

# **Section 404 / NEPA Interagency Merger Process Concurrence Meeting**

## **Least Environmentally Damaging Practicable Alternative (LEDPA) / Preferred Alternative Selection & Avoidance and Minimization**

R-2577 U.S. 158 (Reidsville Road) Improvements  
From Multi-lanes North of U.S. 421/I-40 Business in Winston-Salem to  
U.S. 220 in Stokesdale

Forsyth and Guilford Counties

STIP Project R-2577  
WBS No. 37405.1.1

North Carolina Department of Transportation



**Merger Concurrence Point 3 and 4A**

**May 16, 2018**

# **Meeting Agenda**

**R-2577 U.S. 158 (Reidsville Road) Improvements**

**Merger Concurrence Point 3 and 4A**

**May 16, 2018**

**1. Meeting Purpose**

**2. Project Description**

**3. Purpose of and Need for the Project**

**4. Project History and Status**

**5. Project Cost**

**6. CP 3: Least Environmentally Damaging Practicable Alternative**

**7. CP 4A: Avoidance and Minimization**

## Meeting Purpose

The purpose of the meeting is to present relevant information to the R-2577ABC project merger team in order to reach concurrence on Concurrence Point (CP) 3, “Least Environmentally Damaging Practicable Alternative (LEDPA)/ Preferred Alternative,” and CP 4A “Avoidance and Minimization,” for the proposed improvements to U.S. 158 within the proposed limits of this project.

## Project Description

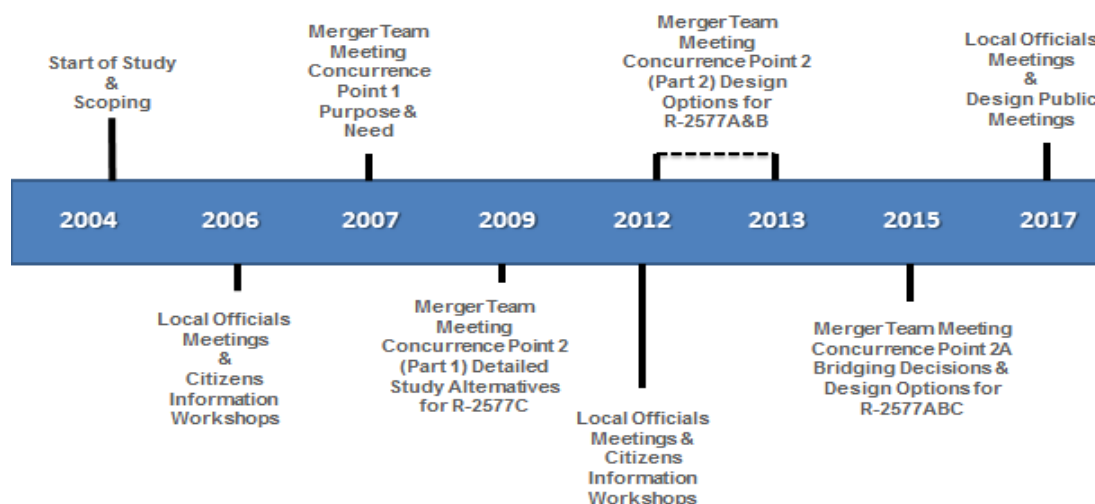
The North Carolina Department of Transportation (NCDOT) proposes to widen approximately 18.8 miles of U.S. 158 (Reidsville Road) to a multi-lane facility, from the existing multi-lane section north of U.S. 421/I-40 Business in Winston-Salem, Forsyth County, to U.S. 220 in Stokesdale, Guilford County. The proposed project is included in the 2018-2027 State Transportation Improvement Program (STIP) as project number R-2577. The project is divided into three sections for funding and construction purposes, sections A, B, and C. R-2577A begins at the multi-lanes north of U.S. 421/I-40 Business in Forsyth County and ends at SR 1965 (Belews Creek Road), north of Vance Road in Forsyth County. R-2577B begins at SR 1965 (Belews Creek Road) in Forsyth County and ends just north of SR 2034 (Anthony Road) in Guilford County. R-2577C begins just north of SR 2034 (Anthony Road) in Guilford County and ends at U.S. 220 in Guilford County.

U.S. 158 is currently a mostly two-lane, undivided facility with no control-of-access within the majority of the project study area. U.S. 158 is designated as a Rural Principal Arterial and provides a link between I-40 in Winston-Salem and U.S. 220 north of Greensboro. The proposed project would upgrade U.S. 158 to a four-lane, median-divided facility with a combination of no control-of-access and partial control-of-access. See Attachment A for a map of the project vicinity and study area boundary.

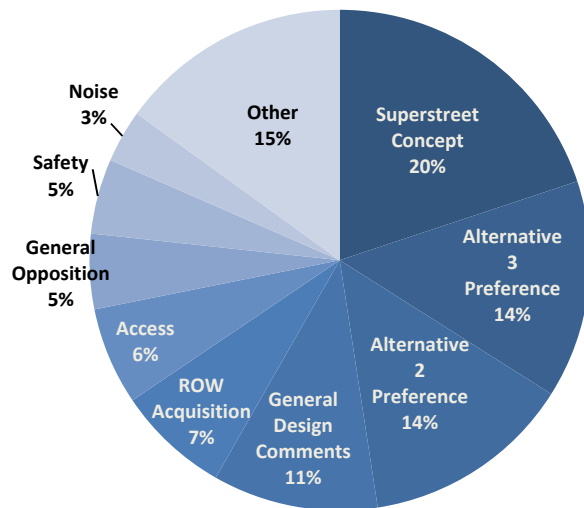
## Purpose of and Need for the Project

The purpose of the project is to improve the traffic carrying capacity and level-of-service (LOS) along U.S. 158, within the project limits. The project need stems from existing transportation deficiencies along this section of U.S. 158 that will cause additional travel delays, increase the potential for accidents, and contribute to the inefficient operation of motor vehicles.

## Project History & Status



- CP 1 meeting held on August 14, 2007 - concurrence reached.
- CP2 meeting for R-2577C held on February 17, 2009 - concurrence reached.
- CP2 meetings for R-2577A&B held on December 12, 2012 and on August 22, 2013 -concurrence reached.
- CP 2A meeting for R-2577A, B & C was held on September 29, 2015, and concurrence was reached.
- Updated Traffic Forecast and Capacity Analysis completed in July 2017 and January 2017, respectively.
- Public Involvement:
  - Citizens Information Workshops (CIWs) were held in April 2006 – one in Walkertown and one in Stokesdale. Purpose of CIWs was to introduce project to public and get comments.
  - CIWs were held in April 2012 to present preliminary study alternatives under consideration.
  - Design Public Meetings (DPMs) were held in October 2017 to give the public and local officials the opportunity to review maps of the Detailed Study Alternatives (DSAs). Nearly 700 members of the public attended the meetings, and 168 written comments were received. The pie chart gives a summary of the types of comments received during the public comment period. A post-DPM meeting was held on November 30, 2017 to discuss and address comments received from the public. Attachment B contains the post-DPM meeting minutes that provides a summary of the comments received and measures taken by NCDOT to address them.
  - USACE posted a Public Notice on April 5, 2018, to allow the public an opportunity to review the proposed DSAs for 30 days and to provide comments.
- Combined State EA/FONSI due in August 2018.
- Project Schedule:
  - R-2577A: Right of Way Acquisition – 2020; Construction 2022
  - R-2577B: Right of Way Acquisition – 2024; Construction 2026
  - R-2577C: Right of Way Acquisition and Construction not funded



## Project Cost

The project is State-funded. Updated project cost estimates are show in Table 1.

**Table 1: Project Cost:**

R-2577	Right of Way (\$M)	Utilities (\$M)	Construction (\$M)	Total Project Cost (\$M)
<b>Part A:</b>				
<b>With Segment 3 Southern</b>	27.2*	0.53	39.2	66.93
<b>With Segment 3 Transitional</b>	27.0*	0.53	38.6	66.13
<b>Part B:</b>				
<b>With Segment 3 Southern</b>	24.2*	0.72	48.8	73.72
<b>With Segment 3 Transitional</b>	26.3*	0.33	48.7	75.33
<b>Part C:</b>				
<b>Alternative 2 Southern</b>	42.0*	0.76	49.8	92.56
<b>Alternative 3 Northern</b>	61.1*	0.73	48.4	110.23
<b>Note:</b> *Right of Way cost estimates are preliminary and will be updated prior to completion of document				

### CP 3: Least Environmentally Damaging Practicable Alternative (LEDPA)

Two Design Options for segment 3 located in R-2577A & B, and two new location alternatives for R-2577C, are still under consideration (see Table 2). For segment 3 located in R-2577A & B, the merger team agreed at the CP 2A meeting on the Southern widening option since it had almost half the wetland and stream impacts than the Northern widening option. However, the number of relocations associated with the Southern widening option was almost twice as much as the Northern widening option. Therefore, the US EPA representative, new to the team, requested that a transitional widening option be considered as well to minimize the number of relocations while still avoiding and/or minimizing impacts to additional jurisdictional resources.

**Table 2: Design Options in R-2577A and R-2577B and Final DSAs to Carry Forward for R-2577C**

Project Section	Project Segment	Segment Termini	Design Options for Further Study/ Detailed Study Alternatives (DSAs)
A&B	3	NC 66 to Flat Rock Rd.	Southern widening Transitional widening
C	n/a	Anthony Rd. to U.S. 220	Alternative 2 (South of Stokesdale) Alternative 3 (North of Stokesdale)

The Design Public Meeting Maps showing the DSAs can be viewed at the following locations:

R-2577A and B (containing segment 3 Southern Widening and Transitional Widening Options):  
<https://www.ncdot.gov/projects/US158ReidsvilleRoad/download/old-hollow-brinkley-map.pdf>

R-2577C Alternative 2 (Southern Bypass of Stokesdale):  
<https://www.ncdot.gov/projects/US158ReidsvilleRoad/download/us158-nc68-map.pdf>  
<https://www.ncdot.gov/projects/US158ReidsvilleRoad/download/eversfield-i73-us220-map.pdf>

R-2577C Alternative 3 (Northern Bypass of Stokesdale):  
<https://www.ncdot.gov/projects/US158ReidsvilleRoad/download/branson-nc65-nc68-map.pdf>  
<https://www.ncdot.gov/projects/US158ReidsvilleRoad/download/athens-i73-us220-map.pdf>

For the new location alternatives around Stokesdale in R-2577C, the merger team concurred that Alternatives 2 and 3 would be carried forward for detailed study. The proposed alignment for Alternative 2 passes around the south side of Stokesdale, and the proposed alignment for Alternative 3 passes around the north side of Stokesdale. Alternative 2 has more wetland and stream impacts than Alternative 3

Table 3 summarizes the impacts for the two widening options for segment 3 in R-2577A & B and for the new location DSAs for R-2577C, Alternatives 2 and 3. The proposed right-of-way limits were utilized to develop anticipated impacts for the two remaining widening options for segment 3 in R-2577A & B and for the two DSAs in R-2577C. Jurisdictional stream, wetland, pond, and stream buffer impacts were calculated based on slopes stakes plus 25 feet of the preliminary design plans.

#### NCDOT Recommended Alternatives

- R-2577A&B Segment 3 - Transitional
- R-2577C - Alternative 3 Northern Bypass

**Table 3: Summary of Impacts for Widening Options and New Location DSAs**

R-2577ABC Project Impacts	Segment 3 R-2577A&B Southern Widening	Segment 3 R-2577A&B Transitional Widening	Bypass Alt 2 R-2577C South of Stokesdale	Bypass Alt 3 R-2577C North of Stokesdale
Streams (No. of Crossings / LF)*	3 / 460	4 / 636	13 / 3335	12 / 2842
Wetlands (Ac)*	0.0	0.0	1.5	0.6
Ponds / Lake (Ac)*	0.2	0.5	0.6	0.0
Stream Buffers (Yes/No)	No	No	Yes - Jordan Lake	Yes - Jordan Lake
Zone 1 Stream Buffers*	0	0	1.9	4.1
Zone 2 Stream Buffers*	0	0	1.4	3.0
River Basins	Yadkin / Roanoke	Yadkin / Roanoke	Roanoke / Cape Fear	Roanoke / Cape Fear
Floodplain Areas	-	-	1 - Kings Creek	-
100-year Floodplain & Floodway (Ac)*	0.0	0.0	0.3	0.0
Forested Area (Ac)*	9.3	12.7	75.0	65.3
Federally Listed Species	NLEB & SAB	NLEB & SAB	NLEB & SWP	NLEB & SWP
VAD (No. of Impacts/Ac)**	1 / 1.5	1 / 0.9	0 / 0.0	0 / 0.0
UST Sites***	0	0	1	4
Historic Architectural Properties	0	0	0	0
Archaeological Properties	0	0	0	0
Inactive Hazardous Sites***	0	0	1	1
No. of Residential Relocations^	19	14	16	39
No. of Business Relocations^	1	2	6	7
No. of Church/Other Relocations^	1	0	5	11
Proposed Interchanges	0	0	0	1
Rest (Retirement) Homes	0	0	0	1
Cemeteries	0	0	2	3
Major Utilities	0	0	0	0
Right of Way Cost (\$M)^	51.4	53.3	42.0	61.1
Utility Cost (\$M)	1.25	0.86	0.76	0.73
Construction Cost (\$<)	88.0	87.3	49.8	48.4
Wetland & Stream Mitigation Cost (\$M)^	1.78	1.82	2.52	2.28
<b>Total Cost (\$M)</b>	<b>142.43</b>	<b>143.28</b>	<b>95.08</b>	<b>112.51</b>
<p><b>Note:</b> * Impacts calculated using slopestakes + 25 feet; ** Impacts calc. using ROW+Easement width  VAD – Voluntary Agricultural District; NLEB – Northern long-eared bat  SAB – Small-anthered bittercress; SWP – Small-whorled pogonia  ^Numbers and costs are preliminary and will be updated prior to completion of document  ^^Cost based on assuming 2:1 mitigation ratio; All costs shown for segment 3 widening options  (southern and transitional) in R-2577A&amp;B reflect the total costs for sections A and B combined.</p>				
<b>NCDOT Recommended Alternatives</b>				

## CP 4A: Avoidance and Minimization

### Bridge Lengths

The merger team concurred on the proposed structures for major stream crossings at the CP 2A meeting; however, bridge lengths were not specified. There are three locations in R-2577A & B where bridges will be constructed. Table 4 shows the proposed structure as concurred to at CP 2A, the Minimum Hydraulic Recommended Structure, and the length of the proposed bridges as reflected in the preliminary design plans.

**Table 4: Proposed bridge lengths for major stream crossings**

Project Section	Location	Existing Structure	Proposed Structure Concurred to at CP 2A	Proposed Structure Length (Feet)
A	Lowery Mill Creek Sta. 140+50	3-Barrel, 7'X10' bottomless culvert	Dual bridges	85
B	Belews Creek Sta. 494+00	6-Barrel, 9'x7' culvert	Dual bridges	110
B	Belews Lake Sta. 607+00	Bridge 164 - 3 span bridge: 1@31', 1@32'6", 1@31' Total bridge length = 94'6"	Retain & widen Bridge 164 or build New adjacent bridge	100

### Utility Impacts

The potential relocation of existing utilities along the proposed project due to the widening of U.S. 158 (R-2577A&B) has been reviewed and assessed. Proposed Utility Easements (PUEs) for the relocation of utilities have been incorporated into the preliminary design plans.

There is a pump station located on the north side of US 158 just east of the Grover Street intersection (R-2577A) that will need to be moved since widening will occur on the north side in this area. The City of Winston-Salem has constructed a pipe bridge on the south side of the existing bridge over Belews Lake (Sta. 607+00 Rt.) for a 12' water main that will need to be relocated when the new bridges over the lake are constructed (R-2577B).

Additional coordination with the City of Winston-Salem for the relocation of the pump station and the water main will be done during the final design phase of the project.

### Additional Avoidance and Minimization Measures to Jurisdictional Resources

The following additional measures to avoid and minimize impacts to jurisdictional and non-jurisdictional resources have been incorporated into the preliminary design plans:

- Existing culverts at the following locations will be replaced with dual bridges:
  - Lowery Mill Creek – proposed bridge lengths of 85'
  - Belews Creek – proposed bridge lengths of 110'
- Bridge 164 over Belews Lake will be replaced with dual bridges (100') and the vertical alignment has been adjusted at Belews Lake crossing (raised 4').

3. Sideslopes will be reduced from 6:1 to 2:1, where possible and without requiring the installation of guardrail, to further minimize stream and wetland impacts.
  - R-2577 A&B – an estimated reduction of 96 LF of overall stream impacts
  - R-2577 A&B segment 3 transitional widening – an estimated reduction of 101 LF of stream impacts
  - R-2577C Alternative 2 – an estimated reduction of 9 LF of stream impacts
  - R-2577C Alternative 3 – an estimated reduction of 21 LF of stream impacts

*Tables detailing individual wetland and stream impacts and changes in impact amounts resulting from minimization measures for R-2577A&B and for R-2577C can be found in Attachment C.*

***Additional Avoidance and Minimization Measures to Non-Jurisdictional Resources*** - additional minimization measures for non-jurisdictional resources have been incorporated into the preliminary design plans:

1. Edgewood Baptist Church (eligible for National Register of Historic Places [NRHP]) – minimized impacts to church and residences across the street:
  - shifted alignment slightly to the south
  - reduced median width to 23'
  - tightened side slopes to 2:1
  - proposed retaining wall in front of church parking lot
2. Drive-In Movie Theater (eligible for NRHP) – tightened side slopes to reduce impacts

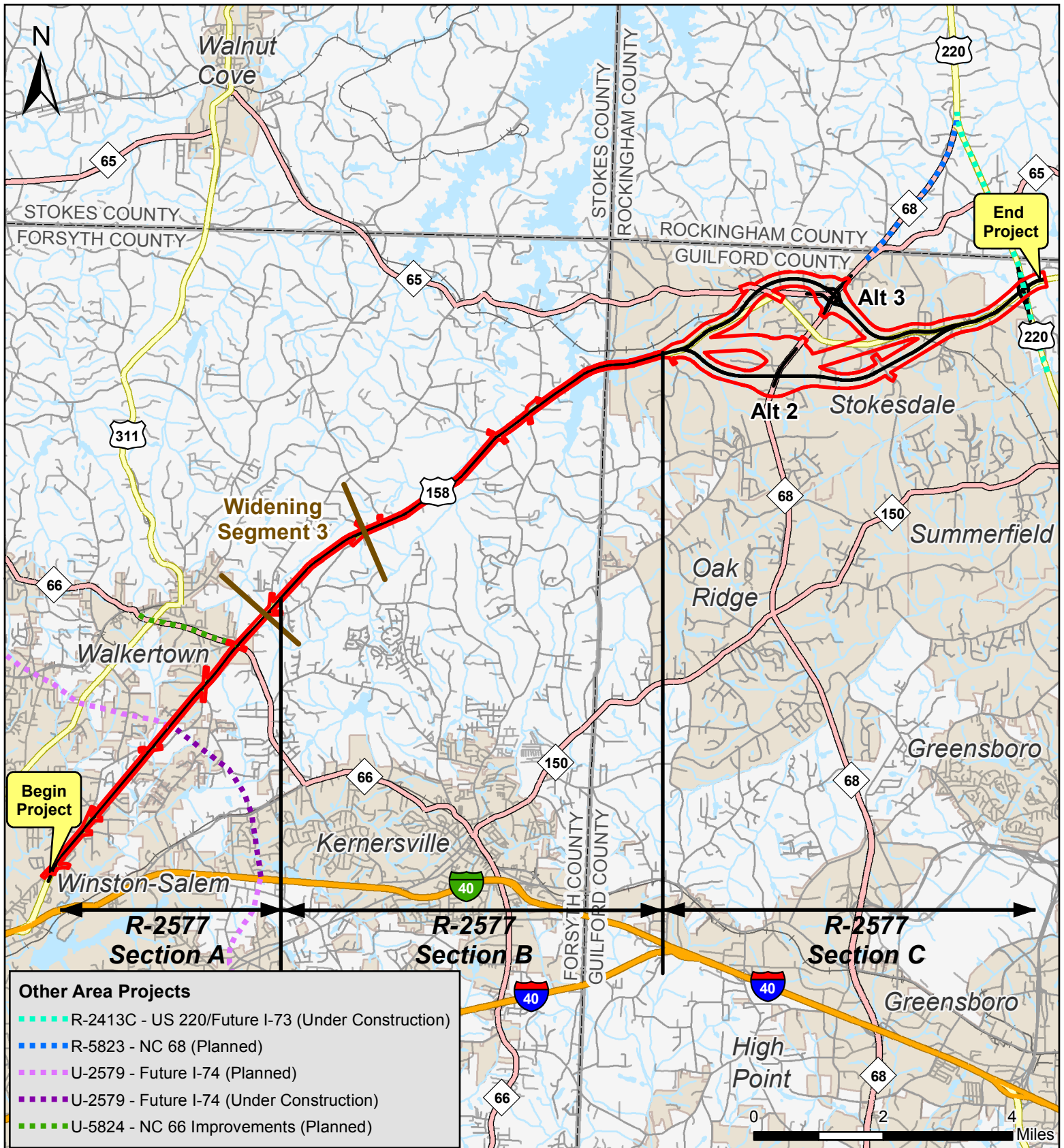


# ATTACHMENT A

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*Project Vicinity & Study Area*

*Jurisdictional Features*

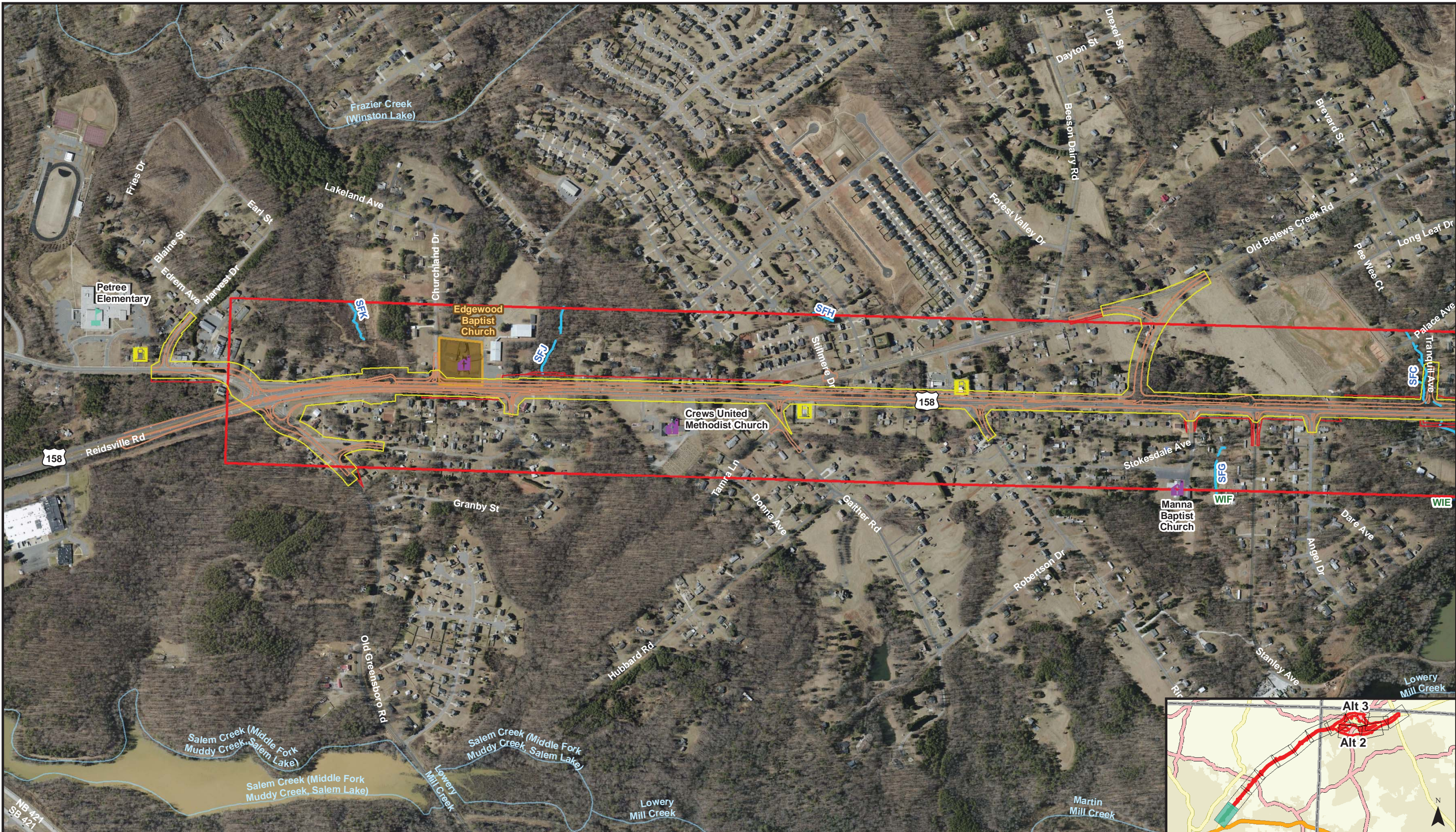


**Project Location Map**  
**US 158 Improvements - TIP R-2577ABC**  
 Forsyth & Guilford Counties



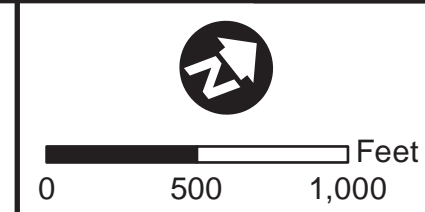
North Carolina Department  
 of Transportation  
 Division of Highways  
 Project Development &  
 Environmental Analysis Unit

**Figure**  
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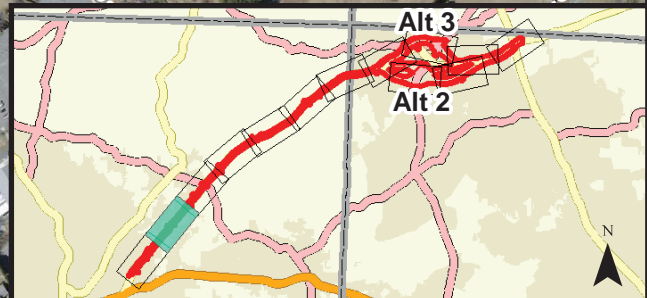
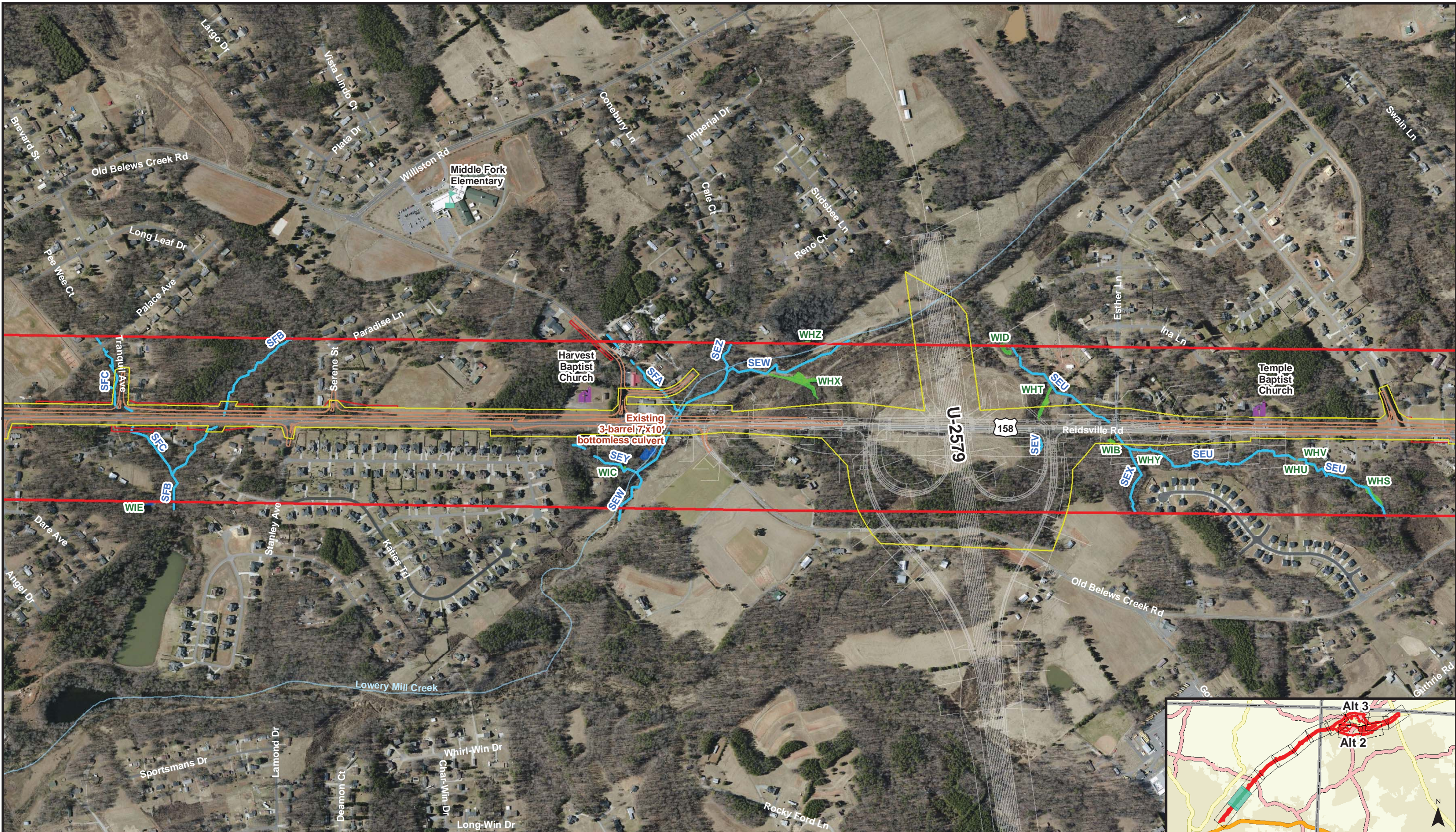


**JURISDICTIONAL FEATURES MAP**  
**U.S. 158 (Reidsville Road) Improvements**  
**Forsyth and Guilford Counties**  
 TIP Project R-2577

- NRTR Study Area
- ROW Limits
- Easement
- Proposed Pavement Edge
- Stream
- Wetland
- Lake/Pond
- Historic Resource
- School
- Church
- Gas Station















Div: 7&9	TIP# R-2577	<b>Figure 1a</b>
Date: May 2018		





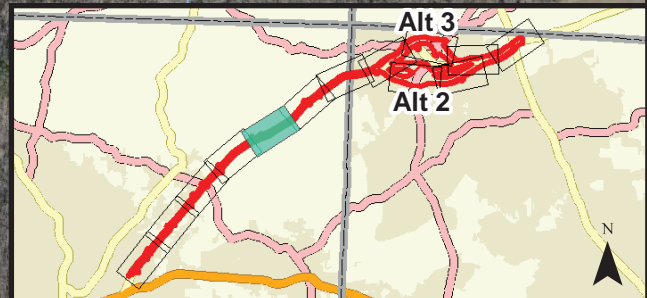
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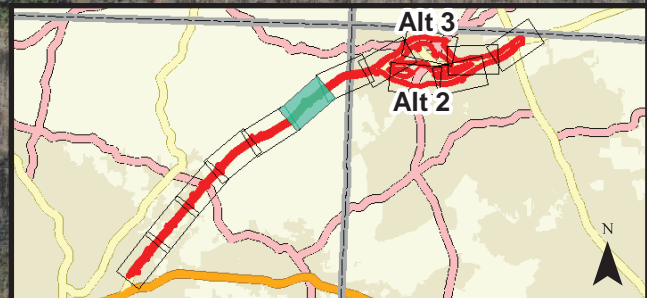
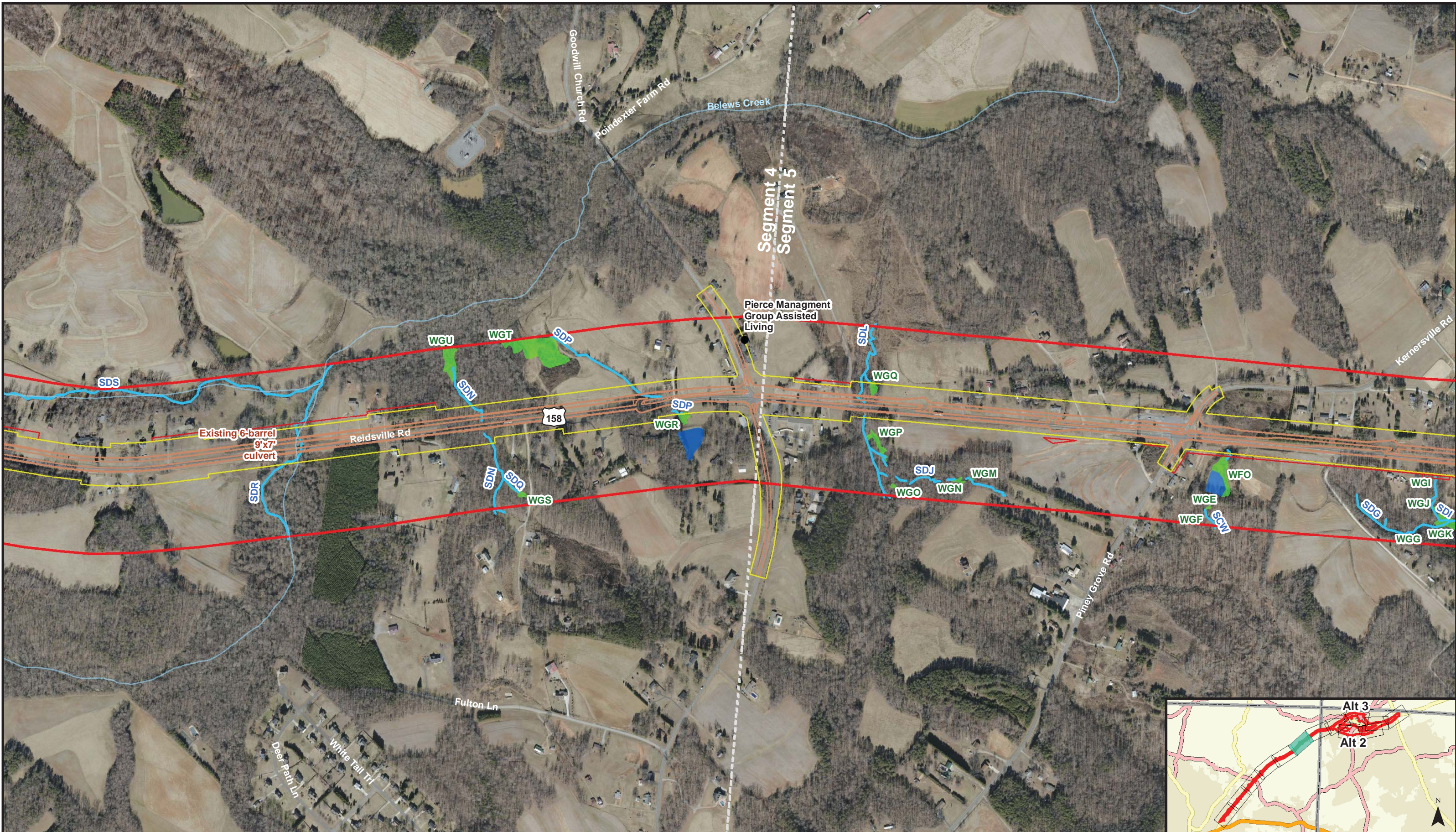
 NRTR Study Area	 Stream	 Historic Resource
 ROW Limits	 Wetland	 Church
 Easement	 Lake/Pond	 Gas Station
 Proposed Pavement Edge		

  
 Feet  
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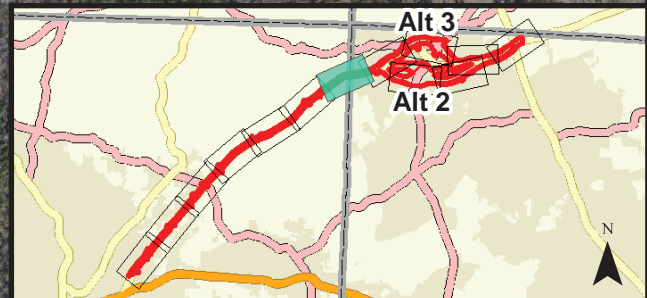
Div: 7&9	TIP# R-2577	Figure <b>1c</b>
Date: May 2018		

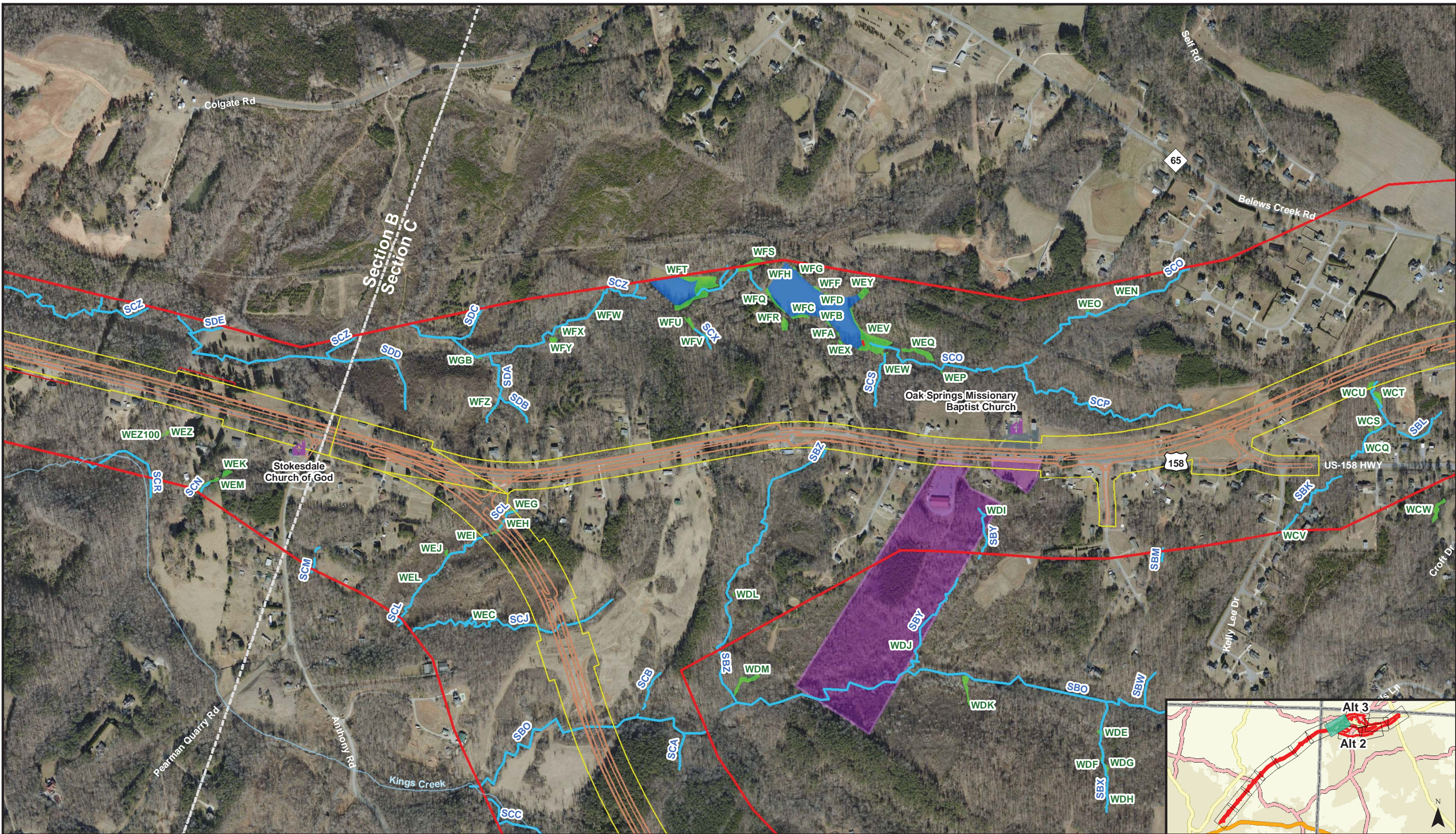








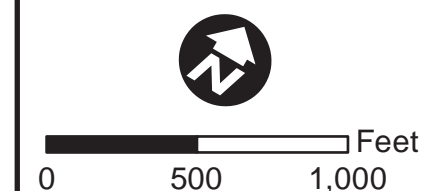




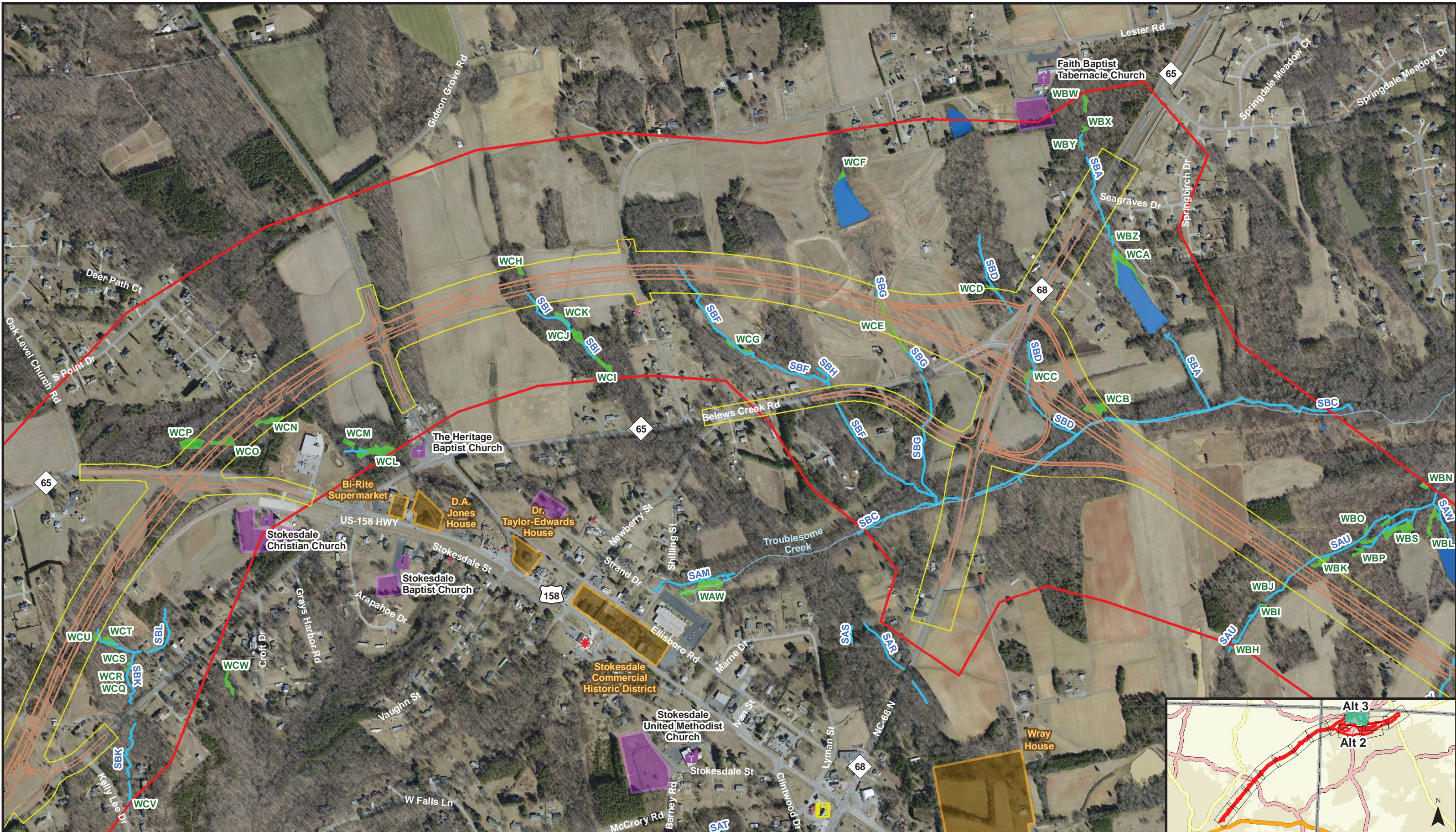

 NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS UNIT

**JURISDICTIONAL FEATURES MAP**  
**U.S. 158 (Reidsville Road) Improvements**  
**Forsyth and Guilford Counties**  
 TIP Project R-2577

- NRTR Study Area
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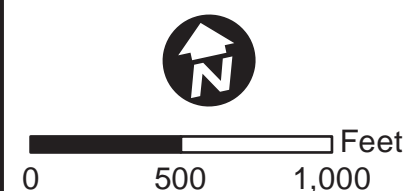


Div: 7&9	TIP#: R-2577	<b>Figure 1h</b>
Date: May 2018		



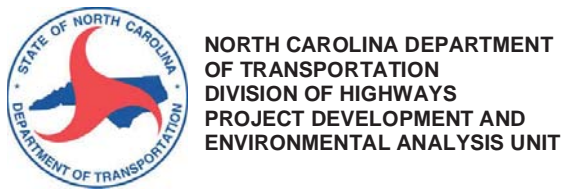
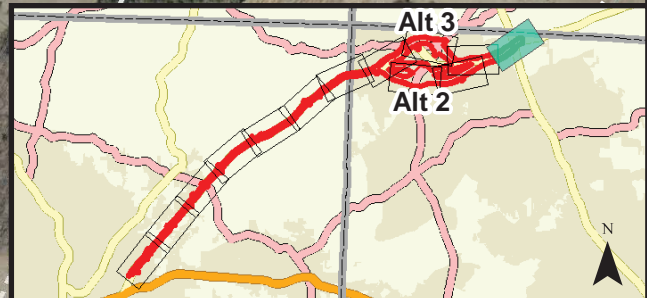
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- Gas Station
- \* Fire Station



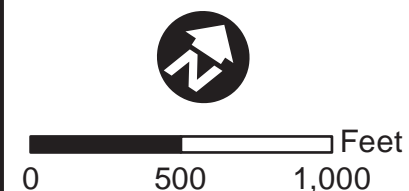
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Date: May 2018		



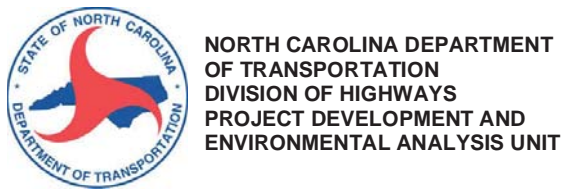


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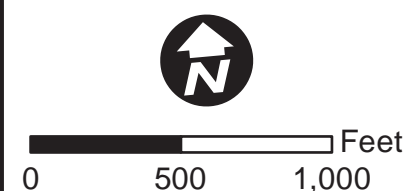


Div: 7&9	TIP# R-2577	<b>Figure 1k</b>
Date: May 2018		



**JURISDICTIONAL FEATURES MAP**  
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 TIP Project R-2577

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Div: 7&9	TIP# R-2577	<b>Figure</b> <b>11</b>
Date: May 2018		



# ATTACHMENT B

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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

MEMO TO: Post Hearing Meeting Attendees  
FROM: Bryan Key, PE, Project Management Unit  
Karen Reynolds, Project Management Unit  
DATE: December 8, 2017  
SUBJECT: Project: 37405.1.1, (R-2577ABC) Forsyth and Guilford Counties  
US 158 Improvements from north of US 421/I-40 Business in  
Forsyth County to US 220 (I-73) in Guilford County  
**Design Public Meetings (DPMs) Post-Meeting Minutes**

A post-meeting for the design public meetings (DPMs) was held in the NCDOT Hydraulics conference room in Raleigh at 10:00 am on Thursday, November 30, 2017. The purpose of the meeting was to discuss comments received at and after the DPMs that were held for the subject project. The first meeting was held on Tuesday, October 24, 2017, at the Gospel Light Baptist Church located at 890 Walkertown Guthrie Road in Walkertown. The second meeting was held on October 26, 2017, at the Stokesdale Town Hall at 8325 Angel-Pardue Road in Stokesdale. Both meetings were informal drop-in style meetings, held from 4:00 pm to 7:00 pm, with the same information and maps presented at both meetings.

Approximately 330 people attended the first meeting in Walkertown, and 357 people attended the second meeting in Stokesdale. A total of 166 comments were submitted. Comments were submitted at the meetings, mailed-in after the meetings, submitted via e-mail, and submitted via the project website. Several people called in before and after the meetings to discuss the project with NCDOT staff and to voice their concerns.

AECOM has prepared a comment-response summary for all of the comments that were received during the comment period, which ended on November 10, 2017 (see Attachment A). A total of 167 comments were received. Eighty-five comment sheets were submitted at the design public meetings, 26 comment sheets were mailed in, 22 comments were submitted via e-mail, 21 comments were submitted via the project website, seven comments were submitted via telephone, and six letters were mailed in with concerns/comments regarding the proposed project.

The following is a summary of the issues and concerns that were raised regarding the project.

### **Superstreet/Median/Restricted Access**

- Dangerous – people feel that U-turn movements are unsafe especially for school and church buses, boat trailers, large trucks, and emergency vehicles/firetrucks.
- Inconvenient – project will create longer travel distances and increased commute times.
- Poor access will lower home values.
- Restricted access will cause decline in businesses.
- Restrictive access will cause more congestion at side streets and entrances to neighborhoods.
- Safety, inconvenience, poor access were concerns expressed by residents in the High Knoll Neighborhood, as well as the neighborhoods off of Stanley Ave and Stanley Park Ave, due to restricted access. Do not want right-in, right-out.

***Response:** NCDOT staff has been working with residents to explain how access to their properties will change as a result of the proposed project. Restricting crossing movements with the median and limiting crossover and U-turn locations reduces the number of conflict points and focuses them in the safest practical locations. Access to all side streets and neighborhoods will be maintained during construction. At least one access per property will be provided along US 158, with a few exceptions: 1) properties near the proposed interchanges (proposed Winston Salem Northern Beltway, and the proposed interchange for R-2577C Alternative 3 and NC 68), and 2) properties adjacent to the turn-around locations where access will be restricted. The turn-around bulbs for U-turns will be able to accommodate large tractor trailers and large farming equipment. Property owners will be notified by NCDOT if access to their property will change as a result of the project after right of way acquisition begins. Right of way acquisition is currently in 2020 for Section A of the project and 2024 for Section B. Section C is currently not funded for right of way acquisition. No control of access is proposed from the beginning of the project to the proposed Winston-Salem North Beltway interchange (except at U-turn locations).*

*Safety is greatly improved by constructing a median and limiting turn movements to right-in, right-out only with redirected left-turn movements at strategically placed U-turn locations. The median separates opposing traffic and reduces a wide range of common accidents including rear-end, right angle, head-on, and left-turn. The median also reduces property damage, injuries, and fatalities related to these accidents. Medians also improve traffic flow, which results in less congestion, less emissions, and less consumption of fuel.*

### **Safety**

- Concerned about current safety at the Vance Road/Belews Creek Road intersection and US 158 – want a stop light installed now and not wait for project.
- Visibility concerns near Stanley Ave, requesting a stop light at Stanley Ave.
- Request to realign Gaither Road and Old Belews Creek Road intersection with US 158 and add a stop light instead of what is currently proposed.
- Requests that speed limit between Beltway and NC 66 be 45 mph.
- Request to reduce current speed limit on Ellison Road.
- U-turns will create safety hazards.

- Project will increase truck traffic at high rates of speed.

**Response:** *The proposed project will address visibility concerns as the vertical curves will be flattened and the horizontal curves will be straightened as per current design standards. Locations for the proposed U-turn bulbs are strategically placed with adequate sight distance and designed with enough space so that large trucks, buses, boat trailers, emergency vehicles, and farming equipment can safely make a U-turn.*

*NCDOT Division 9 is aware of several existing intersections along US 158 in Section A of the project where traffic signals have been requested, including the Vance Road and Stanley Avenue intersections. The Division is evaluating options for improving the safety of these intersections prior to the constructions of the proposed project.*

*Speed limits are posted by NCDOT to increase safety within the context of retaining reasonable mobility of a transportation facility. The posted speed limit is determined by a number of factors including the design speed, traffic volume, visibility, surrounding land use, etc. The posted speed limit for the proposed project will be evaluated prior to completion of the project.*

### **Emergency Response**

- Concerned about emergency access at U-turns. We have larger vehicles with larger turning radius than most vehicles. Also concerned about water points where hydrants are on opposite sides of divided highway.
- Increased response time due to median and restricted access/superstreets.

**Response:** *Emergency vehicles will be able to cross over the proposed depressed grass median at any location along the proposed project, if necessary. Mountable curbs will be constructed for curb and gutter sections at the beginning and end of the proposed project.*

*NCDOT will allow accommodations for installing additional hydrants if requested by the local utility provided.*

### **U-Turn bulb locations**

Several concerns were raised about the current locations shown for the proposed U-turn bulbs and requests were made to either move or consider adding U-turn bulbs:

- Near station 70+00 – property owner of parcel # 268 wants NCDOT to buy entire property. Current design shown has full control of access stopping in front of the parcel, but not covering it completely.
- Station 125+00 to 127+00 - investigate U-turn bulb for westbound US 158 traffic around west of Harvest Baptist Church and westbound US 158/Old Belews Creek Road U-turn bulb. There are a lot of homes located off Stanley Avenue, Angel Drive, and Stanley Park Road that would either have to make a U-turn at the Old Belews Creek Road leftover or go all the way through the interchange to the Darrow Road U-turn bulb. This is a long distance and could deter the performance of the Old Belews Creek Road leftover and/or the interchange.
- Request for an additional U-turn bulb between Darrow Road and NC 66 for traffic wanting to go west towards Winston-Salem.

- Request for additional U-turn bulb between Old Greensboro Road and Gaither Road to head eastbound.
- Requests to remove U-turn bulb at Old Belews Creek Road for westbound traffic due to safety concerns, high travel speeds, and poor sight distance.
- Request to move U-turn bulb at Piney Grove further east to just before lake to avoid extra travel distance (near station 575+00).
- Angel family farm at end of Angel-Purdue Road will be bisected by proposed R-2577C Alternative 2 (Southern Bypass). How will they get harvesting machinery from the north to the south side?

**Response:** *The U-turn bulb turn-around locations will be further evaluated based on the comments received and will be finalized during final design once hydraulic designs and utility relocation plans have been finalized. Consideration will be given for adding additional U-turn bulbs at the following locations:*

- *Adding a U-turn bulb for traffic needing to go east near Station 42+00 (near Crews Church).*
- *Adding a U-turn bulb near station 127+00 for travelers needing to go west towards Winston-Salem (i.e. creating back-to-back U-turn bulbs, one for eastbound traffic and one for westbound traffic).*
- *Adding a U-turn bulb for traffic needing to go eastbound between Esther Lane and Knoll Ridge Drive.*
- *Adding another U-turn bulb just west of Belews Lake crossing for travelers wanted to head east.*

*Access concerns for getting harvesting equipment across the proposed highway for the Angel farm at the end of Angel-Purdue Road will be further investigated as the project further develops.*

## Noise

- Noise impacts will affect neighborhoods and wildlife.
- Noise walls are needed.

**Response:** *NCDOT is currently conducting a Traffic Noise Analysis for the proposed project that will identify potential noise study areas along the project that meet preliminary feasible and reasonable criteria found in the 2016 NCDOT Traffic Noise Policy. A more detailed analysis will be completed during project final design, at which point the location of noise barriers will be decided. Certain property owners and tenants near the proposed barriers will be solicited to obtain their preferences for or against construction of the barriers. In accordance with NCDOT Traffic Noise Policy, the NCDOT is not responsible for evaluating or implementing any noise barriers to protect developed lands for which building permits were not issued before the Date of Public Knowledge. The Date of Public Knowledge of the proposed highway project will be the approval date of the State Environmental Assessment/Finding of No Significant Impact (State EA/FONSI). For development occurring after this date, local governing bodies are responsible to ensure that noise compatible designs are utilized along the proposed facility.*

## Property Values and Right of Way Acquisition

- Concerns that home values will decrease due to increased traffic, noise, restrictive access, lower quality of life.
- Concern about not being able to sell home until project is constructed.
- Requests for NCDOT to buy entire property:
  - Parcel #s 102, 268
  - 9157 US 158 (no parcel #)
- Requests to not impact properties that have been in family for generations (6900 US Hwy 158, 5924 Reidsville Road), as well as a family farm and roadside stand (5938 Reidsville Road) that will be impacted.
- Concerned about impacts to Providence North subdivision off of US-158 and have concerns for parcels 890 and 869 with respect to Alternative 3.

**Response:** *Many factors contribute to the local real estate market and property values within the project study area. Traffic is expected to continue to increase on existing US 158 through the design year, and without the proposed improvements, will continue to deteriorate the safety and integrity of the existing facility. The proposed project will improve the traffic carrying capacity and safety of the US 158 corridor within the project study area, which will benefit both local residents and businesses, as well as through traffic, which would ultimately result in having an overall positive economic effect on the local area.*

*The roadway design plans for the proposed project are not final. Efforts will be made to reduce the impacts to properties along US 158, during the final design phase of R-2577. NCDOT Right-of-Way agents will work with the public during the right of way acquisition phase. Impacted citizens will be contacted starting in 2020 for Section A and 2024 for Section B of the project. Further assistance may be obtained by contacting the NCDOT Highway Division 7 Right-of-Way office in Greensboro at (336) 334-3515 for properties located in Guilford County, or contacting the NCDOT Division 9 Right-of-Way office in Winston-Salem at (336) 760-8737 for properties located in Forsyth County. Additional right-of-way acquisition assistance information is available on the "U.S. 158 (Reidsville Road) Improvements" webpage, on the NCDOT website at <https://www.ncdot.gov/projects/US158ReidsvilleRoad/>*

## Historic Properties

- Edgewood Baptist Church is listed as a historic property on NCDOT's maps, but the church does not have this designation. Please contact us to discuss this issue. We have never filed for such designation.
- Edgewood Baptist Church & Churchland Avenue - project will totally destroy church with the way NCDOT has proposed.

**Response:** *Historic properties shown on the design public meeting maps are either on the National Register for Historic Places (NR), or have been determined eligible for listing on the NR. NCDOT conducted a survey of potentially historic properties pursuant to 36 CFR Section 800.4(b) that might be affected by the proposed project. Edgewood Baptist Church was found eligible for listing on the NR under Criterion C for architecture because of its exceptional importance as a distinctive example of a*

*religious facility built in the modernist style in the Winston-Salem area. This determination is a result of a requirement of state and federal laws to evaluate potentially historic properties and affords those properties special consideration when federal funding or federal permits are required. Additional coordination with the North Carolina State Historic Preservation Office will be completed to minimize and/or mitigate impacts to the church prior to finalizing the design plans.*

### **General design concerns, suggestions, and requests**

- Construct a bridge over NC 66 on US 158 or construct a bridge over US 158 on NC 66.
- Extend Beeson Dairy Road to Reidsville Road due to awkward turn movement. Reverse design and have Old Belews Creek Road T-into Beeson Dairy Road.
- Oppose superstreet design at NC 66.
- Concerned about intersections of US 158 and Darrow Road/Old Belews Creek Road because it is a busy intersection and Darrow Road needs to go straight across.
- Request to realign Flat Rock Road across from Rail Fence Road.

***Response:** Construction of a bridge on US 158 over NC 66 or on NC 66 over US 158 will not be feasible due to the severe impacts to adjacent properties and business at and near this intersection. Extending Beeson Dairy Road to Reidsville Road is outside the scope of the proposed project. The intersection of US 158 and Darrow Road/Old Belews Creek Road and the request to realign Flat Rock Road will be considered as the project is further developed.*

### **Drainage**

- Concerned about current drainage from US 158, and potential increased drainage resulting from expanded road (Eagles Nest Neighborhood).
- At the intersection of Happy Rd and US 158, there is a deep gully or ditch that is part of the ROW. I hope this gets changed.

***Response:** Drainage concerns will be taken into consideration as the project is further developed and hydraulic design plans are developed and refined for the project.*

### **Bicycle/Pedestrian Accommodations**

- The Winston-Salem MPO CTP pedestrian recommendations include building sidewalks between Darrow Rd and Old Hollow (NC 66). Is there any way to incorporate?
- I see no provisions for bike/walkways on any typical section.

***Response:** NCDOT works with local governments to add sidewalks and bicycle accommodations in coordination with highway improvement projects. State funds are available on a sliding scale to match funds provided by the local government for the inclusion of sidewalks. The local government is responsible for maintaining the sidewalk.*

*Accommodations for bicycles and/or pedestrians have not been included in this project as there have been no requests submitted to NCDOT for bicycle and/or pedestrian accommodations from either Walkertown or Stokesdale. US 158, between Darrow Road and Old Hollow Road (NC 66), falls within the city limits of Walkertown. The proposed design for this section of the project, a four-lane median divided facility with curb and gutter and a 10-foot berm, does not preclude the construction of sidewalks in the future, should the City of Walkertown decide to do so.*

### **Public Involvement**

- Recommend adding to website a one-page separate printable legend.
- Cannot read the legend or other writing on the online Highway 158 Improvements Project map. Zooming in is possible, but the writing cannot be read. Where can I go to see the map?

**Response:** *Hard copies of the public meeting maps can be viewed at the NCDOT Division 9 office at 375 Silas Creek Parkway in Winston-Salem and at the NCDOT Division 7 office at 1584 Yanceyville Street in Greensboro. A printable legend can be added to the project website.*

### **Project Schedule**

- When will the project commence and be completed?
- This road is at very crowded today. This improvement should be started sooner than the 2026 time schedule. Frequent accidents are the norm for this road now. Please consider accelerating the construction schedule.

**Response:** *Construction on Section A will begin in 2022 and in 2026 for Section B. Section C is not currently funded for construction. Construction will be completed approximately 2-3 years after the start of construction on each section of the project. Due to the remaining project planning requirements, it is not likely that the project schedule will be advanced.*

### **Traffic**

- How to get out. It's pretty bad now.
- I wanted to know the traffic counts for Stanley Park Road, Stanley Avenue and Angel Drive

**Response:** *The proposed project will improve traffic flow and access to and from side streets. Providing right-in, right-out access at side streets, restricting left-turn movements and cross-over movements (i.e. eliminating many conflict points), and provided U-turn bulbs at strategic locations for redirected left-turns will improve traffic flow and provide a much safer facility for travelers accessing US 158.*

*Stanley Park Road, Stanley Avenue, and Angel Drive are not considered major intersections due to low volumes of daily traffic (less than 100 vehicles per day). The traffic forecast for this project does not include current or projected traffic volumes for minor intersections, i.e. intersections with side streets with less than 100 vehicles per day.*

### Neighborhood Impacts and Services

- Please protect the small town nature of the area - do not create "islands" of residential communities that are cut off by highway.
- The road will affect the rural nature of the town.
- Will there be city/sewer available?

***Response:** Impacts to communities will be evaluated as the project further develops and will be addressed in the environmental document, the State Environmental Assessment/Finding of No Significant Impact (State EA/FONSI). NCDOT will attempt to minimize impacts to neighborhoods, communities, farms, businesses, churches, and individual property owners to the fullest extent practicable.*

*Water and sewer services are provided by local or county municipalities not by the NCDOT.*

### Preference for R-2577C Alternative 2 (Southern Alternative)

- Alternative 2 will encourage truckers to take US 220 to I-73 and stay away from downtown Stokesdale.
- Prefer Alternative 2 because Alternative 3 would impact their properties, neighborhoods (Boone Landing, Marshall Woods) and cause economic loss.
- Concerned about noise impacts to church near Alternative 3
- Fewer superstreets than Alternative 3
- Alternative 2 is the least disruptive to majority of Stokesdale residences - will impact fewer people, homes, structures, and businesses.
- Most direct route and safer than Alternative 3.
- Alternative 2 is the best option to grow Stokesdale town area.
- Concerned about business and wetlands impacts associated with Alternative 3.
- Concerned that Alternative 3 would disrupt flow of traffic and impact access to Belews Lake.
- Alternative 3 would cause delays in fire department emergency response.
- Alternative 3 and proposed U-turns would cause hazardous conditions for visitors and residents of Countryside Retirement Village.
- Southern route has been on planning maps for years and been part of rezoning decisions made in the last few years.

***Response:** Comments regarding the preference for Alternative 2 and impacts to neighborhoods, residences, businesses, churches, schools, and farms along the proposed path for Alternative 3 the will be considered as the project is further developed and when a decision is made regarding the preferred alternative.*

### Preference for R-2577C Alternative 3 (Northern Alternative)

- Alternative 2 is detrimental to Stokesdale – it will result in further corruption of Stokesdale Land Use Plan and the vision of the town core, it will significantly increase the amount of high speed and cause environmental degradation, it will increase noise and air pollution, and will cause more impacts than what is shown due to recent development.



- Southern route affects high end homes and property values and also affects large businesses paying taxes while northern route will affect no businesses.
- Alternative 2 will take away our livelihood (farms impacts).
- Southern route will cut off access to Ellison Road from Shoreline Road.
- Alternative will have direct impacts to new development (The Landing at Angel Glen) and will have no access to the neighborhood.
- Will split farm in half - Angel farm off of Angel-Purdue Road.
- Do not want increase traffic congestion and increase in crime potential. Northern option would best serve town.
- Prefers northern route because it affects fewer businesses and homes.
- Alternative 3 affects fewer businesses and families. Alternative 2 impacts a landmark restaurant and owner's home that opened in the 1950s.
- Prefers Alternative 3 due to noise impacts to Stokesdale Elementary.
- Will there be a new traffic study to determine how much traffic is now using I-73 instead of US 158? Some traffic may go I-40 to Hwy 68 and then new I-73 to go north.
- It is doubtful trucks would continue on 158 to 220 when they want to go the shortest route and can take NC 68 north to 220.
- Concerned about increase traffic congestion on NC 68 due to southern route and the synchronized street proposal for the southern option appears to be significantly inferior to the interchange of the northern option. NC 68 appears to have heavier traffic than US 158; therefore, an option that keeps both roads flowing with minimal disruption (i.e. the interchange of the northern route) seems preferable.
- Impacts to Culp Home Fashions and most recent \$10M distribution center expansion, as well as over the septic field servicing 450 employees
- Southern route would put a hardship on our family and community.
- Impact to Dorsett Downs neighborhood – negative impact to property values, concern about superstreet design, noise levels, and impacts to wetlands.
- Northern route impacts primarily poor individuals who lives along existing roadway, and the southern would go through newly developed subdivisions with \$300K homes.

***Response:*** *Comments regarding the preference for Alternative 3 and impacts to neighborhoods, residences, businesses, churches, schools, and farms along the proposed path for Alternative 2 will be considered as the project is further developed and when a decision is made regarding the preferred alternative.*

*NCDOT recently updated the Traffic Forecast (July 2017) for the proposed project and is currently in the process of completing a traffic capacity analysis based on an updated Traffic Forecast. The updated traffic analysis will be used as the project is further developed and design plans are finalized.*

#### **Other Alternative**

- The most logical widening of HWY 158 through Stokesdale would be to go straight onto HWY 65 and then onto 220, since those highways are already in place and would just need widening.

**Response:** *NCDOT has considered a full range of preliminary alternatives for improving US 158 through Stokesdale, which included upgrading existing facilities as well as new location alternatives. Several preliminary alternatives were eliminated from further study because they either did not meet the purpose and need for the project, or had substantially more impacts than those that were chosen for further study.*

### **General Opposition to Project**

- Do not wish to live 300 feet from a major highway
- No changes to US 158 needed
- Project is not needed because of minimal traffic on US 158
- Farm will be affected by project – do not want a 4-lane obstruction at Flat Rock road because it will be noisy and disturbing
- Do not need big highways – slowly destroying precious farmland used to make a living
- We would also like to advocate the state reevaluate the need for this project. The traffic does not demand a 4-lane divided highway.
- Don't think it will keep traffic flowing & will be flowing in wrong direction. 158 is a major road, look like NCDOT is trying to use as a county road, 45 to 50 mph.
- This project is much too costly and not required!
- Not happy about the project

**Response:** *The purpose for and need of the project is to improve traffic carrying capacity along US 158 within the project limits and to improve the level of service for this roadway. Potential impacts to homes, businesses, churches, farms, and neighborhoods, as well as impacts to the natural environment as a result of the proposed project, will be assessed and evaluated. All efforts will be made to avoid, minimize, and/or mitigate potential impacts. Comments opposing the project will be noted and considered as the project is further developed.*

### **General Support for the Project**

- I wish other attendees and homeowners could consider how the new road is going to benefit the community. Thanks for the detailed maps.
- I support 158 being improved 100%. Good job!
- I have lived on Walkertown-Guthrie for 55 years and have seen the rapid growth in traffic during that time in our community. So I understand and welcome the widening of Hwy 158 in our area.
- First let me say I am very excited about the bypass being built near my home in High Knoll, Walkertown.

**Response:** *Comments in support of the project are noted.*

The following verbal comments related to specific properties were relayed to the project team at the design public meetings.

Roll 6 of 7 (R-2577C Alternative 3)

- Station 67+00 – Mr. Gilliam lives next to Oak Springs Church (west) stated that the church has recently bought property somewhere else to build a new church. He would prefer not to move any graves in the cemetery across the street from the church were several of his relatives are buried.
- Station 23+00 along NC 65 – property owner of parcel #737 requested NCDOT consider moving the proposed realignment of NC 65 near the proposed interchange with NC 68 further west to not impact his driveway access and septic field located in the front of his property. He would like to not be relocated if possible.

If there are any questions or comments regarding this information, please contact Karen Reynolds at 919-707-6038 or at [kreynolds@ncdot.gov](mailto:kreynolds@ncdot.gov), or contact Bryan Key, PE, at 919-707-6263 or at [bckey@ncdot.gov](mailto:bckey@ncdot.gov) .

CC: Meeting Attendees

James Lastinger	US Army Corps of Engineers
Pat Ivy, PE	NCDOT Division 9 Engineer (by phone)
Wright Archer, III, PE	NCDOT Division 9 Construction Engineer (by phone)
Al Blanton, PE, PLS	NCDOT Division 9 Project Development Team Lead (by phone)
Diane Hampton, PE	NCDOT Division 9 Planning Engineer (by phone)
Patty Eason, PE	NCDOT Division 7 Division Construction Engineer (by phone)
Ed Lewis	NCDOT Division 7 Planning Engineer (by phone)
Matt Lauffer, PE	NCDOT Hydraulics Unit (by phone)
Laura Sutton, PE	NCDOT Project Management Unit – Senior Project Manager
Karen Reynolds	NCDOT Project Management Unit – Assistant Project Manager
Bryan Key, PE	NCDOT Project Management Unit – Assistant Project Manager
Jamille Robbins	NCDOT Public Involvement Group Leader
Herman Huang, PhD	NCDOT Community Studies
Braden Walker	NCDOT Congestion Management
Nick Lineberger	NCDOT Congestion Management
Craig McKinney	Greensboro MPO
Byron Brown	Winston-Salem MPO
Drew Joyner, PE	AECOM
Laura Fisher, PE	AECOM
Karen Taylor, PE	AECOM

Attachment

# ATTACHMENT C

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*Total Impacts Associated with Segments 1, 2, 4, 5, 6 & 7*

*Individual Stream Impacts*

*Individual Wetland Impacts*

**Total Impacts Associated with Segments 1, 2, 4, 5, 6 & 7**

<b>R-2577ABC Project Impacts</b>	<b>Segments 1, 2, 4, 5, 6 &amp; 7 R-2577A&amp;B</b>
<b>Rest (Retirement) Homes</b>	1
<b>Cemeteries</b>	1
<b>Utilities</b>	
<b>Historic Properties</b>	2
<b>Residential Relocations</b>	
<b>Business Relocations</b>	
<b>Church/Non-Profit Relocations</b>	
<b>100-year Floodplain &amp; Floodway (Ac)*</b>	11.2
<b>Streams (No. of Crossings / LF)*</b>	14 12 / <del>2566</del> 2470
<b>Wetlands (Ac)*</b>	0.3
<b>Ponds / Lake (Ac)*</b>	4.2
<b>Voluntary Ag. District (No. of Impacts/Ac)**</b>	3 / 2.7
<b>Farmland Preservation Program (No. of Impacts/Ac)**</b>	1 / 1.0
<b>UST Sites***</b>	4
<b>Forested Area (Ac)*</b>	56.0
<b>Right of Way &amp; Utility Cost</b>	
<b>Construction Cost</b>	
<b>Total Cost</b>	
<b>Note: * Impacts calculated using slopestakes + 25 feet</b> <b>** Impacts calculated using ROW+Easement width</b> <b>*** Information from NCDWR website</b>	

R-2577 A&B Individual Stream Impacts

Map ID	Stream Name	Classification	River Basin Buffer	Length in Study Area (LF)	R-2577A&B with Segment 3 Southern Widening Option (LF)	R-2577A&B with Segment 3 Transitional Widening Option (LF)
SCW	UT to East Belews Creek	Intermittent	Not Subject	251	56 0	56 0
SCZ	UT to East Belews Creek	Perennial	Not Subject	8,431	91	91
SDI	UT to East Belews Creek	Intermittent	Not Subject	191	40 0	40 0
SDL	UT to Belews Creek	Perennial	Not Subject	1,375	199	199
SDN	UT to Belews Creek	Perennial	Not Subject	1,187	215	215
SDP	UT to Belews Creek	Perennial	Not Subject	1,052	335	335
SDR	Belews Creek	Perennial	Not Subject	1,633	26	26
SED	UT to Left Fork Belews Creek	Perennial	Not Subject	529	-	66
SEH	UT to Left Fork Belews Creek	Perennial	Not Subject	1,120	149	198
SEK	UT to Left Fork Belews Creek	Perennial	Not Subject	1,383	164	<del>171</del> 70
SEM	UT to Left Fork Belews Creek	Perennial	Not Subject	662	147	201
SES	UT to West Belews Creek	Perennial	Not Subject	1,574	174	174
SET	UT to West Belews Creek	Intermittent / Perennial	Not Subject	663	360	360
SFA	UT to West Belews Creek	Intermittent	Not Subject	592	415	415
SFB	UT to West Belews Creek	Perennial	Not Subject	1,619	197	197
SFC	UT to West Belews Creek	Intermittent / Perennial	Not Subject	1,123	402	402
SFD	UT to West Belews Creek	Intermittent	Not Subject	36	22	22
SFJ	UT to West Belews Creek	Intermittent / Perennial	Not Subject	300	34	34
				<b>Total</b>	<b>3,026 2,930</b>	<b>3,202 3,005</b>

R-2577 C Individual Stream Impacts

Map ID	Stream Name	Classification	River Basin Buffer	Length in Study Area (LF)	R-2577C Alternative 2 Southern Bypass (LF)	R-2577C Alternative 3 Northern Bypass (LF)
SB	UT to Troublesome Creek	Intermittent / Perennial	Subject	270	-	322
SD	UT to East Belews Creek	Intermittent / Perennial	Not Subject	1,150	50 41	51 41
SM	UT to West Belews Creek	Perennial	Subject	1,661	310	-
SR	UT to West Belews Creek	Perennial	Not Subject	327	7	-
SS	UT to West Belews Creek	Perennial	Subject	148	148	-
ST	UT to West Belews Creek	Perennial	Subject	876	-	-
SU	UT to West Belews Creek	Perennial	Subject	1,889	259	-
SV	UT to West Belews Creek	Intermittent	Not Subject	23	-	-
SW	UT to West Belews Creek	Perennial	Subject	738	271	-
SY	UT to West Belews Creek	Perennial	Subject	921	336	-
SAA	UT to Haw River	Perennial	Subject	4,137	271	-
SAU	UT to Troublesome Creek	Perennial	Subject	2,037	-	262
SAY	UT to Troublesome Creek	Intermittent / Perennial	Subject	1,084	-	271
SAZ	UT to Troublesome Creek	Intermittent / Perennial	Subject	684	-	158
SBC	Troublesome Creek	Perennial	Subject	3,845	-	401
SBD	UT to Troublesome Creek	Intermittent / Perennial	Subject	1,494	-	829
SBF	UT to Troublesome Creek	Intermittent	Subject	272	-	48
SBG	UT to Troublesome Creek	Intermittent / Perennial	Subject	1,237	-	200
SBK	UT to Kings Creek	Perennial	Not Subject	1,478	-	45
SBO	UT to Kings Creek	Perennial	Not Subject	10,581	276	-
SBF	UT to Troublesome Creek	Intermittent / Perennial	Subject	2,719	-	225 214
SBZ	UT to Kings Creek	Intermittent / Perennial	Not Subject	2,400	-	30
SCC	UT to Kings Creek	Perennial	Not Subject	3,871	775	-
SCD	UT to Kings Creek	Perennial	Not Subject	621	146	-
SCK	UT to Kings Creek	Perennial	Not Subject	69	307	-
SCL	UT to Kings Creek	Intermittent	Not Subject	209	180	-
				<b>Total</b>	<b>3,335 3,326</b>	<b>2,842 2,821</b>

R-2577 A&B Individual Wetland Impacts

Map ID	NCWAM Classification	Hydrologic Classification	Wetland Rating	Study Area (ac.)	R-2577A&B with Segment 3 Southern Widening Option (Ac.)	R-2577A&B with Segment 3 Transitional Widening Option (Ac.)
<b>WFN</b>	Bottomland Hardwood Forest	Riparian	49	0.03	0.03	-
<b>WGD</b>	Floodplain Pool	Riparian	33	0.17	0.11	0.11
<b>WGI</b>	Headwater Forest	Riparian	17	<0.01	0.001 0.000	0.001 0.000
<b>WGQ</b>	Non-tidal Freshwater Marsh	Riparian	41	0.07	0.05	0.05
<b>WGR</b>	Headwater Forest	Riparian	44	0.1	0.02	0.02
<b>WHC</b>	Headwater Forest	Riparian	28	<0.01	-	0.003
<b>WHI</b>	Headwater Forest	Riparian	37	0.03	-	0.01
<b>WHL</b>	Headwater Forest	Riparian	33	0.02	0.01	-
<b>WHP</b>	Headwater Forest	Riparian	42	0.09	0.04	0.04
<b>WHQ</b>	Headwater Forest	Riparian	42	0.02	0.02	0.02
				<b>Total</b>	<b>0.3</b>	<b>0.3</b>



R-2577 C Individual Wetland Impacts

Map ID	NCWAM Classification	Hydrologic Classification	Wetland Rating	Study Area (ac.)	R-2577C Alternative 2 Southern Bypass (Ac.)	R-2577C Alternative 3 Northern Bypass (Ac.)
WM	Headwater Forest	Riparian	70	0.18	0.02	-
WM100	Headwater Forest	Riparian	70	<0.01	0.01	-
WR	Non-tidal Freshwater Marsh	Riparian	45	2.81	0.69	-
WU	Non-tidal Freshwater Marsh	Riparian	62	0.76	0.72	-
WAC	Headwater Forest	Riparian	39	0.12	0.01	-
WAG	Headwater Forest	Riparian	49	0.41	0.03	-
WBK	Headwater Forest	Riparian	34	0.07	-	0.03
WCB	Headwater Forest	Riparian	30	0.21	-	0.20
WCC	Headwater Forest	Riparian	30	0.08	-	0.07
WCD	Headwater Forest	Riparian	30	0.02	-	0.001
WCE	Headwater Forest	Riparian	8	0.1	-	0.06
WCH	Headwater Forest	Non-riparian	37	0.03	-	<del>0.01</del> 0.00
WCN	Headwater Forest	Non-riparian	28	0.09	-	<del>0.03</del> 0.02
WCO	Headwater Forest	Non-riparian	28	0.18	-	0.15
WCP	Headwater Forest	Non-riparian	28	0.22	-	<del>0.05</del> 0.03
WCU	Headwater Forest	Riparian	33	0.02	-	0.02
WEH	Headwater Forest	Riparian	37	0.06	0.001	-
				<b>Total</b>	<b>1.5</b>	<b>0.6</b>