

**Concurrence Point 2A**  
**Bridging Decisions and Alignment Review**  
and  
**Concurrence Point 3**  
**Least Environmentally Damaging Practicable Alternative (LEDPA)**

TIP Project No. U-5811  
WBS 44384.1.1

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



**February 2025**

**Purpose of Today's Meeting:**

The purpose of this meeting is to make updated bridging decisions (CP 2A)  
and select an updated LEDPA (CP 3).

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- Appendix D – 2019 CP 3 Concurrence Packet and Signed Form

# 1. Introduction and Project Overview

## 1.1 Proposed Action

NCDOT proposes to widen 2.4-miles of Aviation Parkway, from NC 54 to I-40 in Wake County. The proposed project is included in the *2024-2033 State Transportation Improvement Program (STIP)* as Project U-5811.

## 1.2 Meeting Purpose

The purposes of today's meeting are:

1. Confirm concurrence on Bridging Decisions and Alignment Review (Concurrence Point 2A) and Least Environmentally Damaging Practicable Alternative (Concurrence Point 3)
2. Obtain any other new information from the Merger Team that could affect decision-making

## 1.3 Project History since February 2024 Merger Meeting

- CP 1 and 2 Merger sheets signed February 23, 2024 (see history below)
- Updated traffic analysis conducted March 2024
- Section 4(f) coordination with FHWA, RDU, Wake County, and NRCS initiated in April 2024
- Lake Crabtree multi-use path coordination with Town of Cary initiated in June 2024
- Conducted updated wetland delineation in October 2024

## 1.4 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 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: Met 6/13/2019, Signed 6/24/2019 (see packet and concurrence form, Appendix C) *TO BE UPDATED***
  - i) Site 1 – Remove and replace existing culvert with 2 @ 8' x 8' RCBC
  - ii) Site 1A – Remove and replace existing culvert with 2 @ 10' x 7' RCBC OR change roadway grade and remove and replace existing culvert with 2 @ 8' x 8' RCBC
  - iii) Site 1B – Install 2 @ 8' x 8' RCBC
  - iv) Site 1C – Install 2 @ 8' x 8' RCBC
  - v) Site 2 – Remove and replace existing culvert with 2 @ 72" RCPs
  - vi) Site 4 – Remove and replace existing culvert with 2 @ 8' x 7' RCBC
  - vii) Site 5 – Extend existing culvert outlet

- **CP 3: Met 7/10/2019, Signed 7/26/2019 (see packet and concurrence form, Appendix D) TO BE UPDATED**
  - i) Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best-fit section with a 23-foot median and multimodal accommodations.
    - (1) With a minimized typical section across the NC 54/Railroad intersection with 11-foot inside travel lanes, 14-foot outside travel lanes, a 4-foot median, and 5-foot sidewalks on both sides.
    - (2) 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 side.
  - ii) Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection.

## 1.5 Project Updates

Since the CP 1 and CP 2 Merger Update meeting in February 2024, the project design has changed in the following ways:

- Realigned the proposed quadrant loop at the NC 54 intersection to eliminate a stream crossing and avoid impacts to Cotten Pond. The new alignment includes an added connector street between the quadrant loop and Cotten Drive and sidewalks, and additional widening along a portion of the eastern side NC 54.
- Widened the Evans Road approach to include additional turning and through lanes, based on the updated traffic analysis.
- Refined U-turn bulbs and median breaks based on the updated traffic analysis.
- Modified the proposed hydraulic structure on the Lake Crabtree causeway based on additional roadway and hydraulic analysis.

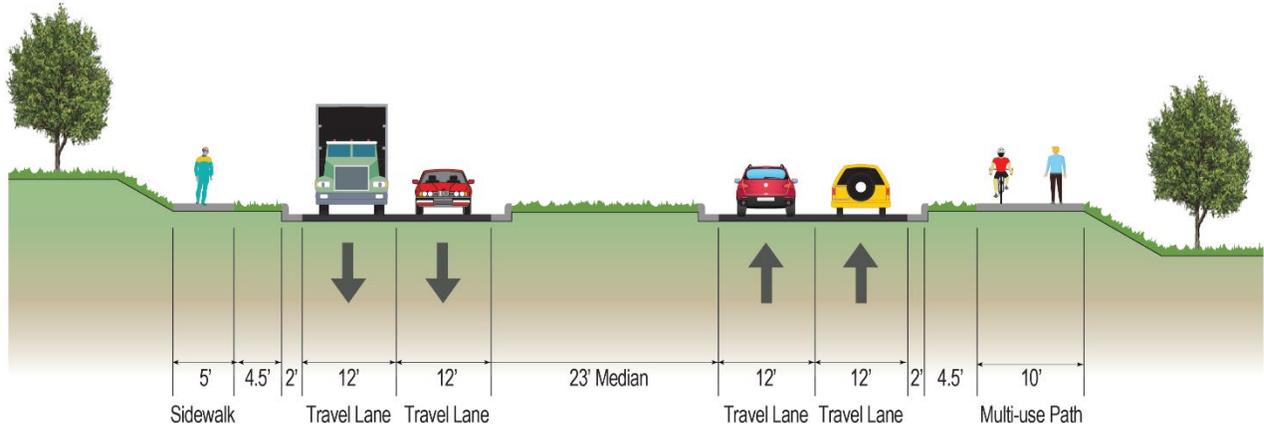
All of these design changes are within the approved study area. Figure 1 shows the project vicinity, and Figure 2 shows the environmental and community features. The study area approved as part of CP 1 is a 1,000-foot corridor (500 feet on either side of the Aviation Parkway centerline) with a larger area around the NC 54 intersection.

## 1.6 Build Alternative to Carry Forward for Detailed Study

The CP 2 decision in February 2024 determined to carry forward Build Alternative 1 for detailed study due to its lesser impacts to the environment (compared with other build alternatives) while still meeting the purpose of the project.

Build Alternative 1 would widen Aviation Parkway to a four-lane median divided section with a 23' median and multimodal accommodations.

The design initially included a 5' sidewalk on the west side of Aviation Parkway and a 10' multiuse path on the east side, along with 14' outside lanes for bicyclists. Since that time, the wide outside lanes were removed east of NC 54 based on current best design practice as recommended by both the NCDOT Integrated Mobility Division (IMD) and the Towns of Morrisville and Cary (see typical section graphic on following page).



## 2. Anticipated Schedule

The following schedule is anticipated:

- Project Updates and Merger Meetings:
  - **CP 2A/CP 3 – February 2025**
  - In-Person Local Officials Meeting and Public Meeting – Spring 2025
  - Coordination regarding Flood Pool Mitigation – Spring 2025
  - Design Recommendation Plan Set – May 2025
  - Redline Drainage Plans – October 2025
  - **CP 4A – January 2026**
- NEPA Categorical Exclusion – April 2026
- Right of Way Acquisition – May 2026
- Construction – State FY 2030

### 3. Merger Concurrence Point 2A – Bridging Decisions and Alignment Review

#### 3.1 Previous CP 2A Decision

In the 2019 CP 2A Meeting, seven major drainage structures were agreed upon. **Table 1** summarizes the previously agreed upon hydraulic structures, and further details can be found in the figures attached to the 2019 CP 2A Packet in **Appendix C**. **Red text in the table indicates structures that are proposed to be changed or removed (see Table 3 for the proposed details).**

**Table 1. Major Drainage Structures previously agreed upon in the 2019 CP 2A Meeting**

Site #	Stream ID #	Name	Existing Structure	Proposed Structure	Stream Classification	Intermittent / Perennial	Channel Width	Proposed impacts <sup>a</sup>	FEMA
1	SB	Morrisville Tributary	3-60" RCP, 60'	2 @ 8'x8' RCBC with 2' sill (buried 1'), 160'	C; NSW	Perennial	Varies from 5-8 ft	135 lf	Yes
1A <sup>1</sup>	SB	Morrisville Tributary	1-6' x 6.5' RCBC	2 @ 10'x7' RCBC (buried 1') with 2' sill in one barrel*, 39'	C; NSW	Perennial	Varies from 8-17 ft	115 lf	Yes
1B <sup>1</sup>	SB	Morrisville Tributary	N/A	2 @ 8'x8' RCBC (buried 1') with 2' sill in one barrel	C; NSW	Perennial	Varies from 8-10 ft	165 lf	Yes
1C <sup>2</sup>	SB	Morrisville Tributary	N/A	2 @ 8'x8' RCBC (buried 1') with 2' sill	C; NSW	Perennial	Varies from 5-8 ft	310 lf	Yes
2	SD	Unnamed Tributary to Crabtree Creek	1-48" RCP, 48'	2 @ 72" RCPs (buried 1'), 144'	C; NSW	Perennial / Intermittent	Varies from 2-8 ft	140 lf	No
4	SP	Unnamed Tributary to Crabtree Creek	2-72" RCP, 65'	2 @ 8'x7' RCBC (buried 1'), 166'	C; NSW	Perennial	Varies from 6-13 ft <sup>3</sup>	155 lf	No
5	Lake Crabtree	Stirrup Iron Creek	1 @ 15' x 14' RCBC OAL = 79'	Extend outlet approx. 49 LF, 128'	B; NSW	Perennial	N/A	1.2 ac / 1.5 ac	Yes

RED – this drainage structure recommendation changes in the 2025 CP 2A concurrence

<sup>1</sup> Only required in Option A (scour holes present upstream and downstream of site)

<sup>2</sup> Only required in Option B (includes 160 feet for the proposed culvert and 150 feet of stream channel realignment)

<sup>3</sup> Scour hole present at outlet of existing culvert (approximately 35-ft wide)

<sup>a</sup> Stream impacts are measured from openings of existing culvert to 25' beyond slope stakes. No wetland impacts are anticipated.

\*Note that this is one of two options presented for Site 1A. This option is shown because there is no change to the existing roadway grade required. Alternate sizing with one grade increase would be 2 @ 8' x 8' RCBC (buried 1') with 2' sill in one barrel.

RCP – Reinforced Concrete Pipe; RCBC – Reinforced Concrete Box Culvert

C – Aquatic life, secondary recreation, fresh water; B – All Class C uses in addition to primary recreation, fresh water

NSW – Nutrient Sensitive Waters

### 3.2 Hydraulic Structure Changes Since the 2019 CP 2A Meeting

**Site #1C:** The 2019 CP 3 Merger Decision determined that Option A, the northern quadrant loop at NC 54 and Aviation Parkway, was the LEDPA, eliminating the need to further evaluate Site #1C. Further details relating to the previous Merger decision can be found in the 2019 CP 3 Packet in **Appendix D**.

**Sites #1A and #1B:** Design refinements along the northern quadrant loop eliminate the need for a crossing at Site #1B and lengthening the proposed structure at Site #1A (from 39 feet to 67 feet).

**Site #5:** Hydraulic alternatives have been evaluated for the Lake Crabtree causeway (Site #5). Initial analysis for the Lake Crabtree causeway evaluated four alternatives:

- Alternative A – Causeway widening with a culvert extension or replacement
- Alternative B – Causeway widening with a partial roadway bridge to replace the existing culvert
- Alternative C – Causeway widening with a culvert extension or replacement, and a separate multi-use path structure rather than connected multi-use path
- Alternative D – Causeway widening with a partial roadway bridge to replace the existing culvert, and a separate multi-use path structure rather than connected multi-use path

The Town of Cary would be responsible for maintaining the structure, for which they were unable to commit. Therefore, Alternatives C and D were eliminated.

As a variation of Alternative A, the design team also considered shifting the culvert to a new location to allow for easier maintenance of traffic during construction. This alternative had challenges with maintaining hydraulic flow during phased construction and was eliminated.

**Table 2** shows a summary of impacts for the remaining alternatives: in-place culvert replacement, a single-span bridge, and a dual-span bridge. A more detailed comparison is in **Appendix A**.

**Table 2. Lake Crabtree Causeway (Site #5) Comparison of Impacts**

Resource	Alternative A		Alternative B	
	Culvert Alternative	Single-Span Bridge	Dual-Span Bridge	
Wetland Impacts	0.94 acres	0.97 acres	0.95 acres	
Open Water Impacts <sup>1</sup>	1.30 acres	1.13 acres	0.75 acres	
Stream Impacts	660 lf	660 lf	660 lf	
Floodway Acreage	7.83 acres	7.69 acres	7.62 acres	
100-year Floodplain Acreages	4.94 acres	4.63 acres	4.55 acres	
Park Impacts	1.61 acres	1.95 acres	1.95 acres	
Constructability Considerations	Close causeway during construction (anticipate 4-6-month construction)	Maintain traffic on the causeway through phased construction (anticipate 18-24-month construction)		
Anticipated Construction Cost <sup>2</sup>	\$3,640,000	\$6,150,000	\$6,450,000	

<sup>1</sup> Impacts are to Lake Crabtree; no impacts are anticipated to Pond PA

<sup>2</sup> Construction Costs do not include ROW acquisition, traffic control, utility, or mitigation costs

NCDOT recommends Alternative A, replacing the culvert in the existing location for the following reasons:

- Minimal difference in environmental impacts compared with bridge options
- Shorter construction duration (4-6 vs 18-24 months)
- More cost effective (approximately \$2.5 to \$2.9 million less)
- Similar ground disturbing activities compared with bridge options

### 3.3 Updated CP 2A: Proposed Structures

**Table 3** summarizes the proposed major drainage structures. In addition, the existing causeway across Lake Crabtree is recommended to be widened. Refer to **Figures 3A-3F** for proposed hydraulic structures.

**Table 3: Proposed Major Drainage Structures**

Site #	Stream ID #	Name	Existing Structure	Proposed Structure	Stream Classification	Intermittent / Perennial	Channel Width	Proposed impacts <sup>a</sup>	FEMA
1	SB	Morrisville Tributary	3-60" RCP OAL = 60'	2 @ 8'x8' RCBC w/ 2' sill (buried 1') OAL = 160'	C; NSW	Perennial	Varies from 5-8 ft	135 lf	Yes
1A	SB	Morrisville Tributary	1-8'x6' RCBC OAL = 39'	<b>2 @ 10'x7' RCBC (buried 1') w/ 2' sill in one barrel*</b> <b>OAL = 67'</b>	C; NSW	Perennial	Varies from 8-17 ft	115 lf	Yes
2	SD	Unnamed Tributary to Crabtree Creek	1-48" RCP OAL = 48'	2 @ 72" RCPs (buried 1') OAL = 144'	C; NSW	Perennial	Varies from 2-8 ft	140 lf	No
4	SP	Unnamed Tributary to Crabtree Creek	2-72" RCP OAL = 65'	2 @ 8'x7' RCBC (buried 1') OAL = 166'	C; NSW	Perennial	Varies from 6-13 ft <sup>3</sup>	155 lf	No
5	Lake Crabtree	Stirrup Iron Creek	1 @ 15' x 14' RCBC OAL = 79'	<b>1 @ 16'x14' RCBC, OAL = 119'</b>	B; NSW	Perennial	N/A	<b>1.3 ac</b>	Yes

**Bold** – this drainage structure recommendation has changed since the 2019 CP 2A concurrence

<sup>a</sup> Stream impacts are measured from openings of existing culvert to 25' beyond slope stakes.

\*Note that this is one of two options presented for Site 1A. This option is shown because there is no change to the existing roadway grade required.

Alternate sizing with one foot grade increase would be 2 @ 8' x 8' RCBC (buried 1') with 2' sill in one barrel.

RCP – Reinforced Concrete Pipe; RCBC – Reinforced Concrete Box Culvert; OAL – Overall Length

C – Aquatic life, secondary recreation, fresh water; B – All Class C uses in addition to primary recreation, fresh water

NSW – Nutrient Sensitive Waters

## 4. Merger Concurrence Point 3 – Least Environmentally Damaging Practicable Alternative

### 4.1 Previous 3 Decision

The following LEDPA was agreed to during the 2019 CP 3 Merger meeting:

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
  - *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*
  - *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 side*
- *Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection*

### 4.2 Stakeholder Involvement

In 2024 and early 2025, additional coordination was held with the Towns of Morrisville and Cary, Wake County, NRCS, and Raleigh-Durham Airport Authority to discuss the proposed design modifications.

An updated Local Officials Informational Meeting and Public Meeting is anticipated for Spring 2025, following confirmation of the LEDPA.

### 4.3 Design Changes Since the 2019 CP 3 Meeting

No design changes have been proposed since the 2019 CP 3 meeting that would affect the previously selected LEDPA decision. FHWA has been added to the Merger team since 2019.

The design details have been refined, as discussed in Section 1.5, and will continue to be refined through the final design phase. These will be provided to the Merger Team through future Merger meetings, Section 106 consultation, and permit applications.

## 5. Conclusion

NCDOT recommends the following, which are included on the signature sheets in Appendix C.

### 5.1 C.P. 2A

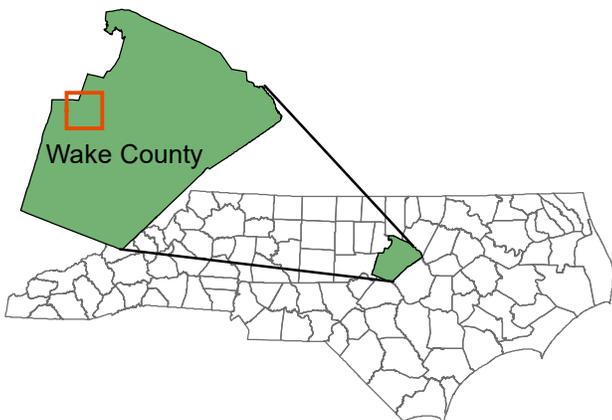
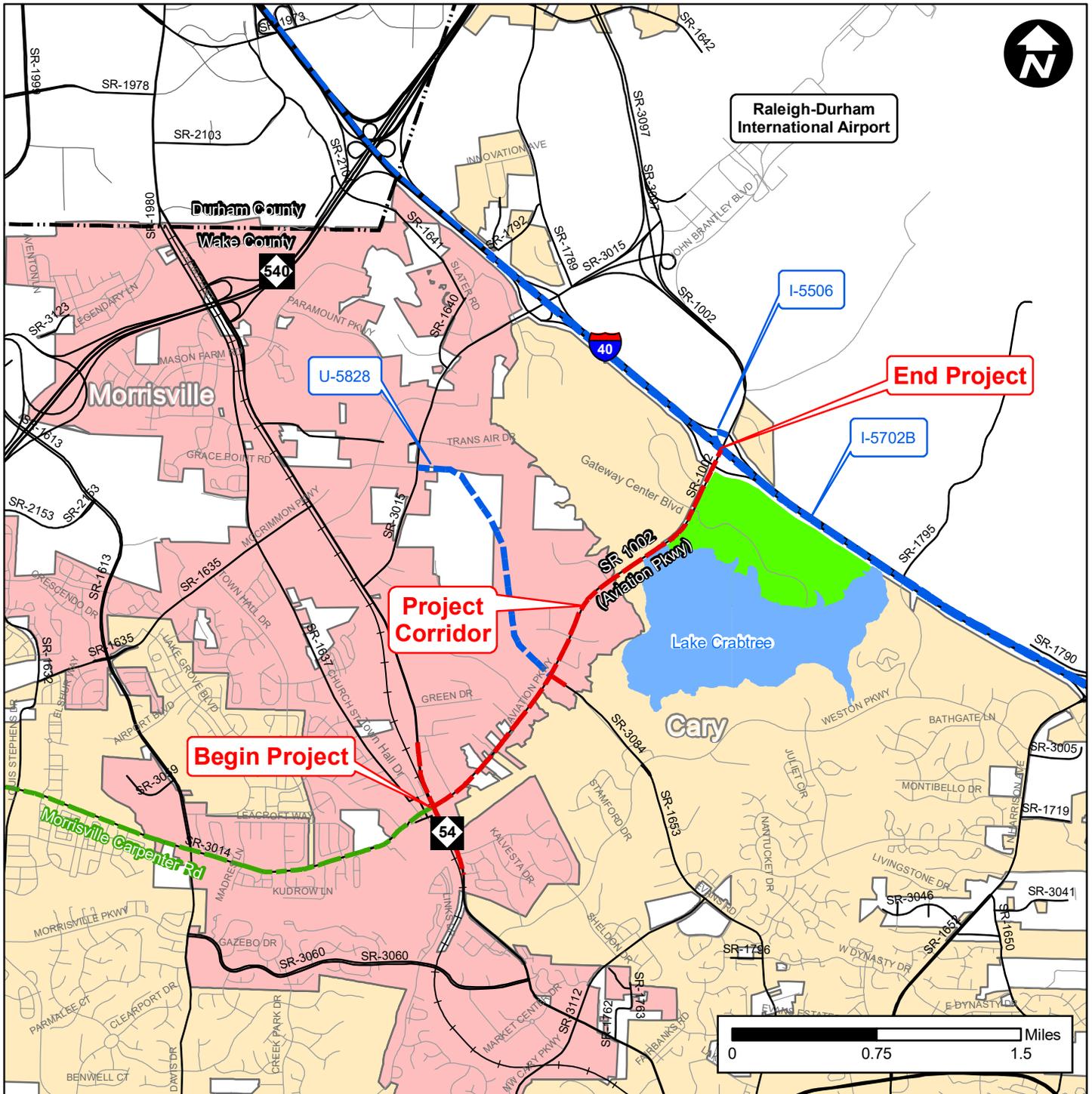
- Site 1 – Remove and replace existing culvert with 2 @ 8' x 8' RCBC
- Site 1A – Remove and replace existing culvert with 2 @ 10' x 7' RCBC
- Site 2 – Remove and replace existing culvert with 2 @ 72" RCPs
- Site 4 – Remove and replace existing culvert with 2 @ 8' x 7' RCBC
- Site 5 – Remove and replace existing culvert with 1 @ 16' x 14' RCBC

### 5.2 C.P. 3

No change is recommended to the Least Environmentally Damaging Practicable Alternative since the approved CP 3 decision in 2019:

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
  - *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*
  - *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 side*
- *Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection*

## Figures



- - - Project Limits
- - - Adjacent Local Project
- - - Adjacent STIP Project
- Lake Crabtree County Park



**Figure 1 - Project Vicinity**  
 Morrisville and Cary  
 SR 1002 From NC 54 to I-40  
 Wake County  
 TIP Project U-5811



Quadrant Loop realignment to the north with added connector to Cotten Dr and sidewalks

Additional U-turn bulb and Median breaks



- |                         |                              |                     |
|-------------------------|------------------------------|---------------------|
| Project Study Area      | Paved Shoulder               | Parks               |
| Slopestakes             | Proposed Drainage Structures | Floodway            |
| Edge of Travel          | Delineated Stream            | 100-year Floodplain |
| Curb and Gutter         | Delineated Wetland           | 500-year Floodplain |
| Sidewalk/Multi-Use Path | Delineated Open Waters       |                     |

**Figure 2A - Environmental Features**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County

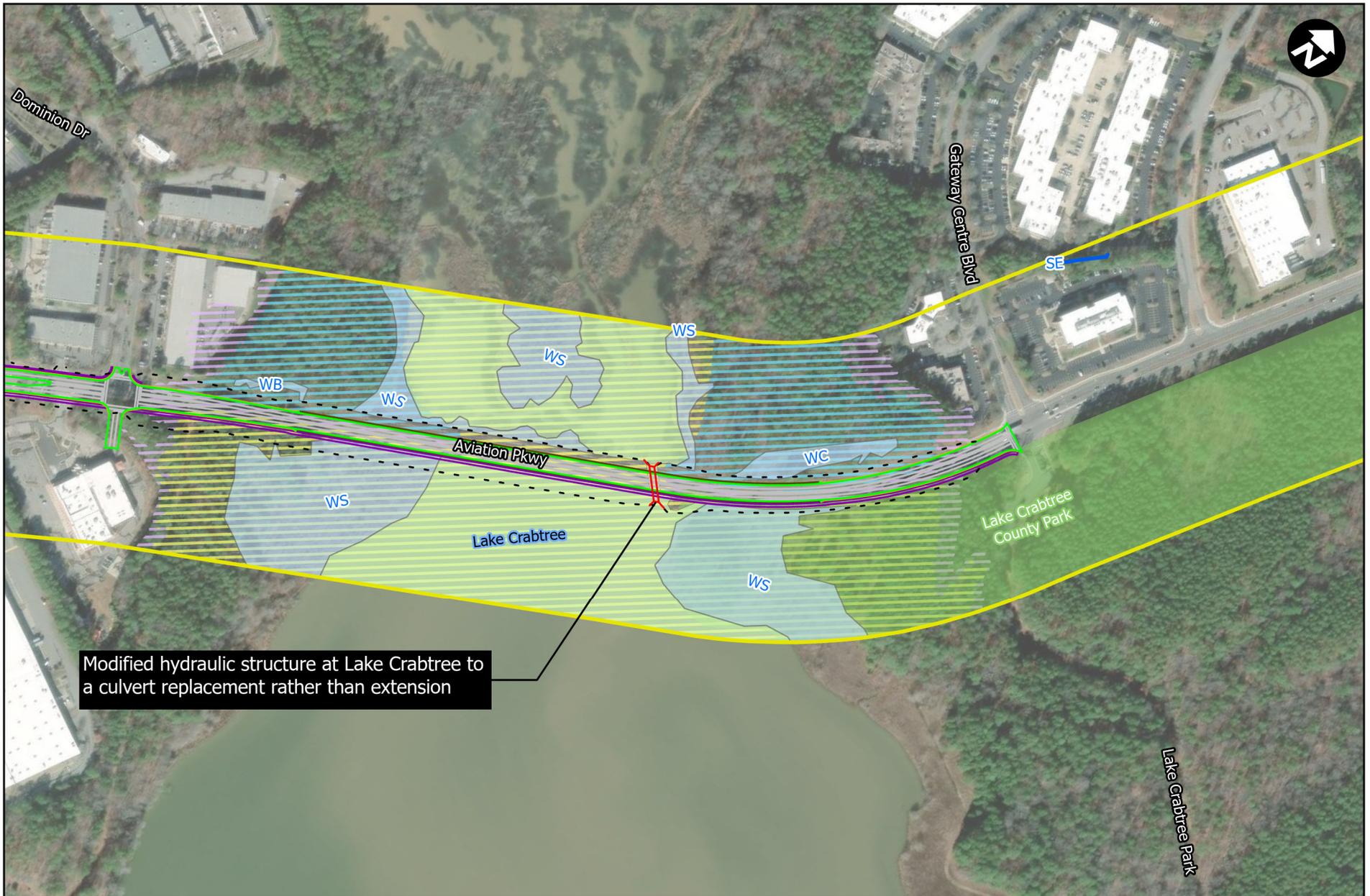


Evans Road approach widened to include additional turn and through lanes



- |                         |                        |                              |
|-------------------------|------------------------|------------------------------|
| Project Study Area      | Paved Shoulder         | Floodway                     |
| Slopestakes             | Delineated Stream      | 100-year Floodplain          |
| Edge of Travel          | Delineated Wetland     | 500-year Floodplain          |
| Curb and Gutter         | Delineated Open Waters | Proposed Drainage Structures |
| Sidewalk/Multi-Use Path | Parks                  |                              |

**Figure 2B - Environmental Features**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



Modified hydraulic structure at Lake Crabtree to a culvert replacement rather than extension



- |                         |                        |                              |
|-------------------------|------------------------|------------------------------|
| Project Study Area      | Paved Shoulder         | Floodway                     |
| Slopestakes             | Delineated Stream      | 100-year Floodplain          |
| Edge of Travel          | Delineated Wetland     | 500-year Floodplain          |
| Curb and Gutter         | Delineated Open Waters | Proposed Drainage Structures |
| Sidewalk/Multi-Use Path | Parks                  |                              |

**Figure 2C - Environmental Features**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



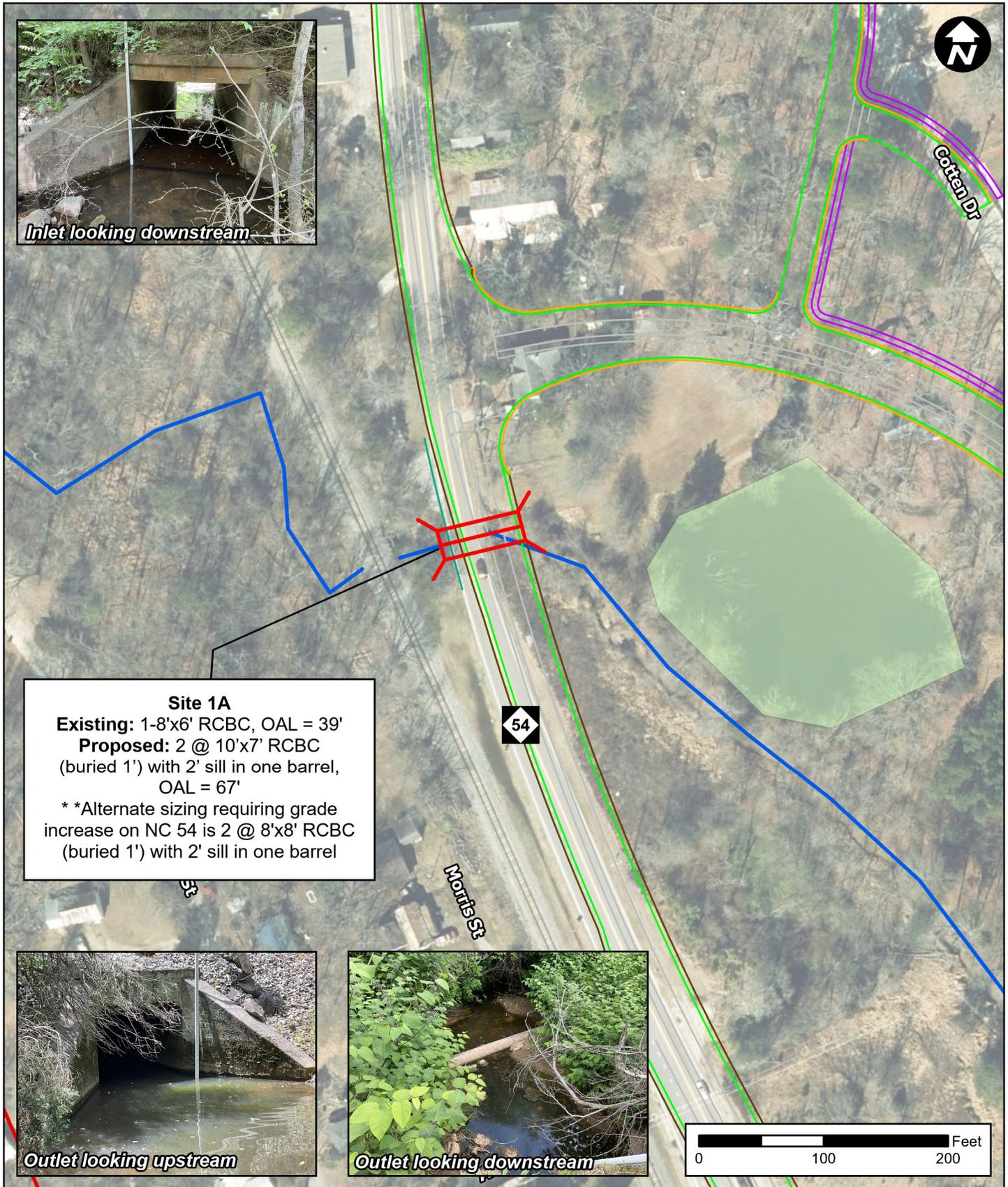
- ▭ NRTR Study Area (2024)
- ~ Potentially Jurisdictional Streams
- ▭ Potentially Jurisdictional Open Water
- ▭ Potentially Jurisdictional Wetlands
- ▭ Potentially Non-Jurisdictional Open Water

**Figure 3A - Major Hydraulic Structures Overview**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



- Proposed Drainage Structures
- Delineated Stream
- Proposed Edge of Travel
- Proposed Sidewalk/Multi-Use Path
- Curb & Gutter
- Paved Shoulder

**Figure 3B - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County

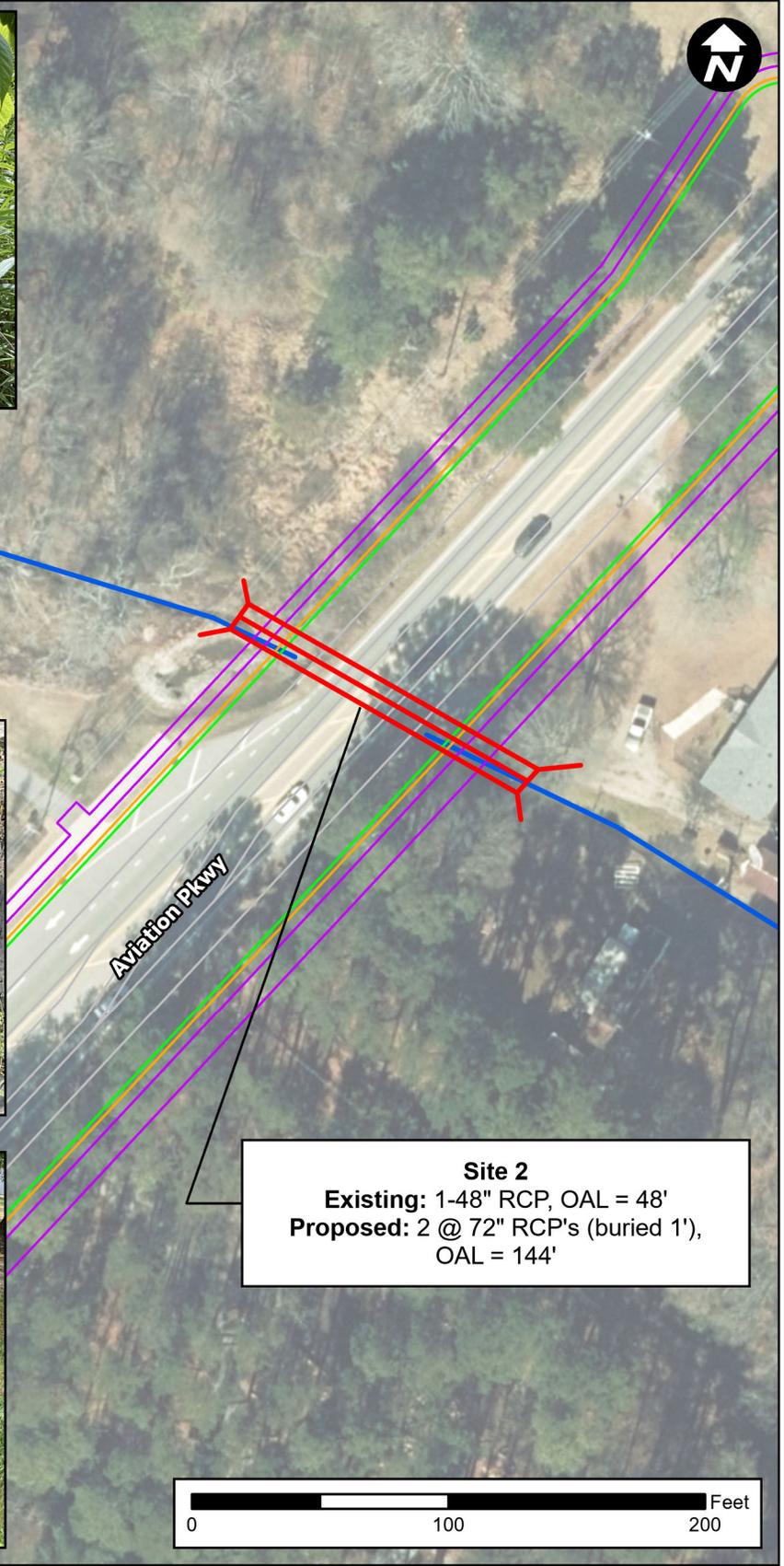
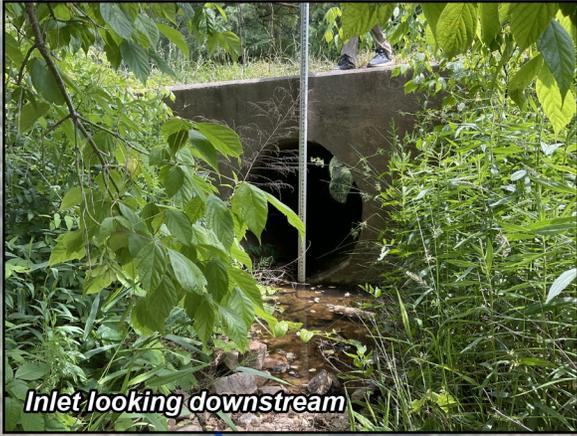


**Site 1A**  
**Existing:** 1-8'x6' RCBC, OAL = 39'  
**Proposed:** 2 @ 10'x7' RCBC  
 (buried 1') with 2' sill in one barrel,  
 OAL = 67'  
 \* \*Alternate sizing requiring grade  
 increase on NC 54 is 2 @ 8'x8' RCBC  
 (buried 1') with 2' sill in one barrel

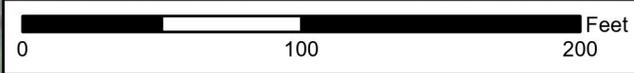


- Proposed Drainage Structures
- Delineated Stream
- Delineated Open Waters
- Proposed Edge of Travel
- Proposed Sidewalk/Multi-Use Path
- Curb & Gutter
- Paved Shoulder
- Guardrail

**Figure 3C - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



**Site 2**  
**Existing:** 1-48" RCP, OAL = 48'  
**Proposed:** 2 @ 72" RCP's (buried 1'),  
 OAL = 144'

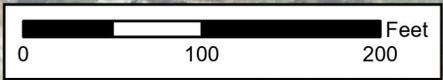


- Proposed Drainage Structures
- Delineated Stream
- Proposed Edge of Travel
- Proposed Sidewalk/Multi-Use Path
- Curb & Gutter

**Figure 3D - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



**Site 4**  
**Existing:** 2-72" RCP, OAL = 65'  
**Proposed:** 2 @ 8'x7' RCBC (buried 1'),  
 OAL = 166'

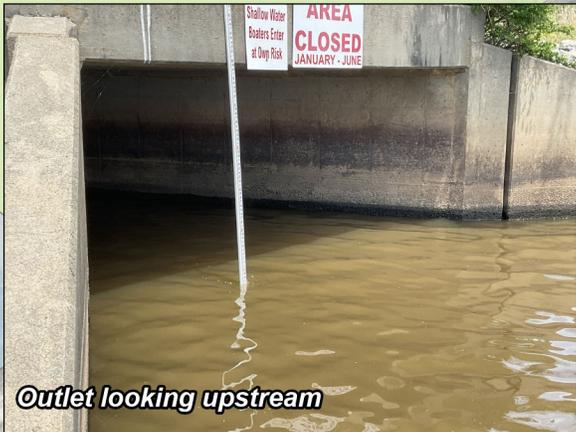


- Proposed Drainage Structures
- Delineated Stream
- Delineated Wetland
- Proposed Edge of Travel
- Proposed Sidewalk/Multi-Use Path
- Curb & Gutter

**Figure 3E - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



**Site 5**  
Existing: 1 @ 15'x14' RCBC, OAL = 79'  
Proposed: 1 @ 16'x14' RCBC, OAL = 119'

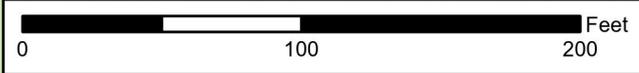


Outlet looking upstream



Outlet looking downstream

Aviation Pkwy



- Proposed Drainage Structures
- Delineated Wetland
- Delineated Open Waters
- Proposed Edge of Travel
- Proposed Sidewalk/Multi-Use Path
- Paved Shoulder

**Figure 3F - Major Hydraulic Structures**  
STIP No. U-5811  
SR 1002 (Aviation Parkway)  
Widening from NC 54 to I-40  
Morrisville/Cary, Wake County

**Appendix A**  
**Additional Merger Support Data**

## **2025 Detailed Impact Comparison for Lake Crabtree Hydraulic Opening**

<b>Resource</b>	<b>Culvert Alternative</b>	<b>Single-Span Bridge</b>	<b>Dual-Span Bridge</b>
Wetland WB	0.02 acres	0.02 acres	0.02 acres
Wetland WC	0.14 acres	0.14 acres	0.14 acres
Wetland WD	0 acres	0 acres	0 acres
Wetland WS	0.49 acres	0.52 acres	0.50 acres
Wetland WT	0.13 acres	0.13 acres	0.13 acres
Wetland WU	0.14 acres	0.14 acres	0.14 acres
Wetland WV	0.02 acres	0.02 acres	0.02 acres
<b>Wetland Total</b>	<b>0.94 acres</b>	<b>0.97 acres</b>	<b>0.95 acres</b>
Lake Crabtree	1.30 acres	1.13 acres	0.75 acres
Pond PA <sup>1</sup>	0 acres	0 acres	0 acres
<b>Open Water Total</b>	<b>1.30 acres</b>	<b>1.13 acres</b>	<b>0.75 acres</b>
Stream SB	282 lf	282 lf	282 lf
Stream SD	142 lf	142 lf	142 lf
Stream SQ	86 lf	86 lf	86 lf
Stream SP	150 lf	150 lf	150 lf
<b>Stream Total</b>	<b>660 lf</b>	<b>660 lf</b>	<b>660 lf</b>
Floodway	7.83 acres	7.69 acres	7.62 acres
100-year Floodplain <sup>2</sup>	4.94 acres	4.63 acres	4.55 acres
Park Impacts	1.61 acres	1.95 acres	1.95 acres

<sup>1</sup> Anticipated to be non-jurisdictional

<sup>2</sup> Floodplain values exclude the floodway values, which are also within the 100-year floodplain

**Appendix B**

**2025**

**CP 2A & CP 3 Concurrence Forms – *Proposed***

**Section 404/NEPA Interagency Agreement**

**Concurrence Point 2A  
Bridging Decisions and Alignment Review**

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 major hydraulic structures as part of the detailed study alternatives:**

- Site 1 – Remove and replace existing culvert with 2 @ 8' x 8' RCBC
- Site 1A – Remove and replace existing culvert with 2 @ 10' x 7' RCBC
- Site 2 – Remove and replace existing culvert with 2 @ 72" RCPs
- Site 4 – Remove and replace existing culvert with 2 @ 8' x 7' RCBC
- Site 5 - Remove and replace existing culvert with 1 @ 16' x 14' RCBC

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

**Section 404/NEPA Interagency Agreement**

**Concurrence Point 3  
Detailed Study Alternative Carried Forward**

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 select the following as the Least Environmentally Damaging Practicable Alternative:**

*Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*

- *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*
- *With a minimize 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 side*

*NCDOT recommends a culvert replacement at Lake Crabtree Causeway hydraulic opening.*

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

## **Appendix C**

**2019**

### **CP 2A Concurrence Packet and Signed Form**

**Concurrence Point 2A  
Bridging Decisions and Alignment Review**

TIP Project No. U-5811  
WBS 44384.1.1

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



**May 2019**

**Purpose of Today's Meeting:**

The purpose of this meeting is to discuss Concurrence Point 2A,  
determining bridging decisions and reviewing the alignment

# 1. Introduction and Project Overview

## 1.1 Meeting Purpose

The North Carolina Department of Transportation (NCDOT) proposes to widen SR 1002 (Aviation Parkway) from NC 54 to I-40 in Wake County. The proposed project is included in the NCDOT 2018-2027 State Transportation Improvement Program (STIP) as Project U-5811.

In accordance with the National Environmental Policy Act (NEPA)/Section 404 Merger Process, NCDOT is seeking consensus from the NEPA/404 Merger Team on CP 2A – Bridging Decisions and Alignment Review.

## 1.2 Project Description

Project U-5811 proposes to widen 2.4 miles of Aviation Parkway to a four-lane median-divided roadway with curb and gutter, including bicycle and pedestrian accommodations from NC 54 (Chapel Hill Road) in Morrisville to I-40 in Cary.

A locally administered project (U-5618) by the Town of Morrisville will widen Morrisville Carpenter Road from Davis Drive to the western North Carolina Railroad right of way, just west of NC 54. NCDOT Project I-5506 will modify the interchange of I-40 with Aviation Parkway, extending along Aviation Parkway to Gateway Centre Drive. Therefore, improvements as part of Project U-5811 are proposed to tie into the Morrisville Carpenter Road widening project just west of NC 54, and tie into the I-40 interchange project at Gateway Centre Drive.

Aviation Parkway is a major east-west route through the Town of Cary and the Town of Morrisville in Wake County. Aviation Parkway connects I-40 with downtown Morrisville, becoming Morrisville Carpenter Road west of NC 54. **Figure 1** shows the project vicinity, and **Figure 2A-C** shows the environmental and community features.

Aviation Parkway is a Minor Arterial that varies from two-lanes undivided to five-lanes undivided with a center left-turn lane at different points along the corridor. There is currently sidewalk along both sides of the road in the middle segment where businesses are located and near NC 54 where new neighborhoods have been built.

## 1.3 Schedule

- Public Meeting – May/June 2019
- C.P. 3 Meeting – July 2019
- Environmental Document – August 2019
- Right of Way Acquisition – FY 2020
- Construction – FY 2023

## 1.4 Merger Process History (Concurrence Points 1 and 2)

On March 22, 2018, the NEPA/404 Merger Team met to discuss Purpose and Need and Study Area (CP 1) and Detailed Study Alternatives (CP 2), for the referenced project. The Merger Team agreed to the following:

### Purpose and Need

*The primary purpose of this project is to reduce congestion on Aviation Parkway in order to improve the LOS in the design year (2040) peak hours along the corridor and at signalized intersections. A secondary benefit of this project is to improve east-west mobility through Morrisville and to I-40 and I-540/NC 540.*

### Study Area Defined

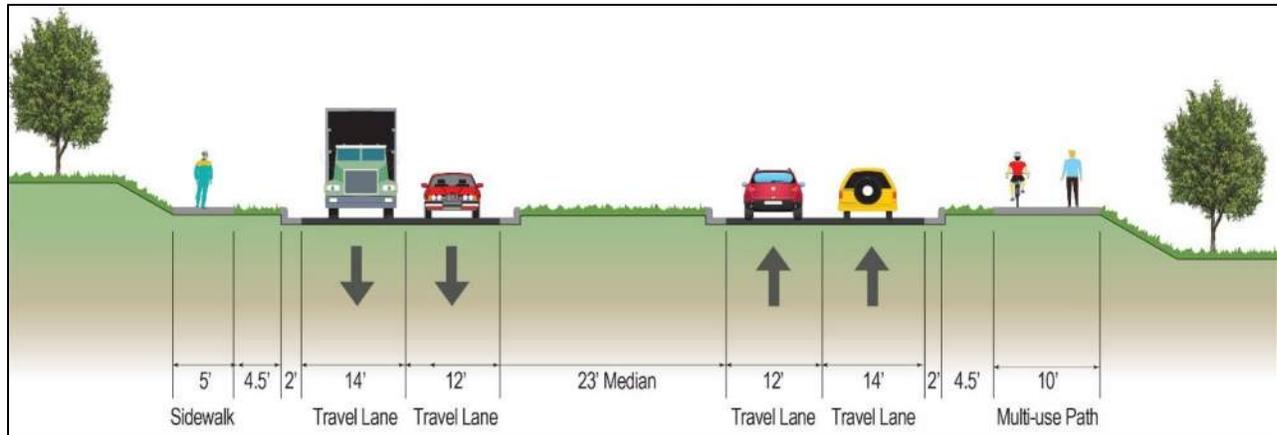
*The proposed study area is a 1,000-foot wide corridor, 500 feet on either side of the Aviation Parkway centerline, with a wider area around the NC 54 intersection, as shown on **Figure 1**.*

## Detailed Study Alternatives Carried Forward

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
- *No Build Alternative: Aviation Parkway would remain in its current condition.*

The proposed typical section for Aviation Parkway includes wide 14-foot outside lanes to accommodate bicycles, 12-foot inside lanes, a 23-foot median, a 5-foot sidewalk on the west side of the roadway, a 10-foot multi-use path on the east side of the roadway, and curb and gutter for approximately 1.4 miles. This can be seen in the figure below.

*Proposed Aviation Parkway Typical Section*

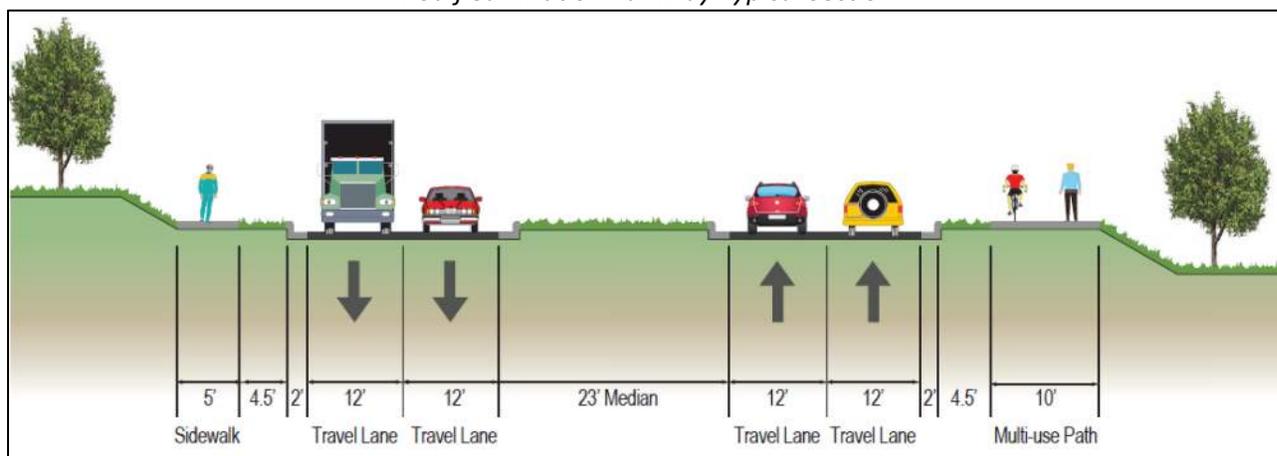


## 2. Design Updates

### 2.1 Typical Section

The typical section for Aviation Parkway has been modified to narrow the outside lanes from 14 feet to 12 feet, which is consistent with current NCDOT guidance for roads with a multi-use path.

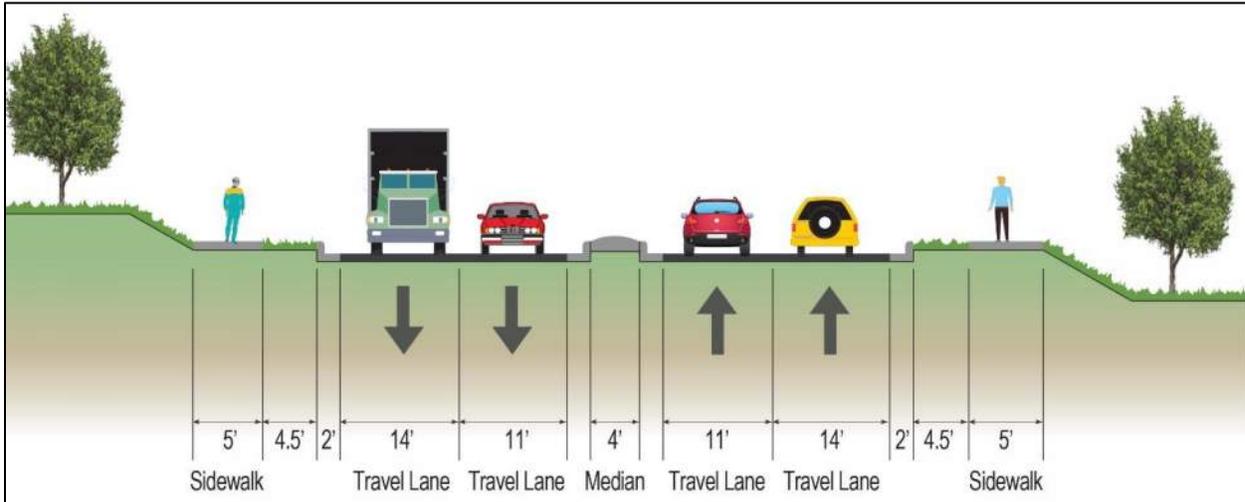
*Modified Aviation Parkway Typical Section*



## 2.2 NC 54/Railroad Crossing

The intersection of Aviation Parkway and NC 54 has undergone additional evaluation since CP 2. Due to the proximity of the railroad, NCDOT proposes to shift NC 54 approximately 20 feet to the east at the Aviation Parkway crossing to create a greater distance between the road and railroad. This typical section is included for approximately 0.2 miles and matches the typical section included in the Morrisville-Carpenter Road widening project.

*Modified Aviation Parkway Typical Section Across NC 54 and the Railroad*



In addition, trucks will be restricted from turning right across the railroad, the existing southbound right-turn slip lane will be removed, and all left turns will be restricted at the NC 54/Aviation Parkway intersection, instead redirected to a quadrant left loop. Two loop options were evaluated:

- **Option A** proposes to convert the existing intersection into a quadrant left intersection with the loop in the northeast quadrant of the intersection.
- **Option B** proposes to convert the existing intersection to a quadrant left intersection with the loop in the southeast quadrant of the intersection.

Both options would operate at LOS E by 2040 but have been carried forward for further analysis as interim solutions. It is assumed that a long-term solution will be studied as a separate project, which may include shifting and widening NC 54 and/or building a grade separation across the railroad. In the interim, restricting left turns at the NC 54/Aviation Parkway intersection improves safety and reduces lanes across the railroad.

## 2.3 Lake Crabtree Causeway

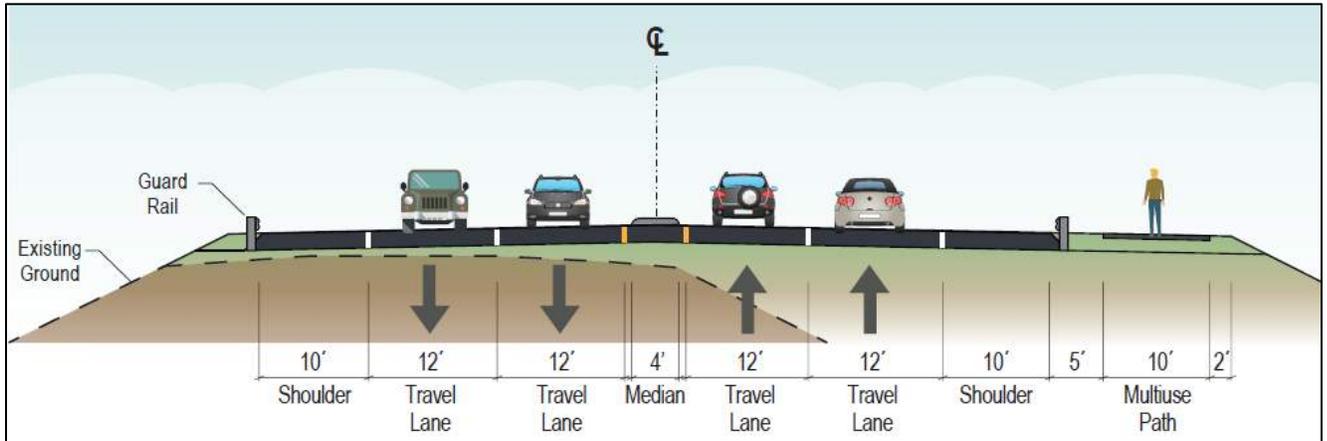
Lake Crabtree has a PCB fish tissue advisory and is listed on the 2016 Final 303(d) list as a poor benthic community. Additionally, it is a designated flood-control facility – any fill placed in Lake Crabtree will require compensatory flood storage mitigation within the flood pool at the same elevation that was filled.

NCDOT proposes a modified typical section across Lake Crabtree that would minimize the footprint while maintaining consistency with the Town of Cary's master plan. The proposed typical section includes two 12-foot travel lanes with 10-foot paved shoulders on each side and a 4-foot concrete island for approximately 0.5 miles. Additionally, a five-foot planting strip and a 10-foot multi-use path is proposed on the south side.

This design also modifies the shoulder to address drainage across the causeway. This includes paving the full shoulder width to the guardrail, selecting a cross-slope to help the water drain more quickly away from

the lanes, and adding a vertical crest curve to reduce potential ponding. The revised typical section over the causeway is shown below.

*Modified Aviation Parkway Typical Section Across Lake Crabtree Causeway*



### 3. Concurrence Point 2A – Bridging Decisions and Alignment Review

**Table 1** summarizes the proposed major drainage structures. In addition, the existing causeway across Lake Crabtree is recommended to be widened. Refer to **Figures 2A-2G** for proposed hydraulic structures.

**Table 1. Proposed Major Drainage Structures**

Site #	Stream ID #	Name	Existing Structure	Proposed Structure	Stream Classification	Intermittent / Perennial	Channel Width	Proposed Stream / Wetland / Open Water Impacts <sup>a</sup>	FEMA
1	SB	Morrisville Tributary	3-60" RCP, 60'	2 @ 8'x8' RCBC with 2' sill (buried 1'), 160'	C; NSW	Perennial	Varies from 5-8 ft	135 lf	Yes
1A <sup>1</sup>	SB	Morrisville Tributary	1-6' x 6.5' RCBC	2 @ 10'x7' RCBC (buried 1') with 2' sill in one barrel*, 39'	C; NSW	Perennial	Varies from 8-17 ft	115 lf	Yes
1B <sup>1</sup>	SB	Morrisville Tributary	N/A	2 @ 8'x8' RCBC (buried 1') with 2' sill in one barrel	C; NSW	Perennial	Varies from 8-10 ft	165 lf	Yes
1C <sup>2</sup>	SB	Morrisville Tributary	N/A	2 @ 8'x8' RCBC (buried 1') with 2' sill	C; NSW	Perennial	Varies from 5-8 ft	310 lf	Yes
2	SD	Unnamed Tributary to Crabtree Creek	1-48" RCP, 48'	2 @ 72" RCPs (buried 1'), 144'	C; NSW	Perennial / Intermittent	Varies from 2-8 ft	140 lf	No
4	SP	Unnamed Tributary to Crabtree Creek	2-72" RCP, 65'	2 @ 8'x7' RCBC (buried 1'), 166'	C; NSW	Perennial	Varies from 6-13 ft <sup>3</sup>	155 lf	No
5	Lake Crabtree	Stirrup Iron Creek	1 @ 15' x 14' RCBC, 79'	Extend outlet approx. 49 LF, 128'	B; NSW	Perennial	N/A	1.2 ac / 1.5 ac	Yes

<sup>1</sup> Only required in Option A (scour holes present upstream and downstream of site)

<sup>2</sup> Only required in Option B (includes 160 feet for the proposed culvert and 150 feet of stream channel realignment)

<sup>3</sup> Scour hole present at outlet of existing culvert (approximately 35-ft wide)

<sup>a</sup> Stream impacts are measured from openings of existing culvert to 25' beyond slope stakes. No wetland impacts are anticipated.

\*Note that this is one of two options presented for Site 1A. This option is shown because there is no change to the existing roadway grade required. Alternate sizing with one grade increase would be 2 @ 8' x 8' RCBC (buried 1') with 2' sill in one barrel.

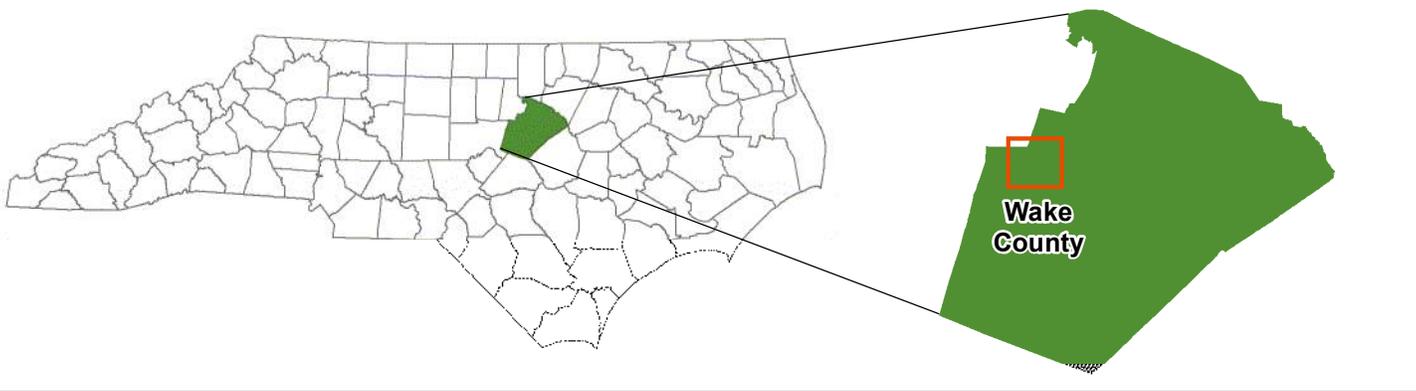
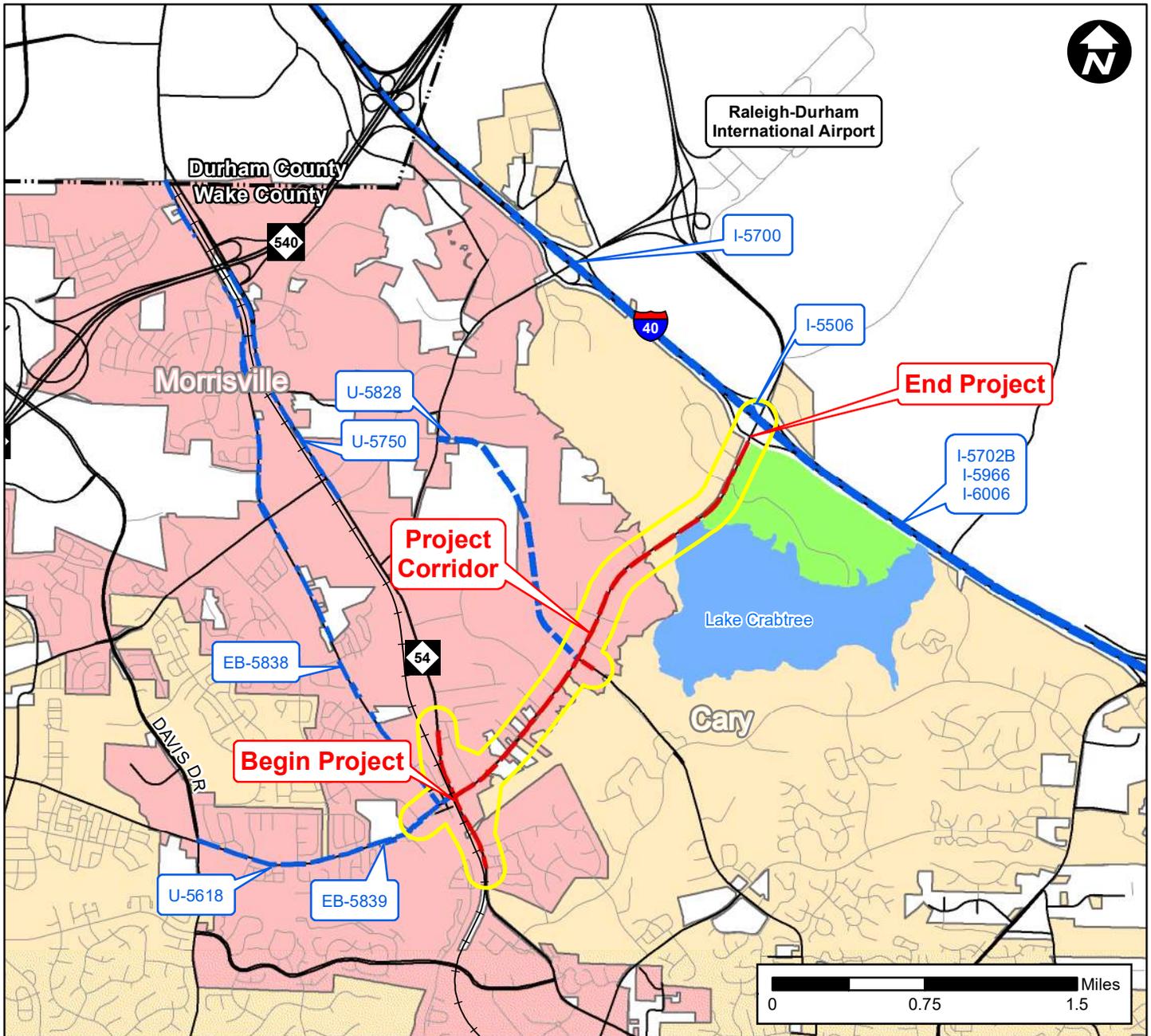
RCP – Reinforced Concrete Pipe; RCBC – Reinforced Concrete Box Culvert

C – Aquatic life, secondary recreation, fresh water; B – All Class C uses in addition to primary recreation, fresh water

NSW – Nutrient Sensitive Waters

## **Figures**

**Figure 1: Project Vicinity**  
**Figures 2A-2G: Major Hydraulic Structures**  
**Figure 3A-3C: Environmental Features Map**





 Project Study Area	 Lake Crabtree County Park
 Project Limits	 Town of Cary
 Adjacent STIP Project	 Town of Morrisville
 Railroad	

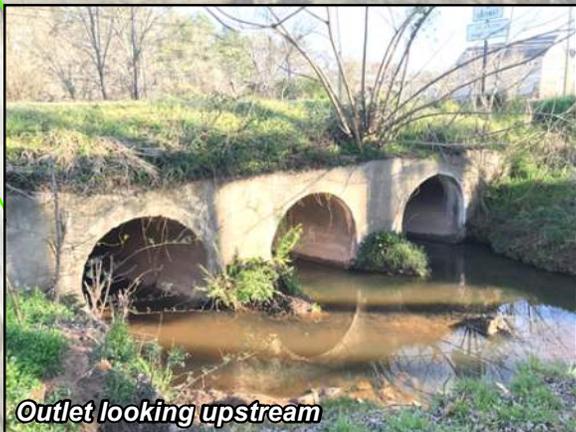
**Figure 1 - Project Vicinity**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



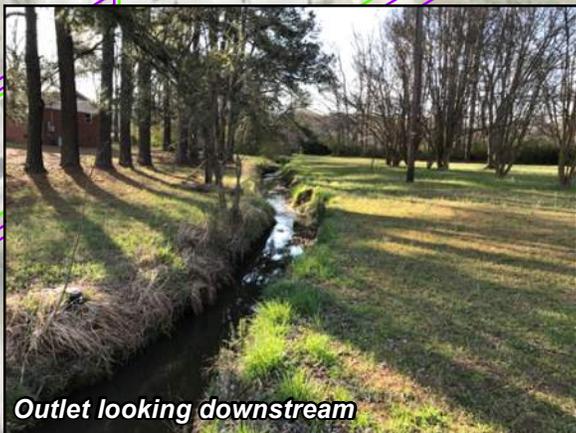
*Inlet looking downstream*



*Inlet looking upstream*

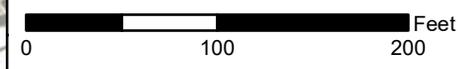


*Outlet looking upstream*



*Outlet looking downstream*

**Site 1**  
**Existing:** 3-60" RCP, 60'  
**Proposed:** 2@ 8'x8' RCBC with 2' sill (buried 1'), 160'



- Proposed Sidewalk / Multi-Use Path
- Proposed Edge of Travel
- Proposed Drainage Structure
- Delineated Stream

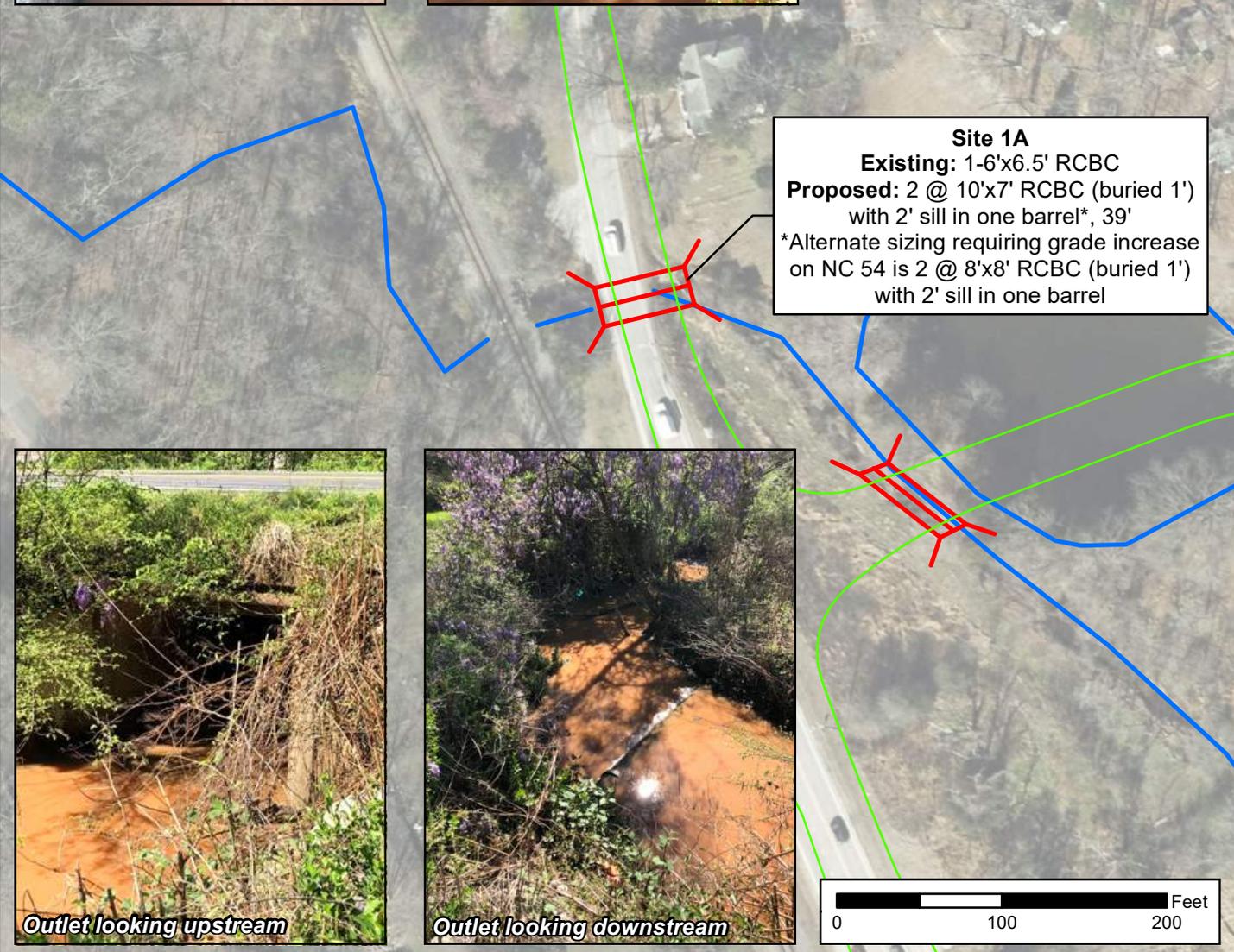
**Figure 2A - Major Hydraulic Structures**  
STIP No. U-5811  
SR 1002 (Aviation Parkway)  
Widening from NC 54 to I-40  
Morrisville/Cary, Wake County



*Inlet looking downstream*



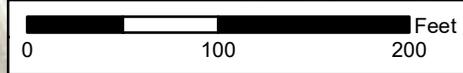
*Inlet looking upstream*



*Outlet looking upstream*



*Outlet looking downstream*



- Proposed Edge of Travel
- Proposed Drainage Structure
- Delineated Stream

**Figure 2B - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County

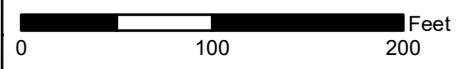


Looking upstream



Looking downstream

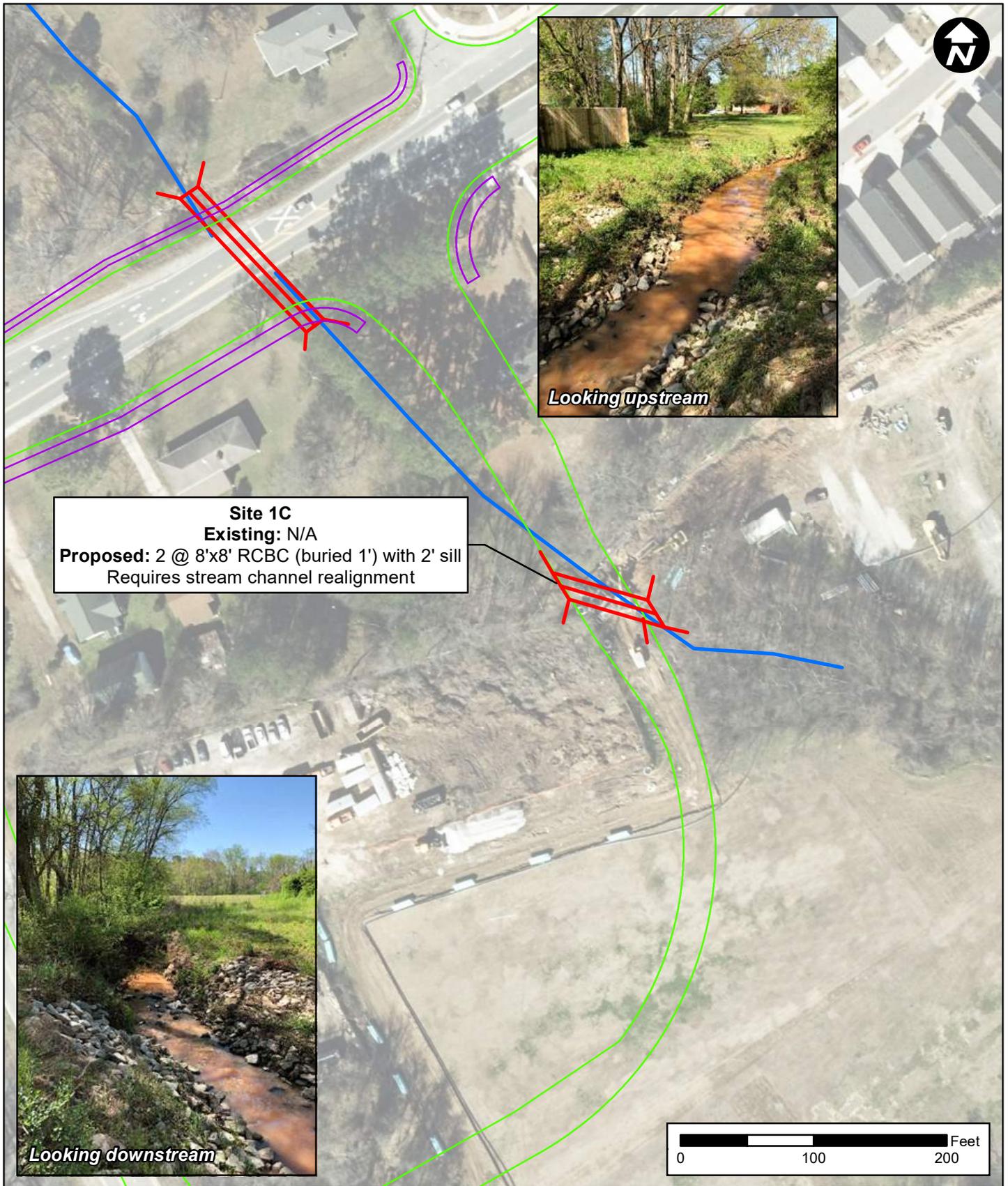
**Site 1B**  
**Existing:** N/A  
**Proposed:** 2 @ 8'x8' RCBC (buried 1')  
with 2' sill in one barrel



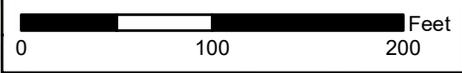
- Proposed Edge of Travel
- Proposed Drainage Structure
- Delineated Stream



**Figure 2C - Major Hydraulic Structures**  
STIP No. U-5811  
SR 1002 (Aviation Parkway)  
Widening from NC 54 to I-40  
Morrisville/Cary, Wake County

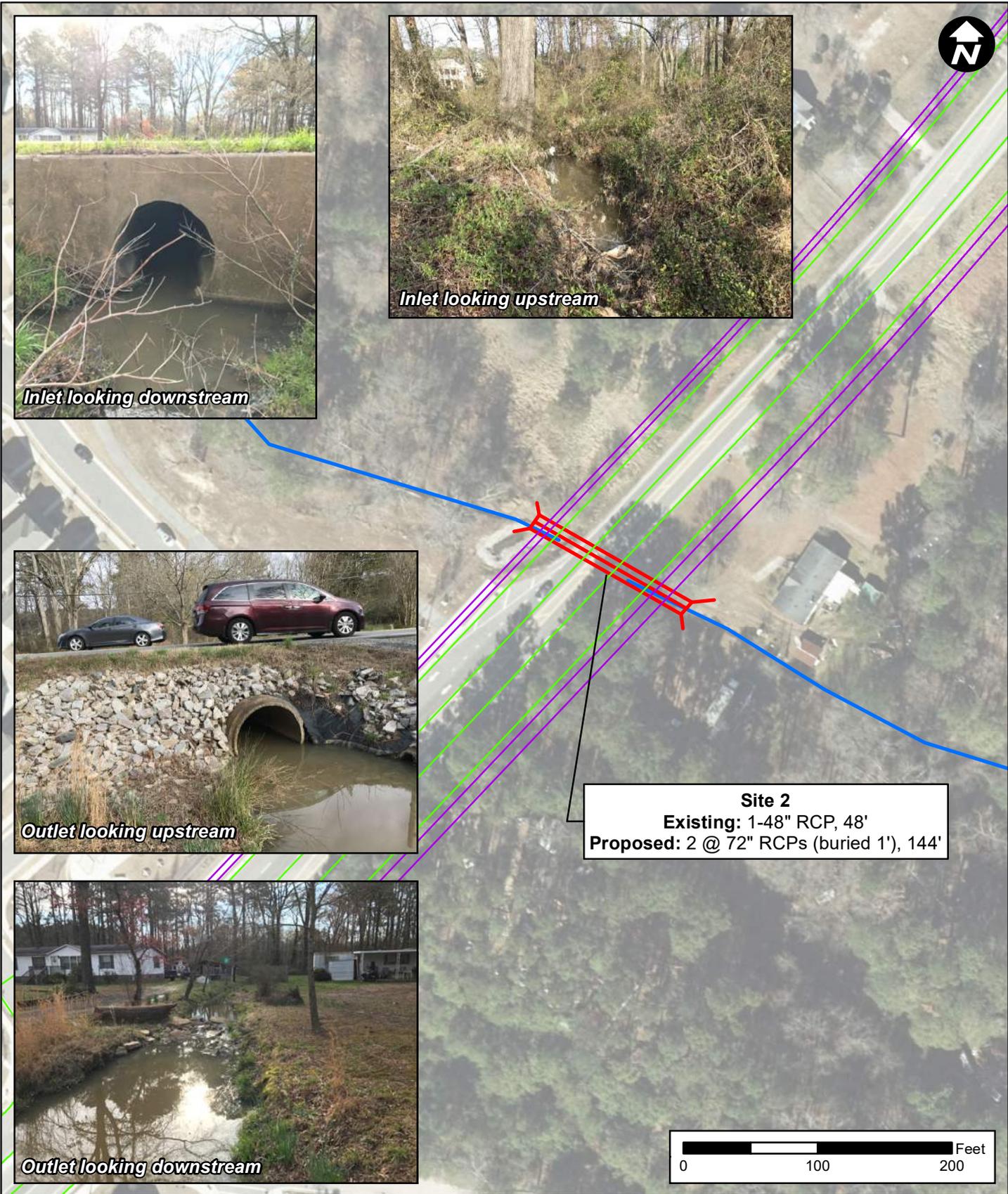


**Site 1C**  
**Existing: N/A**  
**Proposed: 2 @ 8'x8' RCBC (buried 1') with 2' sill**  
**Requires stream channel realignment**



- Proposed Sidewalk / Multi-Use Path
- Proposed Edge of Travel
- Proposed Drainage Structure
- Delineated Stream

**Figure 2D - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



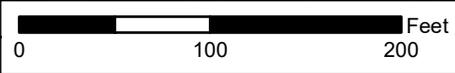
*Inlet looking downstream*

*Inlet looking upstream*

*Outlet looking upstream*

*Outlet looking downstream*

**Site 2**  
**Existing:** 1-48" RCP, 48'  
**Proposed:** 2 @ 72" RCPs (buried 1'), 144'



- Proposed Sidewalk / Multi-Use Path
- Proposed Edge of Travel
- Proposed Drainage Structure
- Delineated Stream

**Figure 2E - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



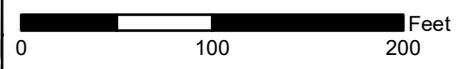
*Inlet looking downstream*

*Inlet looking upstream*

*Outlet looking upstream*

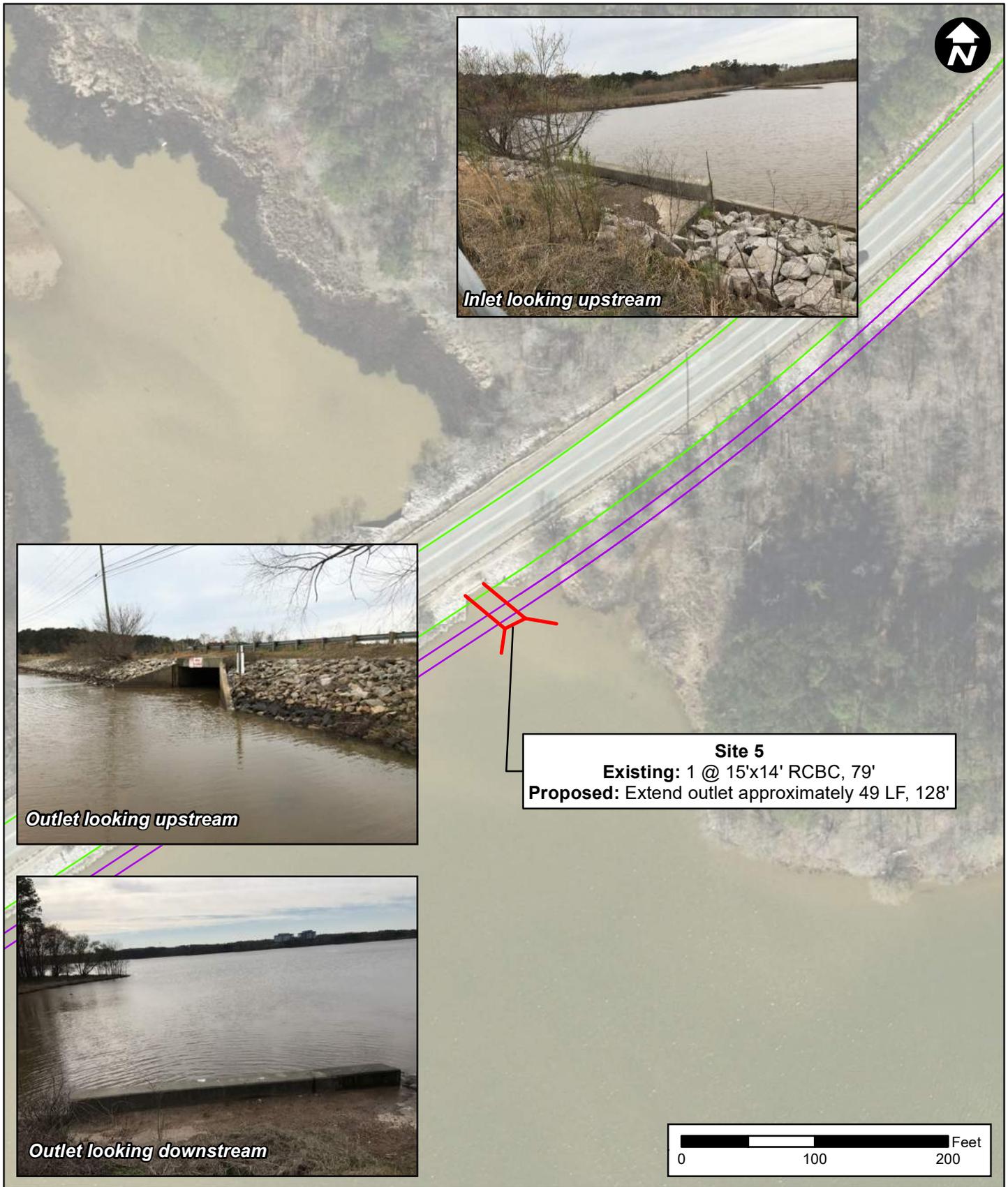
*Outlet looking downstream*

**Site 4**  
**Existing:** 2-72" RCP, 65'  
**Proposed:** 2 @ 8'x7' RCBC (buried 1'), 166'



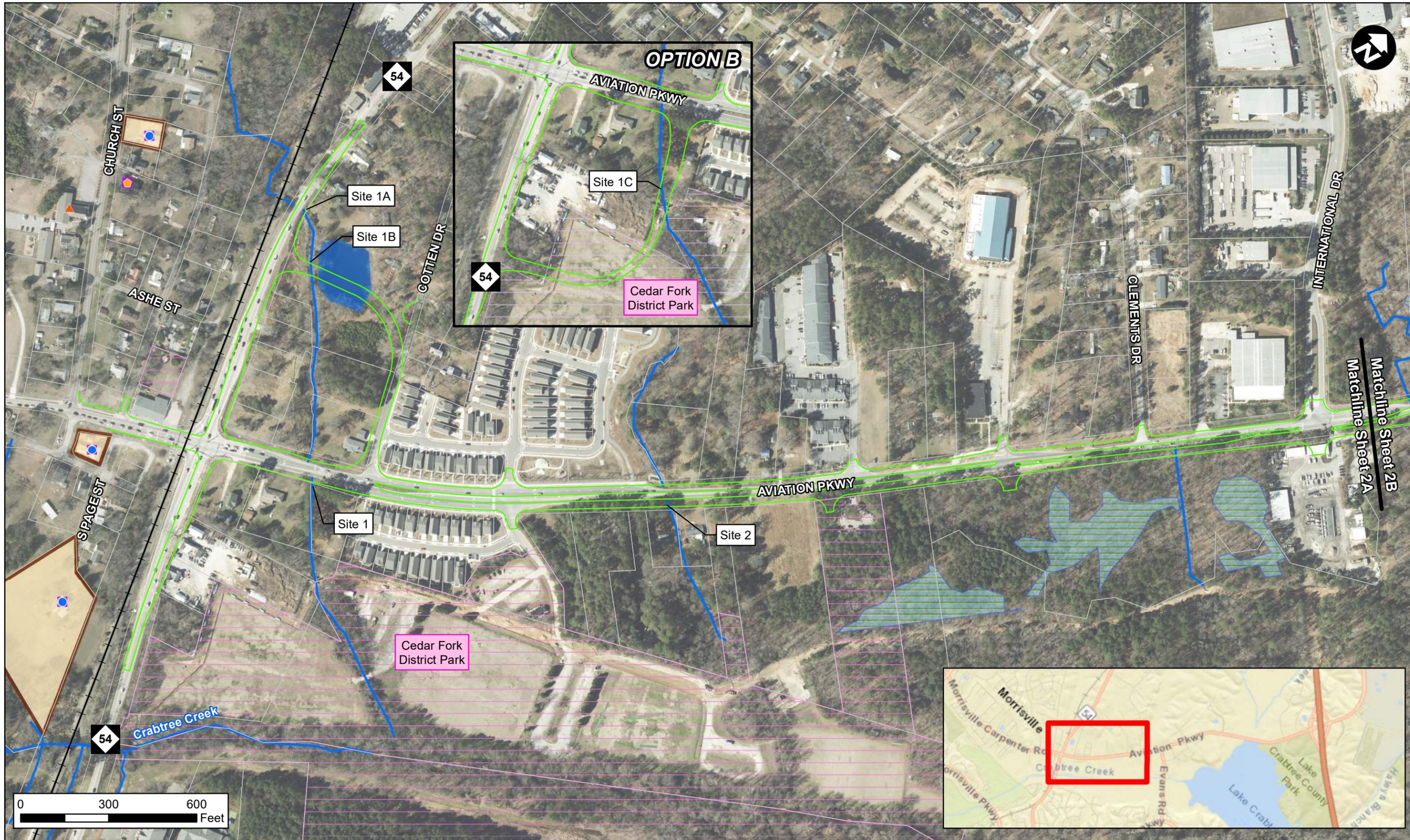
- Proposed Sidewalk / Multi-Use Path
- Proposed Edge of Travel
- Proposed Drainage Structure
- Delineated Stream

**Figure 2F - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



- Proposed Sidewalk / Multi-Use Path
- Proposed Edge of Travel
- Proposed Drainage Structure

**Figure 2G - Major Hydraulic Structures**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



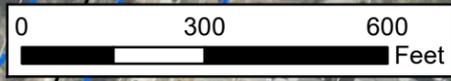
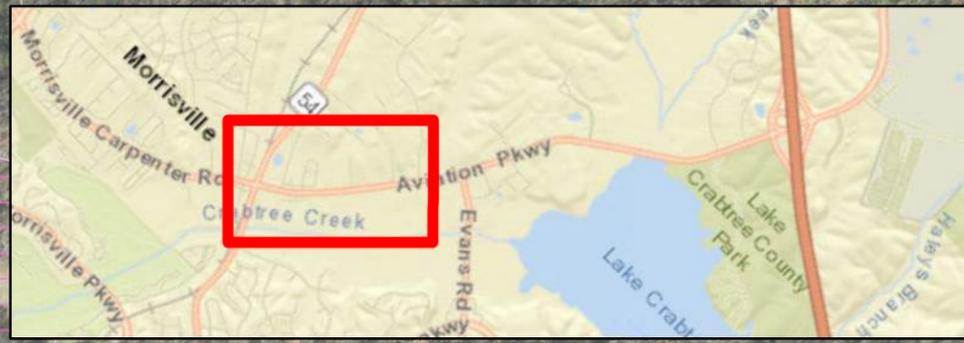
**OPTION B**

AVIATION PKWY

Site 1C

Cedar Fork District Park

54



Parcel Boundary	Delineated Stream	Park	Surveyed, Local Landmark
Proposed Edge of Travel	Delineated Wetland	National Register and Local Landmark	National Register Boundary
Railroad	Pond/Open Water	Determined Eligible for National Register	

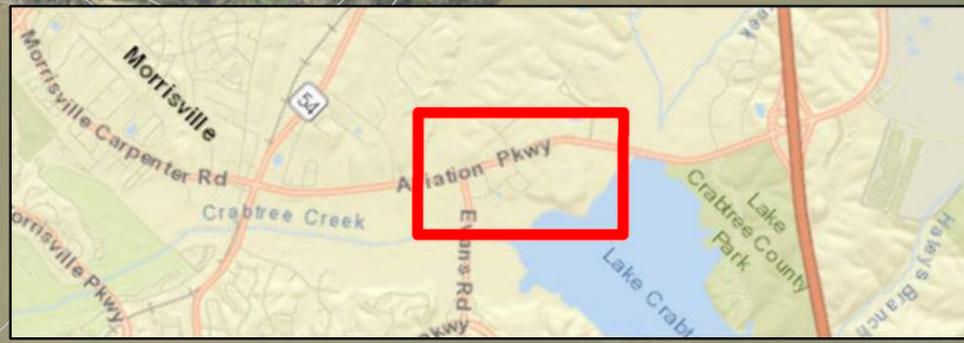
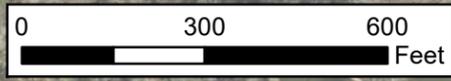
**Aviation Parkway Widening**  
From NC 54 to I-40 in Wake County

**Environmental Features Map**

**Figure 3A**

U-5811

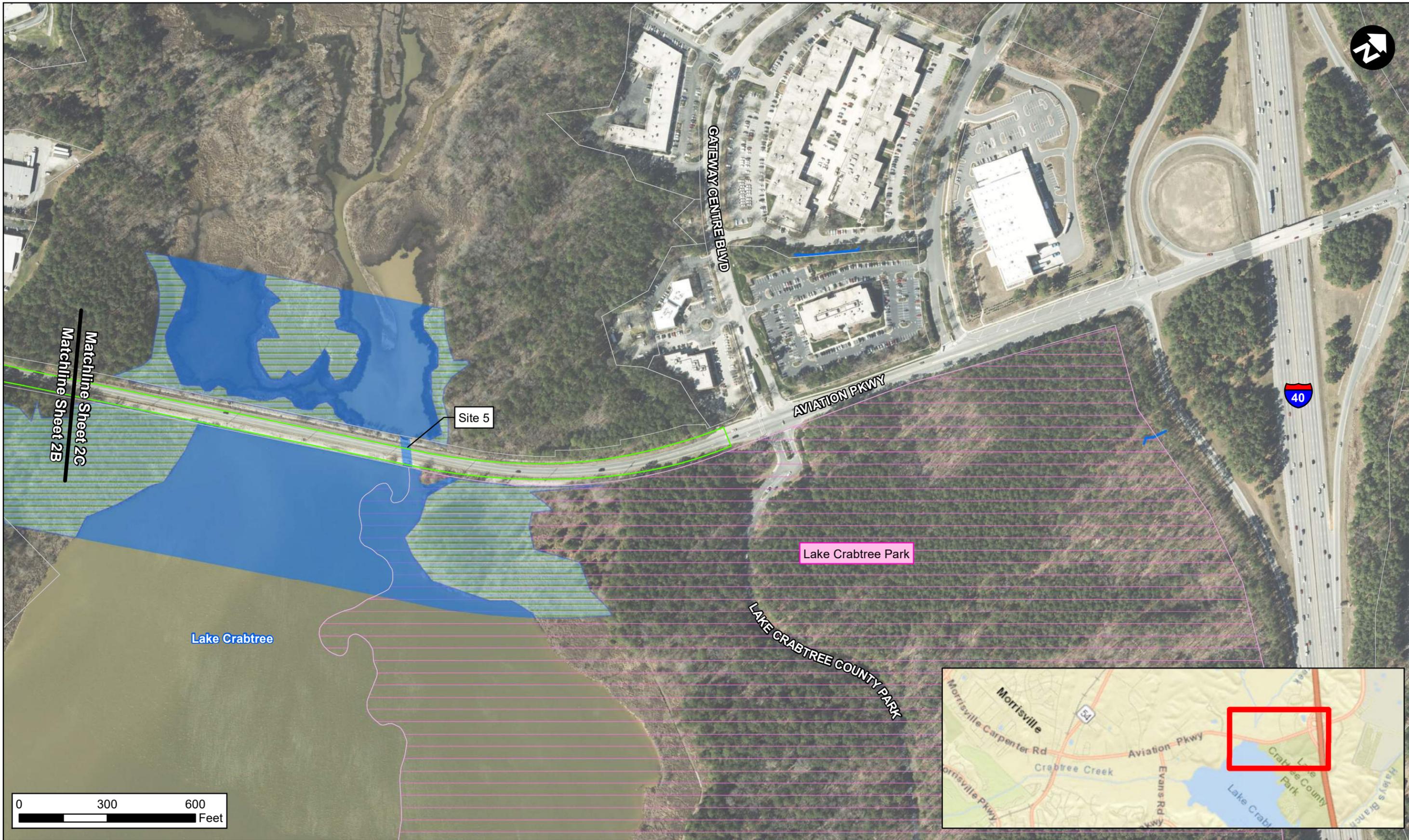
Division 5



- Parcel Boundary
- Proposed Edge of Travel
- Delineated Stream
- Delineated Wetland
- Pond/Open Water

**Aviation Parkway  
Widening**  
From NC 54 to I-40 in Wake County

<b>Environmental Features Map</b>	
<b>Figure 3B</b>	U-5811
Division 5	



-  Parcel Boundary
-  Delineated Wetland
-  Proposed Edge of Travel
-  Pond/Open Water
-  Delineated Stream
-  Park

**Aviation Parkway  
Widening**  
From NC 54 to I-40 in Wake County

**Environmental Features Map**

**Figure 3C**

U-5811  
Division 5

## Section 404/NEPA Interagency Agreement

### Concurrence Point 2A Bridging Decisions and Alignment Review

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 major hydraulic structures as part of the detailed study alternatives:

- Site 1 – Remove and replace existing culvert with 2 @ 8’ x 8’ RCBC
- Site 1A – Remove and replace existing culvert with 2 @ 10’ x 7’ RCBC OR change roadway grade and remove and replace existing culvert with 2 @ 8’ x 8’ RCBC
- Site 1B – Install 2 @ 8’ x 8’ RCBC
- Site 1C – Install 2 @ 8’ x 8’ RCBC
- Site 2 – Remove and replace existing culvert with 2 @ 72” RCPs
- Site 4 – Remove and replace existing culvert with 2 @ 8’ x 7’ RCBC
- Site 5 – Extend existing culvert outlet

Name	Agency	Date
LASTINGER.JAMES.C.136 3642400 <small>Digitally signed by LASTINGER.JAMES.C.1363642400 Date: 2019.06.13 06:55:37 -04'00'</small>	USACE	
<small>DocuSigned by:</small> <i>Amanetta Somerville</i> <small>4A37089ED457408...</small>	USEPA	6/13/2019
<small>DocuSigned by:</small> <i>Gary Jordan</i> <small>801B9AD677C42452...</small>	USFWS	6/13/2019
<small>DocuSigned by:</small> <i>Timothy Beard</i> <small>A415A20B3A42431...</small>	USDA - NRCS	6/21/2019
<small>DocuSigned by:</small> <i>Robert Ridinger</i> <small>80ECA32C7C38490...</small>	NCDWR	6/14/2019
<small>DocuSigned by:</small> <i>April Annis</i> <small>F816D1B972B34C0...</small>	NCDOT	6/13/2019
<small>DocuSigned by:</small> <i>Renee Gledhill-Earley</i> <small>C26A1556A275464...</small>	NCSHPO	6/13/2019
<small>DocuSigned by:</small> <i>Travis Wilson</i> <small>31585D0B682E436...</small>	NCWRC	6/14/2019
<small>DocuSigned by:</small> <i>Chris Lukasina</i> <small>7BA5AEB0438D45D...</small>	CAMPO	6/24/2019

**Appendix D**  
**2019**  
**CP 3 Concurrence Packet and Signed Form**

**Concurrence Point 3**  
**Least Environmentally Damaging Practicable Alternative (LEDPA)**

TIP Project No. U-5811  
WBS 44384.1.1

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



**July 2019**

NCDOT Project Manager: April Annis, Project Management Unit  
Consultant Project Manager: Teresa Gresham, Kimley-Horn

**Purpose of Today's Meeting:**

The purpose of this meeting is to discuss Concurrence Point 3,  
selecting the LEDPA

# 1. Introduction and Project Overview

## 1.1 Meeting Purpose

The North Carolina Department of Transportation (NCDOT) proposes to widen SR 1002 (Aviation Parkway) from NC 54 to I-40 in Wake County. The proposed project is included in the NCDOT 2018-2027 State Transportation Improvement Program (STIP) as Project U-5811.

In accordance with the National Environmental Policy Act (NEPA)/Section 404 Merger Process, NCDOT is seeking consensus from the NEPA/404 Merger Team on CP 3 – Least Environmentally Damaging Practicable Alternative.

## 1.2 Project Description

Project U-5811 proposes to widen 2.4 miles of Aviation Parkway to a four-lane median-divided roadway with curb and gutter, including bicycle and pedestrian accommodations from NC 54 (Chapel Hill Road) in Morrisville to I-40 in Cary.

A locally administered project (U-5618) by the Town of Morrisville will widen Morrisville Carpenter Road from Davis Drive to the western North Carolina Railroad right of way, just west of NC 54. NCDOT Project I-5506 is under construction to modify the interchange of I-40 with Aviation Parkway, extending along Aviation Parkway to Gateway Centre Drive. Therefore, improvements as part of Project U-5811 are proposed to tie into the Morrisville Carpenter Road widening project just west of NC 54, and tie into the I-40 interchange project at Gateway Centre Drive.

Aviation Parkway is a major east-west route through the Town of Cary and the Town of Morrisville in Wake County. Aviation Parkway connects I-40 with downtown Morrisville, becoming Morrisville Carpenter Road west of NC 54. **Figure 1** shows the project vicinity, and **Figure 2A-C** shows the environmental and community features.

Aviation Parkway is a Minor Arterial that varies from two-lanes undivided to five-lanes undivided with a center left-turn lane at different points along the corridor. There is currently sidewalk along both sides of the road in the middle segment where businesses are located and near NC 54 where new neighborhoods have been built.

## 1.3 Schedule

- Environmental Document – August 2019
- Right of Way Acquisition – FY 2020
- Construction – FY 2023

## 1.4 Merger Process History (Concurrence Points 1, 2, and 2A)

### **Concurrence Point 1 & 2**

On March 22, 2018, the NEPA/404 Merger Team met to discuss Purpose and Need and Study Area (CP 1) and Detailed Study Alternatives (CP 2), for the referenced project. The Merger Team agreed to the following:

### **Purpose and Need**

*The primary purpose of this project is to reduce congestion on Aviation Parkway in order to improve the LOS in the design year (2040) peak hours along the corridor and at signalized intersections. A secondary benefit of this project is to improve east-west mobility through Morrisville and to I-40 and I-540/NC 540.*

## Study Area Defined

The proposed study area is a 1,000-foot wide corridor, 500 feet on either side of the Aviation Parkway centerline, with a wider area around the NC 54 intersection, as shown on **Figure 1**.

## Detailed Study Alternatives Carried Forward

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
- *No Build Alternative: Aviation Parkway would remain in its current condition.*

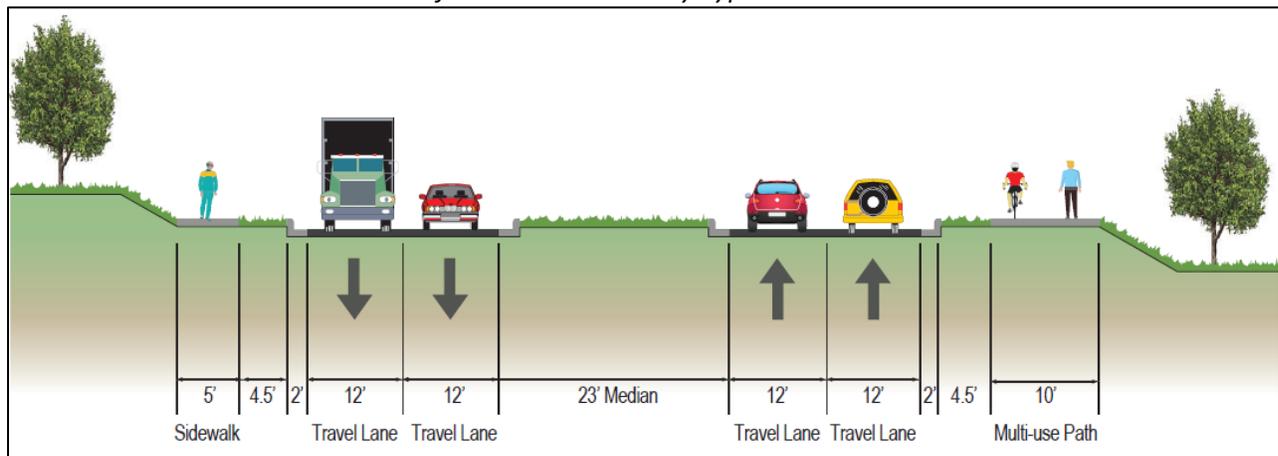
## Concurrence Point 2A

On May 8, 2019 the NEPA/404 Merger Team met to discuss Bridging Decisions and Alignment Review (CP 2A), for the referenced project. The Merger Team agreed to the following:

## Typical Section

The proposed typical section for Aviation Parkway was modified. The Aviation Parkway mainline typical section reduced the outside lanes from 14 feet to 12 feet as seen below:

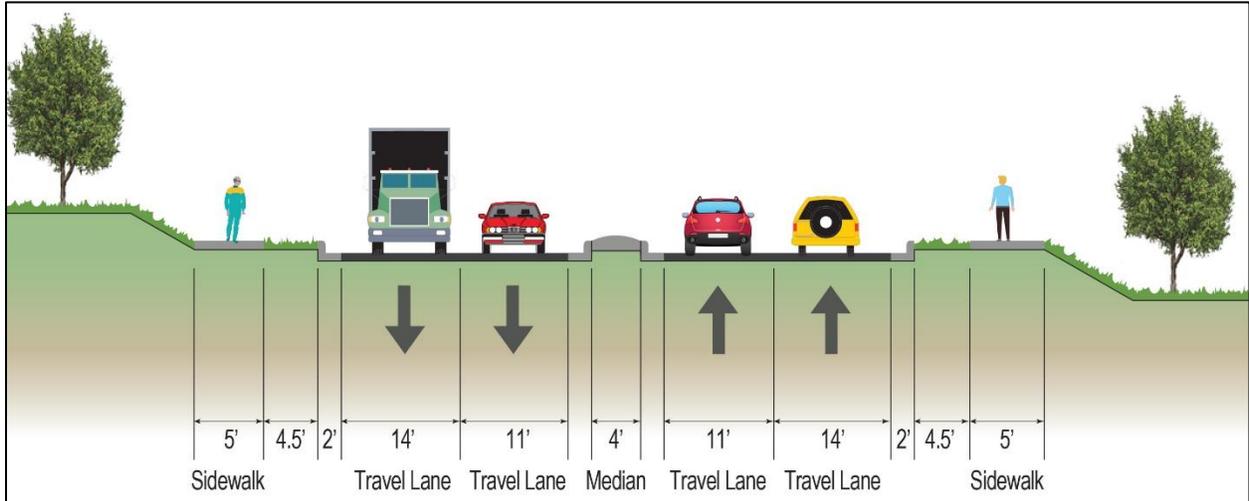
*Modified Aviation Parkway Typical Section*



## NC 54/Railroad Crossing

NC 54 was proposed to be shifted approximately 20 feet east to create greater separation with the railroad crossing. The typical section along this segment was modified to match the Morrisville-Carpenter Road widening project and minimize the roadway width across the railroad. The proposed typical section is included on the following page.

*Modified Aviation Parkway Typical Section Across NC 54 and the Railroad*



Left-turns at the intersection will be redirected to a quadrant left loop. Two loop options were evaluated:

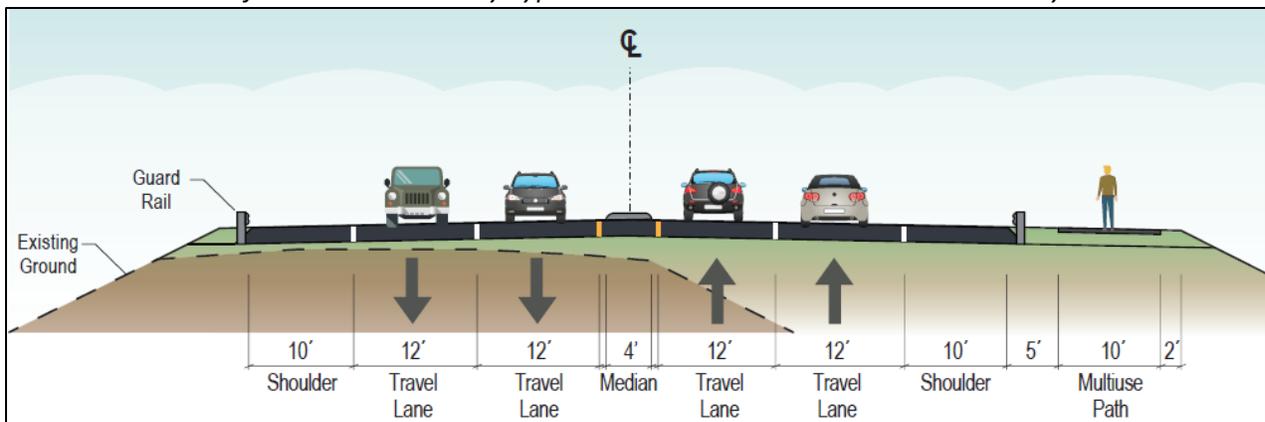
- **Option A** proposes to convert the existing intersection into a quadrant left intersection with the loop in the northeast quadrant of the intersection.
- **Option B** proposes to convert the existing intersection to a quadrant left intersection with the loop in the southeast quadrant of the intersection.

**Lake Crabtree Causeway**

A modified typical section was proposed across Lake Crabtree to minimize the footprint while maintaining consistency with the Town of Cary’s master plan. The proposed typical section includes two 12-foot travel lanes with 10-foot paved shoulders on each side and a 4-foot concrete island for approximately 0.5 miles. Additionally, a five-foot planting strip and a 10-foot multi-use path is proposed on the south side.

This design also modifies the shoulder to address drainage across the causeway. This includes paving the full shoulder width to the guardrail, selecting a cross-slope to help the water drain more quickly away from the lanes, and adding a vertical crest curve to reduce potential ponding. The revised typical section over the causeway is shown below.

*Modified Aviation Parkway Typical Section Across Lake Crabtree Causeway*



### **Major Hydraulic Structures**

- Site 1 – Remove and replace existing culvert with 2 @ 8' x 8' RCBC
- Site 1A – Remove and replace existing culvert with 2 @ 10' x 7' RCBC OR change roadway grade and remove and replace existing culvert with 2 @ 8' x 8' RCBC
- Site 1B – Install 2 @ 8' x 8' RCBC
- Site 1C – Install 2 @ 8' x 8' RCBC
- Site 2 – Remove and replace existing culvert with 2 @ 72" RCPs
- Site 4 – Remove and replace existing culvert with 2 @ 8' x 7' RCBC
- Site 5 – Extend existing culvert outlet

Site 1A would only be required with Alternative A while Sites 1B and 1C would only be required with Alternative B.

## **2. Concurrence Point 3 – Least Environmentally Damaging Practicable Alternative**

### **2.1 Public Involvement**

A Local Officials Informational Meeting was held June 5, 2019 at the Town of Morrisville Town Hall with 30 local officials in attendance representing the Towns of Morrisville and Cary, Wake County, Natural Resources Conservation Service, and NCDOT. The Town of Morrisville expressed concerns over potential impacts to Cedar Fork District Park. A public meeting was held June 12, 2019 at the Town of Morrisville Town Hall with 60 members of the public in attendance. Input from the public was generally positive regarding the project. Preference on the loop alternative was divided, with concerns over potential impacts to adjacent properties and neighborhoods.

### **2.2 Impacts**

A comparison of impacts is included in **Table 1**. Lake Crabtree and Crabtree Creek are flood-control facilities, and as such any impacts to the floodplain within an elevation of 284.9 feet will require compensatory flood storage mitigation within the flood pool at the same elevation that was filled. This mitigation may require additional impacts to jurisdictional features that is not captured below.

**Table 1: Comparison of Impacts**

Resource	Alternative A (Northern Loop)	Alternative B (Southern Loop)
Wetland WS	1.6 acres	1.6 acres
Wetland WT	0.1 acres	0.1 acres
<b>Wetland Total</b>	<b>1.7 acres</b>	<b>1.7 acres</b>
Lake Crabtree	1.7 acres	1.7 acres
Pond PA	0.6 acres	0 acres
<b>Open Water Total</b>	<b>2.3 acres</b>	<b>1.7 acres</b>
Stream SB	415 linear feet	445 linear feet
Stream SD	140 linear feet	140 linear feet
Stream SQ	85 linear feet	85 linear feet
Stream SP	155 linear feet	155 linear feet
<b>Stream Total</b>	<b>795 linear feet</b>	<b>825 linear feet</b>
Flood Control Facility*	0.6 acres	2.3 acres
Floodway	7.3 acres	7.2 acres
100-Year Floodplain	4.3 acres	5.1 acres
Park Impacts	Lake Crabtree Park – 0.9 acres	Lake Crabtree Park – 0.9 acres Cedar Fork District Park – 1.3 acres <sup>1</sup>

*Impacts were calculated using proposed slope stakes plus 25 feet of the preliminary designs*

*\*Total impacts will be re-calculated to include depth during final design*

*<sup>1</sup>Physical impacts from proposed design. Does not include loss-of-use associated with roadway.*

### 2.3 Recommended Alternative

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
  - *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*
  - *With a minimize 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 side*
- *Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection*

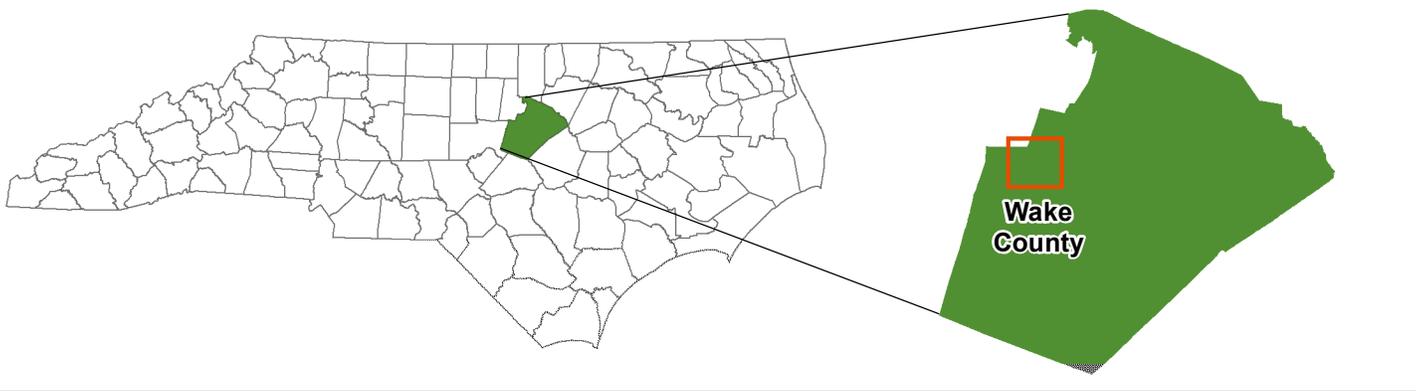
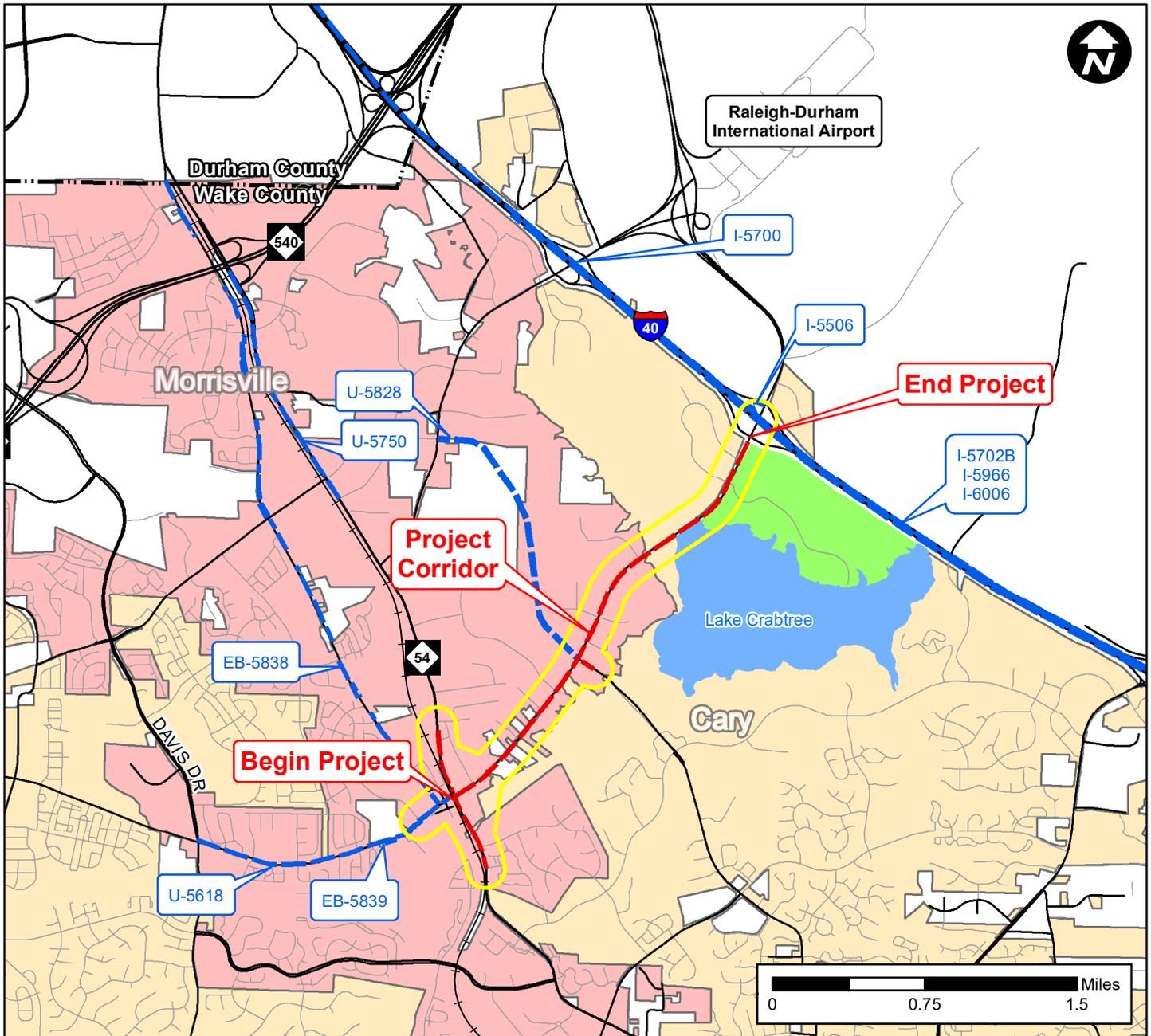
NCDOT recommends the Alternative A loop for the following reasons:

- No impacts to the flood control facility in the southeast quadrant of the intersection with NC 54
- No impacts to the Cedar Fork District Park
- Fewer anticipated stream impacts than Alternative B (795 feet vs. 825 feet) and same wetland impacts

# **Figures**

**Figure 1: Project Vicinity**

**Figure 2A-2C: Environmental Features Map**

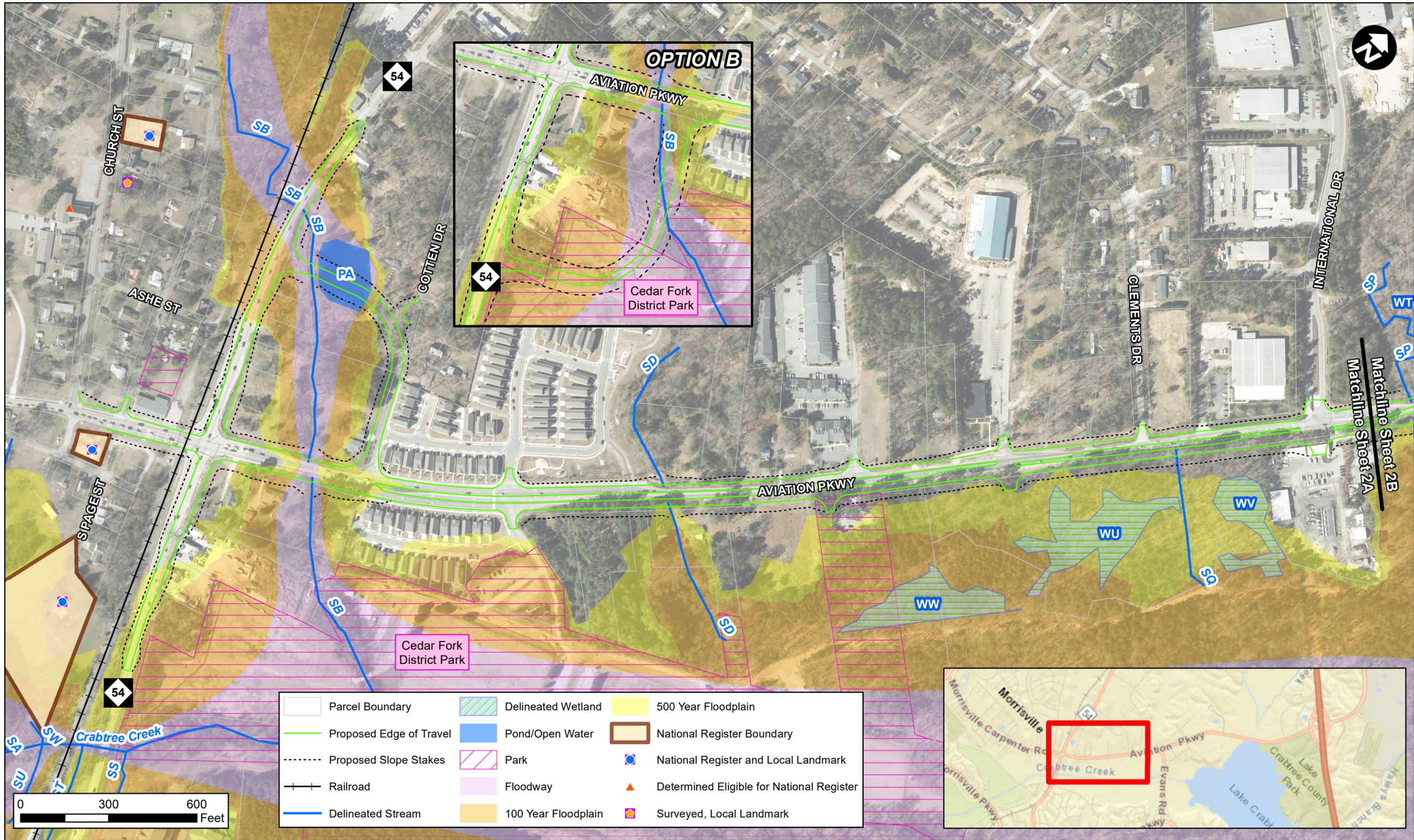




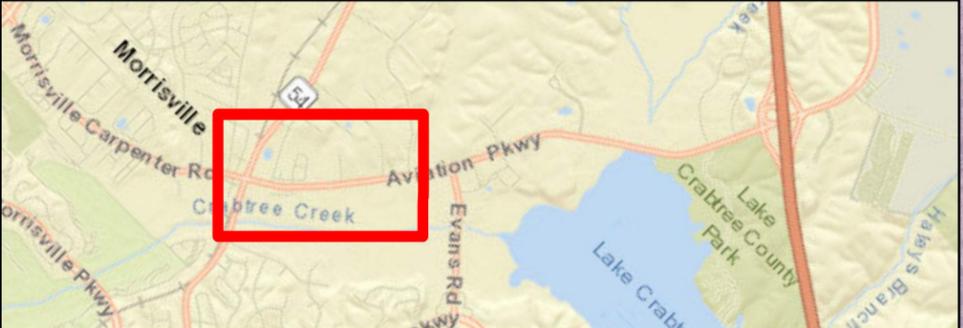
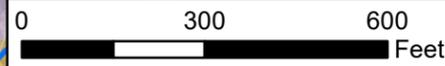
- Project Study Area
- Project Limits
- Adjacent STIP Project
- Railroad

- Lake Crabtree County Park
- Town of Cary
- Town of Morrisville

**Figure 1 - Project Vicinity**  
 STIP No. U-5811  
 SR 1002 (Aviation Parkway)  
 Widening from NC 54 to I-40  
 Morrisville/Cary, Wake County



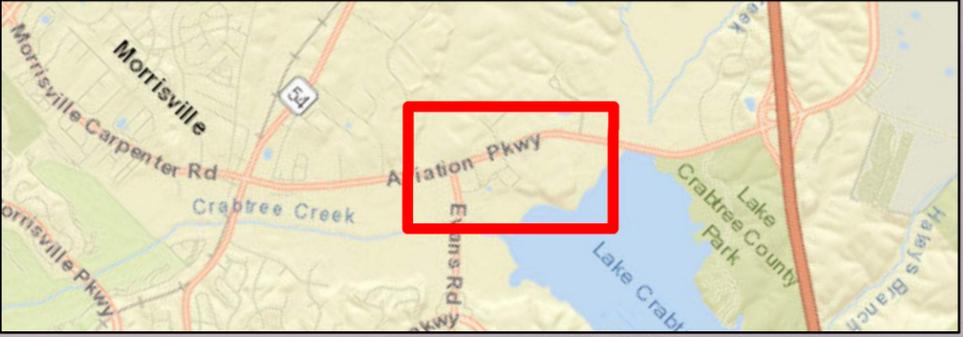
Parcel Boundary	Delineated Wetland	500 Year Floodplain
Proposed Edge of Travel	Pond/Open Water	National Register Boundary
Proposed Slope Stakes	Park	National Register and Local Landmark
Railroad	Floodway	Determined Eligible for National Register
Delineated Stream	100 Year Floodplain	Surveyed, Local Landmark



**Aviation Parkway  
Widening**  
From NC 54 to I-40 in Wake County

**Environmental Features Map**

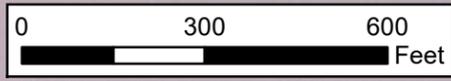
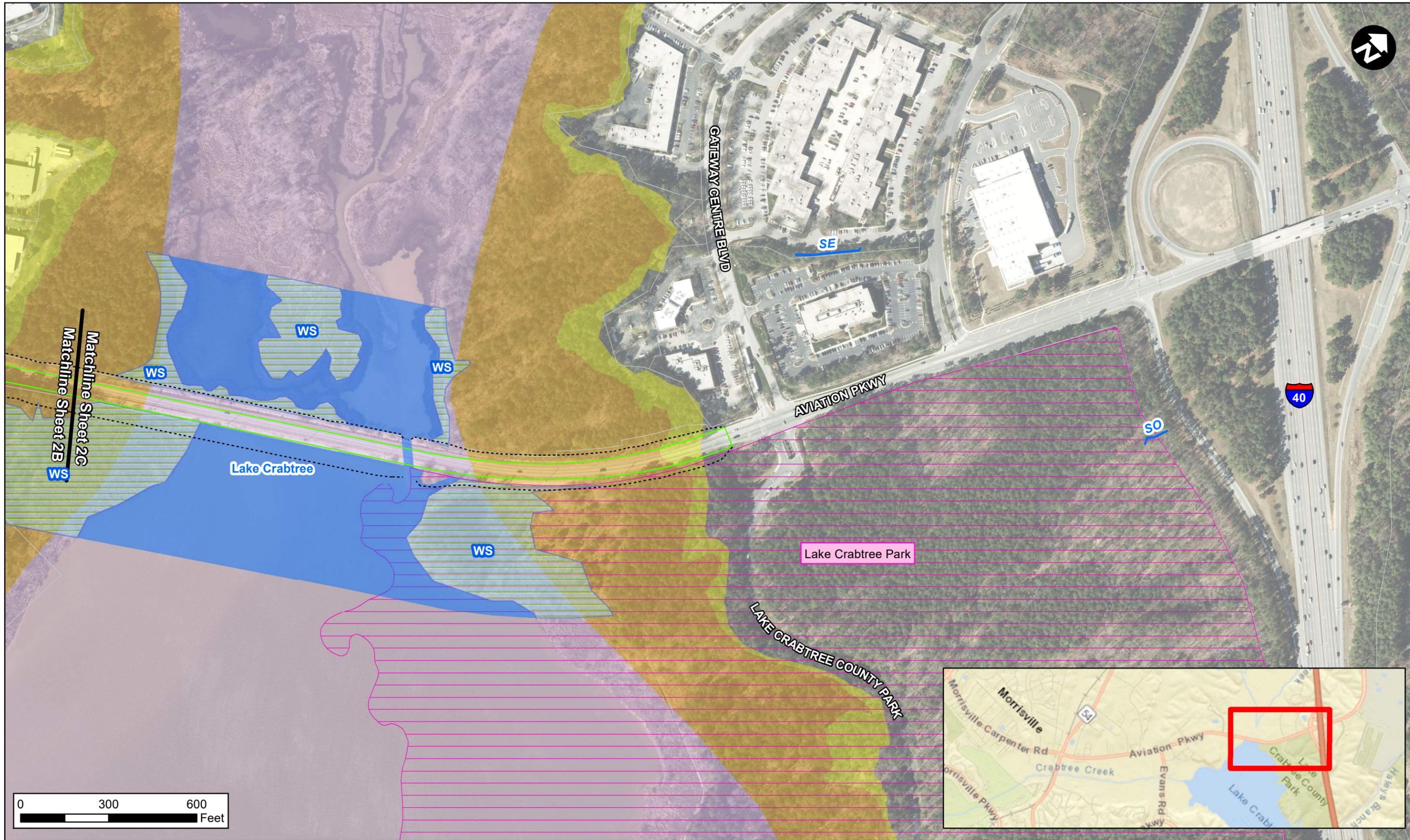
<b>Figure 2A</b>	U-5811
	Division 5



- |                         |                    |                     |
|-------------------------|--------------------|---------------------|
| Parcel Boundary         | Delineated Stream  | Floodway            |
| Proposed Edge of Travel | Delineated Wetland | 100 Year Floodplain |
| Proposed Slope Stakes   | Pond/Open Water    | 500 Year Floodplain |

**Aviation Parkway  
Widening**  
From NC 54 to I-40 in Wake County

<b>Environmental Features Map</b>	
<b>Figure 2B</b>	U-5811
	Division 5



Parcel Boundary	Delineated Stream	Park	500 Year Floodplain
Proposed Edge of Travel	Delineated Wetland	Floodway	
Proposed Slope Stakes	Pond/Open Water	100 Year Floodplain	

**Aviation Parkway Widening**  
From NC 54 to I-40 in Wake County

**Environmental Features Map**  
**Figure 2C**  
U-5811  
Division 5

**Section 404/NEPA Interagency Agreement**

**Concurrence Point 3  
Lead Environmentally Damaging Practicable Alternative**

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 select the following as the Least Environmentally Damaging Practicable Alternative:

- *Build Alternative 1: Widen Aviation Parkway to a four-lane median divided best fit section with a 23-foot median and multimodal accommodations.*
  - *With a minimized typical section across the NC 54/Railroad intersection with 11-foot inside travel lanes, 14-foot outside travel lanes, a 4-foot median, and 5-foot sidewalks on both sides*
  - *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 side*
- *Alternative A loop (northeast quadrant) at the Aviation Parkway/NC 54 intersection*

Name	Agency	Date
 DocuSigned by: Amanetta Somerville 4A37089ED457408...	USACE	7/10/19
DocuSigned by: Gary Jordan 501BAD677C42452...	USEPA	7/10/2019
DocuSigned by: Timothy Beard A60DF14B33A44CB...	USFWS	7/11/2019
 DocuSigned by: April Annis F616D1B972B34C0...	USDA - NRCS	7/11/2019
DocuSigned by: Renee Bledhill-Earley C26A1556A275464...	NCDWR	7/10/19
 DocuSigned by: Chris Lukasina 7BA5AEB438D45D...	NCDOT	7/10/2019
	NCSHPO	7/10/2019
	NCWRC	7/10/19
	CAMPO	7/26/2019