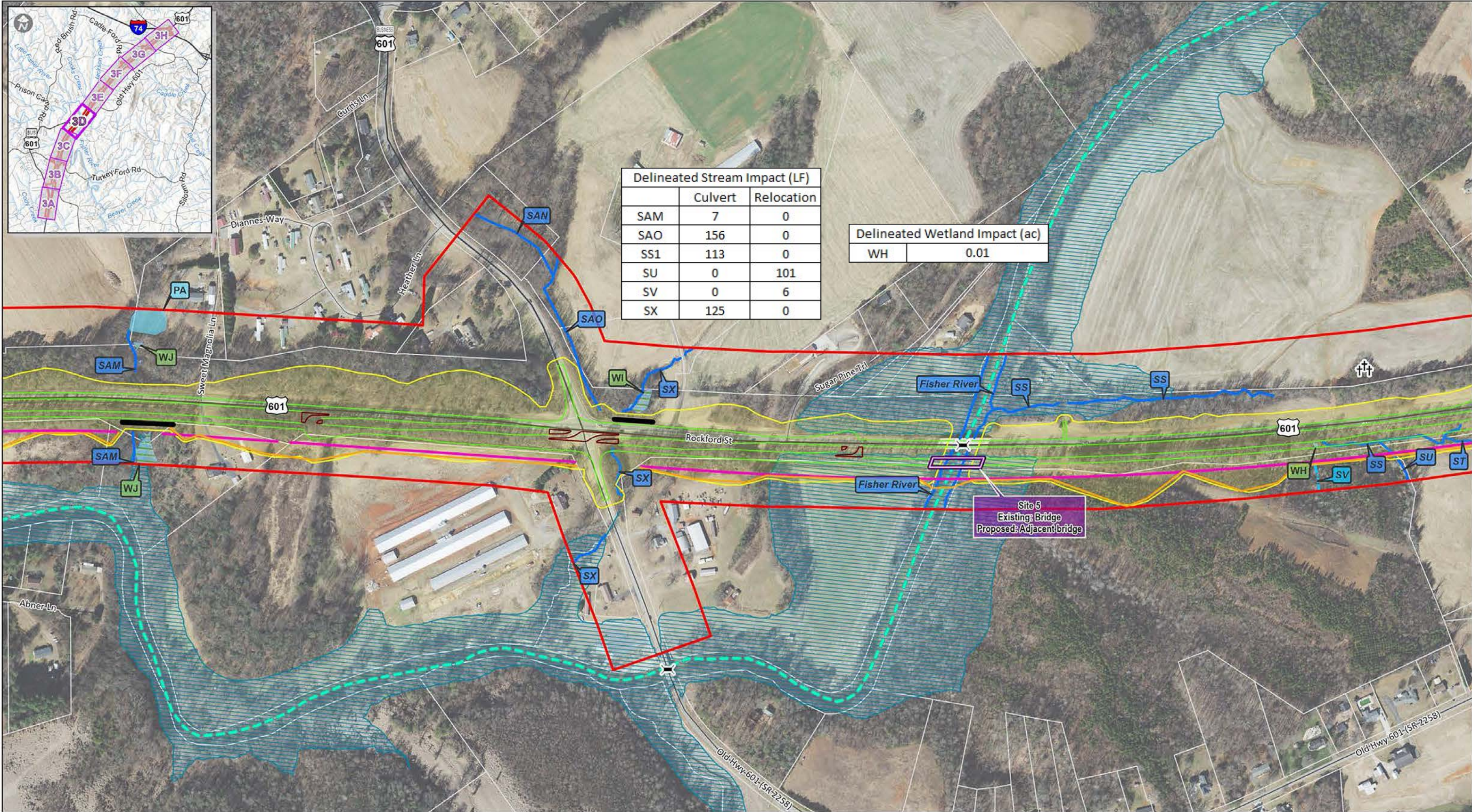
Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
Figure Date: 6/19/2023

US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 3C - Alternative 3



Delineated Stream Impact (LF)		
	Culvert	Relocation
SAM	7	0
SAO	156	0
SS1	113	0
SU	0	101
SV	0	6
SX	125	0

Delineated Wetland Impact (ac)	
WH	0.01

Site 5
Existing: Bridge
Proposed: Adjacent bridge

<p>Proposed Design</p> <ul style="list-style-type: none"> Bridge Culvert / Pipe Island Edge of Travel Right of Way Construction Easement Retaining Wall Slope Stakes + 25 ft 	<ul style="list-style-type: none"> Cemetery Church EMS Station Geoenvironmental Site Inactive Hazardous Waste Site Underground Storage Tank Bridge Road Transmission Line Bicycle Route 	<ul style="list-style-type: none"> Fisher River Blueway Intermittent Stream Perennial Stream Wetland Pond 100 Year Floodplain VAD Parcel Parcel Municipal Boundary Study Area
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

350 175 0 350 Feet

Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

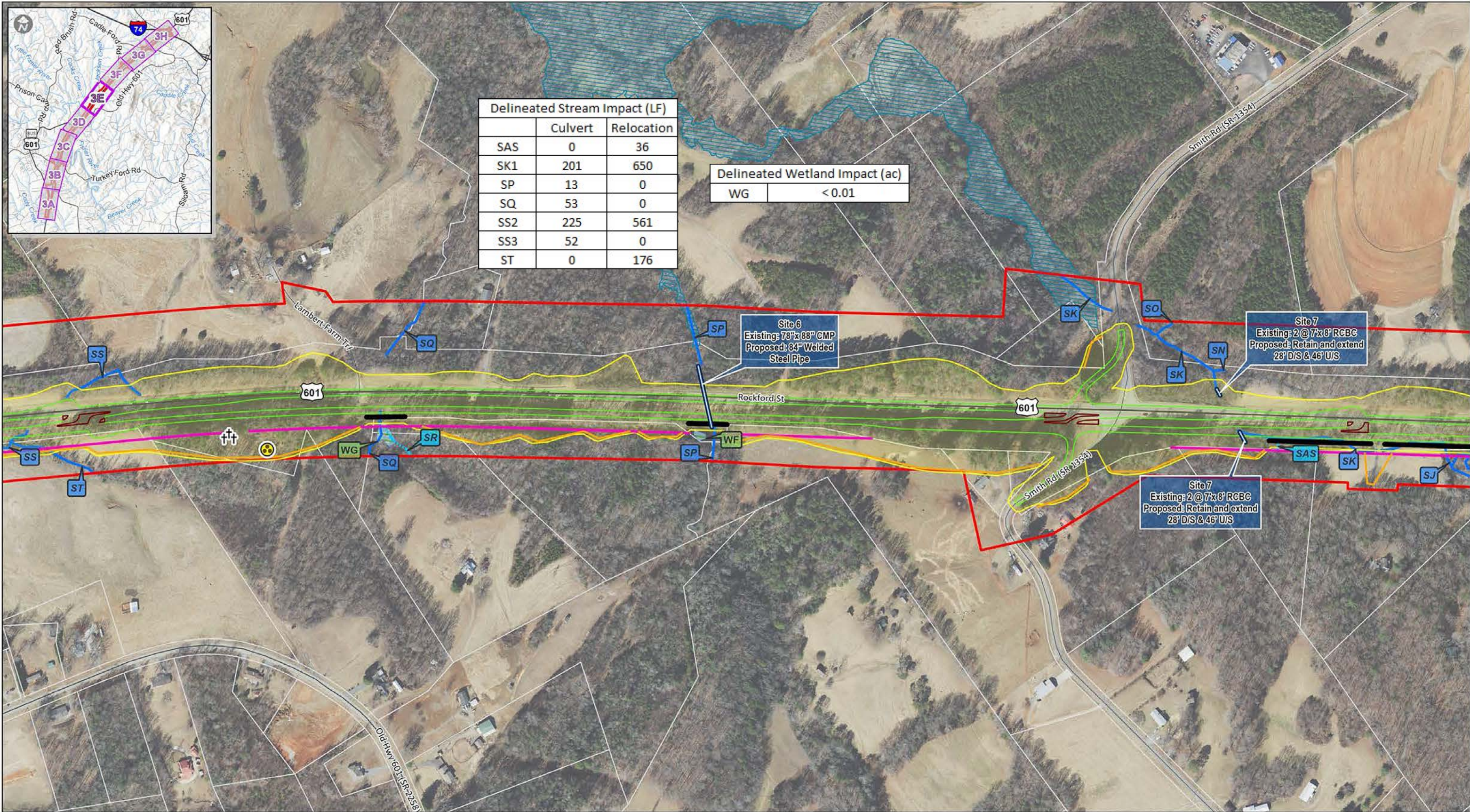
STIP Project R-5836
Preliminary Impact Screening
 Surry County

Figure 3D - Alternative 3



Delineated Stream Impact (LF)		
	Culvert	Relocation
SAS	0	36
SK1	201	650
SP	13	0
SQ	53	0
SS2	225	561
SS3	52	0
ST	0	176

Delineated Wetland Impact (ac)	
WG	< 0.01



<p>Proposed Design</p> <ul style="list-style-type: none"> Bridge Culvert / Pipe Island Edge of Travel Right of Way Construction Easement Retaining Wall Slope Stakes + 25 ft 	<ul style="list-style-type: none"> Cemetery Church EMS Station Geoenvironmental Site Inactive Hazardous Waste Site 	<ul style="list-style-type: none"> Underground Storage Tank Bridge Road Transmission Line Bicycle Route 	<ul style="list-style-type: none"> Fisher River Blueway Intermittent Stream Perennial Stream Wetland Pond 	<ul style="list-style-type: none"> 100 Year Floodplain VAD Parcel Parcel Municipal Boundary Study Area
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION 11

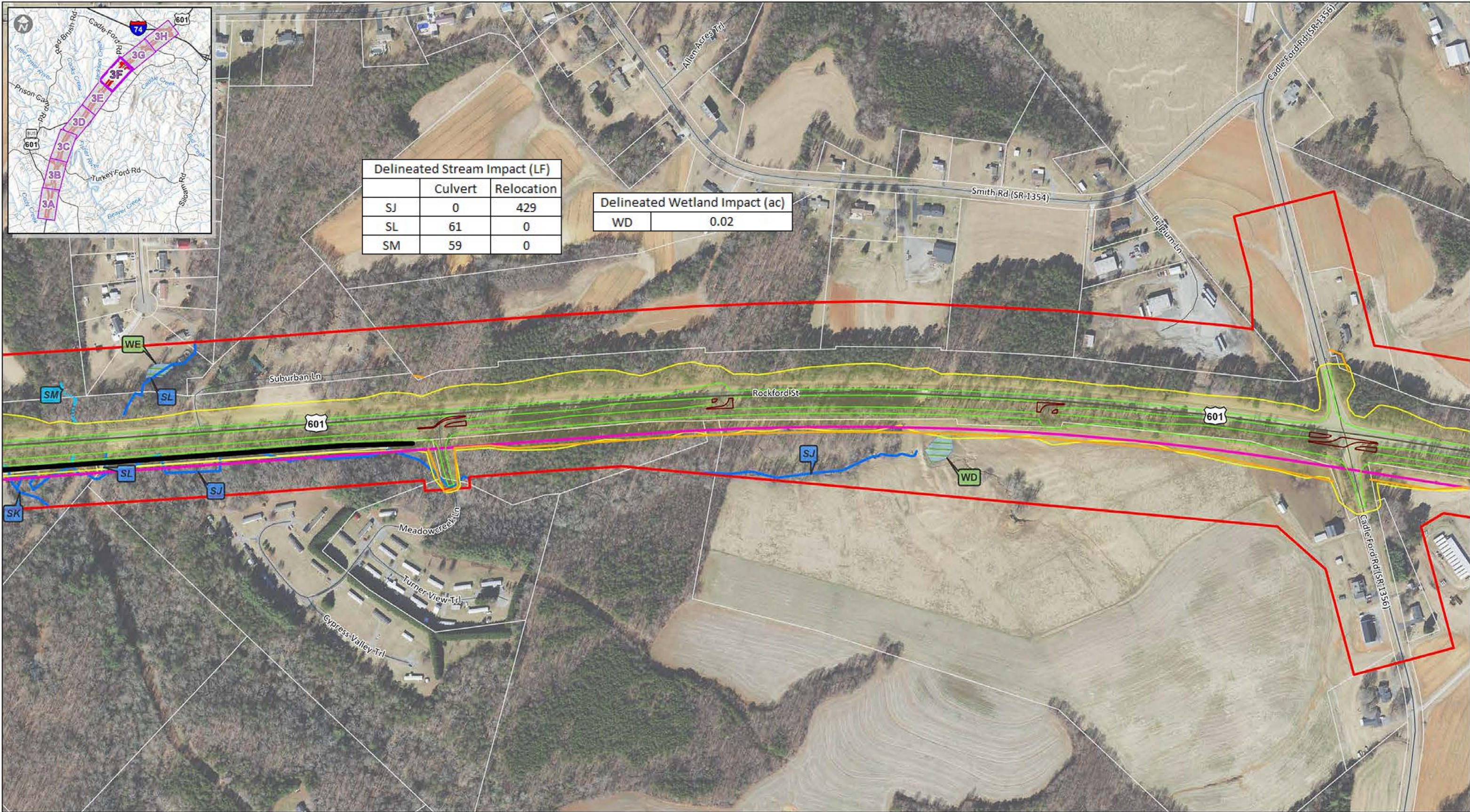
Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
Figure Date: 6/19/2023

US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 3E - Alternative 3



Delineated Stream Impact (LF)		
	Culvert	Relocation
SJ	0	429
SL	61	0
SM	59	0

Delineated Wetland Impact (ac)	
WD	0.02

Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

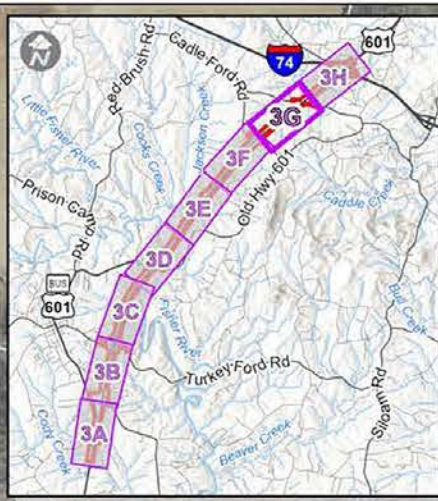
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Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

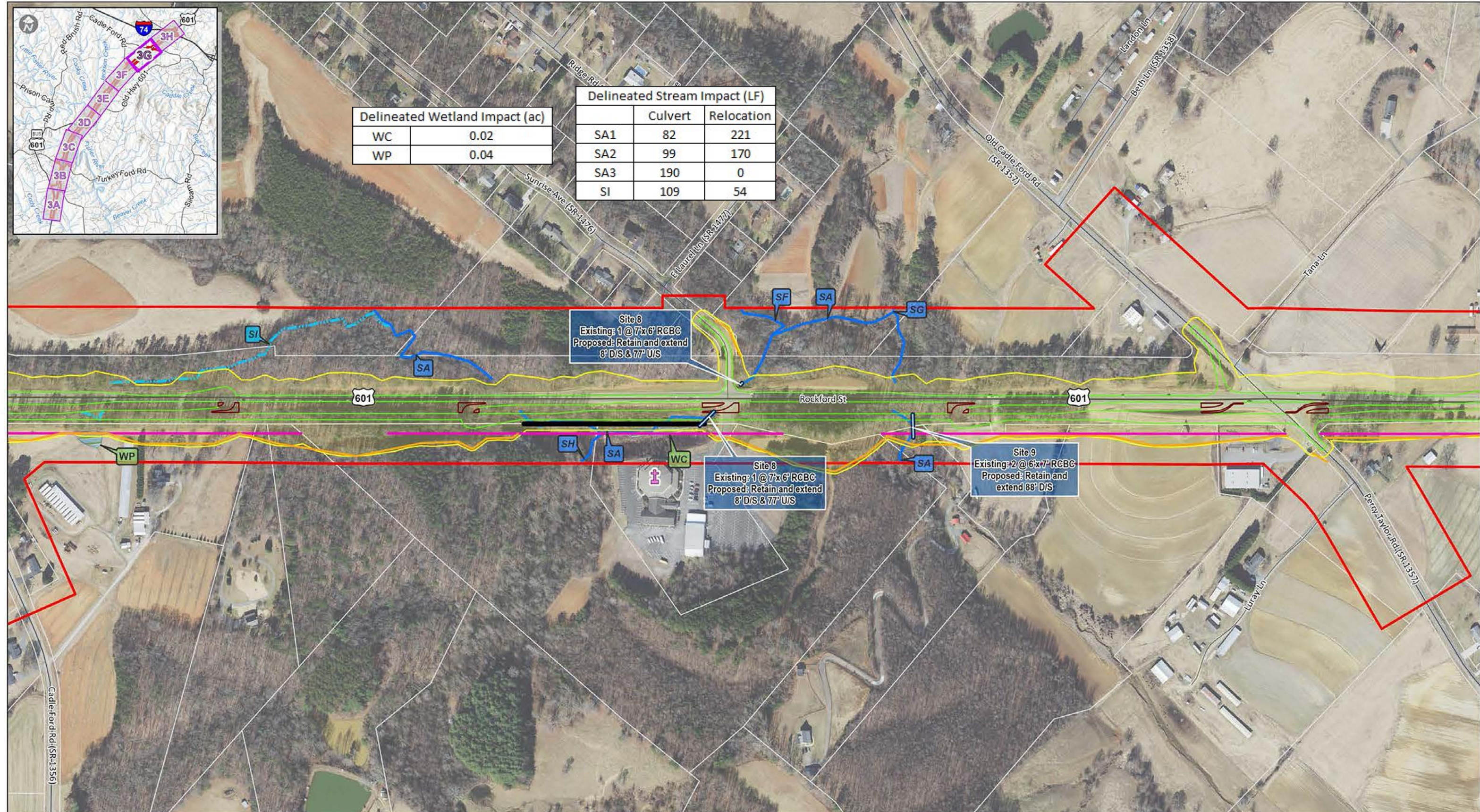
STIP Project R-5836
Preliminary Impact Screening
 Surry County

Figure 3F - Alternative 3



Delineated Wetland Impact (ac)	
WC	0.02
WP	0.04

Delineated Stream Impact (LF)		
	Culvert	Relocation
SA1	82	221
SA2	99	170
SA3	190	0
SI	109	54

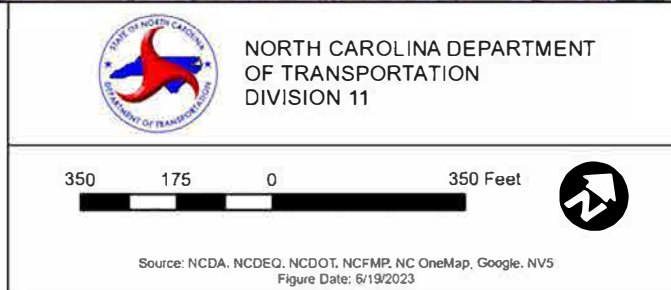
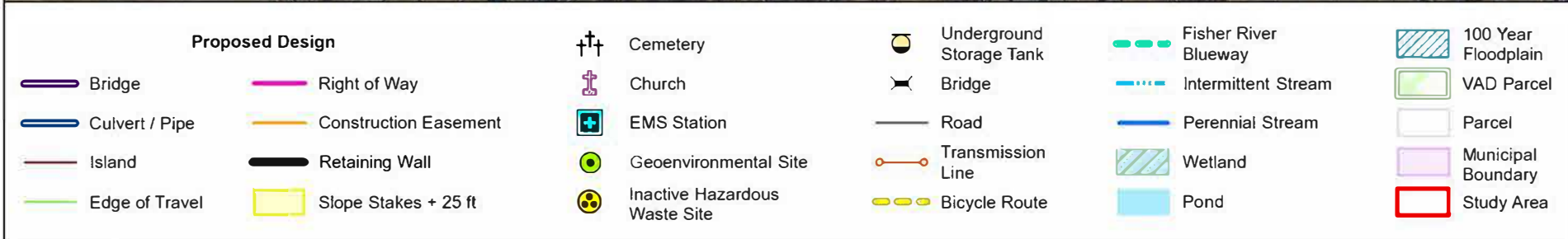
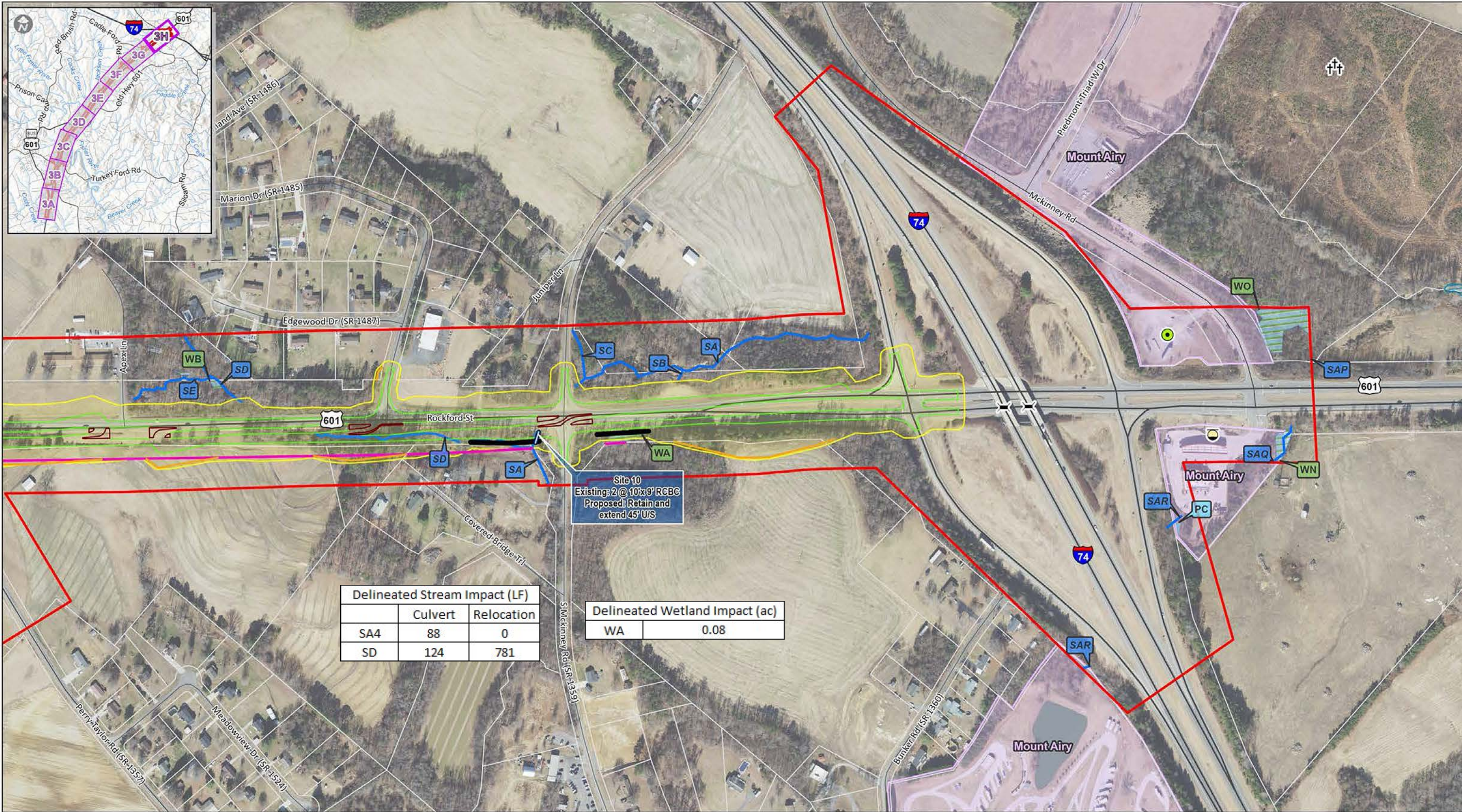


Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.
STIP Project R-5836
Preliminary Impact Screening
 Surry County
Figure 3G - Alternative 3



US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening

Surry County

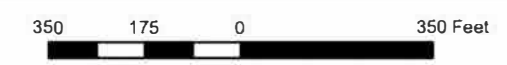
Figure 3H - Alternative 3



Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION 11



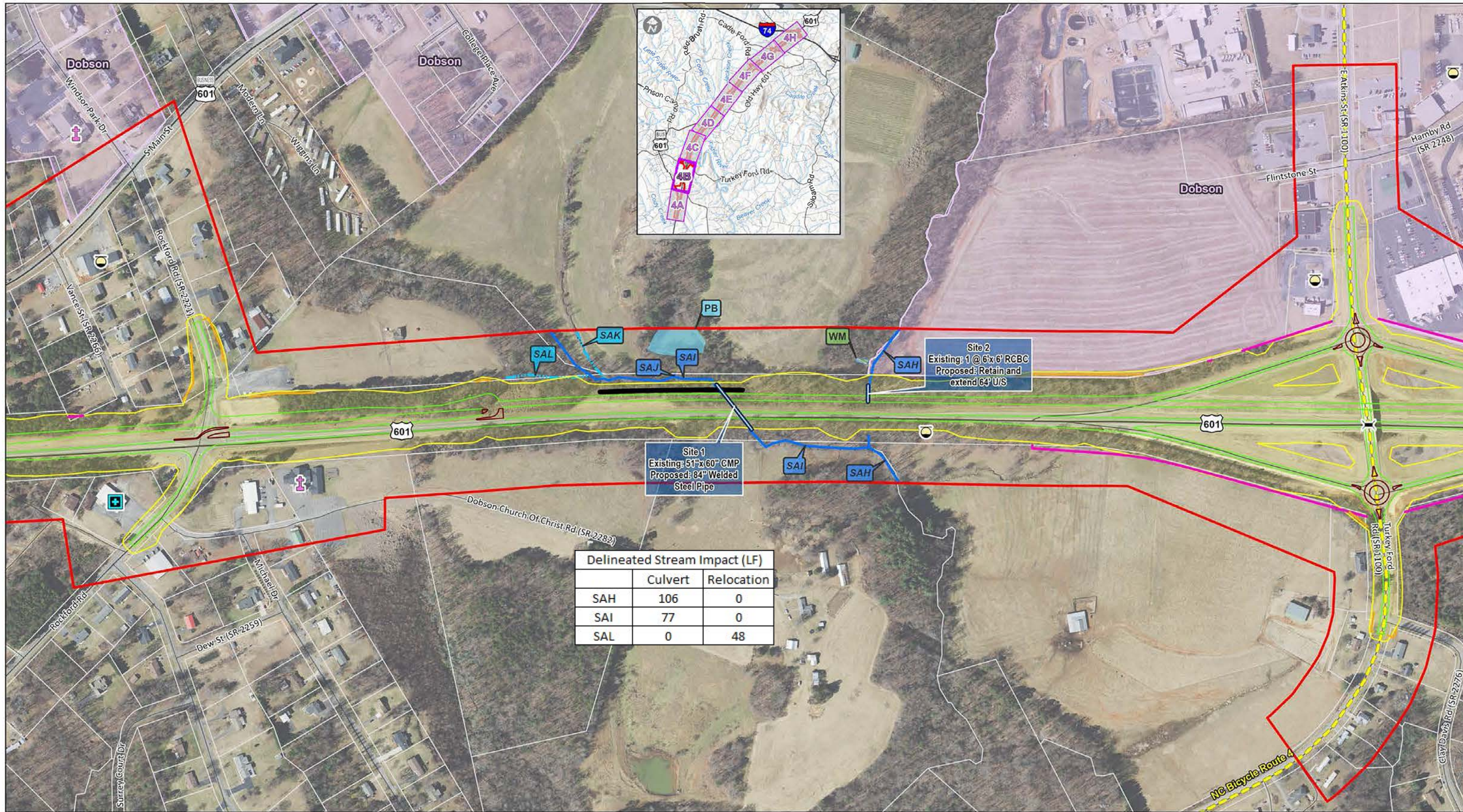
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Figure Date: 6/19/2023

US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.


STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 4A - Alternative 4



- | | | | | | |
|----------------|-----------------------|-------------------------------|--------------------------|----------------------|---------------------|
| Bridge | Right of Way | Cemetery | Underground Storage Tank | Fisher River Blueway | 100 Year Floodplain |
| Culvert / Pipe | Construction Easement | Church | Bridge | Intermittent Stream | VAD Parcel |
| Island | Retaining Wall | EMS Station | Road | Perennial Stream | Parcel |
| Edge of Travel | Slope Stakes + 25 ft | Geoenvironmental Site | Transmission Line | Wetland | Municipal Boundary |
| | | Inactive Hazardous Waste Site | Bicycle Route | Pond | Study Area |


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

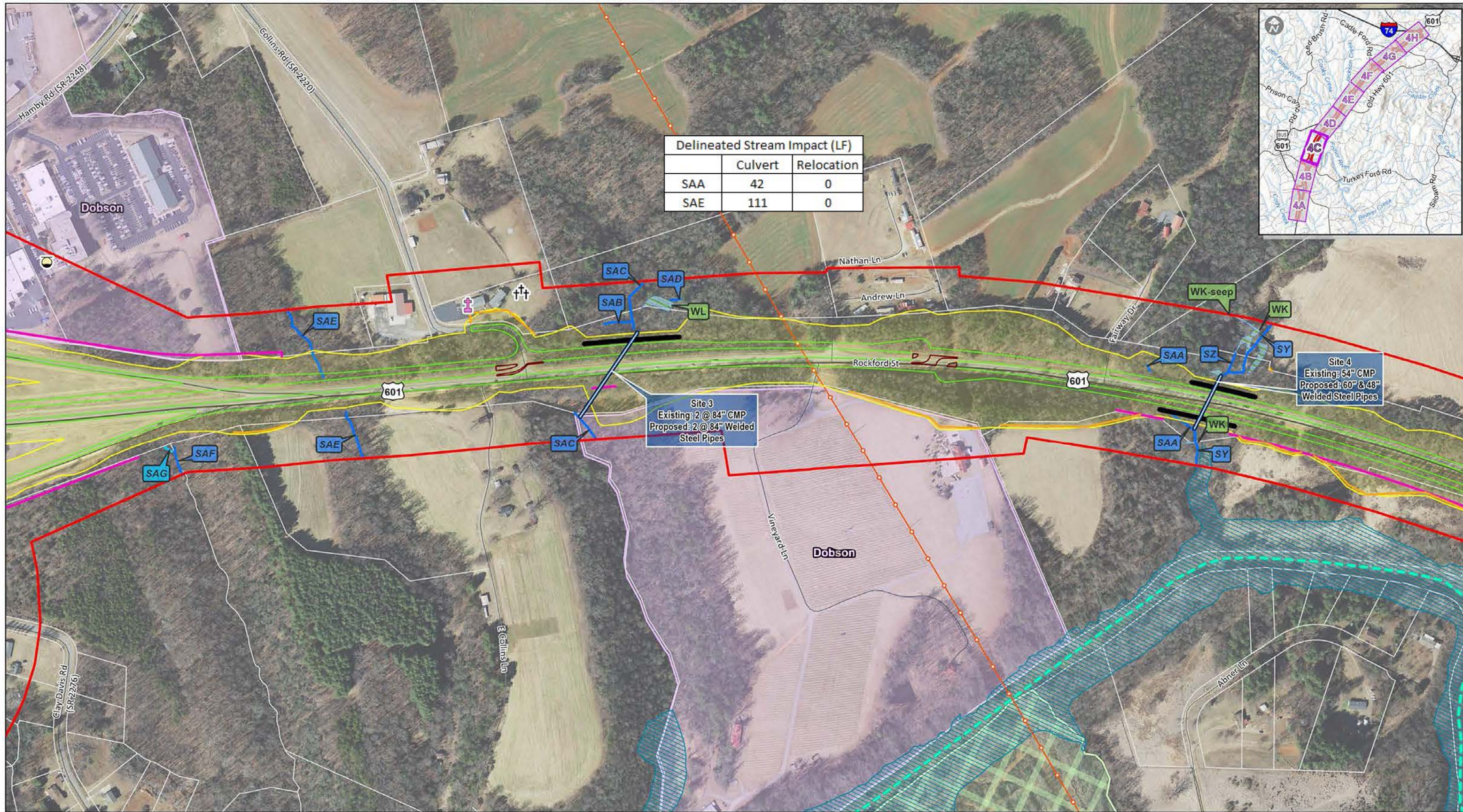
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Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
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 Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening
 Surry County

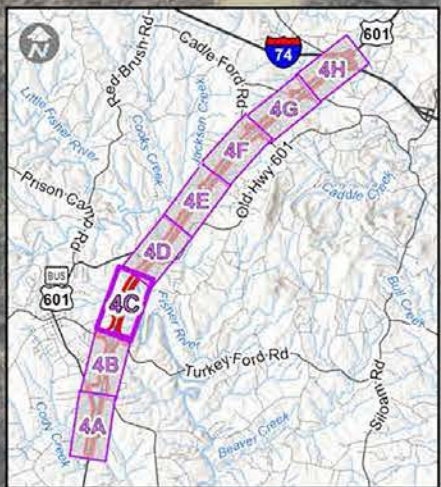
Figure 4B - Alternative 4




Delineated Stream Impact (LF)		
	Culvert	Relocation
SAA	42	0
SAE	111	0

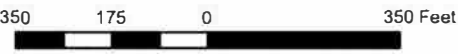

Site 3
Existing: 2 @ 84" CMP
Proposed: 2 @ 84" Welded Steel Pipes

Site 4
Existing: 54" CMP
Proposed: 60" & 48" Welded Steel Pipes



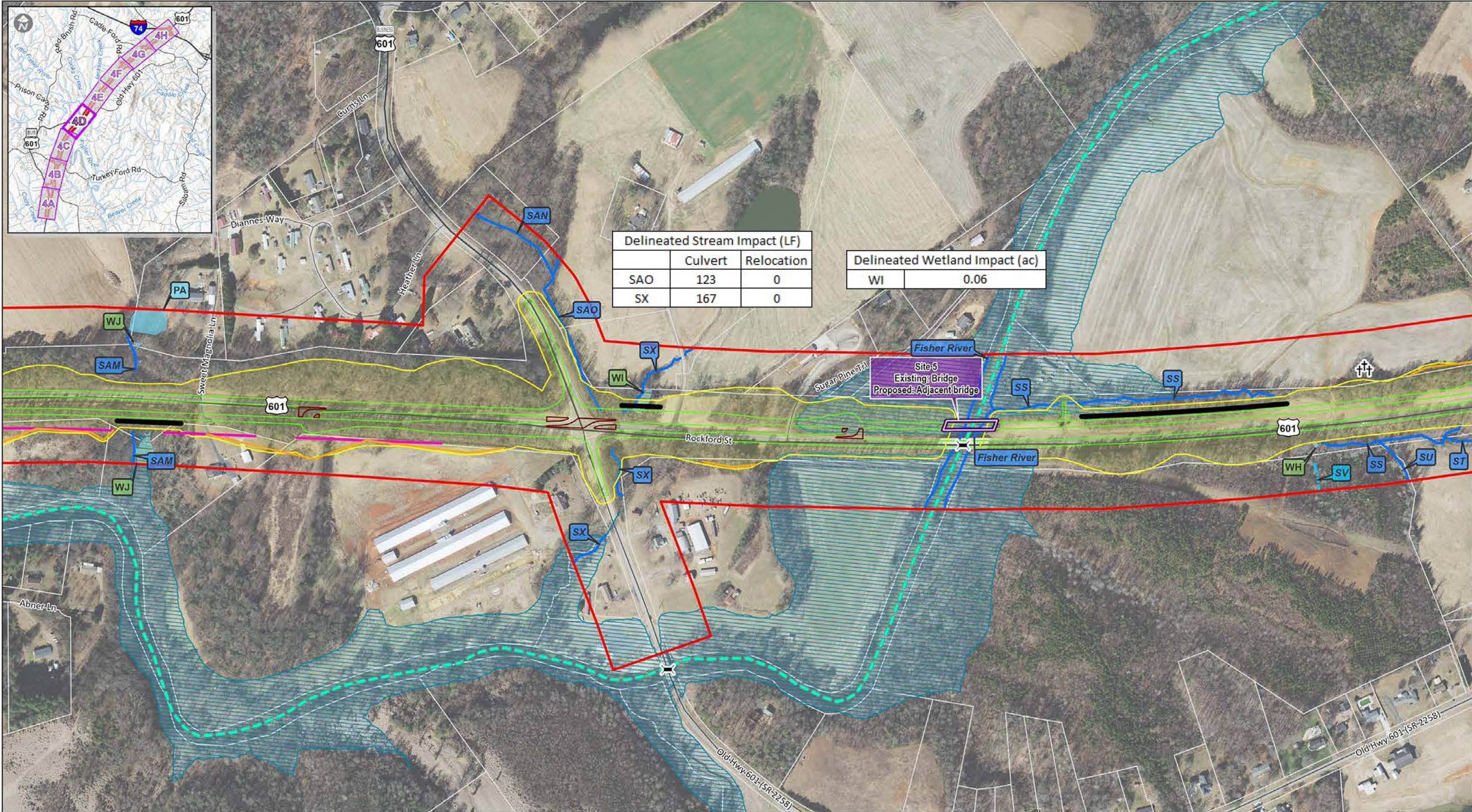
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.
STIP Project R-5836
Preliminary Impact Screening
 Surry County
Figure 4C - Alternative 4



Delineated Stream Impact (LF)		
	Culvert	Relocation
SAO	123	0
SX	167	0

Delineated Wetland Impact (ac)	
WI	0.06

Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
 DIVISION 11

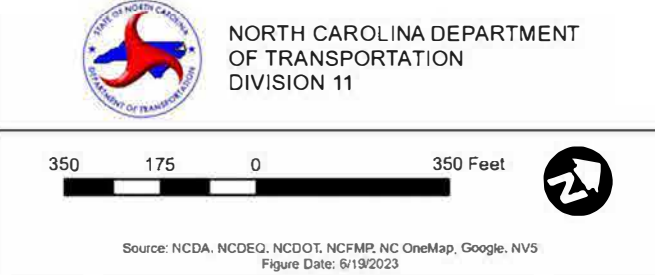
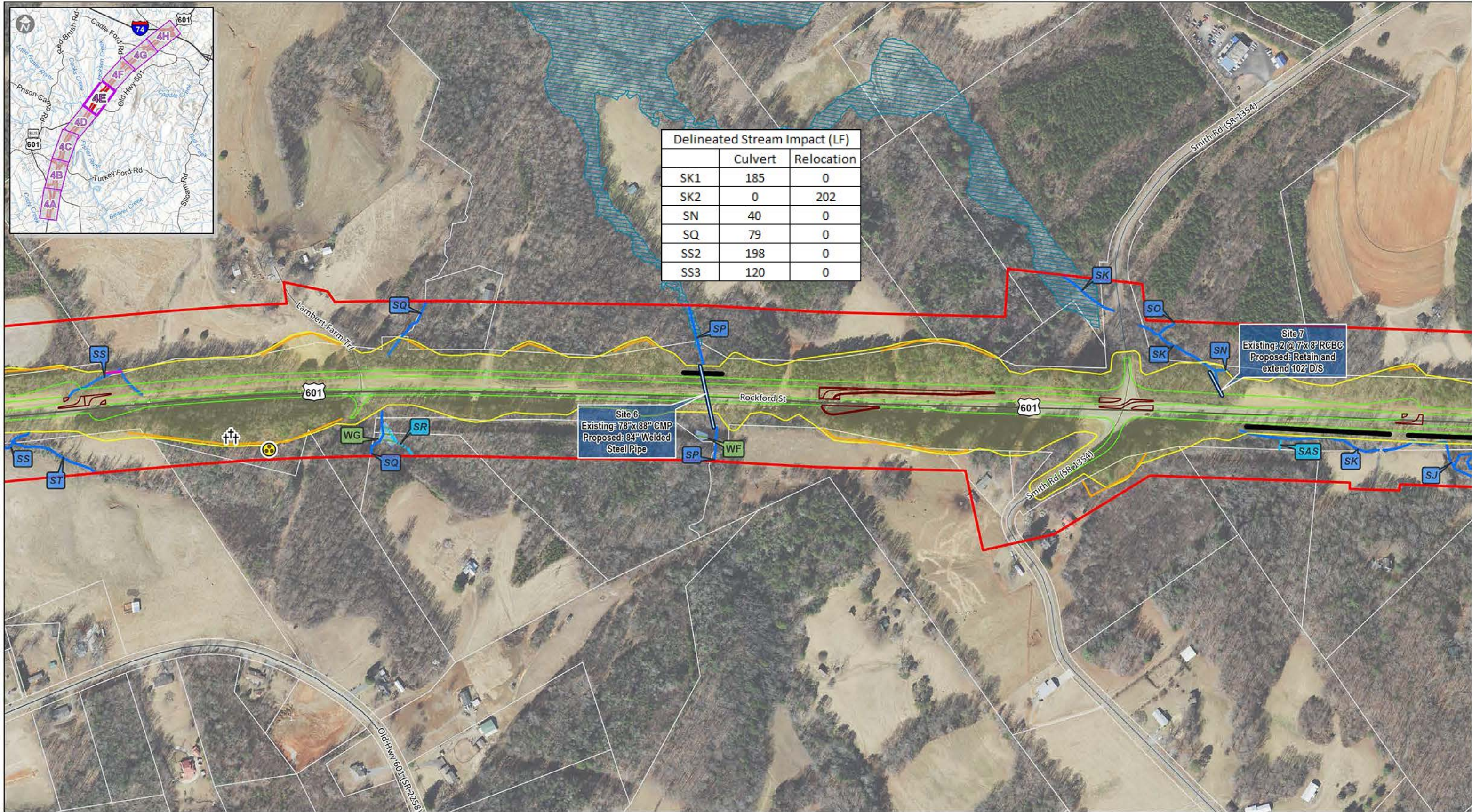
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Source: NCDA, NCDEQ, NCDOT, NCFMP, NC OneMap, Google, NVS
 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.
STIP Project R-5836
Preliminary Impact Screening
 Surry County
Figure 4D - Alternative 4



Delineated Stream Impact (LF)		
	Culvert	Relocation
SK1	185	0
SK2	0	202
SN	40	0
SQ	79	0
SS2	198	0
SS3	120	0

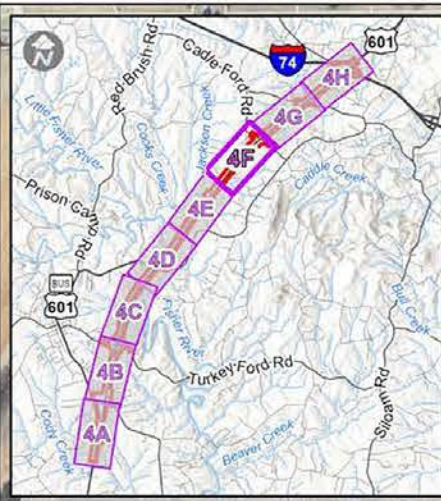


US 601
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Widen to 4 Lanes.

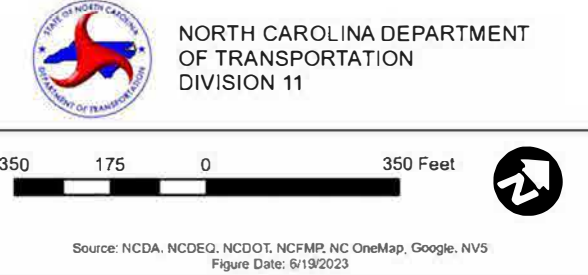
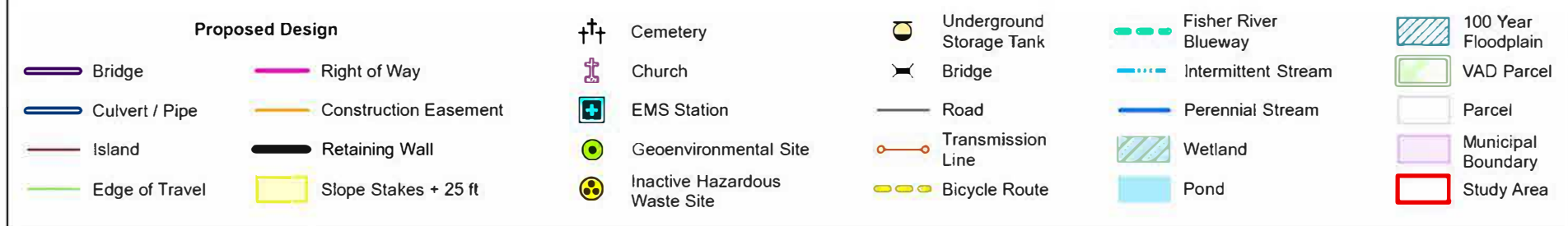
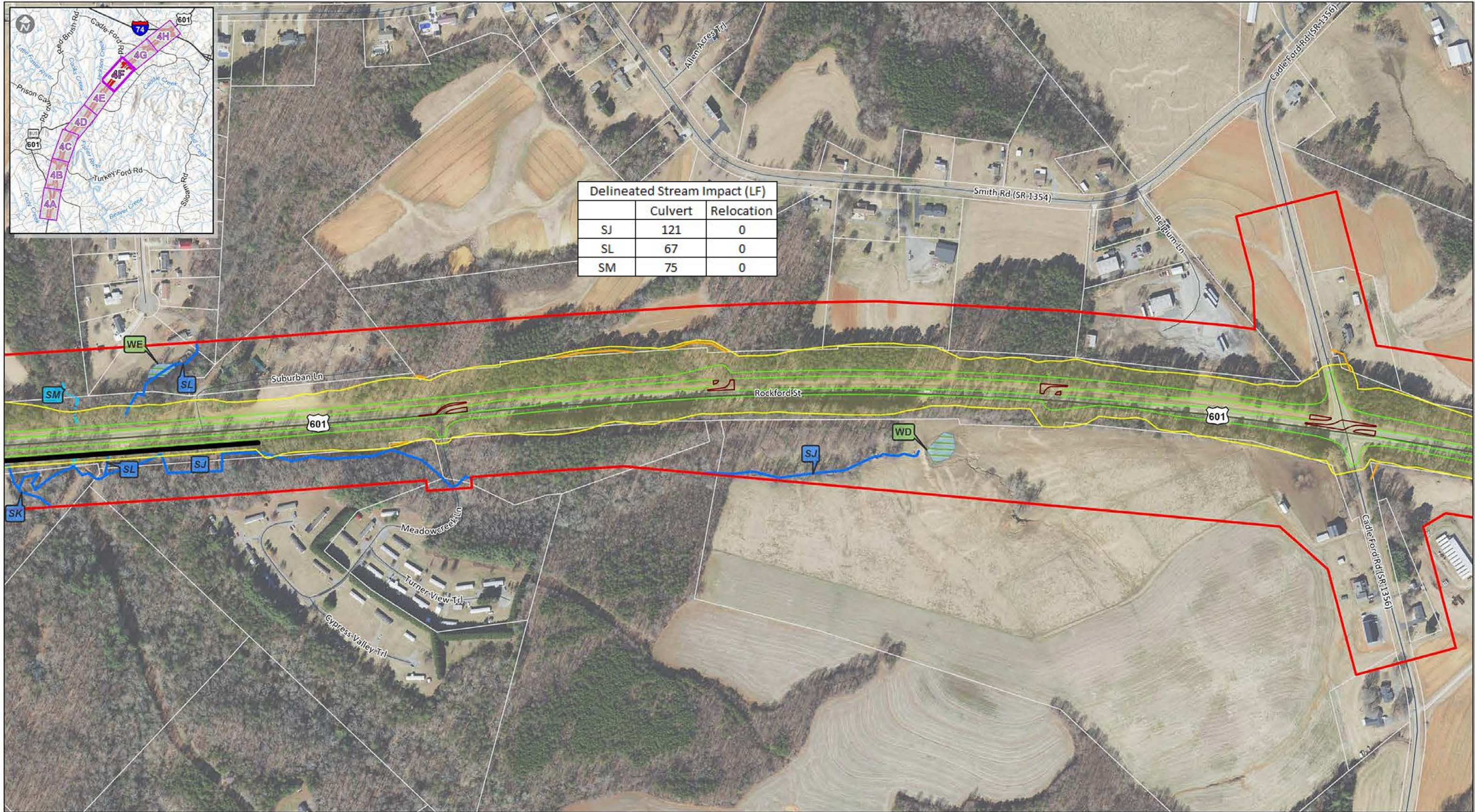
STIP Project R-5836
Preliminary Impact Screening

Surry County

Figure 4E - Alternative 4



Delineated Stream Impact (LF)		
	Culvert	Relocation
SJ	121	0
SL	67	0
SM	75	0



US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Preliminary Impact Screening

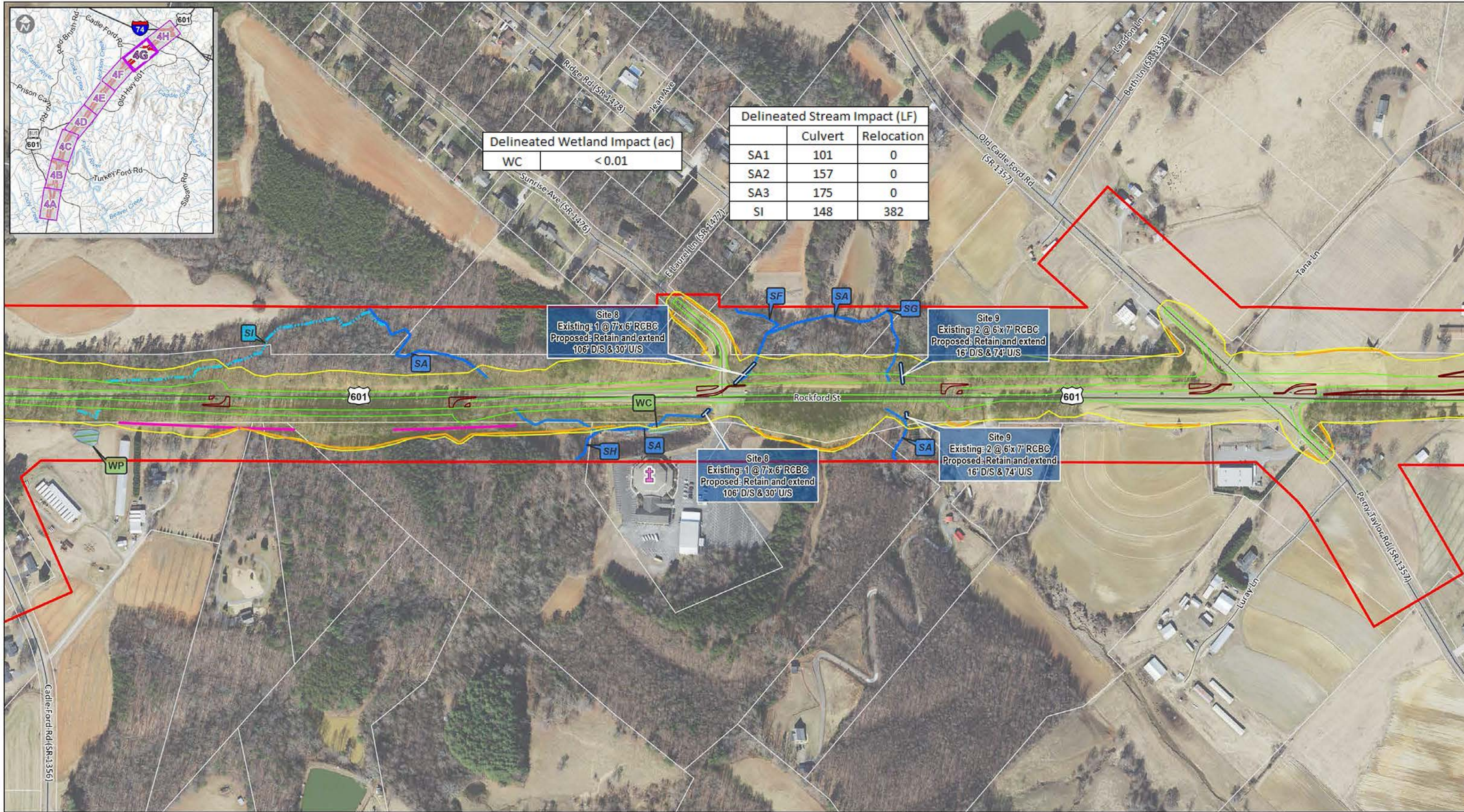
Surry County

Figure 4F - Alternative 4



Delineated Wetland Impact (ac)	
WC	< 0.01

Delineated Stream Impact (LF)		
	Culvert	Relocation
SA1	101	0
SA2	157	0
SA3	175	0
SI	148	382

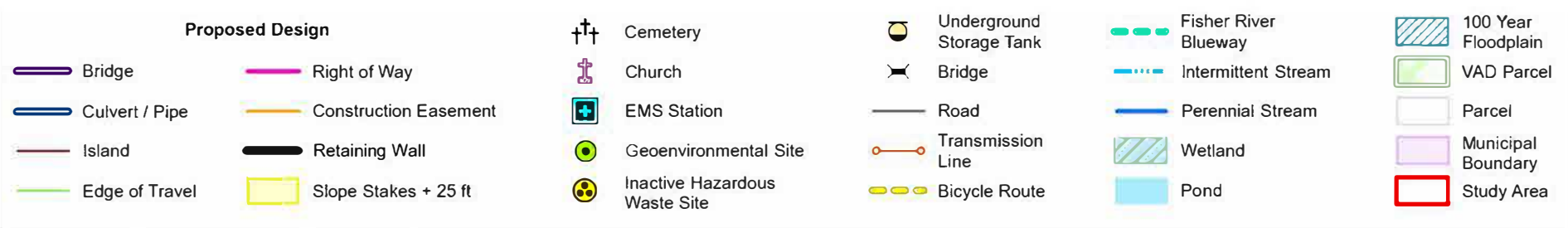


Site 8
Existing: 1 @ 7x6' RCBC
Proposed: Retain and extend
106' D/S & 30' U/S

Site 9
Existing: 2 @ 6x7' RCBC
Proposed: Retain and extend
16' D/S & 74' U/S

Site 8
Existing: 1 @ 7x6' RCBC
Proposed: Retain and extend
106' D/S & 30' U/S

Site 9
Existing: 2 @ 6x7' RCBC
Proposed: Retain and extend
16' D/S & 74' U/S



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 11

350 175 0 350 Feet

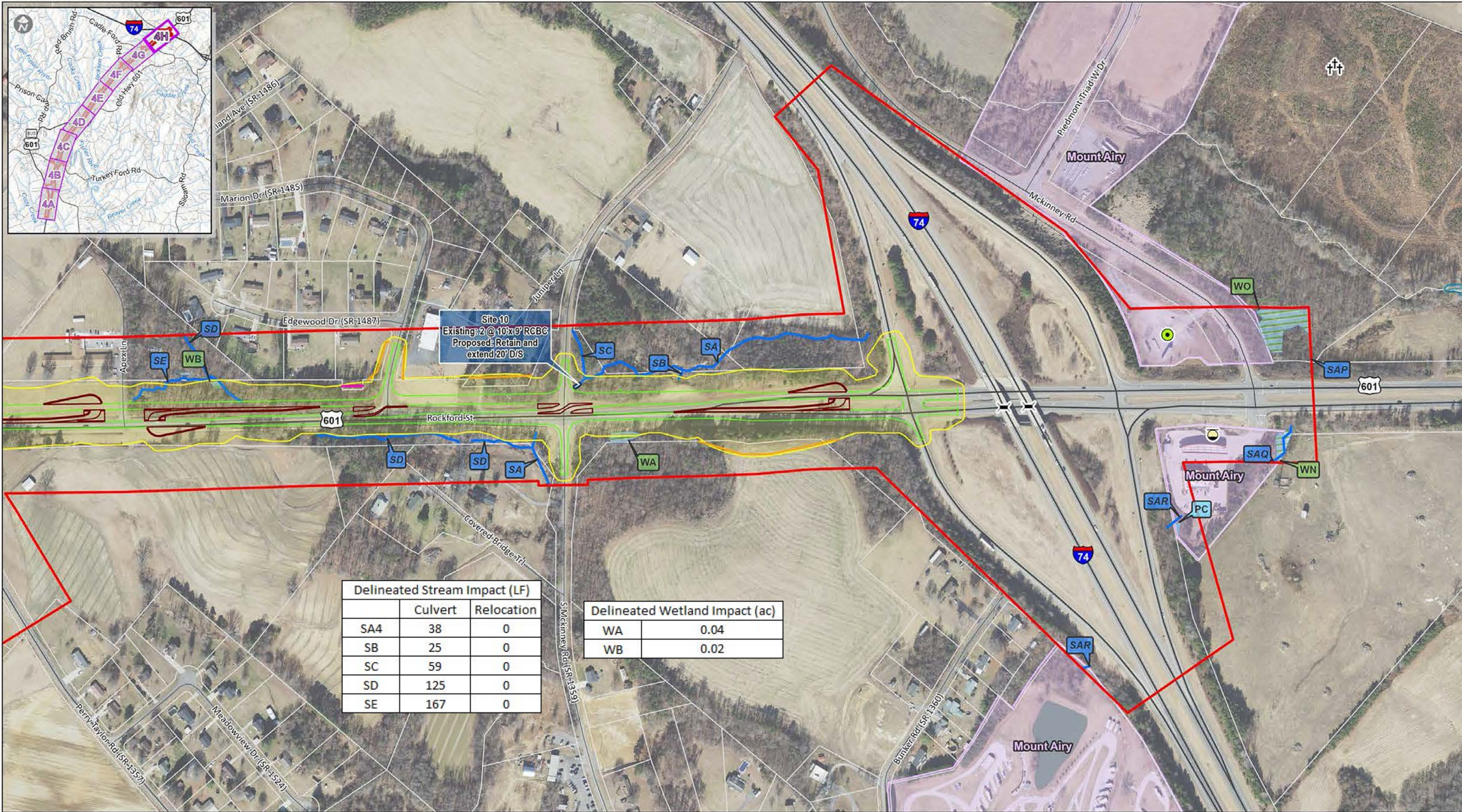
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Figure Date: 6/19/2023

US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

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Preliminary Impact Screening

Surry County

Figure 4G - Alternative 4



Site 10
 Existing: 2 @ 10'x 9' RCBC
 Proposed: Retain and extend 20' D/S

Delineated Stream Impact (LF)		
	Culvert	Relocation
SA4	38	0
SB	25	0
SC	59	0
SD	125	0
SE	167	0

Delineated Wetland Impact (ac)	
WA	0.04
WB	0.02

Bridge	Right of Way	Cemetery	Underground Storage Tank	Fisher River Blueway	100 Year Floodplain
Culvert / Pipe	Construction Easement	Church	Bridge	Intermittent Stream	VAD Parcel
Island	Retaining Wall	EMS Station	Road	Perennial Stream	Parcel
Edge of Travel	Slope Stakes + 25 ft	Geoenvironmental Site	Transmission Line	Wetland	Municipal Boundary
		Inactive Hazardous Waste Site	Bicycle Route	Pond	Study Area

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION 11

350 175 0 350 Feet

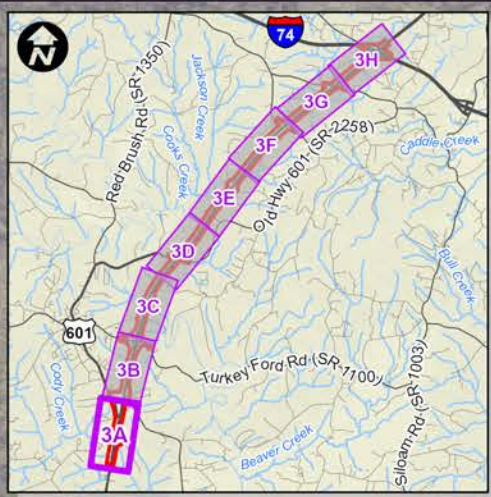
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 Figure Date: 6/19/2023

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.


STIP Project R-5836
Preliminary Impact Screening


Surry County

Figure 4H - Alternative 4



Potentially Jurisdictional Features		Terrestrial Communities		T & E Plant Boundary
Study Area	Perennial Stream	Agriculture	Mixed Pine / Hardwood Forest	Schweinitz's sunflower
Study Area (expansion)	Intermittent Stream	Bottomland Forest	Maintained / Disturbed	
Map Index Tile	Wetland	Open Water		
	Pond			


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ENVIRONMENTAL ANALYSIS UNIT

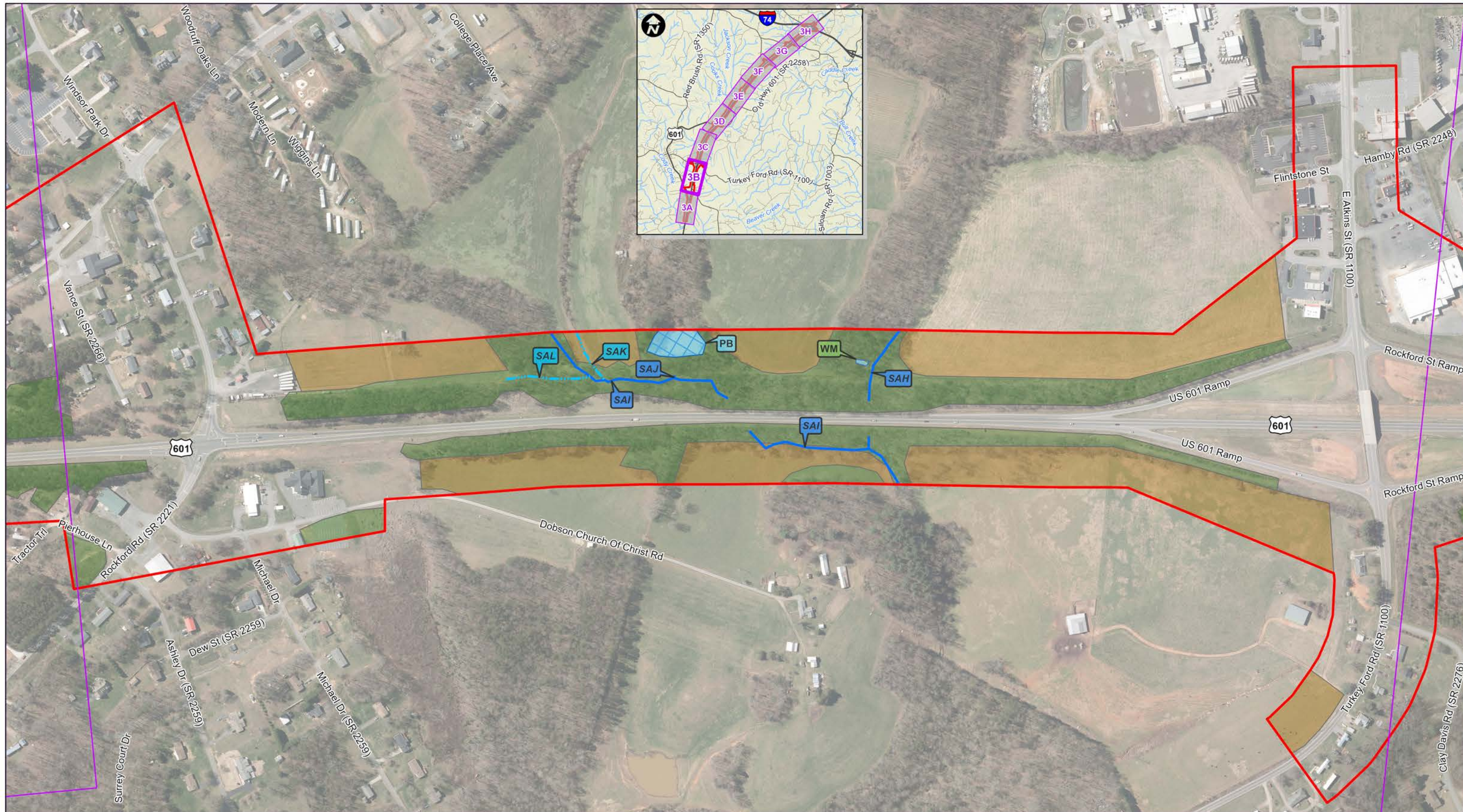


Source: NCDOT, NCOneMap, NV5
Figure Date: 9/14/2022

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Surry County

Figure 3A - Jurisdictional Features & Terrestrial Communities



- Study Area
- Study Area (expansion)
- Map Index Tile

- Potentially Jurisdictional Features**
- Perennial Stream
 - - - Intermittent Stream
 - Wetland
 - Pond

- Terrestrial Communities**
- Agriculture
 - Mixed Pine / Hardwood Forest
 - Bottomland Forest
 - Maintained / Disturbed
 - Open Water

- T & E Plant Boundary**
- Schweinitz's sunflower



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ENVIRONMENTAL ANALYSIS UNIT



Source: NCDOT, NCOneMap, NV5
Figure Date: 9/14/2022



US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Surry County

**Figure 3B - Jurisdictional Features
& Terrestrial Communities**



<ul style="list-style-type: none"> Study Area Study Area (expansion) Map Index Tile 	<p>Potentially Jurisdictional Features</p> <ul style="list-style-type: none"> Perennial Stream Intermittent Stream Wetland Pond 	<p>Terrestrial Communities</p> <ul style="list-style-type: none"> Agriculture Bottomland Forest Open Water Mixed Pine / Hardwood Forest Maintained / Disturbed 	<p>T & E Plant Boundary</p> <ul style="list-style-type: none"> Schweinitz's sunflower
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NORTH CAROLINA
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ENVIRONMENTAL ANALYSIS UNIT

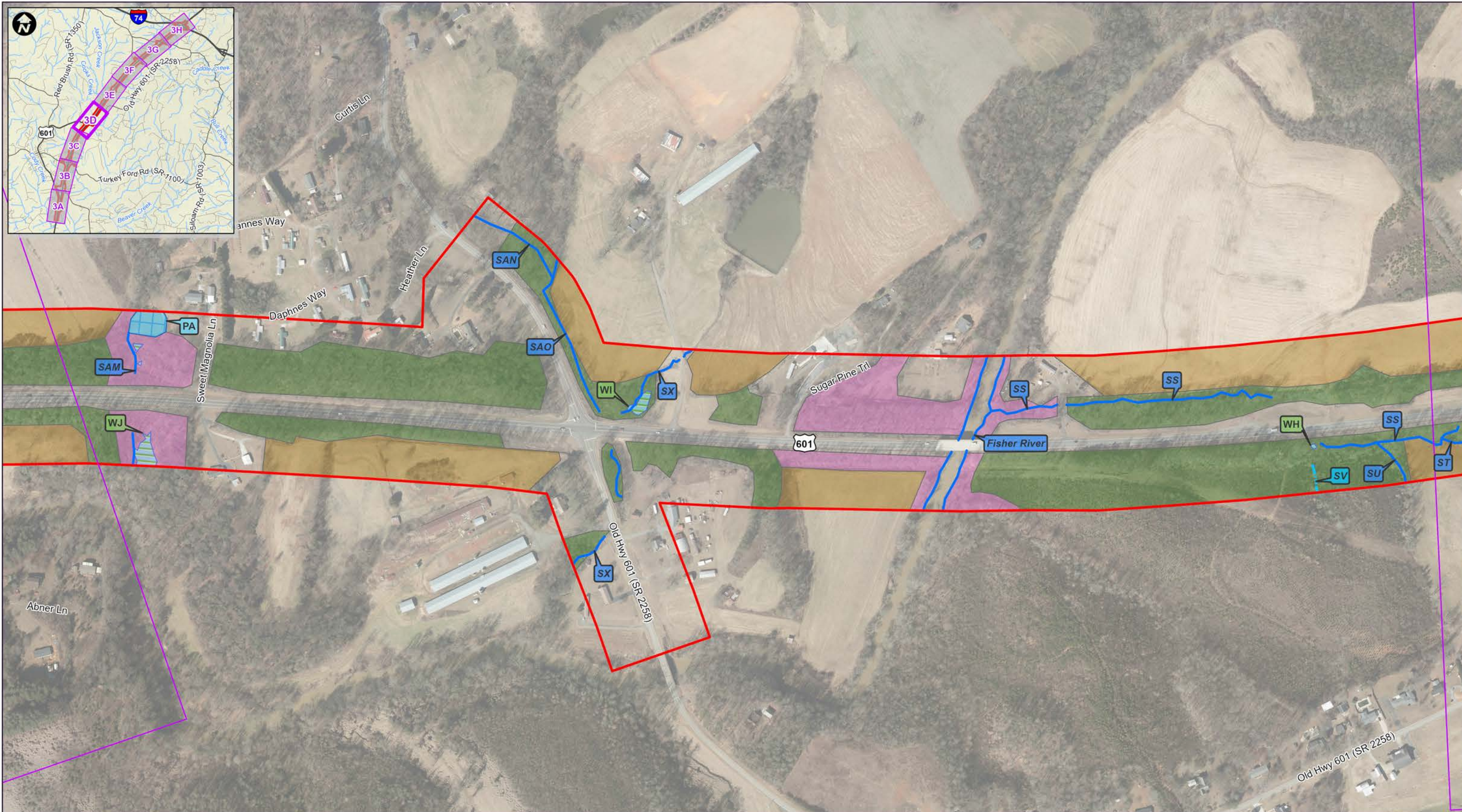
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Source: NCDOT, NCOneMap, NV5
Figure Date: 9/14/2022

US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

STIP Project R-5836
Surry County

**Figure 3C - Jurisdictional Features
& Terrestrial Communities**



<p>Potentially Jurisdictional Features</p> <ul style="list-style-type: none"> Study Area Study Area (expansion) Map Index Tile Perennial Stream Intermittent Stream Wetland Pond 	<p>Terrestrial Communities</p> <ul style="list-style-type: none"> Agriculture Mixed Pine / Hardwood Forest Bottomland Forest Maintained / Disturbed Open Water 	<p>T & E Plant Boundary</p> <ul style="list-style-type: none"> Schweinitz's sunflower
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ENVIRONMENTAL ANALYSIS UNIT

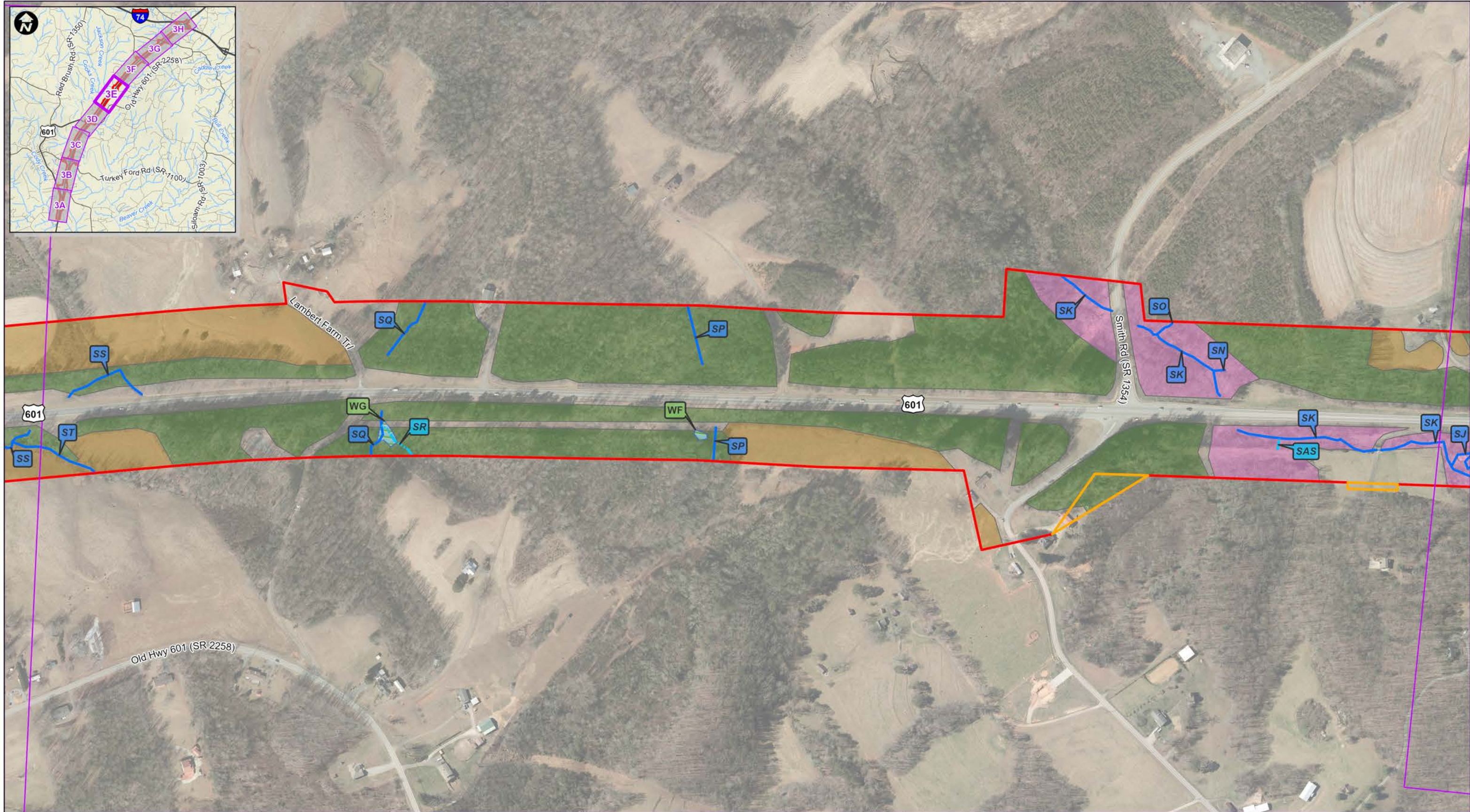
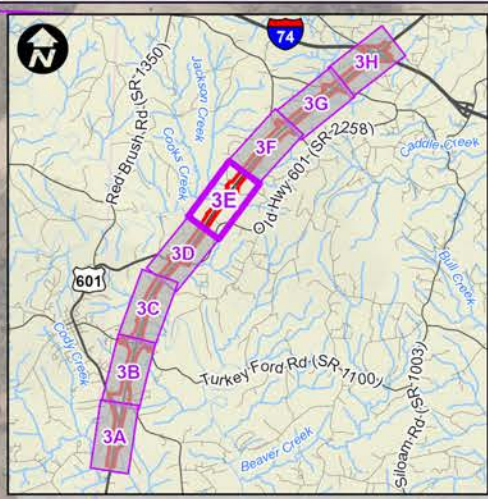
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Source: NCDOT, NCOneMap, NV5
Figure Date: 9/14/2022


US 601
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Widen to 4 Lanes.

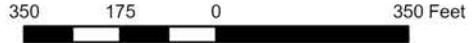
STIP Project R-5836
Surry County

**Figure 3D - Jurisdictional Features
& Terrestrial Communities**



Potentially Jurisdictional Features	Terrestrial Communities	T & E Plant Boundary
Study Area	Agriculture	Schweinitz's sunflower
Study Area (expansion)	Bottomland Forest	
Map Index Tile	Mixed Pine / Hardwood Forest	
Perennial Stream	Maintained / Disturbed	
Intermittent Stream	Open Water	
Wetland		
Pond		


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 ENVIRONMENTAL ANALYSIS UNIT

350 175 0 350 Feet


Source: NCDOT, NCOneMap, NV5
 Figure Date: 9/14/2022

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Surry County

**Figure 3E - Jurisdictional Features
 & Terrestrial Communities**



<ul style="list-style-type: none"> Study Area Study Area (expansion) Map Index Tile 	<p>Potentially Jurisdictional Features</p> <ul style="list-style-type: none"> Perennial Stream Intermittent Stream Wetland Pond 	<p>Terrestrial Communities</p> <ul style="list-style-type: none"> Agriculture Bottomland Forest Open Water Mixed Pine / Hardwood Forest Maintained / Disturbed 	<p>T & E Plant Boundary</p> <ul style="list-style-type: none"> Schweinitz's sunflower
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NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT

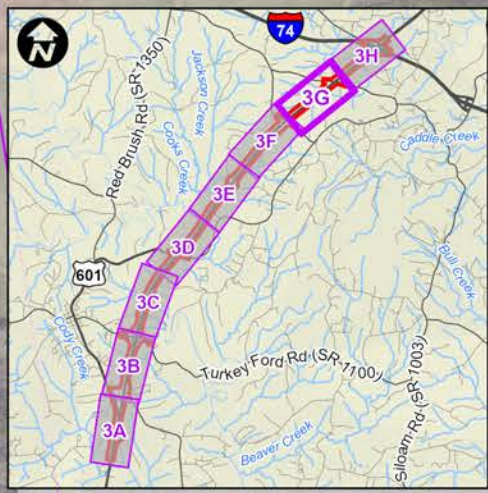
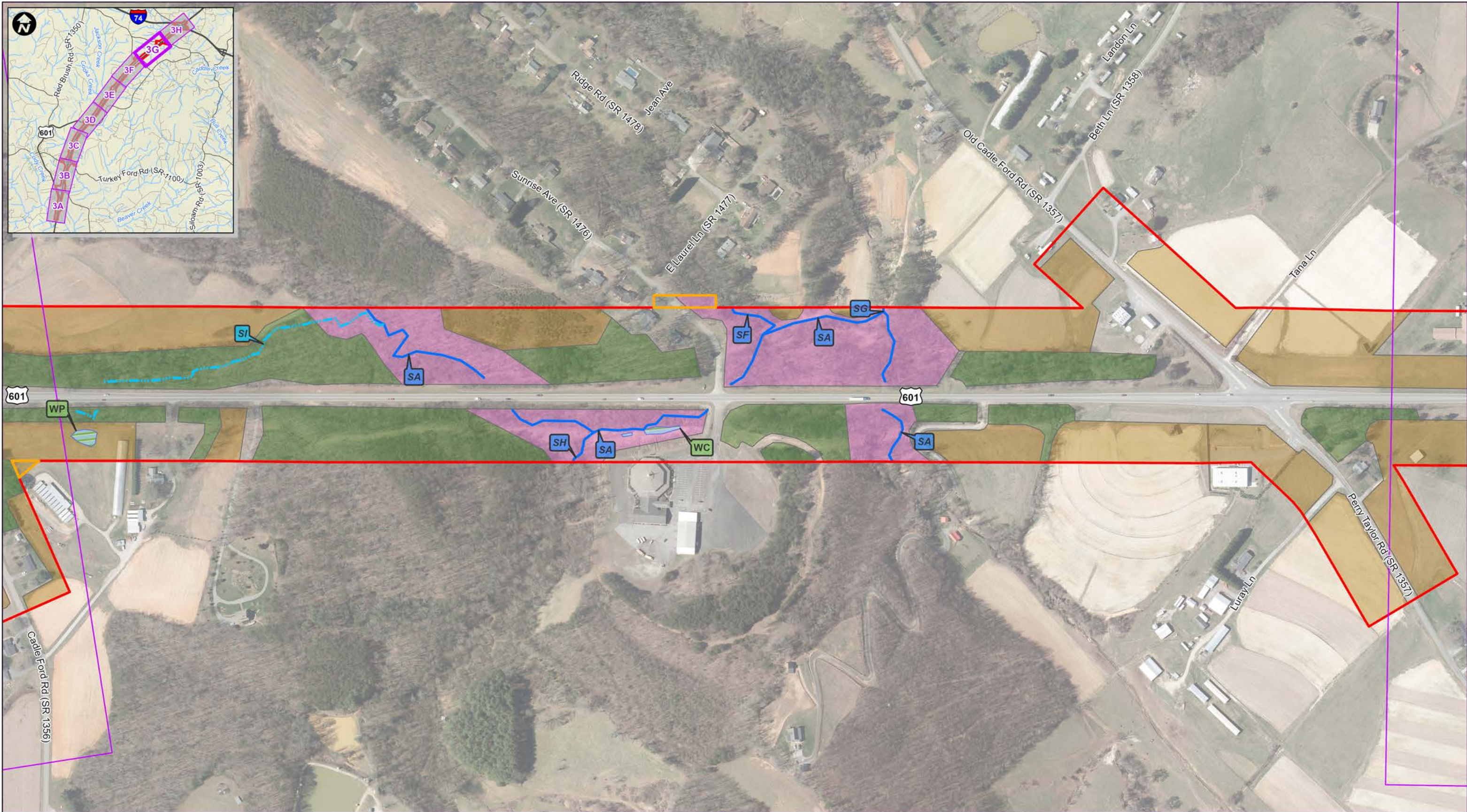
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Source: NCDOT, NCOneMap, NV5
Figure Date: 9/14/2022


US 601
from I-74 to SR 1104 (Cody Trail).
Widen to 4 Lanes.

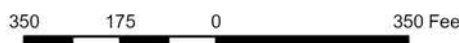
**STIP Project R-5836
Surry County**

**Figure 3F - Jurisdictional Features
& Terrestrial Communities**




Potentially Jurisdictional Features		Terrestrial Communities		T & E Plant Boundary
Study Area	Perennial Stream	Agriculture	Mixed Pine / Hardwood Forest	Schweinitz's sunflower
Study Area (expansion)	Intermittent Stream	Bottomland Forest	Maintained / Disturbed	
Map Index Tile	Wetland	Open Water		
	Pond			


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 ENVIRONMENTAL ANALYSIS UNIT

350 175 0 350 Feet


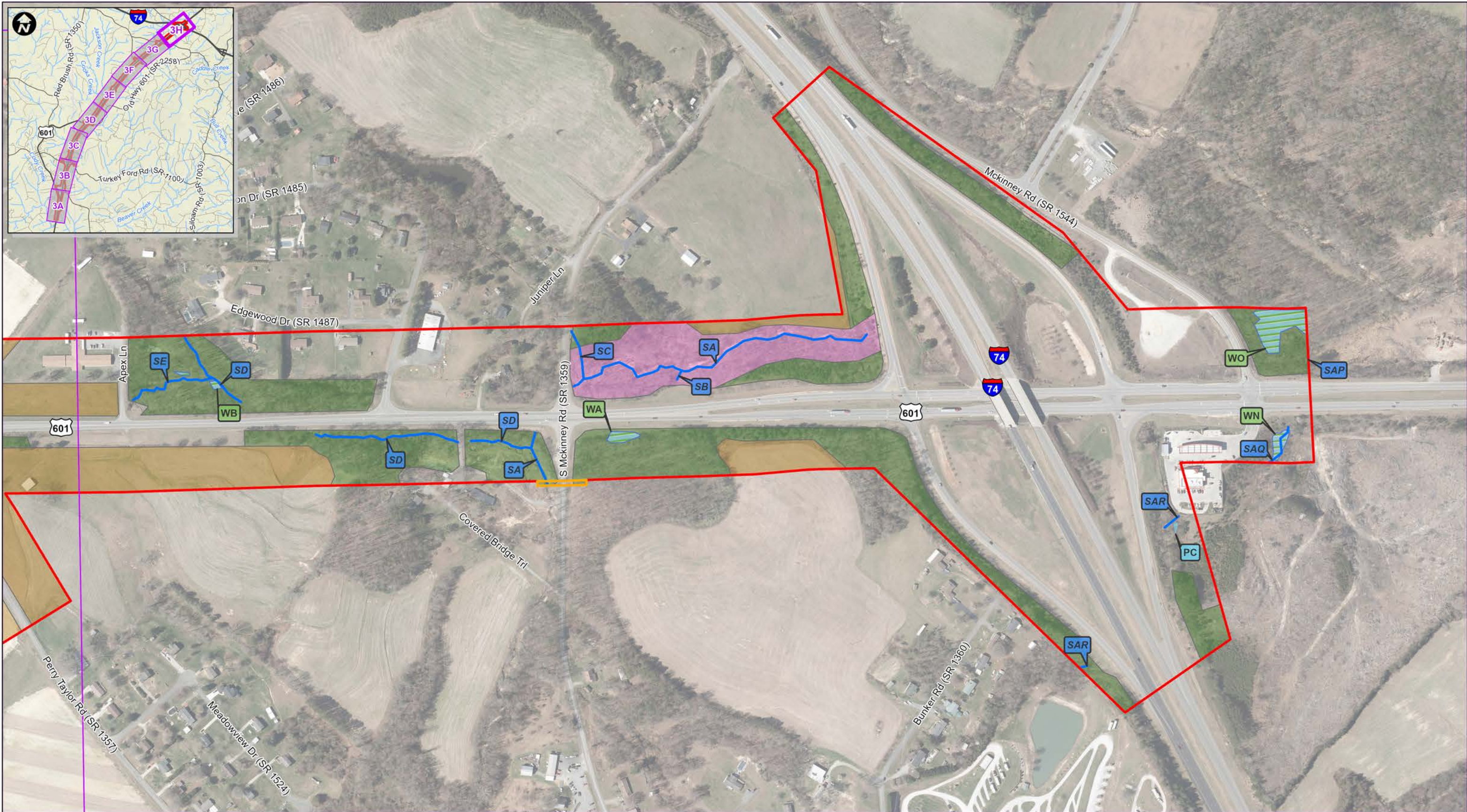
Source: NCDOT, NCOneMap, NV5
 Figure Date: 9/14/2022



US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Surry County

**Figure 3G - Jurisdictional Features
 & Terrestrial Communities**



Potentially Jurisdictional Features Study Area Study Area (expansion) Map Index Tile Perennial Stream Intermittent Stream Wetland Pond		Terrestrial Communities Agriculture Bottomland Forest Open Water Mixed Pine / Hardwood Forest Maintained / Disturbed		T & E Plant Boundary Schweinitz's sunflower
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NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 ENVIRONMENTAL ANALYSIS UNIT

350 175 0 350 Feet

Source: NCDOT, NCOneMap, NV5
 Figure Date: 9/14/2022

US 601
 from I-74 to SR 1104 (Cody Trail).
 Widen to 4 Lanes.

STIP Project R-5836
Surry County

**Figure 3H - Jurisdictional Features
 & Terrestrial Communities**

Table A-1. Streams in the Study Area

Stream Name	Map ID	NCDWR Index Number	Best Usage Classification	Bank Height (ft)	Bankfull width (ft)	Depth (in)
UT to Stewarts Creek	SA	12-72-9-(8)	C	4-6	8-12	8-12
UT to Stewarts Creek	SB	12-72-9-(8)	C	0.5-2	1-1.5	3-6
UT to Stewarts Creek	SC	12-72-9-(8)	C	2-4	1-3	6
UT to Stewarts Creek	SD	12-72-9-(8)	C	2-4	3-4	12
UT to Stewarts Creek	SE	12-72-9-(8)	C	3-4	2-4	4-6
UT to Stewarts Creek	SF	12-72-9-(8)	C	2-5	2-6	4-6
UT to Stewarts Creek	SG	12-72-9-(8)	C	6-8	2-5	6-8
UT to Stewarts Creek	SH	12-72-9-(8)	C	6-8	2-5	6-8
UT to Stewarts Creek	SI	12-72-9-(8)	C	2-4	3-5	6-12
UT to Jackson Creek	SJ	12-36-11	C	8	6	0
UT to Jackson Creek	SK	12-63-11	C	4	4-6	6-10
UT to Jackson Creek	SL	12-63-11	C	3-5	6	6-12
UT to Jackson Creek	SM	12-63-11	C	1-2	2-3	3-6
UT to Jackson Creek	SN	12-63-11	C	1-2	1.5	6
UT to Jackson Creek	SO	12-63-11	C	1	1	3-6
UT to Jackson Creek	SP	12-63-11	C	5-8	2-4	6
UT to Jackson Creek	SQ	12-63-11	C	2-4	2-4	6-8
UT to Jackson Creek	SR	12-63-11	C	.5-1	1-1.5	6
UT to Fisher River	SS	12-63-(9)	C	2-3	3-4	6-12
UT to Fisher River	ST	12-63-(9)	C	1-2	1-2	6
UT to Fisher River	SU	12-63-(9)	C	1-2	2	6
UT to Fisher River	SV	12-63-(9)	C	1	1-1.5	6
Fisher River	Fisher River	12-63-(9)	C	5-10	75-85	48-72
UT to Fisher River	SX	12-63-(9)	C	1-2	2	6
UT to Fisher River	SY	12-63-(9)	C	2-3	2-4	6-12
UT to Fisher River	SZ	12-63-(9)	C	1	1	3-6
UT to Fisher River	SAA	12-63-(9)	C	.5-2	1-2	3-6
UT to Fisher River	SAB	12-63-(9)	C	2-15	1-2	6
UT to Fisher River	SAC	12-63-(9)	C	3-4	10	12-18
UT to Fisher River	SAD	12-63-(9)	C	.5-2	2-4	6-12
UT to Fisher River	SAE	12-63-(9)	C	1-3	1-5	3-6
UT to Fisher River	SAF	12-63-(9)	C	1-5	2-6	6-12
UT to Fisher River	SAG	12-63-(9)	C	4-6	2-3	3-6
UT to Fisher River	SAH	12-63-(9)	C	2-3	5-10	6-12
UT to Fisher River	SAI	12-63-(9)	C	2	3-4	6-12
UT to Fisher River	SAJ	12-63-(9)	C	6	1	3
UT to Fisher River	SAK	12-63-(9)	C	1-2	1-2	3
UT to Fisher River	SAL	12-63-(9)	C	3-8	3-5	3-6
UT to Fisher River	SAM	12-63-(9)	C	4-6	8-12	8-12
UT to Fisher River	SAN	12-63-(9)	C	1-6	3-4	6

Stream Name	Map ID	NCDWR Index Number	Best Usage Classification	Bank Height (ft)	Bankfull width (ft)	Depth (in)
UT to Fisher River	SAO	12-63-(9)	C	1-6	1-2	6
UT to Stewarts Creek	SAP	12-72-9-(8)	C	4-6	2-3	3-6
UT to Stewarts Creek	SAQ	12-72-9-(8)	C	3	3	6
UT to Stewarts Creek	SAR	12-72-9-(8)	C	3	3	6
UT to Stewarts Creek	SAS	12-72-9-(8)	C	2	2	4

Table A-2. Surface Waters in the Study Area

Surface Water	Map ID of Connection	Area (ac) in Study Area
PA	SAM	0.28
PB	N/A	0.45
PC	N/A	0.01

Table A-3. Status of Streams in the Study Area

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer
SA	4,339.21	Perennial	Yes	Not Subject
SB	38.74	Perennial	Yes	Not Subject
SC	194.94	Perennial	Yes	Not Subject
SD	1,164.14	Perennial	Yes	Not Subject
SE	365.91	Perennial	Yes	Not Subject
SF	249.19	Perennial	Yes	Not Subject
SG	17.08	Perennial	Yes	Not Subject
SH*	148.63	Perennial	Yes	Not Subject
SI	1,351.54	Intermittent	Undetermined	Not Subject
SJ*	3,043.16	Perennial	Yes	Not Subject
SK	1,756.09	Perennial	Yes	Not Subject
SL	536.62	Perennial	Yes	Not Subject
SM	236.94	Intermittent	Undetermined	Not Subject
SN	43.91	Perennial	Yes	Not Subject
SO	81.75	Perennial	Yes	Not Subject
SP	366.02	Perennial	Yes	Not Subject
SQ	420.21	Perennial	Yes	Not Subject
SR	173.70	Intermittent	Undetermined	Not Subject
SS*	2,042.03	Perennial	Yes	Not Subject
ST*	352.84	Perennial	Yes	Not Subject
SU	199.09	Perennial	Yes	Not Subject
SV	110.43	Intermittent	Undetermined	Not Subject
Fisher River	614.77	Perennial	Yes	Not Subject

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer
SX*	760.26	Perennial	Yes	Not Subject
SY	451.77	Perennial	Yes	Not Subject
SZ	78.07	Perennial	Yes	Not Subject
SAA	142.10	Intermittent	Undetermined	Not Subject
SAB	111.30	Perennial	Yes	Not Subject
SAC	339.95	Perennial	Yes	Not Subject
SAD	40.13	Perennial	Yes	Not Subject
SAE	508.73	Perennial	Yes	Not Subject
SAF	108.63	Perennial	Yes	Not Subject
SAG	49.36	Intermittent	Undetermined	Not Subject
SAH	539.67	Perennial	Yes	Not Subject
SAI	1,310.70	Perennial	Yes	Not Subject
SAJ	6.75	Perennial	Yes	Not Subject
SAK*	224.09	Intermittent	Undetermined	Not Subject
SAL	329.34	Intermittent	Undetermined	Not Subject
SAM	287.45	Perennial	Yes	Not Subject
SAN	405.99	Perennial	Yes	Not Subject
SAO*	659.18	Perennial	Yes	Not Subject
SAP	0.82	Perennial	Yes	Not Subject
SAQ	178.25	Perennial	Yes	Not Subject
SAR	102.03	Perennial	Yes	Not Subject
SAS	47.31	Intermittent	Undetermined	Not Subject
Total	24,568.82			

* NCSAM forms are available in the JD package

Table A-4. Characteristics of Wetlands in the Study Area

Map ID	NCWAM Classification	Forested	NCWAM Rating	Hydrologic Classification	404/401 or 401	Area (ac.) in Study Area
WA	Bottomland Hardwood Forest	Yes	Low	Riparian	404/401	0.10
WB	Bottomland Hardwood Forest	Yes	High	Riparian	404/401	0.04
WC	Bottomland Hardwood Forest	No	Low	Riparian	404/401	0.08
WD	Headwater Forest	No	Low	Riparian	404/401	0.19
WE	Headwater Forest	No	Medium	Riparian	404/401	0.10
WF	Headwater Forest	Yes	High	Riparian	404/401	0.03
WG	Headwater Forest	Yes	High	Riparian	404/401	0.10
WH	Headwater Forest	Yes	Medium	Riparian	404/401	0.01
WI	Bottomland Hardwood Forest	Yes	Low	Riparian	404/401	0.09

WJ	Bottomland Hardwood Forest	Yes	Low	Riparian	404/401	0.18
WK	Bottomland Hardwood Forest	Yes	Low	Riparian	404/401	0.18
WL	Bottomland Hardwood Forest	Yes	Low	Riparian	404/401	0.10
WM	Headwater Forest	Yes	Low	Riparian	404/401	0.02
WN	Headwater Forest	Yes	Low	Riparian	404/401	0.11
WO	Headwater Forest	Yes	Low	Riparian	404/401	0.49
WP	Non-Tidal Freshwater Marsh	No	Low	No	404/401	0.11
Total						1.93

Table A-5. ESA Federally-Protected Species within the Study Area¹

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Myotis grisescens</i>	gray bat	E	Yes	Unresolved
<i>Myotis septentrionalis</i>	northern long-eared bat	T	Yes	Unresolved
<i>Glyptemys muhlenbergii</i>	bog turtle	SAT	No	Not Required
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	E	Yes	MA-NLAA

¹ IPaC data checked on September 14, 2022

E - Endangered

T - Threatened

SAT - Threatened due to similarity of appearance

MA-NLAA - May Affect – Not Likely to Adversely Affect