

**Concurrence Point 4A
Avoidance and Minimization Efforts**

TIP Project No. U-5811
WBS 44384.1.1

SR 1002 (Aviation Parkway) Widening
From NC 54 to I-40
Wake County



May 2026

Purpose of Today's Meeting:

The purpose of this meeting is to identify avoidance and minimization efforts (CP 4A).

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1. Introduction and Project Overview

1.1 Proposed Action

NCDOT is proposing to widen Aviation Parkway (S.R. 1002) for approximately 2.5 miles from NC 54 (Chapel Hill Road) to I-40 in Morrisville, Wake County (Division 5). The project would upgrade Aviation Parkway from a two-lane undivided roadway to a four-lane median-divided roadway. The project is located in Morrisville, Cary, and unincorporated areas of Wake County (Please see Figure 1: Vicinity Map.)

A quadrant loop intersection is proposed at the intersection of Aviation Parkway and NC 54, and NC 54 will shift slightly eastward to increase the separation between the roadway and the existing North Carolina Railroad (NCRR) train tracks. A quadrant loop intersection, utilizing Southport Drive, is also proposed at the intersection of Aviation Parkway and McCrimmon Parkway/Evans Road. These designs improve capacity through the two intersections. U-turn bulbs will be constructed to allow drivers to change direction at designated points.

A 5-foot-wide sidewalk would be constructed along the northern side of Aviation Parkway, ending just before the Lake Crabtree causeway, and a 10-foot-wide multi-use path would be constructed along the southern side of Aviation Parkway that continues across the causeway. Marked pedestrian crossings would be added across Aviation Parkway at NC 54, the new quadrant loop east of NC 54, International Drive, and Dominion Drive.

The culvert under the Lake Crabtree causeway will be replaced with a new culvert to the west. Other culverts and drainage structures will be extended or replaced as required to accommodate anticipated stormwater flows in the 2050 design year. The Lake Crabtree causeway will be closed for approximately 4 to 6 months during construction; however, access to all properties along the corridor will be maintained through detour routes, primarily utilizing McCrimmon Parkway, Airport Boulevard, and I-40.

1.2 Meeting Purpose

The purposes of today's meeting are:

1. Provide an update on design changes since the last Merger meeting
2. Confirm concurrence on Avoidance and Minimization Measures (Concurrence Point 4A)
3. Obtain any other new information from the Merger Team that could affect decision-making

1.3 Project History since February 2025 Merger Meeting

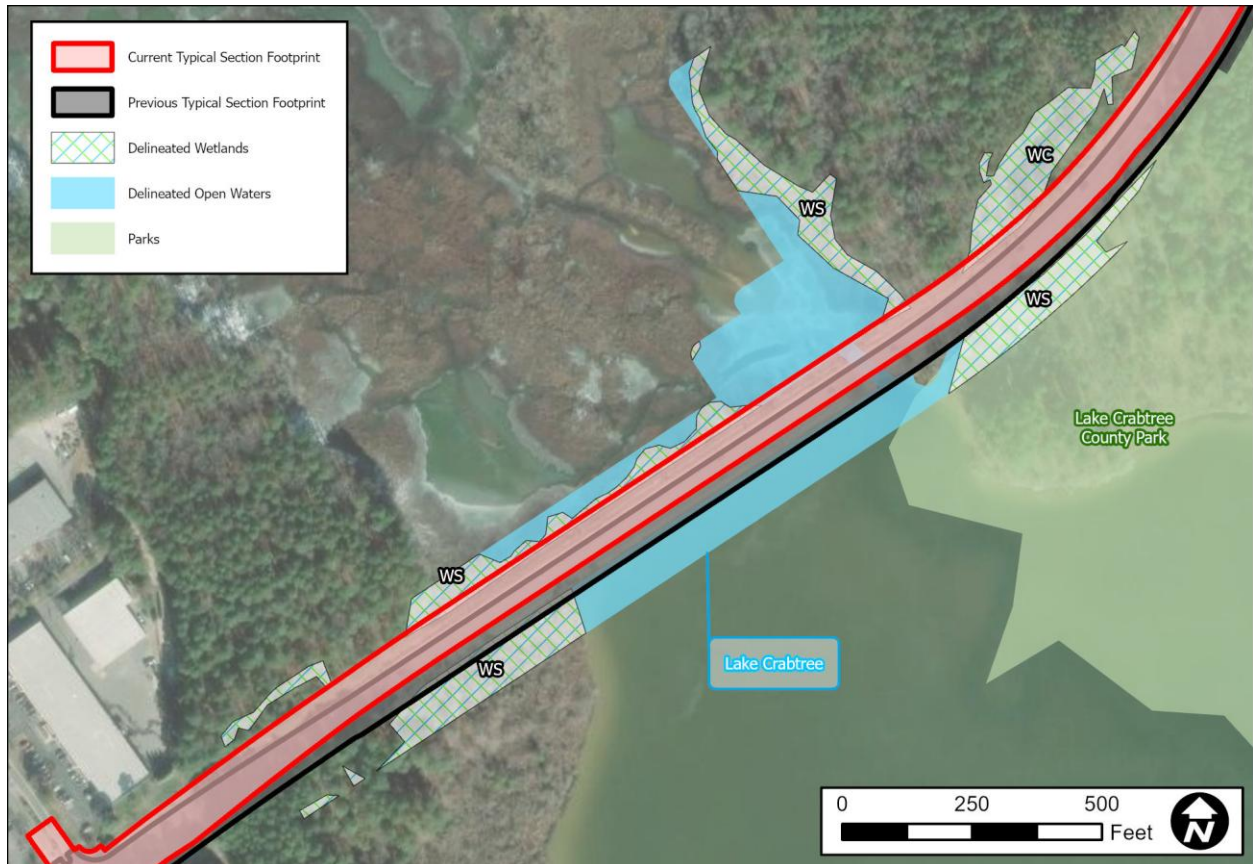
- CP 2A and 3 Merger sheets signed February 25, 2025 (see Appendix A for Merger history)
- Public Involvement and Local Officials Information Meeting held on May 12, 2025
- Updated Phase I ESA completed by NCDOT GeoEnvironmental April 25, 2025
- Combined PJD/AJD issued by USACE May 5, 2025
- Wetland delineation and species survey for expanded study area conducted October 8, 2025
- Design Recommendation Plan Set (DRPS) approved November 24, 2025
- Wetland delineation and species survey for Flood Mitigation Area conducted January 21, 2026
- NRTR Addendum for expanded study area submitted February 5, 2026
- Community Impact Assessment (CIA) Update Memo approved February 24, 2026
- Traffic Noise Report (TNR) approved March 16, 2026
- NEPA Type III Categorical Exclusion signed May 2026

1.4 Project Updates

Several changes have been made to the project design since the CP 2A and CP 3 Merger Update meeting in February 2025, described below. None of these changes require an update to previous Merger concurrence points.

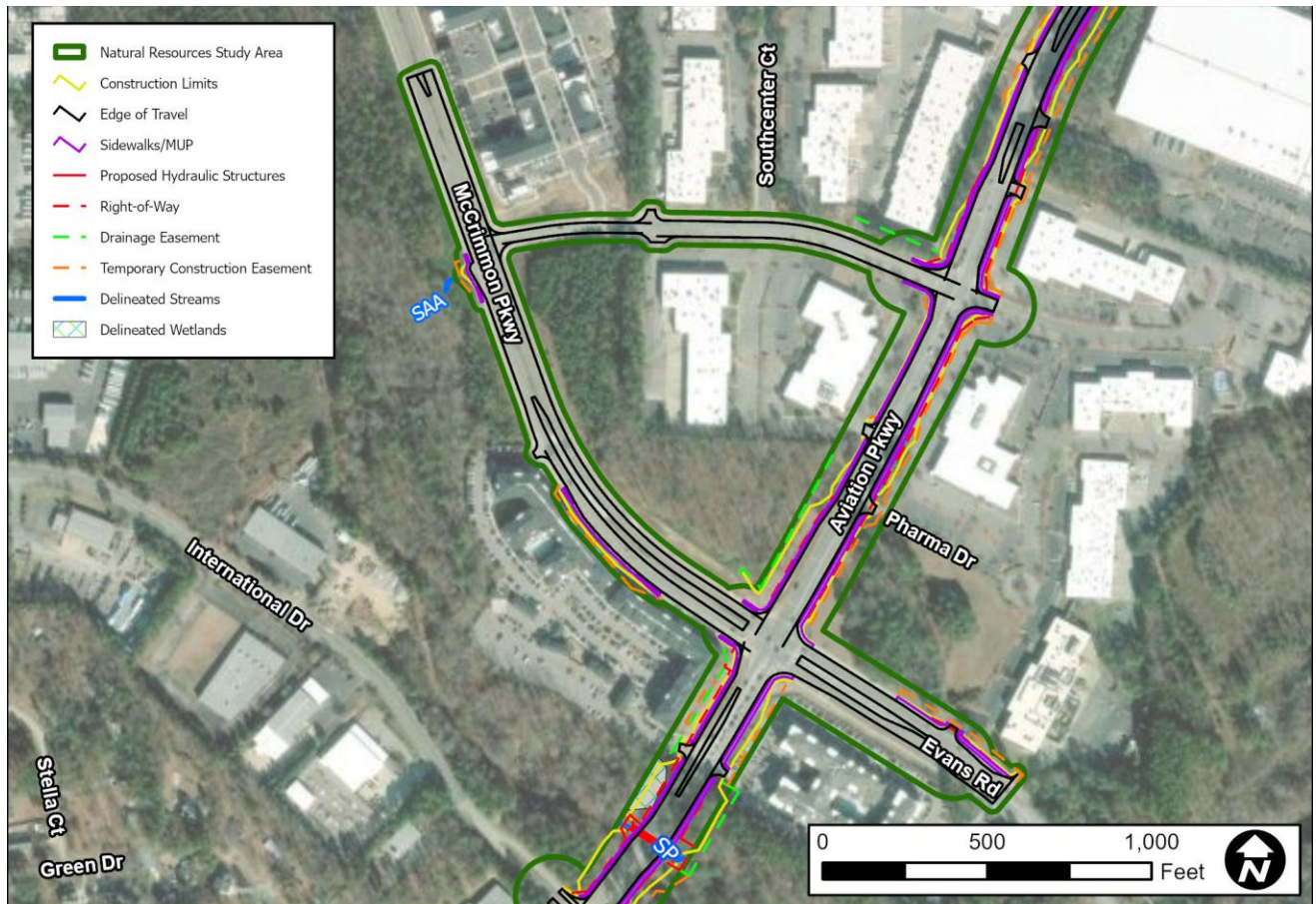
Causeway Alignment

Shifted alignment for the Lake Crabtree causeway to the north instead of the south. This change reduced impacts to utilities, will be easier to construct, and avoids impacts to two Section 4(f) resources (Lake Crabtree County Park and Lake Crabtree). This change results in an approximately 0.47-acre reduction in open water impacts and an approximately 0.27-acre increase in wetland impacts.



McCrimmon Parkway Intersection & Quadrant Loop

Eliminated left turns onto Aviation Parkway from McCrimmon Parkway and Evans Road to improve traffic operations through the intersection. In order to maintain access, minor construction and restriping along McCrimmon/Southport were added. While the majority of the improvements will be within the existing curb, a U-turn bulb out will be constructed west of the McCrimmon/Southport intersection, and minor widening will occur on the western side of McCrimmon Parkway to extend the right turn lane onto Aviation Parkway by approximately 250 feet.



Other Design Changes

In addition, the project design has also changed in the following minor ways:

- Realigned Aviation Parkway west of NC 54 to account for grading challenges at the Fire Admin Building and Pugh house while accommodating an appropriate design speed.
- Realigned Aviation Parkway near the quadrant Loop to account for grading challenges at the Cotten Place homes while accommodating an appropriate design speed. This design change created the need to reconstruct the existing curb and sidewalk in front of the Cotten Place homes.
- Added a median break and dedicated left-turn lane for trucks into businesses at the Dogwood Propco property, south of Aviation Parkway and just east of Southport Drive.
- Changed the design for four hydraulic crossings from cast-in-place reinforced concrete box culverts (RCBC) to welded steel pipes, potentially installed with trenchless methods, while maintaining comparable sizing.
- Shifted sidewalks across the NCRF railroad crossing to go behind the gates, approximately 10 feet off the back of curb.

The study area was expanded to include construction areas along McCrimmon Parkway and Southport Boulevard. All other design changes are within the previous study area. **Figure 1a – 1c** shows potential impacts from roadway construction.

2. Anticipated Schedule

The following schedule is anticipated:

- NEPA Categorical Exclusion – April 2026
- **CP 4A Merger Meeting – May 2026**
- Right of Way Plans – September 2026
- Right of Way Acquisition – October 2026 through October 2028
- Utility Relocations – October 2027 through October 2029
- Construction – July 2029

3. Merger Concurrence Point 4A – Avoidance and Minimization Measures

3.1 Environmental Resources

The following environmental resources may be affected by the project, and therefore have been subject to avoidance and minimization consideration:

Protected Species

There are five federally protected species listed in the study area. Details about the species and Environmental Commitments utilized for the protection of federally protected species are listed in **Appendix B**. During field surveys of the project area on October 8, 2024, a nesting pair of bald eagles were observed utilizing the headwaters of Lake Crabtree west of Aviation Parkway. After monitoring the bald eagle activity, a nest was observed within a loblolly pine (*Pinus taeda*) along the edge of Lake Crabtree west of Aviation Parkway. This nest was GPS-located in the field.

Water Resources

Water resources in the Natural Resources Study Area and Flood Mitigation Area are part of the Neuse River Basin (US Geological Survey (USGS) Hydrologic Unit [03020201]). No streams within 1.0 mile downstream have been designated as Outstanding Resource Waters (ORW), High Quality Waters (HQW), or water supply watersheds (WS-I or WS-II). Delineations have been conducted several times as the design was refined and because of updated waters of the U.S. (WOTUS) regulations.

The project is anticipated to impact approximately 3.9 acres of wetland, 830 linear feet of stream, and 3.6 acres of open water. An Individual Section 404 Permit, Section 401 Individual Water Quality Certification, and a Neuse River Basin Buffer Authorization are anticipated.

Floodplain and Flood Control Zones

The proposed road widening will result in impacts to the Lake Crabtree Flood Easement managed by Wake County as the local sponsor to the Natural Resources Conservation Service (NRCS). The current project design is anticipated to result in the discharge of approximately 22,800 cubic yards of fill within the flood pool and approximately 1,100 cubic yards of fill as sediment storage. A flood control permit will be required and mitigation for the loss of flood storage will be conducted. NCDOT will continue coordinating and collaborating with Wake County and NRCS to resolve the plans, processes, and areas utilized for flood pool mitigation. **Figure 2** shows the proposed Flood Mitigation Area and environmental resources within that area.

Construction is anticipated within regulatory floodways, 100-year floodplains, and 500-year floodplains. A State Floodplain Compliance Permit Type A or B will be acquired prior to construction to account for impacts to water resources resulting from the project.

Cultural Resources

One National Register-listed property, Pugh House, will be affected by the project. The project is anticipated to have a total permanent impact of 635 square feet on the Pugh House historic designated property as well as approximately 1,750 square feet of temporary construction easement. Construction would require removal of two trees and four shrubs; however, the affected landscaping will be replaced. NCDOT has coordinated with Town of Morrisville (the property owner) and Capital Area Preservation (Wake County's historic preservation organization), and will prepare a landscape plan and request a Certificate of Appropriateness prior to right-of-way (ROW) acquisition. Additionally, protection fencing will be utilized around the remaining landscaping and smokehouse during construction activities. The NCDOT Historic Architecture Group and NC SHPO determined that the project would have No Adverse Effect on the Pugh House on April 23, 2026.

Recreational Resources

Four recreational resources are located along the project corridor: Lake Crabtree, Lake Crabtree County Park, Cedar Fork District Park, and Sarah Woody Jenkins Park. The project will not impact Lake Crabtree County Park.

The Cedar Fork District Park is accessed from Aviation Parkway at Liberty Hill Pass. Left turns out of the park entrance will be restricted with the addition of a median along Aviation Parkway; however, U-turn bulbs will be constructed on Aviation Parkway to allow drivers to change direction at designated points.

Less than 0.1 acres of ROW acquisition and approximately 0.3 acres of temporary construction easement are needed for the culvert replacement within Lake Crabtree. A cofferdam is likely to be used for construction of the culvert, with construction anticipated to last 4 to 6 months. The new culvert will allow for boat access to the northern side of the causeway, and the new ROW will not affect the recreational use of Lake Crabtree. These temporary impacts would not result in a Section 4(f) impact.

The project will modify the driveway and have a small encroachment into Sarah Woody Jenkins Park, a 0.25-acre Town of Morrisville pocket park located on the west side of NC 54 within NCDOT and NCRR ROW. These changes will not affect use of the park, which is not considered a 4(f) resource because it was not determined to be significant by the town.

Environmental Impact Summary

The following table summarizes potential impacts to environmental resources from the project, consistent with the approved Categorical Exclusion and ongoing permitting package. Further details regarding species and water resources are detailed in **Appendix B**.

Resource	Impacts
Protected Species	1 Unresolved; 2 May Affect Likely to Adversely Affect (Programmatic); 2 No Effect
Streams	830 linear feet
Wetlands	3.9 acres
Open Waters	3.6 acres
Flood Pool	Flood pool fill: 22,800 cubic yards Sediment storage fill: 1,100 cubic yards
Cultural Resources	Pugh House: No Adverse Effect w/ commitments (635 sq ft within slope stakes; 1,750 sq ft of additional TCE)
Recreational Resources	Sarah Woody Jenkins Park: small encroachment; Lake Crabtree: no recreational impact; Lake Crabtree County Park & Cedar Fork District Park – no impact
Section 4(f)	<i>De minimis</i> on the Pugh House

Impacts are calculated based on the Natural Resources and Flood Mitigation Areas. The Natural Resources study area was designed based on a 25-foot buffer from slope stakes. Flood Mitigation does not include slope stakes and is based on a 25-foot buffer from Temporary Construction Easement.

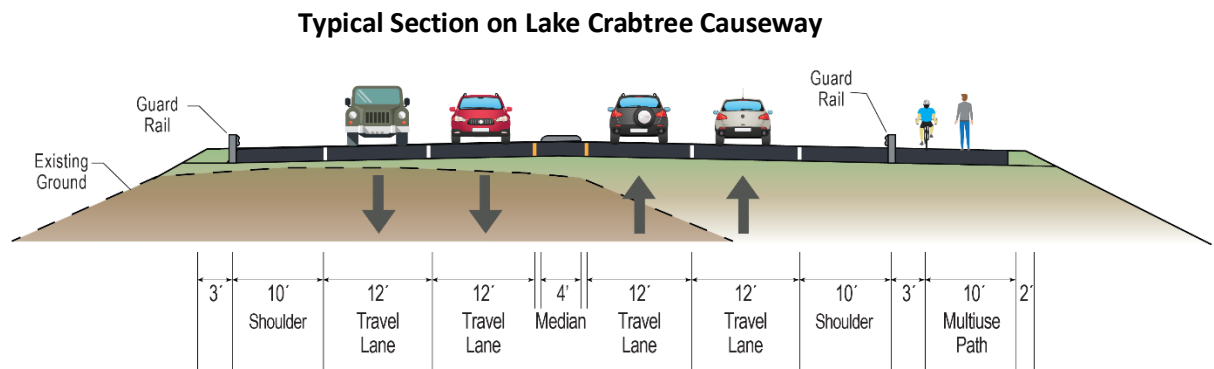
3.2 Avoidance and Minimization Measures

To minimize or avoid impacts, the project design includes modifications to the standard typical section, horizontal and vertical alignment shifts, slope steepening, and ROW narrowing efforts where feasible.

The following specific design measures were incorporated into the project to minimize or avoid impacts:

Road Corridor Typical Section and Alignment

- The best-fit widening strategy agreed upon in CP 3 allows for widening efforts to shift in alignment to minimize impacts to properties and environmental resources along the corridor.
- The typical section west of NC 54 was narrowed by reducing median width from 23 to 16 feet and by including 5-foot-wide sidewalks instead of 10-foot-wide multiuse path along the south side of the road.
 - Reducing the median width reduces roadway impacts to the Fire Admin Building and the Pugh House historic property.
 - In addition to reducing pedestrian facilities south of Aviation Parkway to sidewalks, the sidewalk was shifted to the back of curb to minimize impacts to the Pugh House historic property and minimize additional pavement across the railroad tracks.
- The typical section across the Lake Crabtree causeway was narrowed (see graphic below) to minimize impacts to Lake Crabtree and surrounding wetlands. The typical section for the causeway removes sidewalks on the northern side, and the median width has been reduced from 23 feet wide to a 4-foot-wide concrete island.



- Multimodal accommodations along the northern side of Aviation Parkway are designed to include 5-foot-wide sidewalks rather than a 10-foot-wide multi-use path, which reduced property impacts and stream impacts at two crossings.
- The Lake Crabtree causeway widening was shifted to the north to avoid major utility relocations and eliminate Section 4(f) impacts to Lake Crabtree County Park and Lake Crabtree.

NC 54 Intersection

- The proposed quadrant loop at the NC 54 intersection was shifted further north to eliminate a stream crossing (Site 1B in the CP 2A packet) and avoid impacts to Cotten Pond (determined to be non-jurisdictional).
- The slope stakes were steepened at the proposed road tie-in on the east side of NC 54 south of the Aviation Parkway intersection to eliminate impacts to the Cedar Fork District Park.

Hydraulic Structures

- Headwalls and wingwalls will be utilized to shorten culvert lengths at stream crossings throughout the project corridor. This is consistent with NCDOT standards.

Flood Pool Mitigation Area

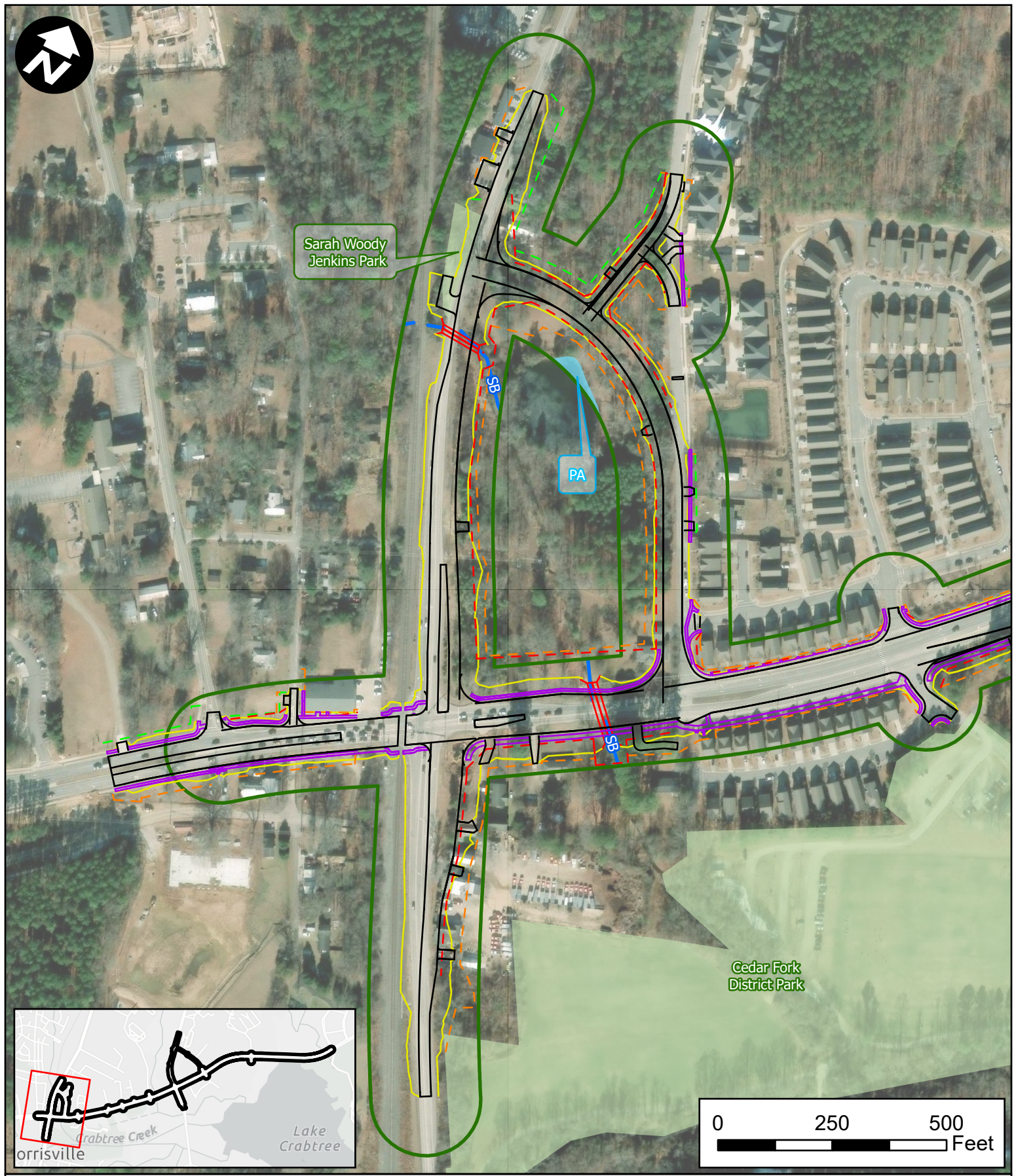
- The Aviation Parkway/Lake Crabtree quadrants and other sites along Lake Crabtree were considered for flood pool mitigation efforts. The northeastern quadrant of the Lake Crabtree causeway was selected as the flood pool mitigation area because it is contiguous to the project, will require a shorter access road compared with other sites (minimizing temporary impacts to waters of the U.S.), and minimizes additional wetland impacts from mitigation efforts. It also avoids the bald eagle nest in the northwest quadrant and the Lake Crabtree County Park property. Mitigating within the adjacent uplands reduces impacts to open waters.
- The flood pool mitigation area was configured to minimize wetland impacts for both the access road area and within the mitigation area itself.

3.3 Summary and Conclusions

As the project design has continued to be refined, impacts to Cotten Pond, Cedar Creek District Park, Lake Crabtree County Park, and active bald eagles nests were avoided. Impacts to stream SB, Lake Crabtree, the Pugh House Historic Property, the Morrisville Fire Department Administrative building, the NC Railroad, and wetlands (WS and WC) were minimized.

Additional avoidance and minimization efforts may be included in the project as the design continues to be refined. Further information regarding project merger history, environmental commitments, and design can be found in the attached appendices.

Figures

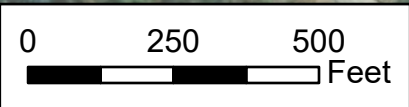
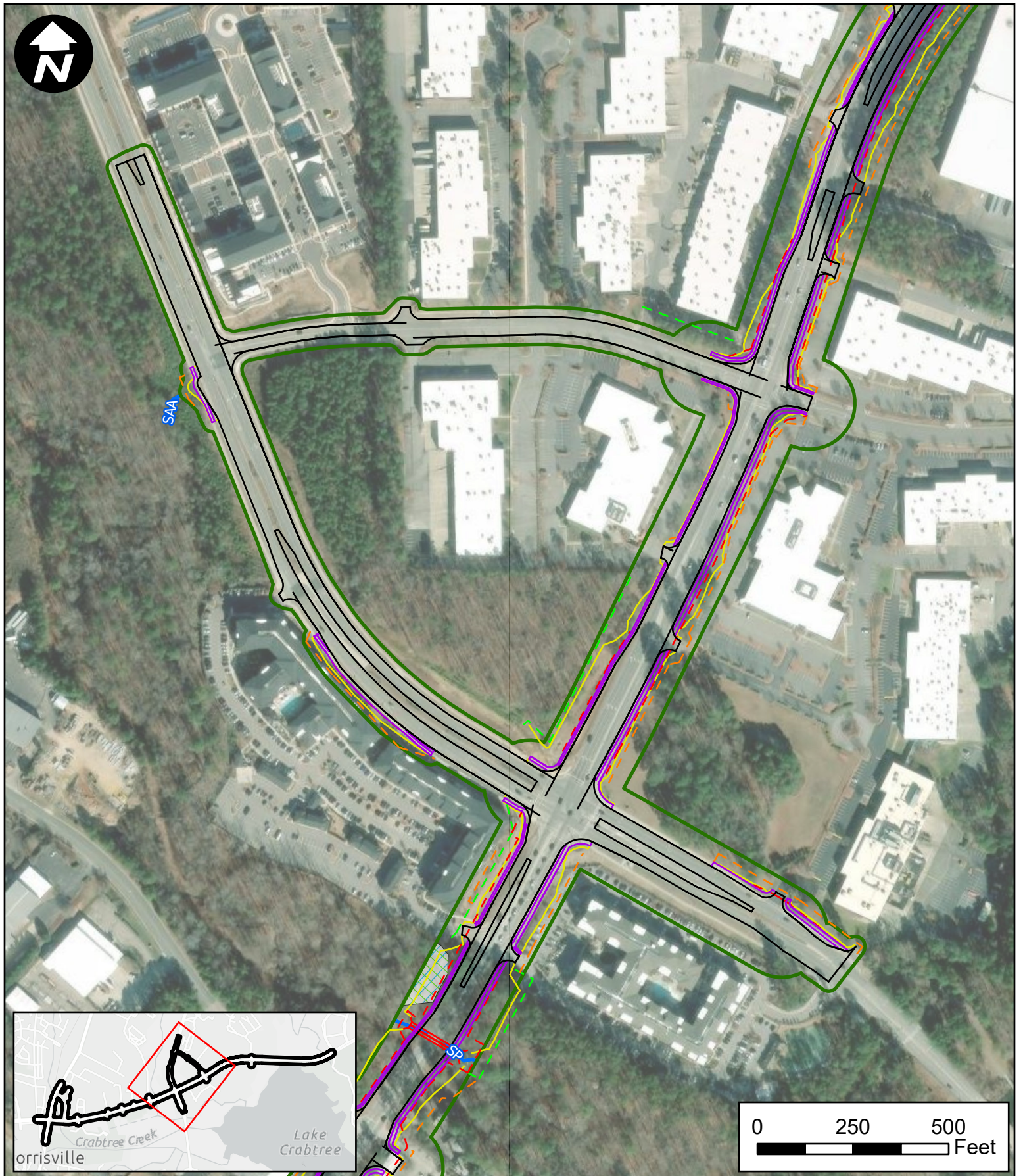


- Natural Resources Study Area
- Construction Limits
- Edge of Travel
- Sidewalks/MUP

- Right-of-Way
- Temporary Construction Easement
- Drainage Easement
- Proposed Hydraulic Structures

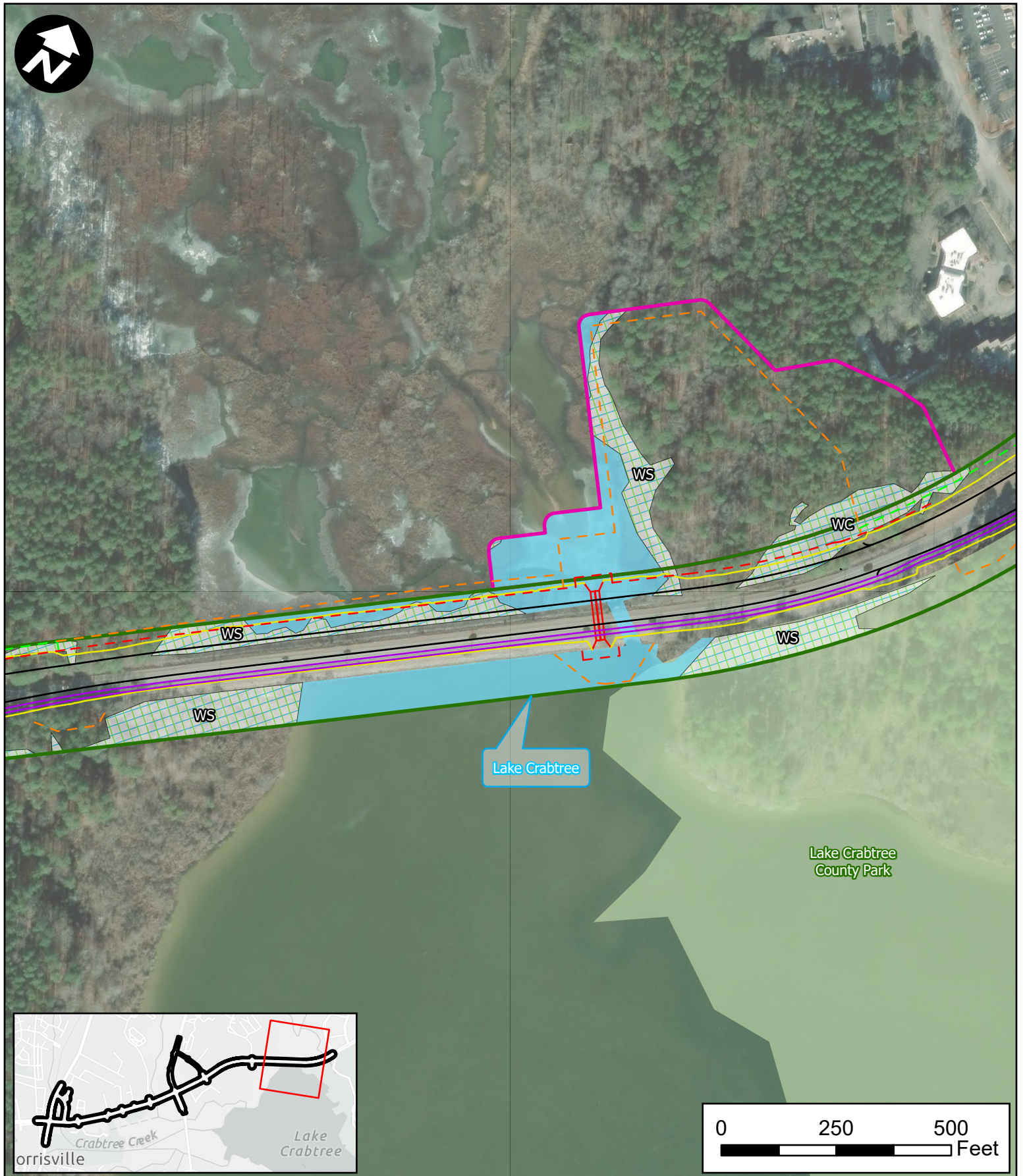
- Delineated Streams
- Delineated Open Waters
- Parks





CP 4A Figure 1(a)
Roadway Impacts Map
 STIP Project No. U-5811
 Aviation Parkway Widening
 Division 5, Wake County, NC











- Natural Resources Study Area
- Construction Limits
- Edge of Travel
- Sidewalks/MUP
- Right-of-Way
- Temporary Construction Easement
- Drainage Easement
- Proposed Hydraulic Structures
- Delineated Streams
- Delineated Wetlands

CP 4A Figure 1(b)
Roadway Impacts Map
STIP Project No. U-5811
Aviation Parkway Widening
Division 5, Wake County, NC

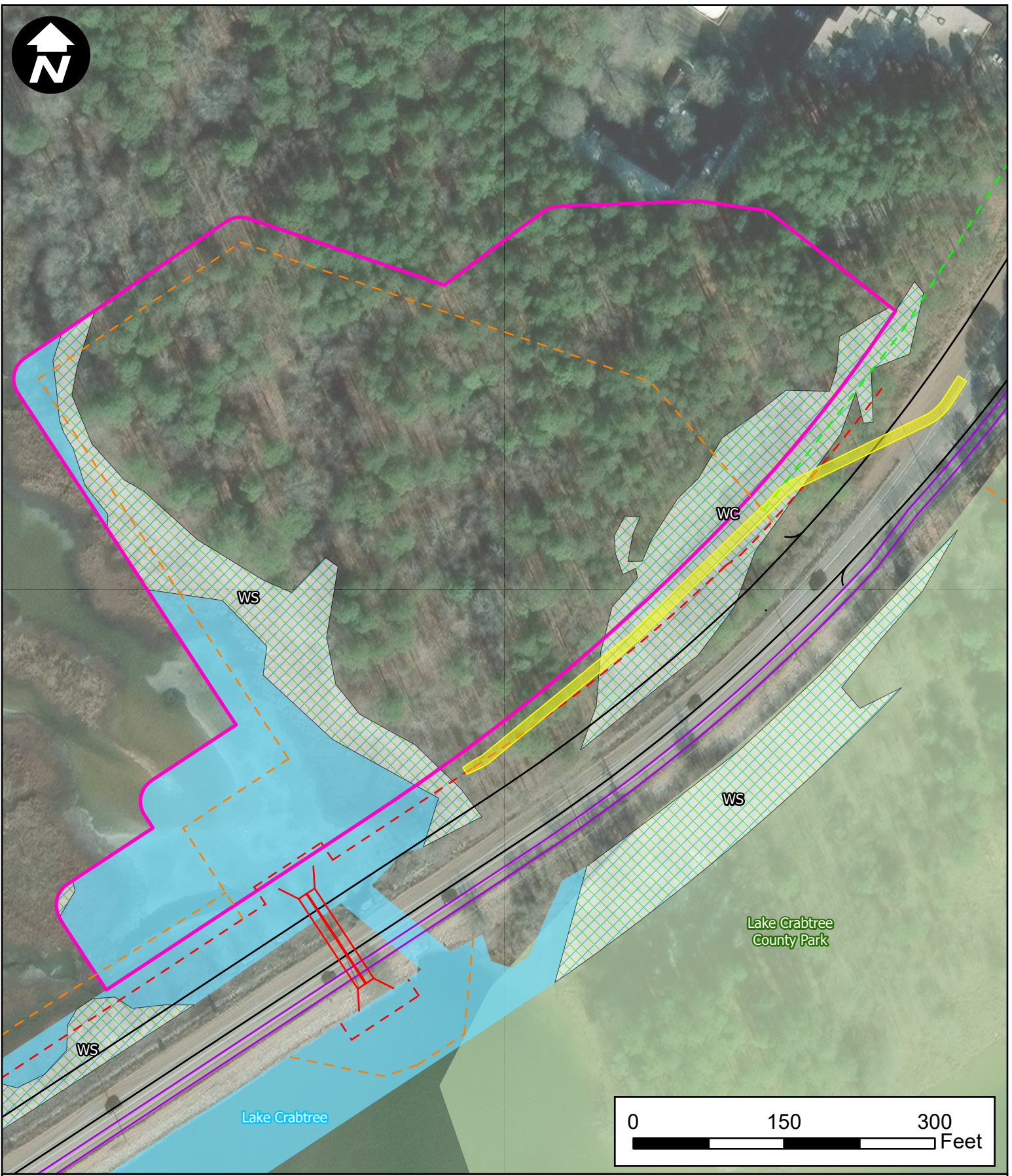


-  Flood Mitigation Area
-  Natural Resources Study Area
-  Construction Limits
-  Edge of Travel

-  Sidewalks/MUP
-  Right-of-Way
-  Temporary Construction Easement
-  Drainage Easement

-  Proposed Hydraulic Structures
-  Delineated Wetlands
-  Delineated Open Waters
-  Parks

CP 4A Figure 1(c)
Roadway Impacts Map
 STIP Project No. U-5811
 Aviation Parkway Widening
 Division 5, Wake County, NC



- Flood Mitigation Area
- Mitigation Access Road
- Proposed Hydraulic Structures
- Edge of Travel

- Sidewalks/MUP
- Temporary Construction Easement
- Right-of-Way
- Drainage Easement

- Delineated Wetlands
- Delineated Open Waters
- Parks

CP 4A Figure 2
Mitigation Impacts Map
STIP Project No. U-5811
Aviation Parkway Widening
Division 5, Wake County, NC

Appendix A
Merger History

CP 1 & 2 (Update): Met 2/14/2024; Signed 2/23/2024

- i) Add FHWA to the Merger team
- ii) Purpose and Need
 - (1) Congestion: The primary purpose of this project is to reduce congestion on Aviation Parkway in order to improve the Level of Service (LOS) in the design year peak hours along the corridor and at signalized intersections.
 - (2) Mobility: A secondary benefit of this project is to improve east-west mobility through Morrisville and to I-40 and I-540/NC 540
- iii) Study area: a 1000'-foot wide corridor, 500 feet on either side of the Aviation Parkway centerline, with a wider area around the NC 54 intersection.
- iv) Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23' median and multimodal accommodations.
- v) No Build Alternative

CP 2A & 3 (Update): Met 2/12/2025, Signed 2/25/2025

- i) Bridging Decisions
 - (1) Site 1 – Remove and replace existing culvert with 2 @ 8' x 8' RCBC
 - (2) Site 1A - Remove and replace existing culvert with 2 @ 10' x 7' RCBC
 - (3) Site 2 – Remove and replace existing culvert with 2 @ 72" RCPs
 - (4) Site 4 – Remove and replace existing culvert with 2 @ 8' x 7' RCBC
 - (5) Site 5 – Remove and replace existing culvert with 1 @ 16' x 14' RCBC
- ii) Least Environmentally Damaging Practicable Alternative (LEDPA)
 - (1) Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.
 - (a) With a minimized typical section across the NC 54/Railroad intersection with two 11-foot travel lanes, two 14-foot outside travel lanes, a 4-foot median, and 5-foot sidewalks on both sides.
 - (b) With a minimized typical section across the Lake Crabtree causeway with four 12-foot travel lanes, 10-foot shoulders, a 4-foot median, and a 10-foot multiuse path on the east (south) side.
 - (2) Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection.

Appendix B
Environmental Commitments

Environmental Commitments

NCDOT Project Management Unit – Flood Pool Mitigation

NCDOT will continue coordinating and collaborating with Wake County and the USDA Natural Resource Conservation Service (NRCS) to resolve the plans, processes, and areas utilized for flood pool mitigation.

NCDOT Project Management Unit – Detour Route

NCDOT will develop a Traveler Information Plan to identify ways to inform the public of travel pattern impacts. The public will be informed of proposed road closures and detour routes prior to project construction.

NCDOT Project Management Unit – Historic Architecture

NCDOT will prepare a landscape plan in coordination with Capital Area Preservation and the Town of Morrisville for planting vegetation at the affected Pugh House property.

NCDOT will receive an approved Certificate of Appropriateness (COA) prior to beginning right-of-way acquisition for the Pugh House property.

NCDOT will use protection fencing around the remaining trees and smokehouse on the Pugh House property during construction activities.

NCDOT Biological Surveys Group – Bat Species

No tree clearing* will occur within 150 feet of a known maternity roost tree May 1 – July 15 in order to protect non-volant young. Winter roost trees are not considered maternity roost trees. NCDOT will cross-reference information provided by the Service for locations of maternity roosts.

* Tree clearing is considered removing trees. Clearing limbs along the ROW is not considered ‘clearing’

Note: At this time, no TCB maternity roost trees have been identified in Div 1-8.

In order to monitor the impacts of incidental take, the NCDOT must report the progress of the Action and its impact on the species to the Service as specified in the ITS (50 CFR §402.14(i)(3)). Specific instruction for such monitoring and reporting (M&R) are listed below. These M&R requirements are mandatory.

- If dead bats suspected of being TCB are observed during clearing, demolition, or construction activities of the Action, such bats should be collected and preserved for identification. Gary Jordan of the Service’s Raleigh Field Office should be contacted at gary_jordan@fws.gov to arrange a transfer of the bats. Dead bats should be placed in a freezer until they can be transferred.
- Structure bat surveys will be performed during the Natural Resource Technical Report phase of projects that are to replace a bridge or culvert > 5 feet in diameter. This information will then be recorded in NCDOT’s database on bridges and culverts. NCDOT staff and/or consultants must follow the NCDOT Bat Habitat Assessment SOP by filling out Bat Habitat Assessment Forms for projects that affect bridges and culverts. These forms will be submitted to the NCDOT Biological Surveys Group and entered into its database even if no bat presence is detected. If TCBs are detected at a bridge or culvert, the Service will be notified via email at gary_jordan@fws.gov.

Species Summary

Scientific Name	Common Name	Federal Status	Habitat Presence	Biological Conclusion
<i>Perimyotis subflavus</i>	Tricolored bat	PE	Yes	MA-LAA
<i>Danaus plexippus</i>	Monarch butterfly	PT	Unresolved	Not Required
<i>Rhus michauxii</i>	Michaux's sumac	E	No	No Effect
<i>Haliaeetus leucocephalus</i>	Bald eagle	BGPA	Yes	No Effect
<i>Myotis septentrionalis</i>	Northern long-eared bat	E	Yes	MA-LAA

¹IPaC data checked on April 28, 2026

PE – Proposed Endangered, E – Endangered, PT – Proposed Threatened, BGPA – Bald and Golden Eagle Protection Act, MA-LAA – May Affect Likely to Adversely Affect

Water Resources Summary

Map ID	Aquatic Resource Type	Hydrologic Classification	Amount in Flood Mitigation Study Area	Amount in Natural Resources Study Area
Lake Crabtree	Non-wetland Open Water	Littoral	1.28 ac.	2.50 ac.
Pond PA	Non-wetland Open Water	Littoral	-	0.07 ac.
SAA	Non-wetland Stream	Intermittent Stream	-	N/A (Outside Natural Resources Study Area) ¹
SB	Non-wetland Stream	Perennial Stream	-	451 LF
SD	Non-wetland Stream	Perennial Stream	-	194 LF
SP	Non-wetland Stream	Perennial Stream	-	190 LF
SQ	Non-wetland Stream	Intermittent Stream	-	108 LF
WB	Headwater Forest Wetland	Riparian Wetland	-	0.12 ac.
WC	Headwater Forest Wetland	Riparian Wetland	0.36 ac.	0.53 ac.
WS	Bottomland Hardwood Forest Wetland	Riparian Wetland	0.63 ac.	2.28 ac.
WT	Bottomland Hardwood Forest Wetland	Riparian Wetland	-	0.23 ac.

¹Streams located outside Natural Resources Study Area, but within 50 feet of boundary and subject to riparian buffer rules

Appendix C
CP 4A Concurrence Form

Section 404/NEPA Interagency Agreement

**Concurrence Point 4A
Avoidance and Minimization Measures**

Project Title: SR 1002 (Aviation Parkway), Widening from NC 54 to I-40
TIP Project No.: U-5811
WBS No.: 44384.1.1

The Project Team has concurred on this date to include the following measures to minimize or avoid impacts:

- Utilizing best-fit widening strategy to allow for alignment shifts.
- Narrowing of typical section across the Lake Crabtree causeway and west of NC 54.
- Sidewalk alignment shifts to avoid impacts to structures at the Pugh House. NCDOT will submit a landscaping plan and obtain a COA prior to right-of-way acquisition on the Pugh House property
- Using sidewalks instead of multiuse path along the northern side of Aviation Parkway.
- Causeway alignment shifts to avoid Section 4(f) impacts to Lake Crabtree and Lake Crabtree County Park.
- NC 54 Quadrant Loop alignment shift to eliminate a stream crossing and avoid impacts to Cotten Pond
- Steepening slopes on the eastern side of NC 54 to avoid impacts to Cedar Fork District Park.
- Utilizing headwalls and wingwalls to shorten culvert lengths at stream crossings.
- Selection of the northeastern causeway quadrant for flood pool mitigation to avoid an eagle’s nest and Lake Crabtree County Park, as well as minimize wetland impacts.
- NCDOT will continue coordinating and collaborating with Wake County and the USDA Natural Resource Conservation Service (NRCS) to resolve the plans, processes, and areas utilized for flood pool mitigation.

<u>Name</u>	<u>Agency</u>	<u>Date</u>
	FHWA	
	USACE	
	USFWS	
	USEPA	
	NCDOT	
	NCWRC	
	NCDEQ	
	NCSHPO	
	CAMPO	
	USDA-NRCS	