

US 1 (Capital Boulevard) Freeway Upgrade
Concurrence Point 3 (LEDPA)
STIP Project U-5307, Wake County, NC

Meeting Packet

September 13, 2023

Prepared by RS&H, Inc. at the direction of NCDOT

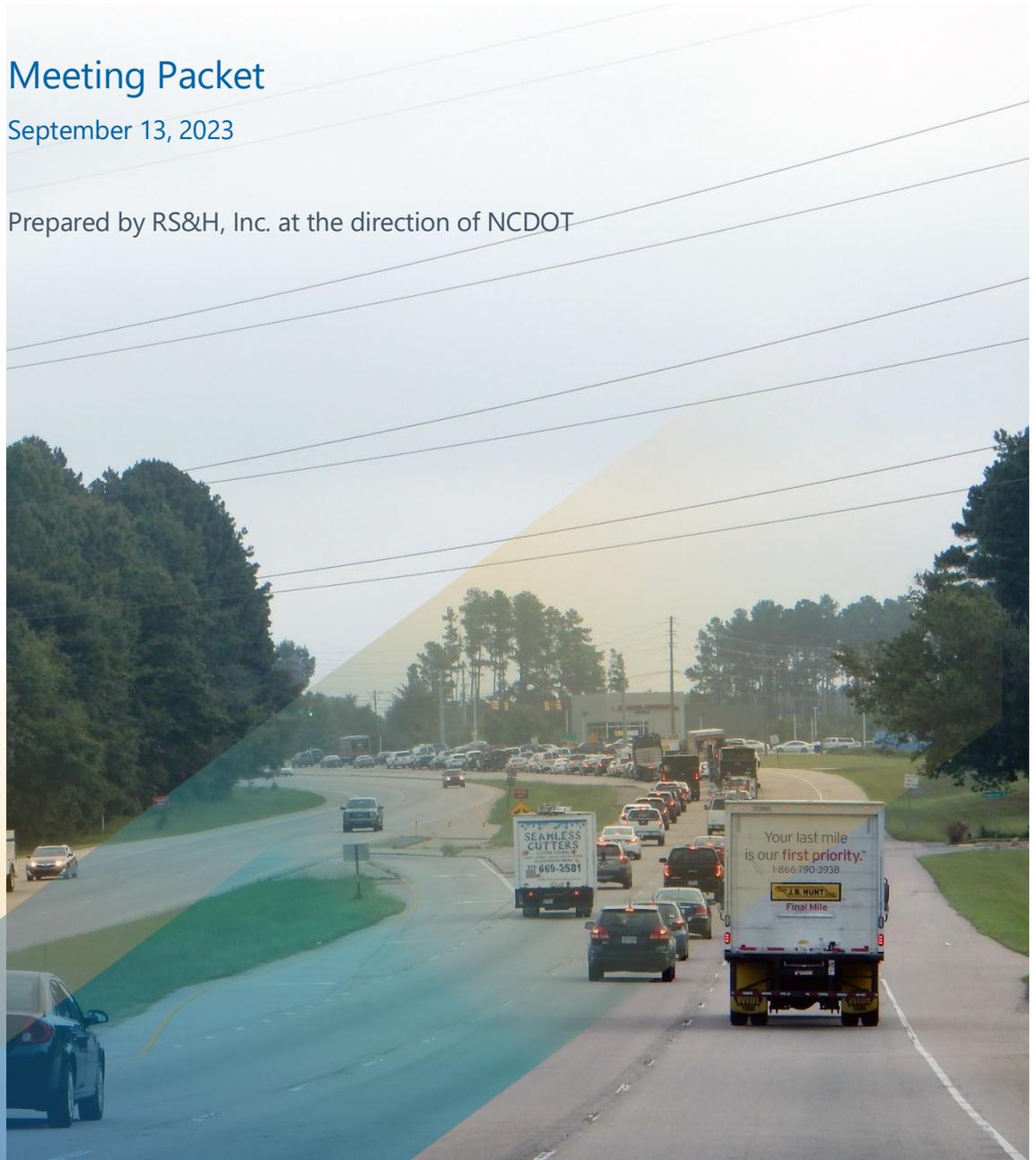


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- U-5307 Section 404 Resource Impact Tables by Segment
- U-5307 June 2023 Public Hearing Comments
- U-5307 June 2023 Public Hearing Municipal Comments

1 Introduction & Project Overview

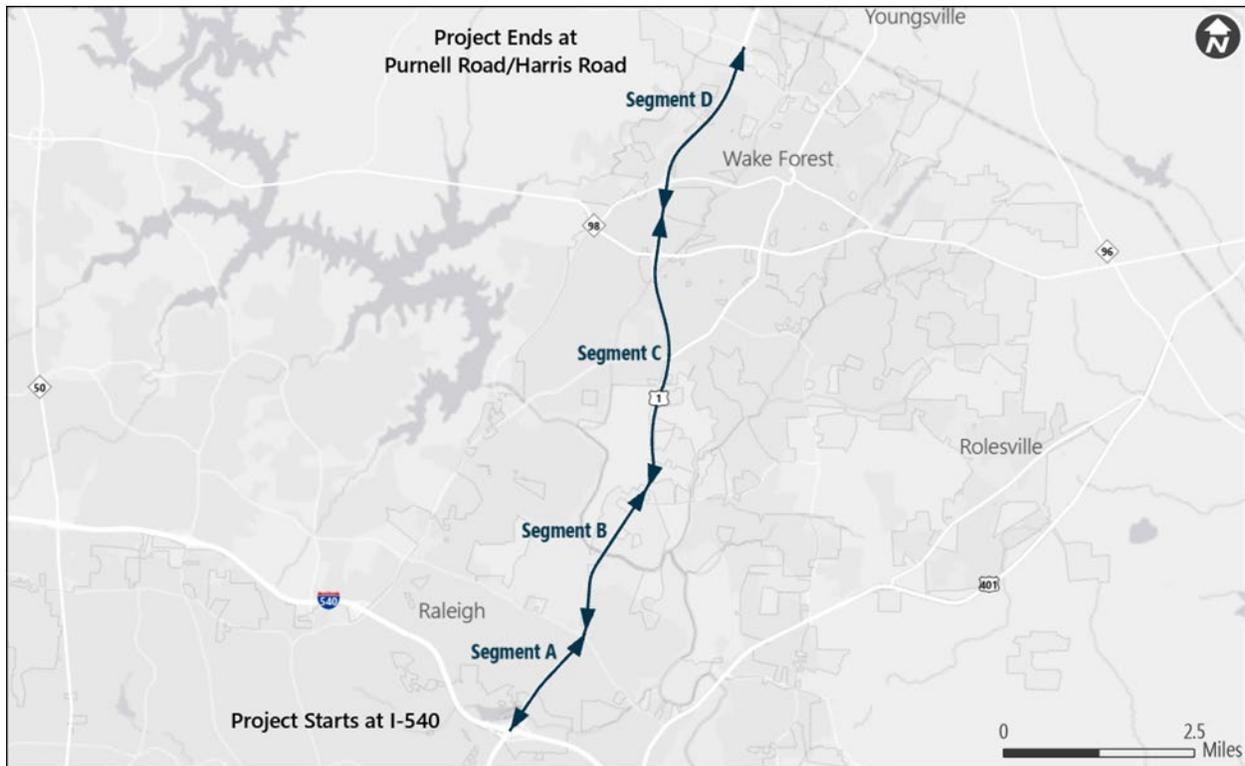
1.1 Introduction

The purpose of today's meeting is to discuss Concurrence Point 3 (CP 3) and the Least Environmentally Damaging and Practicable Alternative (LEDPA). **NCDOT is seeking concurrence from the Merger Team to carry the NCDOT Recommended Alternative (for each Segment) forward as the LEDPA.** This packet provides a project overview, merger meeting history, public involvement and Environmental Assessment update, and detailed impacts tables for each option.

1.2 Project Description

The North Carolina Department of Transportation (NCDOT) proposes to upgrade approximately 10.5 miles of US 1 (Capital Boulevard) from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest in Wake County. The U-5307 project is included as four segments, A through D, in NCDOT's current State Transportation Improvement Program (STIP) (see **Figure 1-1**).

Figure 1-1. U-5307 Project Limits



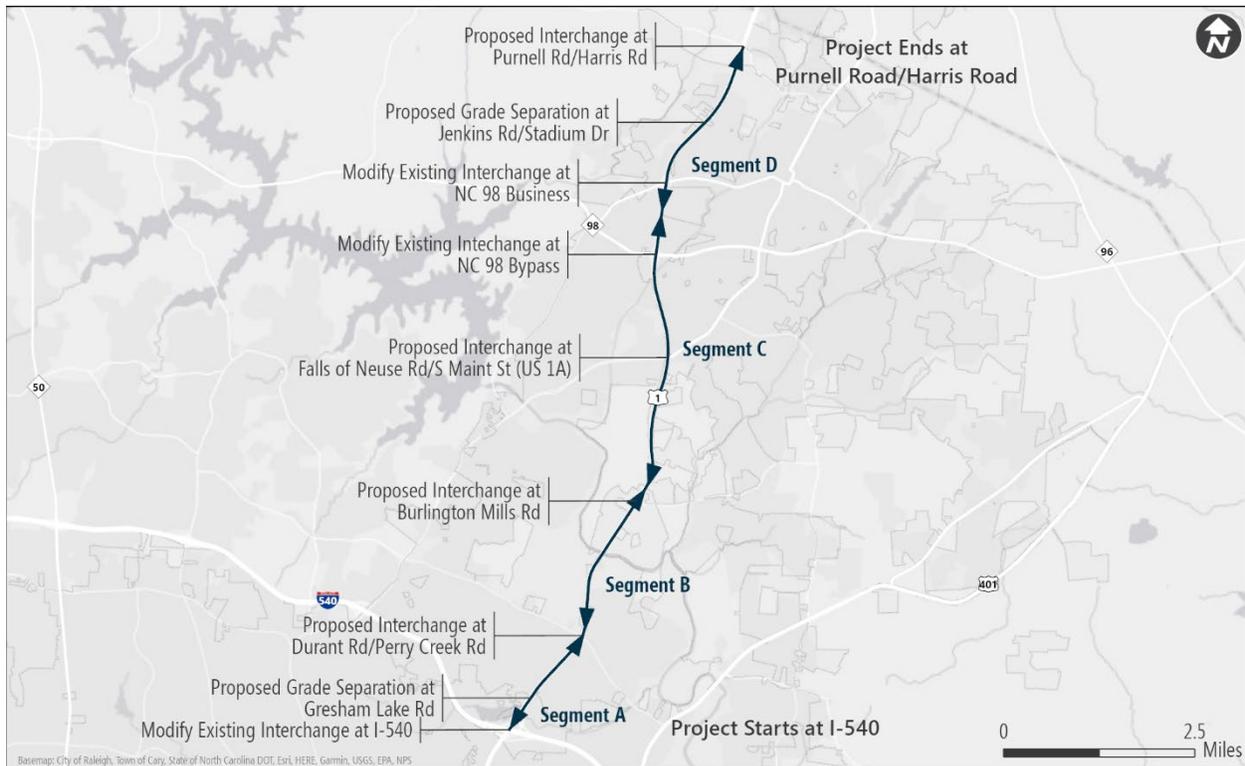
U-5307 Segment Summary

- » Segment A – I-540 to north of Durant Road/Perry Creek Road
- » Segment B – North of Durant Road/Perry Creek to Burlington Mills Road
- » Segment C – North of Burlington Mills Road to south of NC 98 Business
- » Segment D – South of NC 98 Business to Purnell Road/Harris Road

Proposed improvements include upgrading US 1 from a median-divided roadway with partial access control to a fully controlled-access freeway as well as improving existing and constructing new interchanges and service roads. The current design includes the following:

- » Removing all traffic signals and driveway connections along US 1.
- » Improving existing interchanges along US 1 at I-540, NC 98 Bypass, and NC 98 Business.
- » Constructing two new grade separations along US 1 – north of I-540 at Gresham Lake Road and at the existing Jenkins Road/Stadium Drive intersection.
- » Constructing new interchanges at Durant Road/Perry Creek Road, Burlington Mills Road, US 1A (Falls of Neuse Road/S Main Street), and Purnell Road/Harris Road.
- » Improving existing service roads and constructing new service road connections throughout the project corridor.

Figure 1-2. Proposed Improvements



1.3 Project Status

Following completion of the Informational Merger Meeting in December 2022, preliminary designs were further developed through additional coordination with the City of Raleigh, Town of Wake Forest, and Capital Area Metropolitan Planning Organization (CAMPO).

Based on municipal comments received after Public Meeting 2 in December 2021, as well as the potential relocation impacts (particularly associated with Circle Drive and Burlington Mills Road Interchange), the Federal Highway Administration (FHWA) decided to revise the type of

environmental document from a Categorical Exclusion (CE) to an Environmental Assessment (EA). This document was signed on May 31, 2023, and is available for reference here - <https://www.ncdot.gov/projects/capital-boulevard-upgrade/Documents/capital-boulevard-north-environmental-assessment.pdf>.

Following completion of the EA, the Project Team proceeded to hold a Public Hearing on June 21, 2023, where the EA and the NCDOT Recommended Alternative were made available to the public. The Project Team addressed approximately 100 comments from the public as well as comments from local municipalities and transportation groups, including the City of Raleigh, Town of Wake Forest, and the Regional Transportation Authority. Open channels of communication have been maintained with the public and the Project Team has continued to address additional comments and questions.

Based on the NCDOT 2024-2033 State Transportation Improvement Program (STIP) (June 2023), Segment A is scheduled for Right-of-Way, Utilities, and Construction in Fiscal Year (FY) 2026 with a Let date in October 2025. Segments B-D are scheduled for Preliminary Engineering only. The more detailed project schedule anticipates completion of CP 3 and 4A by the end of 2023 followed by the Cost Schedule Risk Assessment (CSRA) in early 2024 and an anticipated Finding of No Significant Impact (FONSI) in Spring 2024.

Project cost estimates as shown in the NCDOT 2024-2033 STIP (June 2023) can be seen in **Table 1-1**.

Table 1-1. U-5307 Project Cost Estimates (NCDOT 2024-2033 STIP, June 2023)

Segment	Right-of-Way	Utilities	Construction	Total
Segment A	\$94,301,000	\$12,200,000	\$184,700,000	\$291,201,000
Segment B	\$80,403,000	\$6,700,000	\$92,400,000	\$179,503,000
Segment C	\$28,199,000	\$5,100,000	\$108,799,000	\$142,098,000
Segment D	\$48,900,000	\$8,300,000	\$83,999,000	\$141,199,000
TOTAL	\$251,803,000	\$32,300,000	\$469,898,000	\$754,001,000

More detailed preliminary design costs estimates have been completed by the NCDOT Estimating Management Unit and area available in the potential impacts sections.

2 Merger Process History

2.1 Concurrence Point 1

Purpose & Need and Project Study Area (June 2018)

The purpose of the meeting was to discuss the project's Purpose & Need and the Study Area. Existing conditions were presented alongside the proposed study area, project's need, and project's purpose. Upon conclusion of the presentation and discussions, the Merger Team reached consensus and signed the formal CP 1 agreement on June 14, 2018, which defines the following:

Need of the Proposed Action

- » Traffic congestion and trip time unreliability.

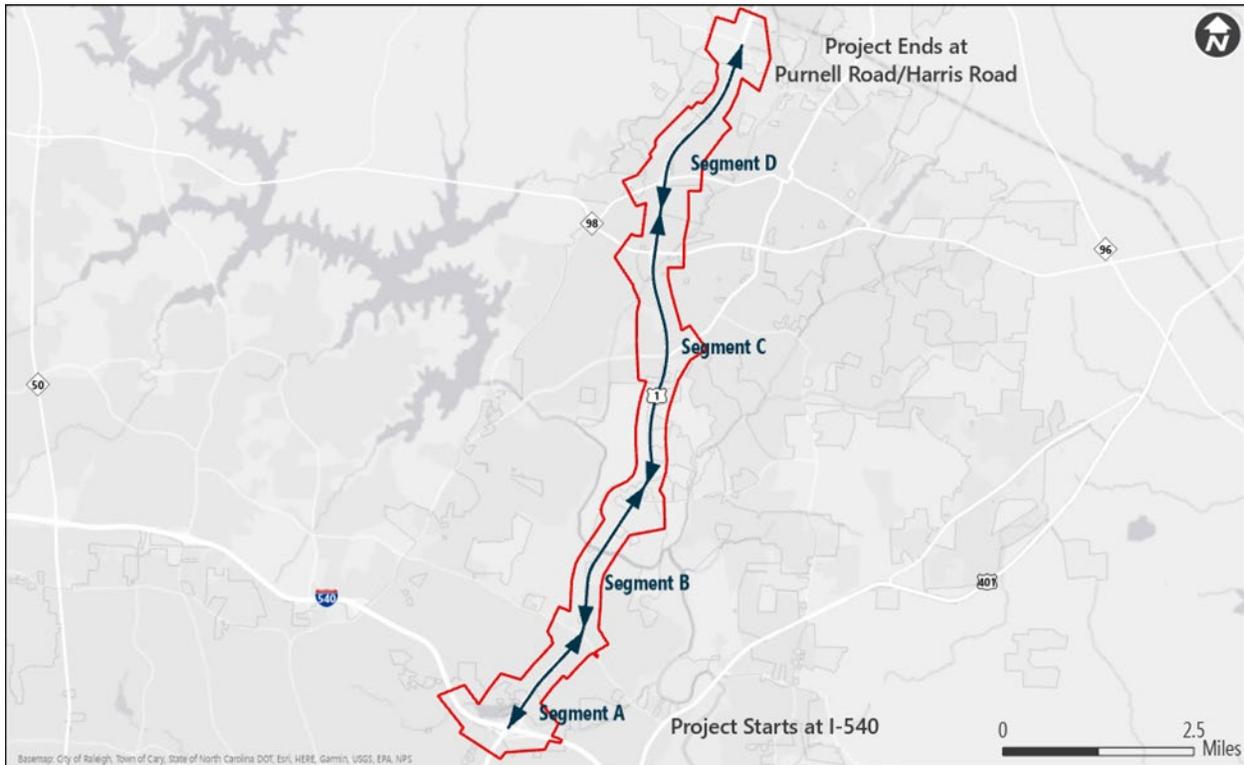
Purpose of the Proposed Action

- » Improve traffic congestion and travel times.
- » Maintain regional mobility and local connectivity.

Study Area Defined

- » The study area agreed upon at the CP 1 meeting extends along US 1 from I-540 to Purnell Road/Harris Road in Wake County, as shown in **Figure 2-1** below:

Figure 2-1. Project Study Area (Agreed Upon at CP 1)



2.2 Concurrence Point 2

Detailed Study Alternatives Carried Forward (November 2018)

The purpose of the meeting was to discuss the Detailed Study Alternatives Carried Forward. Public comments from the October 2018 Public Meetings, proposed design alternatives, plus stream and wetland impacts were presented. Upon conclusion of the presentation and discussions, the Merger Team reached consensus and signed the formal CP 2 agreement on November 14, 2018, which defines the following alternatives to carry forward:

Segments A-D

- » US 1 Mainline
 - Conversion to a controlled-access highway; best fit alignment for centerline with consideration for maintenance of traffic during construction.
- » Service Roads
 - A combination of existing streets and new location service roads are under study to maintain regional mobility and local connectivity.

Segment A

- » I-540 (existing interchange)
 - New flyover carrying US 1 southbound to directly connect with I-540 eastbound.
 - Westbound lane addition between Triangle Town Boulevard Interchange and US 1 southbound on-ramp at I-540.
- » Durant Road/Perry Creek Road (proposed interchange)
 - Option A – Diverging Diamond Interchange (US 1 over Durant Road/Perry Creek Road).
 - Option B – Diamond Interchange (US 1 over Durant Road/Perry Creek Road).

Segment B

- » Burlington Mills Road (proposed interchange)
 - Option A – Diamond Interchange (US 1 under Burlington Mills Road).
 - Option B – Diverging Diamond Interchange (US 1 under Burlington Mills Road).

Segment C

- » US 1A (Falls of Neuse Road/S Main Street) (proposed interchange)
 - Diverging Diamond Interchange (US 1 over US 1A).
- » NC 98 Bypass (existing interchange)
 - Ramp modifications at the gores but keeping the existing lane configurations for the Single Point Urban Interchange (SPUI) the same.

Segment D

- » NC 98 Business (existing interchange)
 - Addition of a loop in the northeast quadrant and relocation of adjacent on-ramp.
- » Jenkins Road/Stadium Drive (existing intersection)
 - New grade separation (US 1 under Jenkins Road/Stadium Drive).
- » Purnell Road/Harris Road (proposed interchange)
 - Partial cloverleaf (US 1 under Purnell Road/Harris Road).

2.3 Concurrence Point 2 Revised (April 2021)

In February 2020, the project team and key agency team members determined that an update would be necessary to the CP 2 agreement. Additional coordination via emails and meetings was completed in April 2021.

CP 2 revisions included five minor study area modifications to “[...] account for pavement tie-ins and potential easements” as well as revising the previously agreed upon interchange types to carry forward at US 1 and Durant Road/Perry Creek Road and US 1 at Burlington Mills Road. Upon conclusion of agency correspondence, the Merger Team reached a formal consensus and signed the revised CP 2 Agreement on April 7, 2021, detailing the following:

Segments A-D

- » US 1 Mainline
 - Conversion to a controlled-access highway; best fit alignment for centerline with consideration for maintenance of traffic during construction.
 - No change from CP 2.
- » Service Roads
 - A combination of existing streets and new location service roads are under study to maintain regional mobility and local connectivity.
 - No change from CP 2.

Segment A

- » I-540 (existing interchange)
 - Flyover carrying US 1 southbound to directly connect with I-540 eastbound.
 - No change from CP 2.
 - Westbound lane addition between Triangle Town Boulevard Interchange and US 1 southbound on-ramp at I-540.
 - No change from CP 2.
- » Durant Road/Perry Creek Road (proposed interchange)
 - Option A – Diverging Diamond Interchange (US 1 over Durant Road/Perry Creek Road).
 - Option changed to Minimized DDI for CP 2 Rev.
 - Option B – Diamond Interchange (US 1 over Durant Road/Perry Creek Road).
 - Option removed from consideration for CP 2 Rev.

Segment B

- » Burlington Mills Road (proposed interchange)
 - Option A – Diamond Interchange (US 1 under Burlington Mills Road).
 - No change from CP 2.
 - Option B – Diverging Diamond Interchange (US 1 under Burlington Mills Road).
 - Option removed from consideration for CP 2 Revised.
 - Option C – Skewed Partial Cloverleaf Interchange.
 - Added for CP 2 Revised.

Segment C

- » US 1A (Falls of Neuse Road/S Main Street) (proposed interchange)
 - Diverging Diamond Interchange (US 1 over US 1A).
 - No change from CP 2.
- » NC 98 Bypass (existing interchange)
 - Ramp modifications at the gores but keeping the existing lane configurations for the Single Point Urban Interchange (SPUI) the same.
 - No change from CP 2 but studying potential ramp improvements.

Segment D

- » NC 98 Business (existing interchange)
 - Addition of a loop in the northeast quadrant and relocation of adjacent on-ramp.
 - No change from CP 2 but studying potential ramp and loop additions (see **Section 4.4** for additional information).
- » Jenkins Road/Stadium Drive (existing intersection)
 - New grade separation (US 1 under Jenkins Road/Stadium Drive).
 - No change from CP 2 but working with stakeholders not to preclude possible future improvements by others.
- » Purnell Road/Harris Road (proposed interchange)
 - Partial cloverleaf (US 1 under Purnell Road/Harris Road).
 - No change from CP 2.

2.4 Concurrence Point 2A

Bridging Decisions & Alignment Review (July – November 2021)

Bridging Decisions and Alignment Review for major hydraulic structures were presented in the CP 2A packet and reviewed in the field on July 7, 2021. Following additional emails and correspondence, comments, and review time, the CP 2A packet was signed on November 17, 2021.

Table 2-1 includes the concurred upon structures from the CP 2A meeting.

Table 2-1. Bridging & Alignment Decisions from CP 2A

Site #	Stream or Feature Crossing Roadway	Existing	Proposed Structure	Wetland Impacts (acres)	Stream Impacts (lf)
Segment A					
1	UT to Perry Creek I-540	72" RCP	Retain existing	0.1	70
2	UT to Perry Creek I-540	Double-barrel 8'x6' RCBC	Retain existing & add 72" supplemental pipe	0.0	180
3	Perry Creek Gresham Lake Road Ext	N/A	300' bridge	0.0	260
4	Perry Creek US 1	Triple-barrel 8'x8' RCBC	Retain + extend existing & add 84" supplemental pipe	0.0	190
5	UT near Neuse River US 1	Double-barrel 8'x8' RCBC	Retain existing & add 84" supplemental pipe	0.0	100
6	UT near Neuse River Y10 (new service road)	N/A	48'W x 60'L bridge	0.0	120
7	UT near Neuse River Y10 (new service road)	N/A	Single 6'x7' RCBC with notched sill	0.1	300
11	UT near Neuse River Driveway	N/A	DELETED (no longer necessary)	N/A	N/A
Segment B					
8	Neuse River US 1	Dual 250' bridges	345' dual bridges + service road bridge ¹	0.0	430
Segment C					
9	UT to Smith Creek Y18 (new Star Rd Ext)	N/A	Single 7'x8' RCBC	0.6	810
10	Richland Creek US 1	Quadruple 10'x11' RCBC	Retain + extend existing RCBC & add 72" supplemental pipe	0	160
12	US 1 over CSX Rail (NR eligible)	Dual bridges carrying US 1	300' dual bridges + service road bridge	0.0	0.0

Note – Potential wetland and stream impacts calculated for CP 2A were determined using slope stakes + 40'.

¹ Three 280' bridges (US 1 structures + service road) were recommended as part of the CP 2 Packet. Following additional coordination and recommendations from USFWS and NCWRC, 345' bridges were concurred upon to allow and additional 65' for wildlife crossings along the southern bank of the Neuse River.

2.5 Concurrence Point 3 and 4A

Informational Merger Meeting (December 15, 2022)

The purpose of this meeting was to provide a project update and additional information in preparation for CP 3 and CP 4A meetings. NCDOT was not seeking concurrence from the Merger Project Team on any of the information shown at the meeting or in the meeting packet. The intent of the presented information was to provide a detailed project overview as well as summarize previous concurrence points and design progress.

The most significant updates included in this meeting were the following:

- » Public Involvement and municipal coordination following Public Meeting 2 in December 2021.
- » Citizen and developer coordination efforts.
- » NC Historic Preservation Office (HPO) coordination and the HPO Effects Meeting in October 2022.
- » Supplemental traffic information and history of traffic and design processes.
- » Detailed service road alignments.

No signatures were required as part of this informational meeting. Documentation for this meeting was finalized on January 31, 2023, and distributed to attendees.

3 Public Outreach & Ongoing Coordination Efforts

3.1 Public Involvement Prior to CP 2A

Two Public Meetings (Public Meeting 1) were held in October 2018 to present mainline and interchange concepts and gather public feedback. Service/connector roads were not yet determined and were not shown on meeting maps. A total of 477 citizens attended the meetings. 52 comments were received via comment forms at the Public Meetings with an additional 10 comments submitted via email and 100 through the project website.

3.2 Public Involvement Since CP 2A

Following CP 2A, the U-5307 project design was further developed, and Public Meeting materials were prepared using previously agreed upon details. Various alternatives at interchange locations were presented based on the outcome of the CP 2 Revisions, bridges and culverts were presented based on coordination during CP 2A, and specific betterment options were presented based on NCDOT and municipal coordination.

3.2.1 Public Meeting No. 2 (December 9, 2021)

Preliminary designs, which included service/connector road options, were presented at a virtual public meeting (webinar) in December 2021 via GoTo Meeting. A public comment period was open from December 9, 2021, through January 7, 2022. Approximately 300 citizens participated (answered survey questions or asked questions) from the 3,000 plus website hits during this public outreach period. More than 200 new subscribers were added to the project email list.

3.2.2 Circle Drive Neighborhood Meeting (November 16, 2022)

A small group, neighborhood meeting was held on November 16, 2022, from 6:00 to 8:00 PM at Celebration Church (8700 Capital Boulevard) to address the residents along Circle Drive. The purpose of this meeting was to provide information on the U-5307 project and present the preliminary designs from Public Meeting 2 for the two proposed interchange alternatives at Burlington Mills Road.

Both interchange options are likely to have impacts to the residents along Circle Drive, with Option 1 (Diamond Interchange) resulting in requiring a new entrance to the neighborhood and Option 2 (Skewed Partial Cloverleaf Interchange) resulting in the displacement of almost all residents in this neighborhood.

Based on the feedback received at this meeting, a large majority of residents of Circle Drive prefer Option 1. Residents noted that many of them have lived along Circle Drive for a number of years, some their entire lives, with multiple generations of several families still present. Residents also noted hardships associated with relocating due to disabled children and elderly populations. The

overall feelings shared were that this is a tight-knit cohesive community with substantial sentimental and (personal) historic value and not something that can be replaced.

3.2.3 Public Hearing (for the Environmental Assessment) (June 21, 2023)

NCDOT conducted a Public Hearing as a result of the document shift from a CE to an EA to comply with federal requirements. A public notice was distributed on May 22, 2023, opening a 30-day window prior to the Public Hearing where the public was able to view the EA and project maps and provide comments on the project website (<https://publicinput.com/capital-boulevard-upgrade>).

The Public Hearing was held at a central location along the project corridor (Living Word Family Church, 10520 Star Road, Wake Forest) on June 21, 2023. A Local Officials Informational Meeting (LOIM) was held prior to the hearing at 3:00 PM. Doors opened to the public at 4:00 PM for an open house style format, followed by a formal presentation and comment session at 7:00 PM.

137 people attended the hearing, and four local officials attended the LOIM. A total of 2,643 website hits have been registered since the initial public notice in May and NCDOT has fielded approximately 100 comments on the EA, preliminary design, and NCDOT recommended alternative. The City of Raleigh, Town of Wake Forest, GoTriangle, and the Regional Transportation Alliance also provided comments during the comment period.

NCDOT is currently working to address all comments as part of the anticipated FONSI. When available, all comments and responses will be made available on the project website.

- » EA comments received from 10 agencies.
- » 46 comments on general project details such as bicycle and pedestrian accommodations, project funding and schedule, travel times, and right-of-way impacts.
- » 59 comments received on specific locations such as the Gresham Lake Road overpass or NC 98 Bypass Interchange.
- » No new concerns regarding the NCDOT Recommended Alternative were received – the main concerns were between Gresham Lake Road Option 2 versus Option 4 and the additional connectivity provided by the connection to Triangle Town Boulevard.

The USACE conducted its Public Notice as part of the NCDOT Public Hearing. No comments were received by the Corps regarding the project or environmental document.

3.3 Ongoing Efforts

3.3.1 Citizen and Developer Coordination

NCDOT has maintained an open line of communication with the public and has continued to respond to comments and project inquiries via telephone and email throughout the life of the project.

The Project Team has also fielded multiple developer requests to meet and discuss preliminary designs. Developers have initiated coordination with the Project Team to discuss their proposed developments in relation to the U-5307 plans. The Project Team has shared preliminary designs and provided information on how development plans may impact the project design and vice versa. Private development coordination has ranged from existing major facilities such as Mallinckrodt and Guerbet to a variety of proposed multi-use, residential, and commercial developments.

3.3.2 Municipal Coordination

Following Public Meeting 2 in December 2021, the City of Raleigh, Town of Wake Forest, CAMPO, and GoTriangle submitted comments in response to the initial alternative designs presented. NCDOT held a series of meetings with these groups over the next year discussing typical sections, number of lanes along US 1 and service roads, bicycle and pedestrian facilities, service road connections, interchange locations and designs, US 1 access, and traffic projections. The outcome of these meetings and NCDOT's position on the above topics was completed and distributed in May 2023. Revisions resulting from these coordination efforts were implemented in the preliminary designs shown at the Public Hearing or noted for revision during the final design process.

Comments were also received from the City of Raleigh, Town of Wake Forest, and GoTriangle following the Public Hearing in June 2023. Comments addressed topics similar to Public Meeting 2 such as:

- » Gresham Lake Road options (preference for Option 2).
- » Safety enhancements (preference for roundabout option at Gresham Lake Road).
- » Neuse River crossing (preference for full vehicular bridge versus bicycle/pedestrian bridge (NCDOT's recommendation)).
- » Greenway connections (culvert crossings and Neuse River Trail).
- » Bicycle/pedestrian accommodations (sidewalks versus side paths, pedestrian signals and crossings).
- » Additional review of traffic projections and regional model data (new traffic forecast is underway).

All municipal comments from the Public Hearing are included in the Attachments. NCDOT is currently developing responses to those comments which will be made available on the project website.

3.3.3 Historic, Section 4(f), and Section 6(f) Resources

Details regarding Section 4(f) and Section 6(f) resources are detailed in **Table 3-1**. The findings shown here are the result of the Effects Meeting with the State Historic Preservation Office and FHWA on October 27, 2022. These findings were also presented in Section 5 the EA signed on May 31, 2023.

All properties listed are considered Section 4(f) resources. Joyner Park is also considered a Section 6(f) resource but no impacts to the park are anticipated, thus Section 6(f) is not a concern.

Table 3-1. Section 4(f) and Section 6(f) Resource Impact Summary

Property Name	Historic Architecture Effects Determination	Section 4(f) Impact Determination	Description of Use/Impact & Project Commitments
Powell House (NR, Site WA0040)	No Adverse Effect	<i>De Minimis</i>	Description of Use/Impact <ul style="list-style-type: none"> ❖ Removal of driveway access to U.S. 1 Project Commitments <ul style="list-style-type: none"> ❖ NCDOT to provide driveway access to the historic property off Stroller Ridge Drive ❖ NCDOT to protect a triangular piece of land adjacent to the historic property
Raleigh and Gaston Rail Corridor (Eligible for NR)	No Effect	None	None (no impacts)
Purefoy Dunn Plantation (NR, Site WA0221)	No Effect	None	None (no impacts)
Wakefields/Sutherland (NR, Site WA0024)	No Adverse Effect	<i>De Minimis</i>	Description of Use/Impact <ul style="list-style-type: none"> ❖ Right-of-way acquisition along the front of the property adjacent to U.S. 1 Project Commitments <ul style="list-style-type: none"> ❖ Retaining wall along Capital Boulevard to be a soil nail wall and design selected by property owner ❖ Landscaping and fence style behind the wall to be coordinated with property owner ❖ Cul-de-sac of Wake Union Church Road to be eliminated behind the historic property
Joyner Park	N/A	None	None (no impacts)

4 Concurrence Point 3

Least Environmentally Damaging and Practicable Alternative

Based on prior Merger Team coordination, municipal input, and public involvement, NCDOT has developed recommendations for the preferred alternative. Rationale for recommending the Least Environmentally Damaging and Practicable Alternative (LEDPA) is provided throughout this section where alternatives are organized by interchange or other major improvements within each Segment (A through D) of the U-5307 project. ***The purpose of this section is to seek concurrence on the LEDPA and gather any final input prior to further developing the project designs.***

The Project Team is requesting the Merger Team’s concurrence on four specific locations that carried multiple design options forward following the conclusion of CP 2A:

- » Gresham Lake Road (Options 1, 2, 3, and 4).
- » Neuse River Crossing (2 mainline options and 2 service road options).
- » Burlington Mills Road Interchange (2 interchange options).
- » Purnell Road/Harris Road Interchange (2 interchange options).

All other impacts associated with each project segment are included in the following section in addition to these four key decision points. Impacts associated with the US 1 mainline and service roads are included with their respective segments as well as any notable changes stemming from additional municipal and/or agency coordination.

For complete preliminary designs, view the Public Hearing Maps (June 2023) at:

- » **NCDOT Recommended Alternatives – <https://www.ncdot.gov/projects/capital-boulevard-upgrade/Pages/recommended-alternatives.aspx>.**
- » **Additional maps and information available on the online public engagement platform – <https://publicinput.com/capital-boulevard-upgrade>.**

Notes Regarding Impact Calculations:

- » *Section 404 resource impacts are calculated based on slope stakes + 25' and are also shown in the Environmental Assessment (05/31/2023). Impacts are shown as slope stakes + 25' followed by slope stakes only in parentheses.*
- » *All other resources are analyzed based on proposed preliminary design right-of-way limits. Potential impacts for CP 2A were determined based on slope stakes + 40'.*
- » *ROW impacts (residential and commercial or institutional displacements) are determined based on the approved EIS (November 2021).*
- » *Managed Areas sourced from the NC Natural Heritage Program and include fee-simple properties and easements where natural resource conservation is one of the management goals.*
- » *Potential Noise Abatement Areas (PNAAs) were specified in the approved Traffic Noise Report (March 2022).*
- » *For the adjacent Block Groups, a Notable Environmental Justice Population is present when Minority, Low-Income, Limited English Proficiency (LEP), and/or Language Assistance (LA) populations meet or exceed thresholds established in the NCDOT Demographic Screening Tool using 2014-2018 American Community Survey Data as noted in the approved Community Impact Assessment (August 2021).*

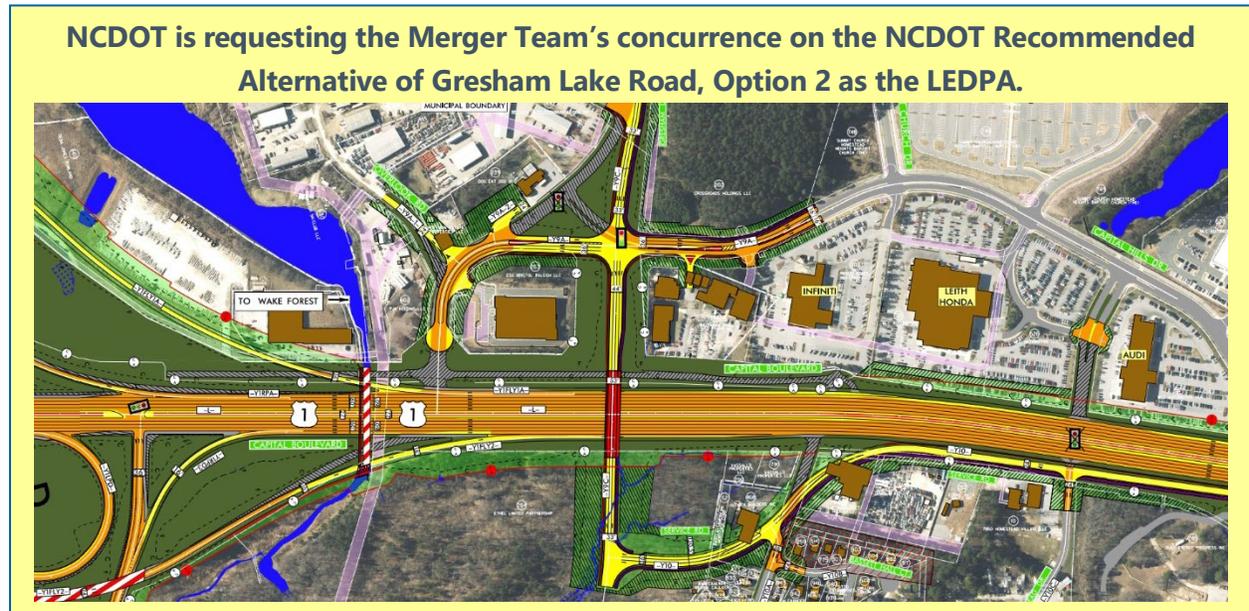
Notes Regarding Cost Estimates

- » *All estimates shown are the latest available cost estimates by Segment and Alternative.*
- » *All estimates are rounded to the nearest \$1,000.*
- » *Right-of-Way and Utility estimates are from July 2021.*
- » *Construction cost estimates include updated unit prices as of August 2023.*

4.1 Segment A

I-540 to North of Durant Road/Perry Creek Road

Segment A improvements include widening US 1, select I-540 interchange ramps, Gresham Lake Road (overpass and Triangle Town Boulevard Connection, four options), service road connections, and interchange construction at the US 1 and Durant Road/Perry Creek Road intersection (one option).



Design options addressed in previous Merger Meetings include:

- » Construct a flyover ramp carrying US 1 southbound to I-540 eastbound.
- » Add an additional westbound lane along I-540 between Triangle Town Boulevard and the US 1 southbound on-ramp.
- » Replace the existing intersection of US 1 and Durant Road/Perry Creek Road with a minimized DDI.
- » Bridging decisions at Sites 1-7 (detailed in **Table 2-1** within [Section 2, Merger Process History](#)).
- » Options for extending Gresham Lake Road to Triangle Town Boulevard.
 - Based on coordination with the City of Raleigh, the Triangle Town Boulevard Extension (Y10 intersection to I-540) is currently planned for construction by a private developer independent of the U-5307 project.
- » Jacqueline Lane (Y10) service road and connection to Perry Creek Road.

Section 4.1 Tables and Figures:

- » **Table 4-1.** Comparison of Options for Gresham Lake Road, Options 1-4
- » **Table 4-2.** Segment A Overall Impact Summary

Table 4-1. Comparison of Options for Gresham Lake Road, Options 1-4

Gresham Lake Road Option 1	Gresham Lake Road Option 2	Gresham Lake Road Option 3	Gresham Lake Road Option 4 (Option 2 + Option 3)
	 <p>OR ADDITIONAL OPTIONS OF BASE SEE THE GRESHAM LAKE OPTION PLANNING MAPS</p>		
<ul style="list-style-type: none"> » Cul-de-sac existing Gresham Lake Road west of US 1. » Close Cheviot Hills Drive adjacent to the west side of US 1. » Construct the Jacqueline Lane service road but no additional connections. 	<ul style="list-style-type: none"> » Cul-de-sac existing Gresham Lake Road west of US 1 and realign the existing intersection with Capital Hills Drive. » Close Cheviot Hills Drive adjacent to the west side of US 1. » Construct the Gresham Lake Road overpass over US 1 and connect to the new Jacqueline Lane service road. 	<ul style="list-style-type: none"> » Cul-de-sac existing Gresham Lake Road west of US 1. » Close Cheviot Hills Drive adjacent to the west side of US 1. » Construct the Jacqueline Lane service road and connect to Triangle Town Boulevard and I-540 to the south. 	<ul style="list-style-type: none"> » Cul-de-sac existing Gresham Lake Road west of US 1 and realign the existing intersection with Capital Hills Drive. » Close Cheviot Hills Drive adjacent to the west side of US 1. » Construct the Gresham Lake Road overpass over US 1 and connect to the new Jacqueline Lane service road. » Construct the Jacqueline Lane service road and connect to Triangle Town Boulevard and I-540 to the south.
Section 404 Impacts Summary for (for slope stakes (ss) + 25')			
<p>Streams – 3,873 linear ft Wetlands – 0.79 acres Surface Waters – 0.02 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 242,292 sq ft / 200,087 sq ft</p>	<p>Streams – 4,687 linear ft Wetlands – 1.13 acres Surface Waters – 0.02 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 281,761 sq ft / 219,665 sq ft</p>	<p>Streams – 4,532 linear ft Wetlands – 1.16 acres Surface Waters – 0.02 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 272,343 sq ft / 213,164 sq ft</p>	<p>Streams – 4,979 linear ft Wetlands – 1.67 acres Surface Waters – 0.02 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 298,607 sq ft / 232,296 sq ft</p>

Table 4-2. Segment A Overall Impact Summary

	Impact Category	Segment A Gresham Lake, Option 1	Segment A Gresham Lake, Option 2	Segment A Gresham Lake, Option 3	Segment A Gresham Lake, Option 4
Section 404 Resources	Wetlands SS+25' (SS) (acres)	0.79 (0.56)	1.13 (0.89)	1.16 (0.86)	1.67 (0.97)
	Streams SS+25' (SS) (linear ft)	3,873 (2,297)	4,687 (3,240)	4,532 (2,764)	4,979 (3,474)
	Surface Waters SS+25' (SS) (acres)	0.02 (0)	0.02 (0)	0.02 (0)	0.02 (0)
	Neuse River Basin Riparian Buffers – Zone 1 SS+25' (SS) (sq ft)	242,292 (144,579)	281,761 (181,485)	272,343 (168,923)	298,607 (194,738)
	Neuse River Basin Riparian Buffers – Zone 2 SS+25' (SS) (sq ft)	200,087 (111,078)	219,665 (132,473)	213,164 (130,325)	232,296 (142,570)
Natural Environment	100-Year Floodplain (acres)	0.5	2.9	0.5	2.9
	High Quality Waters	--	--	--	--
	Water Supply Watersheds (acres)	--	--	--	--
	Public Water Supply Wells (100' Buffer)	--	--	--	--
	Fed/State Threatened or Endangered Species Habitat Present	Yes	Yes	Yes	Yes
	Managed Areas (acres)	<0.1	<0.1	<0.1	<0.1
	Wildlife Refuges and Game Lands (acres)	--	--	--	--
Human Environment	GeoEnvironmental Sites of Concern (Phase I Report)	9 parcels	9 parcels	9 parcels	9 parcels
	Potential Noise Abatement Areas	1	1	1	1
	Notable EJ Presence	Minority, Low-Income, LA	Minority, Low-Income, LA	Minority, Low-Income, LA	Minority, Low-Income, LA
	Parks – Section 4(f)/6(f) Resources	--	--	--	--
	Other Recreational Resources/Wake County Open Space (acres)	0.4	0.4	0.4	0.4
	Cemeteries	--	--	--	--
	Places of Worship	1	1	2	1
	Schools (Public, Charter, & Private)	--	--	--	--
	Public Library	--	--	--	--
	Transit Routes/Stops	2 routes + 4 stops	2 routes + 4 stops	2 routes + 4 stops	2 routes + 4 stops
	Emergency Response Stations (EMS, Fire, Police)	--	--	--	--
	Historic Properties – Section 4(f)	--	--	--	--
	ROW	Residential Displacements	4 (1 minority)	4 (1 minority)	4 (1 minority)
Commercial Displacements		11 (1 minority)	12 (1 minority)	11 (1 minority)	12 (1 minority)
Non-Profit Displacements		1	1	1	1
Project Cost	Right-of-Way	\$86,236,000	\$90,730,000	\$89,234,000	\$93,728,000
	Utilities	\$9,922,000	\$10,644,000	\$11,387,000	\$12,109,000
	Construction	\$224,400,000	\$237,600,000	\$239,700,000	\$253,000,000
	Total	\$320,558,000	\$338,974,000	\$340,321,000	\$358,837,000

4.1.1 Segment A

NCDOT Recommended LEDPA

Following concerns detailed in the City of Raleigh Staff Comments (dated 02/11/2022) from Public Meeting 2, the Project Team conducted additional design review and coordination meetings with City staff to address their comments. After concluding September 2022 coordination meetings, City staff and the Project Team agreed that Gresham Lake Road Option 2, albeit with a reduced typical section of two lanes, would provide the necessary benefits to avoid substantial community and traffic impacts, while maintaining consistency with the project's purpose and need.

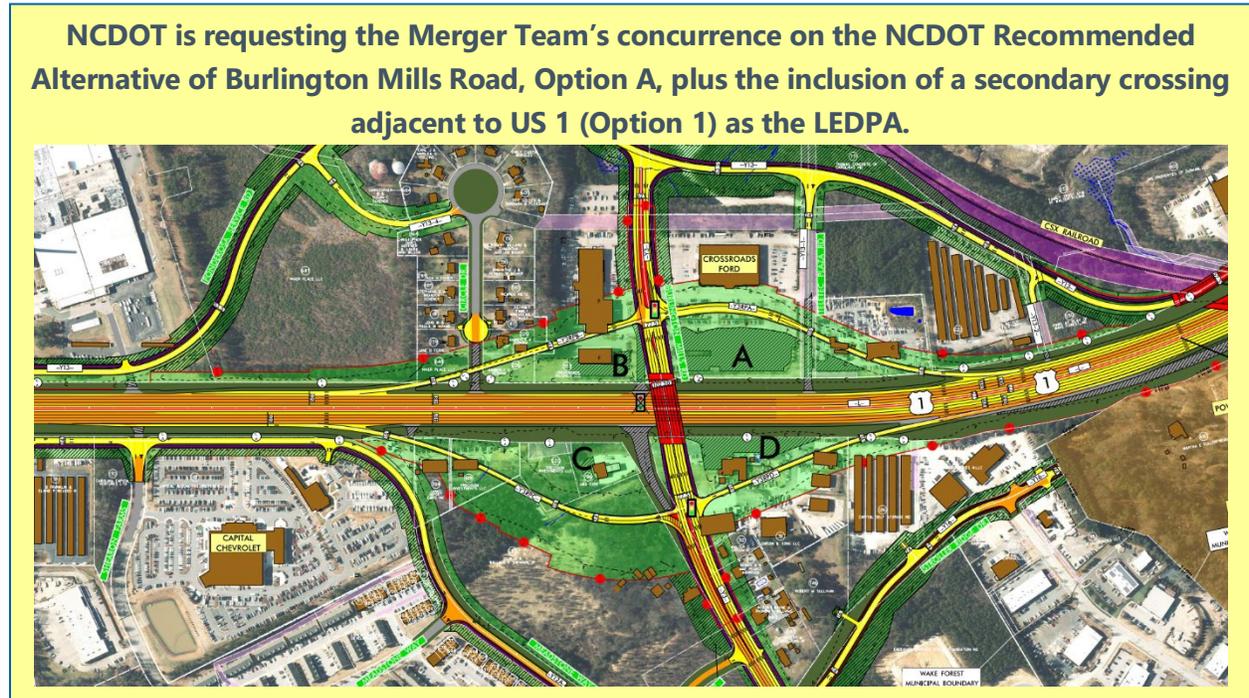
NCDOT is requesting the Merger Team's concurrence with Gresham Lake Road Option 2 as the LEDPA for the following reasons:

- » Option 2 provides supports local planning objectives by avoiding an adverse effect on local traffic patterns and community cohesiveness as well as maintains consistency with City efforts to reduce speeds and cut-thru traffic on neighborhood streets by improving local connectivity.
- » While Option 1 meets the traffic needs of the project, there is concern from the City of Raleigh and CAMPO regarding the lack the connectivity across US 1 without substantial detours, especially once Quadrant D is fully developed. The City of Raleigh and CAMPO prefer Option 4; however, both have agreed that Option 2 provides the additional benefit of better meeting the local connectivity needs of the project versus Option 1. NCDOT, the City of Raleigh, and CAMPO have agreed to compromise with Option 2 predicated on the understanding that additional connections will be a local responsibility.
- » The City of Raleigh has been coordinating with a private developer regarding quadrant D of the I-540/US 1 interchange. Recent developments in those coordination efforts have revealed a developer desire to build out that quadrant and construct a Triangle Town Boulevard connection within the next year.
- » The main concern expressed by the public (at the Public Hearing) was Option 2 versus Option 4 and the additional connectivity provided by the connection to Triangle Town Boulevard.
- » Option 2 provides additional improvements to traffic operations at Durant Road/Perry Creek Road by creating additional connection options for local traffic.
- » Municipal input noted constructing a bridge over US 1 at this location as part of a separate project would not be feasible due to disruption and impacts to the surrounding community and cost prohibitive.
- » Additional information regarding the reduced typical section will be available at the CP 4A Meeting to discuss Avoidance and Minimization.

4.2 Segment B

North of Durant Road/Perry Creek Road to Burlington Mills Road

Segment B improvements include widening US 1, interchange construction at the US 1/Burlington Mills Road intersection (two options), service road connections, and bridging the Neuse River (two options).



Design options addressed in previous Merger Meetings include:

- » Bridging decision at Site 8 (Neuse River) (detailed in **Table 2-1** within [Section 2, Merger Process History](#)). This site included both US 1 mainline bridges and an adjacent service road bridge.
- » Burlington Mills Road interchange options – Option A (Diamond Interchange) and Option B (Skewed Partial Cloverleaf Interchange).
- » Stroller Ridge Drive connection extending north from Burlington Mills Road and connecting with the proposed service road extending south from the existing Stroller Ridge Drive.
- » Ponderosa Service Road extension along the west side of US 1 from north of the Neuse River (the bridge over the CSX Railroad and connection with Falls of Neuse Road are included in Segment C).

Section 4.2 Tables and Figures:

- » **Table 4-3.** Comparison of Options for Burlington Mills Road Interchange and Y12A Crossing over the Neuse River
- » **Table 4-4.** Segment B Overall Impact Summary

Table 4-3. Segment B – Comparison of Options for Burlington Mills Road Interchange and Y12A Crossing over the Neuse River

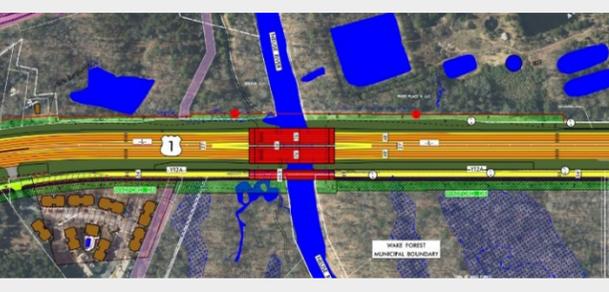
Burlington Mills Road Option A	Burlington Mills Road Option B	Y12A Multi-Use Path (Bicycle/Pedestrian) Connection over the Neuse River, Option 1	Y12A Full Service Road Connection over the Neuse River, Option 2
			
<ul style="list-style-type: none"> » Construct diamond interchange at US 1/Burlington Mills Road. » Construct service road connections from north of the Neuse River to Burlington Mills Road. » Provide a service road connection along the west side of US 1 from Burlington Mills Road across the CSX rail corridor to US 1A/Falls of Neuse Road. » Provide a service road connection from Burlington Mills Road to Stroller Ridge Drive. » Cul-de-sac Circle Drive and provide a connection to the new service road. 	<ul style="list-style-type: none"> » Construct skewed partial cloverleaf interchange at US 1/Burlington Mills Road. » Construct service road connections from north of the Neuse River to Burlington Mills Road. » Provide a service road connection along the west side of US 1 from Burlington Mills Road across the CSX rail corridor to US 1A/Falls of Neuse Road. » Provide a service road connection from Burlington Mills Road to Stroller Ridge Drive. » Circle Drive neighborhood will be displaced with this option. 	<ul style="list-style-type: none"> » Provide a bicycle and pedestrian connection over the Neuse River via a multi-use path/side path bridge. The structure will be used for construction phasing temporarily and then converted to the bicycle/pedestrian connection once construction is complete. » Bridge length includes an additional 65' for wildlife crossings. 	<ul style="list-style-type: none"> » Provide a full service road connection across the Neuse River by connecting the cul-de-sacs at Y12A (Wadford Drive and Meadstone Way). » Bridge length includes an additional 65' for wildlife crossings. » Betterment option with cost share between the City of Raleigh and Town of Wake Forest.
<p>Section 404 Impacts Summary (for slope stakes (ss) + 25')</p>			
<p>Streams – 1,197 linear ft Wetlands – 0.94 acres Surface Waters – 0.01 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 80,502 sq ft / 57,345 sq ft</p>	<p>Streams – 1,242 linear ft Wetlands – 0.95 acres Surface Waters – 0.01 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 76,724 sq ft / 60,235 sq ft</p>	<p><i>Due to the extents of slope stakes and impacts associated with the US 1 mainline bridge, no additional impacts are associated with the adjacent structure.</i></p>	<p><i>Due to the extents of slope stakes and impacts associated with the US 1 mainline bridge, no additional impacts are associated with the adjacent structure.</i></p>

Table 4-4. Segment B Overall Impact Summary

	Impact Category	Segment B with Burlington Mills Road Option A with Pedestrian Bridge over the Neuse River	Segment B with Burlington Mills Road Option B with Pedestrian Bridge over the Neuse River	Additional Impacts Associated with Full Y12A Service Road Connection over the Neuse River
Section 404 Resources	Wetlands SS+25' (SS) (acres)	0.94 (0.59)	0.95 (0.50)	N/A
	Streams SS+25' (SS) (linear ft)	1,197 (833)	1,242 (847)	N/A
	Surface Waters SS+25' (SS) (acres)	0.01 (0)	0.01 (0)	N/A
	Neuse River Basin Riparian Buffers – Zone 1 SS+25' (SS) (sq ft)	80,502 (56,342)	76,724 (56,561)	N/A
	Neuse River Basin Riparian Buffers – Zone 2 SS+25' (SS) (sq ft)	57,345 (39,897)	60,235 (40,690)	N/A
Natural Environment Resources	100-Year Floodplain (acres)	3.2	3.2	--
	High Quality Waters	--	--	--
	Water Supply Watersheds (acres)	Critical = 0 Protected = 28.2	Critical = 0 Protected = 17.4	--
	Public Water Supply Wells (100' Buffer)	5	5	--
	Fed/State Threatened or Endangered Species Habitat Present	Yes	Yes	--
	Managed Areas (acres)	0.1	0.1	--
	Wildlife Refuges and Game Lands (acres)	--	--	--
Human Environment	GeoEnvironmental Sites of Concern (Phase I Report)	4 parcels	4 parcels	--
	Potential Noise Abatement Areas	1	1	--
	Notable EJ Presence	Minority, LA	Minority, LA	--
	Parks – Section 4(f)/6(f) Resources	--	--	--
	Other Recreational Resources/Wake County Open Space (acres)	--	--	--
	Cemeteries	--	--	--
	Places of Worship	1	1	--
	Schools (Public, Charter, & Private)	--	--	--
	Public Library	--	--	--
	Transit Routes/Stops	1 route + 0 stops	1 route + 0 stops	--
	Emergency Response Stations (EMS, Fire, Police)	1 EMS Station	1 EMS Station	--
	Historic Properties – Section 4(f)	--	--	--
	ROW	Residential Displacements	8 (1 minority)	18 (2 minority)
Commercial Displacements		16	16	0
Non-Profit Displacements		0	0	0
Project Cost (\$M)	Right-of-Way	\$74,549,000	\$47,256,000	+ \$71,000
	Utilities	\$6,684,000	\$5,404,000	+ \$0
	Construction	\$109,500,000	\$102,200,000	+\$2,077,000
	Total	\$190,733,000	\$154,860,000	+\$2,148,000

4.2.1 Segment B

NCDOT Recommended LEDPA

The NCDOT recommended alternatives for LEDPA for Segment B have been determined following additional coordination efforts with municipalities, public involvement, and a supplemental small group public meeting. Following the December 2021 Public Meeting, the Project Team revised the preliminary plans to further reduce impacts to natural resources and the community while maintaining consistency with the project's purpose and need.

NCDOT is requesting the Merger Team's concurrence with Burlington Mills Road, Option A, plus the secondary multi-use path/side path bridge for bicycle and pedestrian use (Option 1), as the LEDPA for the following reasons:

- » No difference in wetland impacts and approximately two percent difference, or 27', in stream impacts.
- » Option 3 would result in total displacement of the residents along Circle Drive. Based on the small group meeting with these residents, Option 3 is very strongly opposed and likely to be met with legal opposition.
- » Based on traffic operations, Option 1 (diamond interchange), is able to process more vehicles with less delay than Option 3 (partial cloverleaf) and provides more long-term stability with the industrial truck traffic at this interchange.
- » A third bridge is necessary for maintenance of traffic (MOT) along US 1 mainline during construction. Rather than construct a shorter, temporary bridge, NCDOT is recommending proceeding with a permanent structure of the same length (345'). This bridge will be constructed with the minimum requirements for temporary vehicular traffic use since it is not intended to serve vehicular traffic permanently.
- » Following completion of the construction of the mainline bridges, the structure needed for the maintenance of traffic will be converted to a bicycle and pedestrian facility only. The bridge will tie into a multi-use path adjacent to the east side of US 1 and connect to the proposed cul-de-sacs along Wadford Drive and Meadstone Way.
- » With the conversion of US 1 to an accessed controlled facility, bicycle and pedestrian activity along US 1 is no longer feasible or legal. This will satisfy the removed bicycle and pedestrian access along US 1 and maintain local connectivity.

4.3 Segment C

North of Burlington Mills Road to South of NC 98 Business

Segment C improvements include widening US 1, interchange construction at Falls of Neuse Road/S Main Street (US 1A), replacing the existing US 1 bridges over the CSX railroad as well as constructing a service road bridge, minor interchange improvements at NC 98 Bypass, and constructing new service road connections.

This segment does not include options that were not previously discussed and concurred upon as part of previous Merger Meetings; therefore, the improvements and impacts presented in this section are the only option and further concurrence is not necessary. Additional minimization efforts will be explored as part of CP 4A.

Design options addressed in previous Merger Meetings include:

- » Bridging decision at Site 9 (Star Road Extension over UT to Smith Creek), Site 10 (US 1 over Richland Creek), and Site 12 (US 1 over CSX Railroad) (detailed in **Table 2-1** within [Section 2, Merger Process History](#)).
 - Plans include replacing the existing US 1 bridges over the CSX Railroad with a 300' long structure (includes 4 lanes in each direction). Horizontal and vertical clearances for future rail expansion have been accounted for in the proposed structures.
- » Construct a DDI at the existing intersection of US 1 and Falls of Neuse Road/S Main Street (US 1A).
- » Complete ramp modifications at the gores of the existing US 1 and NC 98 Bypass interchange (Single Point Urban Interchange). Potential ramp improvements have been explored and minimal modifications to the ramps are anticipated at this time.
- » Continue the Ponderosa Service Road north from Burlington Mills Road along the west side of US 1 connecting to Falls of Neuse Road. This service road includes the bridging decision at Site 12 noted previously. The proposed structure accommodates 2-lanes plus and MUP and accounts for future rail expansion in the horizontal and vertical clearances.
- » Construct Star Road Extension extending north along the east side of US 1 from north of the CSX Railroad and connect with Wake Drive at S Main Street. This service road includes the bridging decision at Site 9 noted previously.

Section 4.3 Tables and Figures:

- » **Table 4-5.** Segment C Overall Impact Summary

Table 4-5. Segment C Overall Impact Summary

	Impact Category	Segment C
Section 404 Resources	Wetlands SS+25' (SS) (acres)	0.66 (0.43)
	Streams SS+25' (SS) (linear ft)	1,588 (620)
	Surface Waters SS+25' (SS) (acres)	<0.01 (0)
	Neuse River Basin Riparian Buffers – Zone 1 SS+25' (SS) (sq ft)	95,405 (46,894)
	Neuse River Basin Riparian Buffers – Zone 2 SS+25' (SS) (sq ft)	60,837 (31,446)
Natural Environment Resources	100-Year Floodplain (acres)	0.6
	High Quality Waters	--
	Water Supply Watersheds (acres)	Critical = 0 Protected = 3.1
	Public Water Supply Wells (100' Buffer)	--
	Fed/State Threatened or Endangered Species Habitat Present	Yes
	Managed Areas (acres)	<0.1
	Wildlife Refuges and Game Lands (acres)	--
Human Environment	GeoEnvironmental Sites of Concern (Phase I Report)	4 parcels
	Potential Noise Abatement Areas	3
	Notable EJ Presence	Language Assistance
	Parks – Section 4(f)/6(f) Resources	--
	Other Recreational Resources/Wake County Open Space (acres)	--
	Cemeteries	--
	Places of Worship	1
	Schools (Public, Charter, & Private)	--
	Public Library	--
	Transit Routes/Stops	4 routes + 1 stop
Emergency Response Stations (EMS, Fire, Police)	--	
Historic Properties – Section 4(f)	Purefoy-Dunn Plantation, Powell House, CSX RR Bridge	
ROW	Residential Displacements	2
	Commercial Displacements	0
	Non-Profit Displacements	0
Project Cost (\$M)	Right-of-Way	\$28,124,000
	Utilities	\$5,057,000
	Construction	\$141,700,000
	Total	\$174,881,000

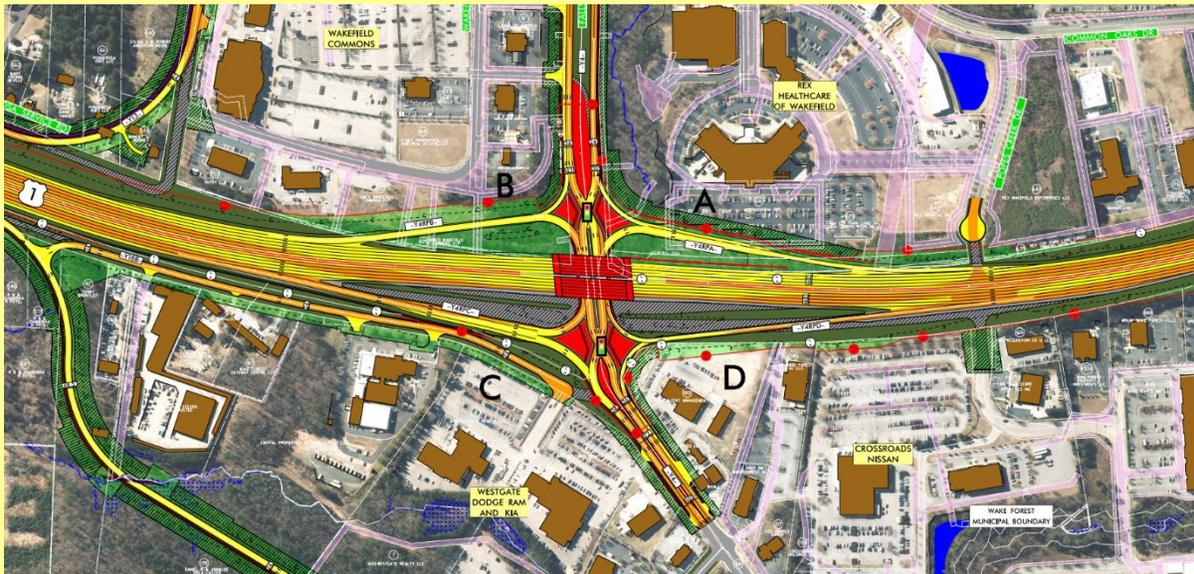
4.3.1 Segment C

NCDOT Recommended LEDPA

The NCDOT recommended alternatives for LEDPA for Segment C have been determined based on previous Merger Meetings and Concurrence Points. Minor changes to the design have occurred as the project progresses, but no new options are presented in this section.

NCDOT is requesting the Merger Team's concurrence on the recommended interchange options at Falls of Neuse Road/S Main Street (US 1A) and NC 98 Bypass as well as the recommended service road improvements.

Diverging Diamond Interchange at Falls of Neuse Road/S Main Street (US 1A)



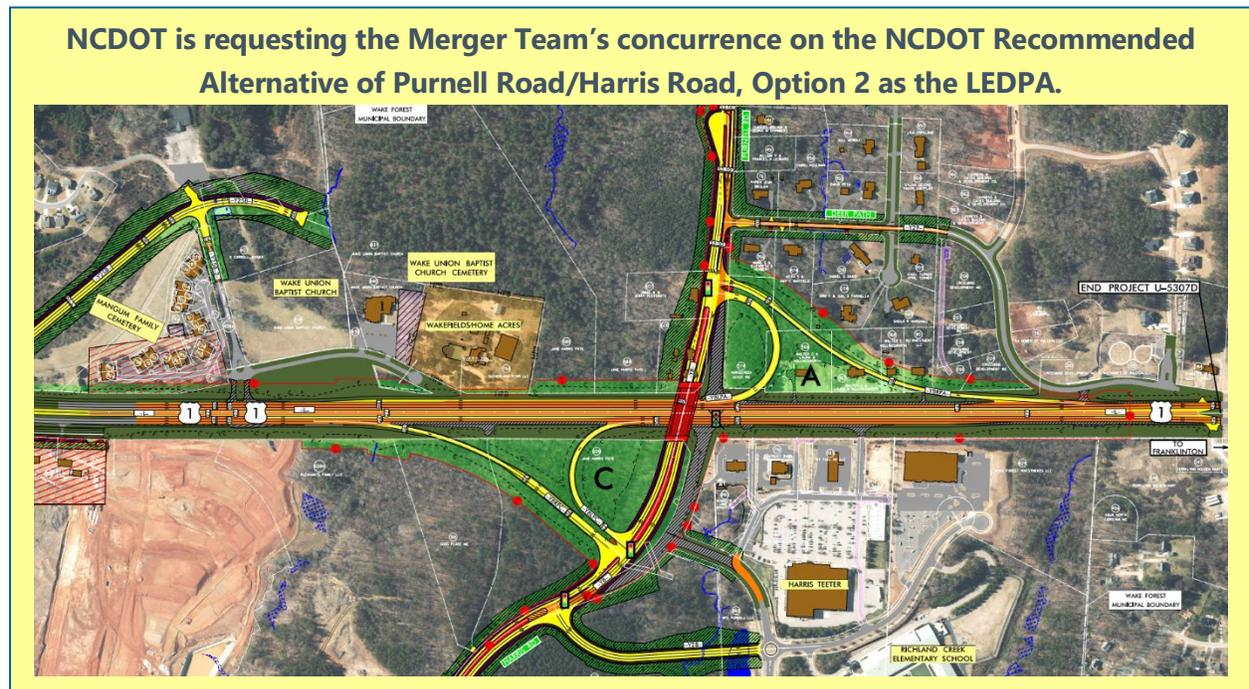
Existing Interchange Modifications at NC 98 Bypass



4.4 Segment D

South of NC 98 Business to Purnell Road/Harris Road

Segment D improvements include widening US 1, interchange improvements at NC 98 Business (one option), a grade separation at Jenkins Road/Stadium Drive (one option), interchange construction at Purnell Road/Harris Road (two options), and constructing new service road connections.



Design options addressed in previous Merger Meetings include:

- » Construct interchange improvements at the existing NC 98 Business interchange (includes addition of a loop in the northeast quadrant and relocation of adjacent on-ramp and replacement of US 1 bridges over NC 98 Business).
- » Construct a grade separation at the existing Jenkins Road/Stadium Drive intersection.
- » Construct an interchange (Partial Cloverleaf) at the existing Purnell Road/Harris Road intersection. The second option was created to better account for terrain and ongoing development.
- » Service Road connection extending north along the east side of US 1 from NC 98 Business connecting Wake Forest Crossing Shopping Center, Stadium Drive, and Harris Road.
- » Service Road connection extending north along the west side of US 1 connecting the existing Wake Union Church Road to Jenkins Road and parcels south of Purnell Road. Based on additional coordination with HPO, this connection will not extend to Purnell Road.

Section 4.4 Tables and Figures:

- » **Table 4-6.** Comparison of Options for Purnell Road/Harris Road Interchange
- » **Table 4-7.** Segment D Overall Impact Summary

Table 4-6. Segment D – Comparison of Options for Purnell Road/Harris Road Interchange

<p style="text-align: center;">Purnell Road/Harris Road Interchange Option 1</p>	<p style="text-align: center;">Purnell Road/Harris Road Interchange Option 2</p>
	
<ul style="list-style-type: none"> » Construct a Partial Cloverleaf interchange at Purnell Road/Harris Road intersection. » Construct improvements along Wallridge Road accessing shopping center and school entrances. » Provide a service road along Deer Path and Dolce Drive. 	<ul style="list-style-type: none"> » Construct a Partial Cloverleaf interchange at Purnell Road/Harris Road intersection. » Remove retaining wall along Wallridge Road over stream SHHH and realign Wallridge Road with Wrigley Drive at the roundabout. » Provide a service road along Deer Path and Dolce Drive.
<p>Section 404 Impacts Summary (for slope stakes (ss) + 25')</p>	
<p>Streams – 1,443 linear ft Wetlands – 0.05 acres Surface Waters – 0.87 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 91,419 sq ft / 61,764 sq ft</p>	<p>Streams – 1,392 linear ft Wetlands – 0.06 acres Surface Waters – 1.17 acres Neuse River Riparian Buffers Zone 1/Zone 2 – 85,833 sq ft / 51,164 sq ft</p>

Table 4-7. Segment D Overall Impact Summary

	Impact Category	Segment D Purnell Road/Harris Road Option 1	Segment D Purnell Road/Harris Road Option 2
Section 404 Resources	Wetlands SS+25' (SS) (acres)	0.05 (0.04)	0.06 (0.05)
	Streams SS+25' (SS) (linear ft)	1,443 (1,089)	1,392 (1,154)
	Surface Waters SS+25' (SS) (acres)	0.87 (0.48)	1.17 (0.67)
	Neuse River Basin Riparian Buffers – Zone 1 SS+25' (SS) (sq ft)	91,419 (66,556)	85,833 (61,936)
	Neuse River Basin Riparian Buffers – Zone 2 SS+25' (SS) (sq ft)	61,764 (39,221)	51,164 (33,121)
Natural Environment Resources	100-Year Floodplain	--	--
	High Quality Waters	--	--
	Water Supply Watersheds (acres)	Critical = 0 Protected = 108.5	Critical = 0 Protected = 98.4
	Public Water Supply Wells (100' Buffer)	--	--
	Fed/State Threatened or Endangered Species Habitat Present	Yes	Yes
	Managed Areas (acres)	--	--
	Wildlife Refuges and Game Lands (acres)	--	--
	GeoEnvironmental Sites of Concern (Phase I Report)	6 parcels	6 parcels
Human Environment	Potential Noise Abatement Areas	2	2
	Notable EJ Presence	Low Income, Language Assistance	Low Income, Language Assistance
	Parks – Section 4(f)/6(f) Resources	--	--
	Other Recreational Resources/Wake County Open Space (acres)	--	--
	Cemeteries	1	1
	Places of Worship	3	3
	Schools (Public, Charter, & Private)	--	--
	Public Library	--	--
	Transit Routes/Stops	1 route + 0 stops	1 route + 0 stops
	Emergency Response Stations (EMS, Fire, Police)	1 Fire Station	1 Fire Station
	Historic Properties – Section 4(f)	Wakefields/Sutherland House	Wakefields/Sutherland House
ROW	Residential Displacements	20 (4 minority)	20 (4 minority)
	Commercial Displacements	7	7
	Non-Profit Displacements	0	0
Project Cost (\$M)	Right-of-Way	\$48,387,000	\$47,957,000
	Utilities	\$8,159,000	\$8,159,000
	Construction	\$125,000,000	\$123,700,000
	Total	\$181,546,000	\$179,816,000

4.4.1 Segment D

NCDOT Recommended LEDPA

The NCDOT recommended alternatives for LEDPA for Segment D have been determined following further design review, municipal and agency coordination.

NCDOT is requesting the Merger Team’s concurrence with Purnell Road/Harris Road, Option 2 as well as the Jenkins Road/Stadium Drive overpass and service road connections as the LEDPA for the following reasons:

- » One percent difference in stream impacts and 0.01-acre difference in wetland impacts.
 - Additional surface water impacts associated with Option 2 are to retaining ponds only; however, Option 2 would also enable NCDOT to remove the existing Wallridge Drive, retaining wall, and culvert and return stream SHHH to original conditions.
- » Option 1 constructability issues due to signal spacing, grade, and maintenance of traffic during construction.
- » Additional private development that is currently underway that NCDOT would need to tie proposed designs into.

4.5 NCDOT Recommended LEDPA Total Impact Summary

Table 4-8 shows the project totals, based on the NCDOT recommended LEDPA for each Segment (subject to concurrence by the Merger Team).

Table 4-8. NCDOT Recommended LEDPA Total Impact Summary

	Impact Category	Segments A-D Combined
Section 404 Resources	Wetlands SS+25' (SS) (acres)	2.79 (1.96)
	Streams SS+25' (SS) (linear ft)	8864 (5847)
	Surface Waters SS+25' (SS) (acres)	1.21 (0.67)
	Neuse River Basin Riparian Buffers – Zone 1 SS+25' (SS) (sq ft)	543,501 (345,657)
	Neuse River Basin Riparian Buffers – Zone 2 SS+25' (SS) (sq ft)	389,011 (236,937)
Natural Environment Resources	100-Year Floodplain (acres)	6.7
	High Quality Waters	--
	Water Supply Watersheds (acres)	Critical = 0 Protected = 31.3
	Public Water Supply Wells (100' Buffer)	5
	Fed/State Threatened or Endangered Species Habitat Present	Yes
	Managed Areas (acres)	0.2
	Wildlife Refuges and Game Lands	--
Human Environment	Geo-Environmental Sites of Concern (Phase I Report)	23
	Potential Noise Abatement Areas	7
	Notable EJ Presence	Minority, Low-Income, LA
	Parks – Section 4(f)/6(f) Resources	1
	Other Recreational Resources/Wake County Open Space (acres)	0.4
	Cemeteries	--
	Places of Worship	6
	Schools (Public, Charter, & Private)	--
	Public Library	--
	Transit Routes/Stops	8 routes + 5 stops
	Emergency Response Stations (EMS, Fire, Police)	1 EMS
	Historic Properties – Section 4(f)	4
	ROW	Residential Displacements
Commercial Displacements		46 (2 minority)
Non-Profit Displacements		2
Project Cost (\$M)	Right-of-Way	\$241,360,000
	Utilities	\$30,544,000
	Construction	\$612,500,000
	Total	\$884,404,000

5 Next Steps (CP 4A)

Upon concurrence of LEDPA, NCDOT is prepared to hold the CP 4A meeting, anticipated to be later this year. Based on prior Merger Team coordination, municipal input, and public involvement, NCDOT is developing recommendations for CP 4A. Much of the avoidance/minimization discussion will focus on service roads. Examples of minimization to-date include:

- » I-540/U.S. 1 interchange ramps were moved in to avoid stream impacts.
- » Reduction of the typical section of Gresham Lake Road overpass and connection to Y10 (Jacqueline Lane) from a 4-lane to 2-lane roadway will reduce stream impacts.
- » Durant/Perry Creek Diamond Interchange eliminated due to potentially high stream impacts.
- » Durant/Perry Creek Partial Cloverleaf Interchange eliminated due to potentially high stream impacts.
- » The extension of Wake Union Church Road to Purnell Road was removed from additional coordination due to potential impacts to the historic Wakefield/Sutherland House.
- » Site 3 Bridge Crossing – decision to construct 300' bridge (rather than culvert) to minimize stream impacts.
- » Site 6 Bridge Crossing – decision to construct 60' bridge (rather than culvert) to minimize stream impacts.
- » Site 8 Bridge Crossing (Neuse River) – decision to extend bridges over the Neuse River by an additional 65' to provide for wildlife crossing.
- » Site 11 Bridge Crossing – decision not to pursue this crossing due to stream impacts.
- » Service roads are crossing as perpendicular to streams where possible.