



March 26, 2024

NCDOT STIP Project U-5307 (Capital Boulevard) Freeway Upgrade

Finding of No Significant Impact (FONSI)



This page intentionally left blank

U.S. 1 (Capital Boulevard) Freeway Upgrade

From I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest

Wake County, North Carolina

Federal Aid Project No. NHS-0001 (138)

NCDOT STIP Project No. U-5307

WBS No. 47027.1.1

Administrative Action

Finding of No Significant Impact (FONSI)

Submitted Pursuant to the National Environmental Policy Act 42 U.S.C 4332(2)(c)

By the

United States Department of Transportation, Federal Highway Administration;

North Carolina Department of Transportation

4/3/2024

Date of Approval

for Yolonda K. Jordan
Division Administrator
Federal Highway Administration

4/1/2024

Date of Approval

John Jamison, PWS, CPM
Environmental Policy Unit Head
North Carolina Department of Transportation

The following persons may be contacted for additional information concerning this document:

Ms. Yolonda K. Jordan
Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, NC 27601
(919) 856-4346

Mr. John Jamison, PWS, CPM
Environmental Policy Unit
NC Department of Transportation
1000 Birch Ridge Drive
Raleigh, NC 27610
(919) 707-6140

Mr. Terry Farr, PE
Project Management Unit
NC Department of Transportation
1000 Birch Ridge Drive
Raleigh, NC 27610
(919) 707-6017

This page intentionally left blank

U.S. 1 (Capital Boulevard) Freeway Upgrade

From I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest

Wake County, North Carolina

Federal Aid Project No. NHS-0001 (138)

NCDOT STIP Project No. U-5307

WBS No. 47027.1.1

Administrative Action

Finding of No Significant Impact (FONSI)

Documentation prepared by:



RS&H Architects-Engineers-Planners, Inc.

Raleigh, NC

3/26/2024

Date

Charles R. Cox, PE
Project Manager
RS&H Architects-Engineers-Planners, Inc.



3/26/2024

Date

Ford Tanner, PE
Project Engineer
RS&H Architects-Engineers-Planners, Inc.



Documentation prepared for:

North Carolina Department of Transportation

4/1/2024

Date

Katrina Feltes, PE
Project Management Unit Team Lead – Divisions 5 & 8

3/28/2024

Date

Terry Farr, PE
Project Management Unit, Senior Project Manager – Divisions 5 & 8

This page intentionally left blank

Table of Contents

1	Introduction & Summary of the Proposed Project.....	1
1.1	Type of Action	1
1.2	Project Overview.....	1
1.3	Project Purpose and Need	3
1.4	Project Cost Estimates.....	3
1.5	Project Schedule.....	3
2	Alternatives.....	4
2.1	Build Alternatives	5
2.2	Preferred Alternative/LEDPA.....	6
2.3	Design Refinements to the Preferred Alternative	7
3	Environmental Effects	9
3.1	Updates to the Environmental Assessment.....	9
3.1.1	Traffic Forecast and Operations Analysis Update	9
3.1.2	Errata.....	9
3.1.3	Air Quality	10
3.1.4	Traffic Noise.....	16
3.2	Impact Summary for the Preferred Alternative/LEDPA	16
4	Coordination and Comments	18
4.1	Section 404/NEPA Merger Process and Agency Coordination.....	18
4.1.1	Concurrence Point 1 Purpose and Need, Study Area Defined (June 2018).....	18
4.1.2	Concurrence Point 2 Detailed Study Alternatives Carried Forward (November 2018, April 2021).....	18
4.1.3	Concurrence Point 2A Bridging Decisions and Alignment Review (November 2021).....	19
4.1.4	Concurrence Informational Meeting (December 2022)	19
4.1.5	Concurrence Point 3 Preferred Alternative/LEDPA Selection (September 2023)	19
4.1.6	Concurrence Point 4A Avoidance and Minimization (December 2023).....	20
4.2	Municipal Coordination.....	20
4.3	Public Involvement History.....	20
4.3.1	Public Meetings & Neighborhood Meetings.....	20

4.4 Environmental Assessment (May 2023) and Public Hearing (June 2023) 22

4.4.1 Comments Received During the Environmental Assessment Comment Period 22

5 Basis for Finding of No Significant Impact 35

6 Contact information 35

List of Tables

Table 1-1. U-5307 Current STIP Project Cost Estimates by Segment 3

Table 2-1. Build Alternatives Carried Forward 5

Table 2-2. U-5307 Preferred Alternative/LEDPA 6

Table 3-1. Overall Impact Summary for the Preferred Alternative/LEDPA 17

Table 4-1. Agencies Responding to Request for Comments on the EA 23

Table 4-2. Public Comments - General Comment Totals 34

Table 4-3. Public Comments - Location Specific Comment Totals 34

List of Figures

Figure 1-1. U-5307 Project Segmentation 2

Appendices

Appendix A – Section 404/NEPA Merger Process Documents

- ❖ Concurrence Point 3 Form
- ❖ Concurrence Point 4A Form

Appendix B – Environmental Assessment & Public Hearing Comments

- ❖ Agency Comments
- ❖ Municipal Comments
- ❖ Public Comments and Responses

Acronyms

Acronym	Definition
AADT	Annual Average Daily Traffic
AASHTO	American Association of Highway and Transportation Officials
CAAA	Clean Air Act Amendments
CAMPO	Capital Area Metropolitan Planning Organization
CFR	Code of Federal Regulations
CH ₄	Methane
CO ₂	Carbon Dioxide
CO ₂ e	Carbon Dioxide Equivalent
CP	Concurrence Point
DDI	Diverging Diamond Interchange
EA	Environmental Assessment
EIS	Environmental Impact Statement
EMS	Emergency Medical Service
EPA	Environmental Protection Agency
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FY	Fiscal Year
HEI	Health Effects Institute
HQW	High Quality Waters
ICE	Infrastructure Carbon Estimator
IPaC	Information for Planning and Consultation
IRIS	Integrated Risk Information System
LEDPA	Least Environmentally Damaging Practicable Alternative
LOIM	Local Officials Informational Meeting
MALAA	May Affect, Likely to Adversely Affect
MANLAA	May Affect, Not Likely to Adversely Affect
MBTA	Migratory Bird Treaty Act
mph	Miles Per Hour
MSAT	Mobile Source Air Toxics
MTP	Metropolitan Transportation Plan
MUP	Multi-Use Path

Acronym	Definition
MUTCD	Manual on Uniform Traffic Control Devices
N ₂ O	Nitrous Oxide
NAAQS	National Ambient Air Quality Standards
NATA	National Air Toxics Assessment
NCDEQ	NC Department of Environmental Quality
NCDOT	NC Department of Transportation
NEPA	National Environmental Policy Act
NRWD	Neuse River Waterdog
ORW	Outstanding Resource Waters
PM	Particulate Matter
SIP	State Implementation Plan
STIP	State Transportation Improvement Program
TIP	Transportation Improvement Program
TRM	Triangle Regional Model
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
VMT	Vehicle Miles Traveled
WRX	Wake Forest-Raleigh Express Route
WS-I, WS-II	Water Supply Watershed

PROJECT COMMITMENTS

Widening of US 1 from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest

T.I.P Number:U-5307

Wake

Federal Aid Number:

WBS:47027.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Hydraulics - Construction in FEMA Floodplain

This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the Division shall: (1) construct all vertical and horizontal elements within the floodplain as designed; and (2) consult with the Hydraulics Unit of any planned deviation of these elements within the floodplain prior to commencing any such changes; and (3) submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction. The Hydraulics Unit will then verify either: (1) the drainage structure(s) and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically; or (2) any changes made to the plans were reviewed and approved to meet FEMA SFHA compliance; or (3) appropriate mitigation measures will be achieved prior to project close-out.

EAU – ECAP - Construction Moratorium

The North Carolina Wildlife Resources Commission identifies the Neuse River within the study area as anadromous fish spawning area (AFSA). An in-water work moratorium will apply for this project between February 15 – June 30.

EAU – Cultural Resources - Powell House Historic Property

NCDOT will provide a driveway access to the historic property off Stroller Ridge Drive. NCDOT will purchase/protect the triangular piece of land adjacent to the historic property.

EAU – Cultural Resources - Wakefields / Sutherland Historic Property

NCDOT will construct a soil nail retaining wall along the front of the property with the design being selected by property owner. NCDOT will also coordinate landscaping and fencing (for top of wall) with the property owner. Cul-de-sac of Wake Union Road will be replaced with a t-turn at the property line. Further coordination will be required with HPO regarding archaeological site.

Project Management (PMU/SMU/Division) - U-5307A Design-Build Requirements

The Design-Build team for US1 and Division 5 project team for U-5307 should continue to coordinate roadway design plans.

Project Management (PMU/SMU/Division) - Traffic Noise and Air Quality

Complete a Traffic Noise Report Addendum following FONSI approval.

Project Management (PMU/SMU/Division) - Swallow Surveys on Neuse River Bridges

A survey of the nesting colony of swallows on the Neuse River bridges will be completed prior to any proposed construction or demolition of the bridges. If active, NCDOT will enact their migratory bird plan for the swallow colony.

Project Management (PMU/SMU/Division) - Neuse River Trail Access

Maintain access to the Neuse River Trail (to the best extent possible) during construction.

COMMITMENTS FROM PERMITTING

No commitments developed during project permitting.

*****END OF PROJECT COMMITMENTS*****

Widening of US 1 from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest

47027.1.1

This page intentionally left blank

1 Introduction & Summary of the Proposed Project

1.1 Type of Action

This document is a Federal Highway Administration (FHWA) Administrative Action, Finding of No Significant Impact (FONSI) and has been prepared in accordance with the National Environmental Policy Act (NEPA). The North Carolina Department of Transportation (NCDOT) and FHWA have determined the U-5307 project will not have a significant impact on the human and natural environment.

The FONSI is based on the Environmental Assessment (EA) signed by FHWA and NCDOT on May 31, 2023. Together, the EA and the FONSI provide evidence and rationale that an Environmental Impact Statement (EIS) is not required. Completion of the FONSI fulfills requirements under NEPA and FHWA can authorize NCDOT to proceed with final design, right-of-way acquisition, and construction.

1.2 Project Overview

NCDOT proposes to upgrade approximately 10.5 miles of U.S. 1 (Capital Boulevard) from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest in Wake County. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads. The current design includes the following:

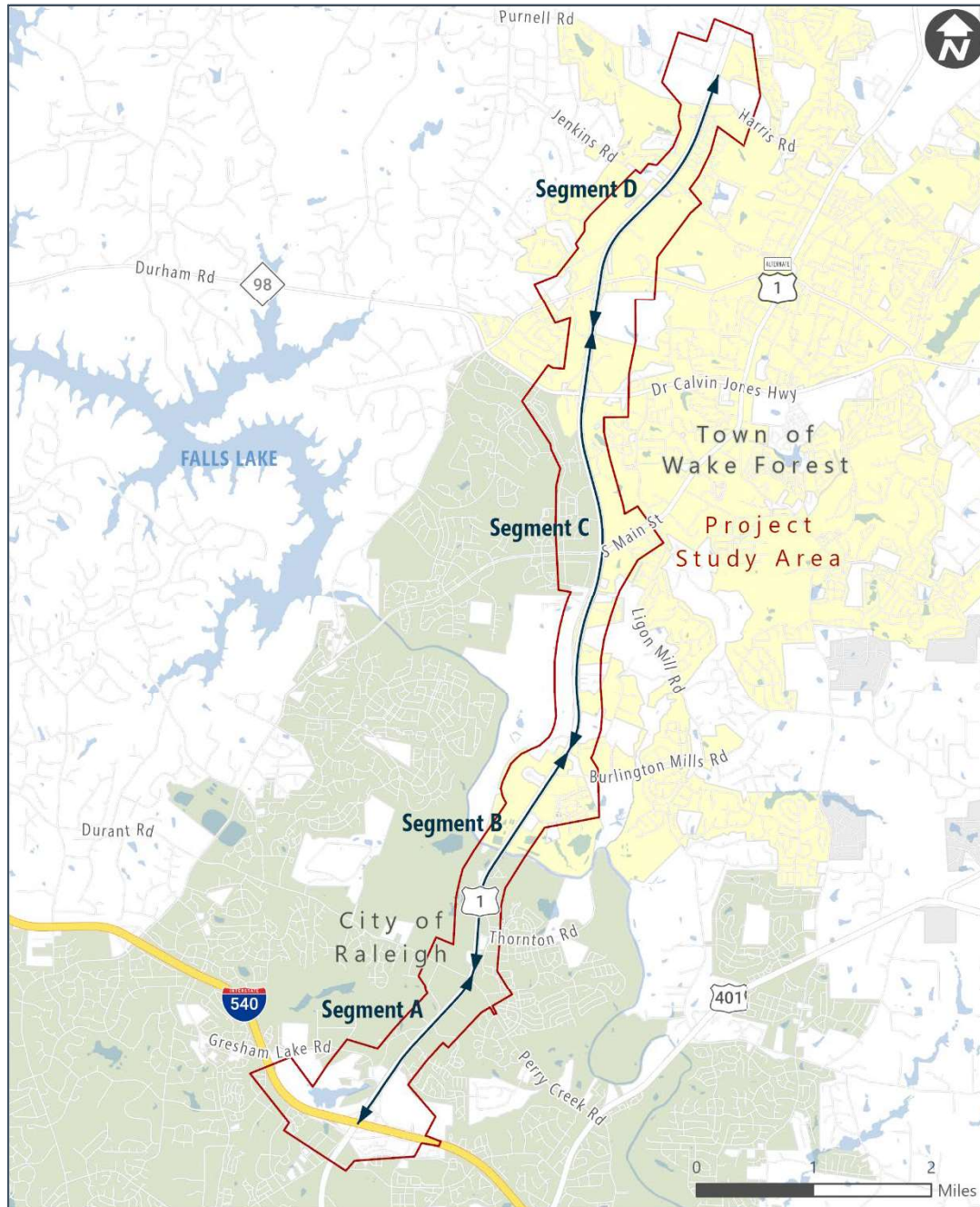
- ❖ Remove all traffic signals and driveway connections along U.S. 1.
- ❖ Improve existing interchanges along U.S. 1 at I-540, N.C. 98 Bypass, and N.C. 98 Business.
- ❖ Construct two new grade separations along U.S. 1 at Gresham Lake Road and at the existing Jenkins Road/Stadium Drive intersection.
- ❖ Construct new interchanges at Durant Road/Perry Creek Road, Burlington Mills Road, Falls of Neuse Road/South Main Street (U.S. 1A), and Purnell Road/Harris Road.
- ❖ Improve existing service/connector roads and construct new service/connector road connections throughout the project corridor.

NCDOT's current State Transportation Improvement Program (STIP) includes the U-5307 project as four segments, A through D, which can be seen in **Figure 1-1**.

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 north of Burlington Mills Road
- ❖ Segment C – North of Burlington Mills Road to south of N.C. 98 Business
- ❖ Segment D – South of N.C. 98 Business to Purnell Road/Harris Road

Figure 1-1. U-5307 Project Segmentation



1.3 Project Purpose and Need

The overall need for this project is:

- ❖ Traffic congestion and trip time unreliability.

To address the needs described previously, the purpose of the proposed project is to:

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

1.4 Project Cost Estimates

The current NCDOT STIP (NCDOT 2024-2033, amended March 2024) total project cost estimate for Segments A-D is \$753,649,000. **Table 1-1** includes the current STIP cost estimates by segment.

Table 1-1. U-5307 Current STIP Project Cost Estimates by Segment

Segment	Right-of-Way	Utilities	Construction	Total
Segment A	\$94,301,000	\$12,200,000	\$184,699,000	\$291,200,000
Segment B	\$80,053,000	\$6,700,000	\$92,399,000	\$179,152,000
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				\$753,649,000

* Segments B-D are funded for preliminary engineering only

Table 3-1 in [Section 3-2](#) includes the most recent project cost estimates by segment as of February 2024.

1.5 Project Schedule

The current NCDOT STIP (NCDOT 2024-2033) denotes the right-of-way acquisition, utility relocation, and construction for Segment A to begin in Fiscal Year (FY) 2026 as a Design-Build project.

Segments B-D are programmed for Preliminary Engineering only at this time, which means that those segments are not anticipated to move forward into right-of-way acquisition, utility relocation, or construction in the next 10 years.

2 Alternatives

NCDOT developed project alternatives through coordination with local and agency partners. Preliminary designs are consistent with American Association of State Highway and Transportation Officials (AASHTO) and NCDOT guidelines for a freeway using a 70 mile per hour (mph) design speed (posted 65-mph). Six 12' lanes, three in each direction, will be provided along U.S. 1 with auxiliary lanes and transition lanes between interchanges where warranted. Local service/connector roads will have two 11' to 12' lanes, one in each direction, with left-turn lanes as needed¹. A 10' multi-use path (MUP)/side path² to accommodate bicycles and pedestrians will be included in addition to a sidewalk along the local service/connector roads (as appropriate).

For additional details on project alternatives, refer to Section 3 of the U-5307 EA.

¹ The left-turn lanes proposed along Y25B and Y26B service/connector roads and Y7 (Jenkins Road/Stadium Drive) is a two-way-left-turn-lane. This is the only location along the project corridor where a three-lane section is proposed. Additional details can be seen on Sheet 9 of the Public Hearing Maps (<https://www.ncdot.gov/projects/capital-boulevard-upgrade/Documents/capital-boulevard-north-stadium-drive-jenkins-road.pdf>)

² An MUP/side path refers to a multi-use pathway that is physically separated from motor vehicle traffic and can be either within the highway right-of-way or within an independent right-of-way. MUPs/side paths can include bicycle paths, rail-trails or other facilities built for bicycle and pedestrian traffic. (<https://connect.ncdot.gov/projects/BikePed>)

2.1 Build Alternatives

Build Alternatives were developed for each proposed interchange location along the project corridor. NCDOT eliminated, updated, or added design options as their alternatives analyses progressed through the Section 404/NEPA Merger Process (see [Section 4.1](#)) and coordination with agency and local partners. Several interchange concepts were proposed but eliminated from future consideration at Concurrence Point (CP) 2. Concepts carried forward from CP 2 for future analysis, and then presented to the public at the June 2023 Public Hearing are listed in **Table 2-1**.

A detailed overview of past alternatives can be found in Section 3.2 of the EA.

Table 2-1. Build Alternatives Carried Forward

Location	Build Alternative
U.S. 1 Mainline	<ul style="list-style-type: none"> ❖ Fully controlled-access freeway along best-fit alignment. ❖ Six-lane typical section plus auxiliary and transition lanes between interchanges as warranted.
Service/Connector Roadways	<ul style="list-style-type: none"> ❖ New two to three-lane service/connector roadways with bicycle and/or pedestrian accommodations, as appropriate.
I-540 at U.S. 1	<ul style="list-style-type: none"> ❖ Addition of Flyover (with no Loop)
Durant Road/Perry Creek Road at U.S. 1	<ul style="list-style-type: none"> ❖ Minimized Diverging Diamond Interchange (DDI)
Burlington Mills Road at U.S. 1	<ul style="list-style-type: none"> ❖ Diamond Interchange (Option A) ❖ Skewed Partial Cloverleaf Interchange (Option B)
Falls of Neuse Road/South Main Street (U.S. 1A) at U.S. 1	<ul style="list-style-type: none"> ❖ Diverging Diamond Interchange (DDI)
N.C. 98 Bypass at U.S. 1	<ul style="list-style-type: none"> ❖ Ramp Improvements
N.C. 98 Business at U.S. 1	<ul style="list-style-type: none"> ❖ Ramp/loop additions to existing interchange
Purnell Road/Harris Road at U.S. 1	<ul style="list-style-type: none"> ❖ Partial Cloverleaf Interchange (Option 1) ❖ Partial Cloverleaf Interchange (Option 2)

2.2 Preferred Alternative/LEDPA

Preliminary designs were further refined and the NCDOT recommended alternative was presented at a Public Hearing in June 2023. Based on public feedback and an in-depth review of impacts, NCDOT presented their rationale for the recommended alternative to be the Preferred/Least Environmentally Damaging Practicable Alternative (LEDPA) to the Section 404/NEPA Merger Team at Concurrence Point 3 (September 13, 2023). At the conclusion of this concurrence point, the Section 404/NEPA Merger Team agreed to the Preferred Alternative/LEDPA outlined in **Table 2-2**.

Table 2-2. U-5307 Preferred Alternative/LEDPA

Location	Preferred Alternative/LEDPA
U.S. 1 Mainline	<ul style="list-style-type: none"> ❖ Fully controlled-access freeway along best-fit alignment. ❖ Six-lane typical section plus auxiliary and transition lanes between interchanges as warranted.
Service/Connector Roadways	<ul style="list-style-type: none"> ❖ New two to three-lane service/connector roadways with bicycle and/or pedestrian accommodations, as appropriate.
I-540 at U.S. 1	<ul style="list-style-type: none"> ❖ Addition of Flyover (with no Loop).
Gresham Lake Road	<ul style="list-style-type: none"> ❖ Overpass with connection to the new location service/connector road (Option 2).
Durant Road/Perry Creek Road at U.S. 1	<ul style="list-style-type: none"> ❖ Minimized Diverging Diamond Interchange (DDI).
Neuse River Bridge	<ul style="list-style-type: none"> ❖ Bicycle and Pedestrian Bridge (Option 1).
Burlington Mills Road at U.S. 1	<ul style="list-style-type: none"> ❖ Diamond Interchange (Option A).
Falls of Neuse Road/South Main Street (U.S. 1A) at U.S. 1	<ul style="list-style-type: none"> ❖ Diverging Diamond Interchange (DDI).
N.C. 98 Bypass at U.S. 1	<ul style="list-style-type: none"> ❖ Ramp Improvements.
N.C. 98 Business at U.S. 1	<ul style="list-style-type: none"> ❖ Ramp/loop additions to existing interchange and replace U.S. 1 bridges over N.C. 98 Business.
Stadium Drive/ Jenkins Road	<ul style="list-style-type: none"> ❖ Grade Separation.
Purnell Road/ Harris Road at U.S. 1	<ul style="list-style-type: none"> ❖ Partial Cloverleaf Interchange (Option 2).

2.3 Design Refinements to the Preferred Alternative

As part of coordination efforts with municipalities and local agencies, NCDOT has agreed to include several design refinements and evaluate others as the project progresses through the final design process. These improvements are intended to address concerns raised by local representatives during the public involvement process.

Gresham Lake Road

A roundabout at the intersection of Gresham Lake Road/Capital Hills Drive/Overlook Road was presented as an option at the Public Hearing and included in the EA. The inclusion of the roundabout at this location instead of the signalized intersection is a revision that may occur during the final design process.

Durant Road/Perry Creek Road

NCDOT has agreed to reduce lane widths to 11' outside of the DDI and bicycle and pedestrian accommodations will be shifted to the center of the DDI along a MUP/side path. Additionally, one of the sidewalks along Durant Road/Perry Creek Road will be replaced with a MUP/side path. This will be addressed during final design.

Capital Hills Drive Extension (Mallinckrodt Driveway)

NCDOT has agreed to include sidewalks on the publicly owned and maintained portion of this roadway within City of Raleigh corporate limits. This will be addressed during final design.

Neuse River Greenway

NCDOT has recommended a bicycle/pedestrian bridge (Option 1) spanning the Neuse River. A full vehicular bridge would be a betterment. At the request of the Capital Area Metropolitan Planning Organization (CAMPO), NCDOT has agreed to re-investigate the need for a full vehicular connection spanning the Neuse River once the traffic forecast/analysis is completed.

Stroller Ridge Drive

As part of the final design process, NCDOT has agreed to evaluate a left-turn from Burlington Mills Road. This will be addressed during final design.

Falls of Neuse Road/U.S. 1A (S. Main Street)

NCDOT has agreed to reduce lane widths to 11' outside of the DDI and bicycle and pedestrian accommodations will be shifted to the center of the DDI along a MUP/side path. NCDOT has also agreed to reevaluate the intersection at Wake Drive and the Star Road alignment in relation to Ligon Mill Road pending an update of the traffic operations and analysis. This will be addressed during final design.

Bicycle and Pedestrian Accommodations

Coordination with the NCDOT Integrated Mobility Division is ongoing and may result in some adjustments to the bicycle and/or pedestrian facilities presented at the June 2023 Public Hearing and currently included as part of the Preferred Alternative/LEDPA. Any potential update is expected to be minor and not impact the overall Preferred Alternative/LEDPA.

Other Revisions

As part of municipal coordination and impact minimization efforts, NCDOT has agreed to investigate certain design aspects during the final design process, such as pedestrian crossings, refuges, and signals, curb radii, and lighting. Revisions to the design are expected as a normal part of project development and are not anticipated to notably impact the Preferred Alternative/LEDPA.

3 Environmental Effects

3.1 Updates to the Environmental Assessment

3.1.1 Traffic Forecast and Operations Analysis Update

NCDOT has initiated a review of the new Triangle Regional Model (TRM) and is working to update the traffic forecast and traffic operations reports. The final forecast report is anticipated to be completed by mid-2024 and operations analysis is anticipated late-2024. Results of this analysis will determine if any further refinements to the Preferred Alternative/LEDPA are necessary.

3.1.2 Errata

3.1.2.1 Natural Resources

Section 5.1 (Natural Resources) of the EA. Per Gary Jordan (U.S. Fish and Wildlife Service (USFWS)), nesting swallows were not mentioned in the EA and are “[...] a [...] Migratory Bird Treaty Act (MBTA) issue and will need to involve careful timing of demolition or exclusion practices to avoid unauthorized take of migratory birds”.

A large number of barn swallow and cliff swallow nests have been observed on the undersides of both bridges crossing the Neuse River. Both species are protected under the Migratory Bird Treaty Act. NCDOT will work with USFWS to develop a plan to minimize potential impacts to nesting swallows, which may include phasing any demolition/under-bridge activities so that they are performed outside of the breeding season and/or employing the use of exclusion practices prior to nesting season to prevent nesting under the structures. A survey of the nesting colony will be performed prior to any proposed construction/demolition associated with the bridges to confirm that it is still active; if active, NCDOT will enact their migratory bird plan for the swallow colony.

To satisfy protections for swallows under the Migratory Bird Treaty Act of 1918, a project commitment has been added to address nesting swallows on the Neuse River bridges. Additional details are provided in [Section 4.4.1](#) in the responses to USFWS comments.

Section 5.1.1.2 (Water Resources) of the EA. There was an error in the year listed for the final 303(d) list of impaired waters. Page 49, paragraph 7 should read *“There are no Outstanding Resource Waters (ORW), High Quality Waters (HQW), or water supply watersheds (WS-I or WS-II) within 1.0 mile downstream of the study area. The North Carolina 2022 Final 303(d) list of impaired waters identified Smith Creek within 1.0 mile downstream of features identified within the study area as impaired (for turbidity).”*

Section 5.1.3.8 (Endangered Species Act Protected Species) of the EA. There was an error in footnote 11 regarding “[...] payment to the N.C. Non-game Aquatic Resource Fund to satisfy Section 7 for the species”. No payment is necessary. Additional details are provided in [Section 4.4.1](#) in the responses to USFWS comments.

3.1.2.2 Impact Summary

In Section 5.1.14 (Overall Impact Summary) of the EA, the GoRaleigh transit routes and stops potentially impacted in Segment C should be 3 routes + 1 stop. Routes intersecting the U-5307 project include the WRX (Wake Forest-Raleigh Express), Triangle Town Link (Route 25L), and the Wake Forest Loop (Routes WFL-A and WFL-B), all part of the GoRaleigh system³.

3.1.3 Air Quality

3.1.3.1 Attainment Status and Transportation Conformity (updated since the EA)

The project is in Wake County, which is within the Raleigh-Durham-Chapel Hill nonattainment area for the prior 1997 ozone National Ambient Air Quality Standard (NAAQS) as defined by the Environmental Protection Agency (EPA). This area was designated nonattainment for the 1997 8-hour ozone standard effective June 15, 2004. However, due to improved monitoring data, this area was redesignated maintenance on December 26, 2007. EPA approved a State Implementation Plan (SIP) revision for the removal of Federal low-reid vapor pressure requirement effective on February 3, 2014. The Raleigh-Durham-Chapel Hill area was attainment for the 2008 ozone NAAQS resulting in the 1997 ozone NAAQS being revoked on April 6, 2015. On February 16, 2018, the United States Court of Appeals for the District of Columbia Circuit in *South Coast Air Quality Management. District v. EPA* (“South Coast II,” 882 F.3d 1138) held that transportation conformity determinations must be made in areas that were either nonattainment or maintenance for the 1997 ozone NAAQS and attainment for the 2008 ozone NAAQS when the 1997 ozone NAAQS was revoked. Transportation conformity for plans and Transportation Improvement Programs (TIPs) for the 1997 Ozone NAAQS can be demonstrated without a regional emissions analysis pursuant to Title 40 Code of Federal Regulations (CFR) Part 93 Section 109(c).

The Capital Area Metropolitan Planning Organization 2050 Metropolitan Transportation Plan (MTP) and the FY 2024-2027 TIP conform to the intent of the SIP. The U.S. Department of Transportation (USDOT) made a conformity determination on the MTP on 09/28/2023 and the TIP on 09/28/2023. The current conformity determination is consistent with the final conformity rule found in 40 CFR

³ <https://gotriangle.org/maps-schedules/gotriangle>

51 and 93. There are no significant changes in the project's design concept or scope, as used in the conformity analyses.

3.1.3.2 Mobile Source Air Toxics (MSAT)

Background

Per the FHWA's *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA* (January 18, 2023), a quantitative MSAT analysis must be completed for projects with design year traffic projected to be greater than 140,000 annual average daily traffic (AADT) and located in proximity to populated areas. Projected traffic volumes for the proposed project for the design year exceed the 140,000 AADT threshold. Thus, a quantitative MSAT analysis was prepared for the proposed project.

Controlling air toxic emissions became a national priority with the passage of the Clean Air Act Amendments (CAAA), whereby Congress mandated that the EPA regulate 188 air toxics, also known as hazardous air pollutants. The EPA assessed this expansive list in its rule on the Control of Hazardous Air Pollutants from Mobile Sources (Federal Register, Vol 72, No. 37, page 8430, February 26, 2007), and identified a group of 93 compounds emitted from mobile sources that are part of EPA's Integrated Risk Information System (IRIS)⁴. In addition, EPA identified nine compounds with significant contributions from mobile sources that are among the national and regional-scale cancer risk drivers or contributors and non-cancer hazard contributors from the 2014 National Air Toxics Assessment (NATA)⁵. These are 1,3-butadiene, acetaldehyde, acrolein, benzene, diesel particulate matter (diesel PM), ethylbenzene, formaldehyde, naphthalene, and polycyclic organic matter. While FHWA considers these the priority MSAT, the list is subject to change and may be adjusted in consideration of future EPA rules.

According to an FHWA analysis using EPA's MOVES3 model, FHWA estimates that even if vehicle miles traveled (VMT) increases by 31 percent from 2020 to 2060 as forecast, a combined reduction of 76 percent in the total annual emissions for the priority MSAT is projected for the same time period.

MSAT analyses are intended to capture the net change in emissions within an affected environment, defined as the transportation network affected by the project. The affected environment for MSAT may be different than the affected environment defined in the NEPA document for other environmental effects, such as noise or wetlands. Analyzing MSAT only within a geographically defined "study area" will not capture the emissions effects of changes in traffic on roadways outside

⁴ <https://www.epa.gov/iris>

⁵ <https://www.epa.gov/national-air-toxics-assessment/2014-nata-assessment-results>

of that area, which is particularly important where the project creates an alternative route or diverts traffic from one roadway class to another. At the other extreme, analyzing a metropolitan area's entire roadway network will result in emissions estimates for many roadway links not affected by the project, diluting the results of the analysis.

Incomplete or Unavailable Information for Project Specific MSAT Health Impact Analysis

In FHWA's view, information is incomplete or unavailable to credibly predict the project-specific health impacts due to changes in MSAT emissions associated with a proposed set of highway alternatives. The outcome of such an assessment, adverse or not, would be influenced more by the uncertainty introduced into the process through assumption and speculation rather than any genuine insight into the actual health impacts directly attributable to MSAT exposure associated with a proposed action.

The EPA is responsible for protecting the public health and welfare from any known or anticipated effect of an air pollutant. They are the lead authority for administering the Clean Air Act and its amendments and have specific statutory obligations with respect to hazardous air pollutants and MSAT. The EPA is in the continual process of assessing human health effects, exposures, and risks posed by air pollutants. They maintain the IRIS, which is "a compilation of electronic reports on specific substances found in the environment and their potential to cause human health effects"⁴. Each report contains assessments of non-cancerous and cancerous effects for individual compounds and quantitative estimates of risk levels from lifetime oral and inhalation exposures with uncertainty spanning perhaps an order of magnitude.

Other organizations are also active in the research and analyses of the human health effects of MSAT, including the Health Effects Institute (HEI). A number of HEI studies are summarized in Appendix D of FHWA's Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents. Among the adverse health effects linked to MSAT compounds at high exposures are: cancer in humans in occupational settings; cancer in animals; and irritation to the respiratory tract, including the exacerbation of asthma. Less obvious is the adverse human health effects of MSAT compounds at current environmental concentrations⁶ or in the future as vehicle emissions substantially decrease.

The methodologies for forecasting health Impacts include emissions modeling; dispersion modeling; exposure modeling; and then final determination of health impacts – each step in the process building on the model predictions obtained in the previous step. All are encumbered by technical shortcomings or uncertain science that prevents a more complete differentiation of the

⁶ HEI Special Report 16, <https://www.healtheffects.org/publication/mobile-source-air-toxics-critical-review-literature-exposure-and-health-effects>

MSAT health impacts among a set of project alternatives. These difficulties are magnified for lifetime (i.e., 70 year) assessments, particularly because unsupportable assumptions would have to be made regarding changes in travel patterns and vehicle technology (which affects emissions rates) over that time frame, since such information is unavailable.

It is particularly difficult to reliably forecast 70-year lifetime MSAT concentrations and exposure near roadways; to determine the portion of time that people are actually exposed at a specific location; and to establish the extent attributable to a proposed action, especially given that some of the information needed is unavailable.

There are considerable uncertainties associated with the existing estimates of toxicity of the various MSAT, because of factors such as low-dose extrapolation and translation of occupational exposure data to the general population, a concern expressed by HEI⁶. As a result, there is no national consensus on air dose-response values assumed to protect the public health and welfare for MSAT compounds, and in particular for diesel PM. The EPA states that with respect to diesel engine exhaust, "[t]he absence of adequate data to develop a sufficiently confident dose-response relationship from the epidemiologic studies has prevented the estimation of inhalation carcinogenic risk."⁷

There is also the lack of a national consensus on an acceptable level of risk. The current context is the process used by the EPA as provided by the Clean Air Act to determine whether more stringent controls are required in order to provide an ample margin of safety to protect public health or to prevent an adverse environmental effect for industrial sources subject to the maximum achievable control technology standards, such as benzene emissions from refineries. The decision framework is a two-step process. The first step requires EPA to determine an "acceptable" level of risk due to emissions from a source, which is generally no greater than approximately 100 in a million. Additional factors are considered in the second step, the goal of which is to maximize the number of people with risks less than 1 in a million due to emissions from a source. The results of this statutory two-step process do not guarantee that cancer risks from exposure to air toxics are less than 1 in a million; in some cases, the residual risk determination could result in maximum individual cancer risks that are as high as approximately 100 in a million. In a June 2008 decision, the U.S. Court of Appeals for the District of Columbia Circuit upheld EPA's approach to addressing risk in its two-step decision framework. Information is incomplete or unavailable to establish that even the largest of highway projects would result in levels of risk greater than deemed acceptable⁸.

Because of the limitations in the methodologies for forecasting health impacts described, any

⁷ EPA IRIS database, Diesel Engine Exhaust, Section II.C., https://iris.epa.gov/static/pdfs/0642_summary.pdf

⁸ [https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/\\$file/07-1053-1120274.pdf](https://www.cadc.uscourts.gov/internet/opinions.nsf/284E23FFE079CD59852578000050C9DA/$file/07-1053-1120274.pdf)

predicted difference in health impacts between alternatives is likely to be much smaller than the uncertainties associated with predicting the impacts. Consequently, the results of such assessments would not be useful to decision makers, who would need to weigh this information against project benefits, such as reducing traffic congestion, accident rates, and fatalities plus improved access for emergency response, which are better suited for quantitative analysis.

Quantitative Analysis Results

Due to improvements in emissions technologies MSAT levels are expected to decrease over time, even with an increase in overall VMT. For the study area, VMTs on the included roadways are anticipated to increase approximately 78 percent between the 2015 base year and the 2040 No-Build scenario. The VMT is also expected to increase 0.7 percent between the 2040 No-Build scenario and the 2040 Build scenario. This relatively small increase between the 2040 No-Build and the 2040 Build reflects the impact of the proposed travel pattern shifting and capacity addition to the area transportation network.

Overall, the MSAT levels for the modeled area are anticipated to decrease by 89 percent between the 2015 base year and the 2040 Build condition and by three (3) percent between Build and No-Build conditions. The 2040 scenarios experience a significant decrease in emissions when compared to the 2015 emissions during this period. When comparing these decreases to the vehicle miles traveled, it is evident that despite increases in the VMT, MSAT emissions continue to decrease over time. This decrease in MSAT over time is consistent with national research.

3.1.3.3 Greenhouse Gases

The greenhouse gas emissions associated with transportation include carbon dioxide (CO₂), methane, and nitrous oxide. Any process that burns fossil fuel releases CO₂ in the air. Pursuant to the August 2019 Complete 540 Settlement Agreement, all NCDOT projects for which a NEPA EA or EIS is being prepared and a Preferred Alternative/LEDPA has not been selected prior to January 1, 2021, will complete a quantitative greenhouse gas analysis. The U-5307 Preferred Alternative/LEDPA was not identified prior to January 1, 2021, and the EA was prepared with FHWA as the lead federal agency. As a result, the proposed project required the preparation of a Quantitative Project-Level Greenhouse Gas Analysis.

The greenhouse gas analysis includes an operational analysis utilizing the MOVES3.1 results and a quantified summary of construction and operation and maintenance emissions utilizing FHWA's

Infrastructure Carbon Estimator (ICE) tool⁹. The analysis was conducted for CO₂ equivalent, or CO₂e. Using CO₂e instead of CO₂ captures the effects of other greenhouse gases, such as methane (CH₄) and nitrous oxide (N₂O), in addition to CO₂, and reports them in CO₂-equivalents.

The operational analysis considered the effects of the vehicles using the facility and uses the MOVES3.1 outputs. The operational analysis includes “tailpipe” emissions and “fuel cycle” emissions. Fuel cycle emissions account for the emissions released during fuel extraction, refining, and transportation to the end user. These emissions are reported as a component of operational emissions because they are directly proportional to the amount of fuel used.

The CO₂ equivalent emissions for the network analyzed for the U-5307 project are anticipated to decrease by 0.58 percent from the 2040 No-Build to Build condition. According to the North Carolina Greenhouse Gas Inventory (1990-2030)¹⁰, the transportation sector is anticipating an approximately 14 percent decrease in greenhouse gas emissions between 2015 and 2030. Improvements in fuel economy and continued transition to alternative fuel vehicles help explain the reduction in greenhouse gases for the U-5307 project area despite the increase in VMT.

Greenhouse gas emissions relating to construction and maintenance of the proposed project were calculated using FHWA’s ICE tool. Construction emissions consist primarily of fuel used to build the project such as that needed for bulldozers, pavers, and rollers. Emissions from fuel combusted in equipment used for routine maintenance activities are also considered. This analysis indicated an annualized impact of 3,300 million tons of CO₂e resulting from the materials, transportation, construction, operation, and maintenance efforts associated with this project.

3.1.3.4 Summary

Vehicles are a major contributor to decreased air quality because they emit a variety of pollutants into the air. Changing traffic patterns are a primary concern when determining the impact of a new highway facility or the improvement of an existing highway facility. New highways or the widening of existing highways increase localized levels of vehicle emissions, but these increases could be offset due to increases in speeds from reductions in congestion and because vehicle emissions will decrease in areas where traffic shifts to the new roadway facilities. Significant progress has been made in reducing criteria pollutant emissions from motor vehicles and improving air quality, even as vehicle travel has increased rapidly. The proposed project is located in Wake County, which is still

⁹ “The Infrastructure Carbon Estimator Version 2.1 is a spreadsheet tool that estimates the lifecycle energy and greenhouse gas emissions from the construction and maintenance of transportation facilities.” (https://www.fhwa.dot.gov/environment/sustainability/energy/tools/carbon_estimator)

¹⁰ <http://www.deq.nc.gov/GHGinventory>

subject to regional conformity reporting requirements for the 1997 8-hour ozone standard. However, the proposed project is not expected to create significant adverse effects on air quality.

3.1.4 Traffic Noise

In accordance with 23 CFR 772, Procedures for Abatement of Highway Traffic Noise and Construction Noise and the North Carolina Department of Transportation Traffic Noise Policy, each Type I highway project must be analyzed for predicted traffic noise impacts. In general, Type I projects are proposed State or Federal highway projects that construct a highway on new location, add new through lanes to an existing highway, substantially change the horizontal or vertical alignment of an existing highway, add or relocate interchange ramps or loops to complete an existing partial interchange, or involve new construction or substantial alteration of transportation facilities such as weigh stations, rest stops, ride-share lots or toll plazas.

A traffic noise evaluation was performed in March 2022 and traffic noise impacts and contours as well as potential noise abatement areas were discussed in detail in Section 5.1.10 of the EA. Due to the elapsed time from the initial traffic noise report and final environmental document, a traffic noise report addendum is scheduled following completion of the FONSI. This update will include any new noise sensitive development with an approved building permit prior to approval of this document. A design noise report is also scheduled to be completed during final design for each segment, A-D, of the proposed project.

3.2 Impact Summary for the Preferred Alternative/LEDPA

Potential impacts to the natural and human environment are discussed in detail in Section 5 of the EA. The following is a summary of potential environmental impacts for the Preferred Alternative/LEDPA.

Refer to [Section 2.2](#) for additional details on the Preferred Alternative/LEDPA.

Table 3-1. Overall Impact Summary for the Preferred Alternative/LEDPA

	Impact Category	Segment A	Segment B	Segment C	Segment D	TOTAL
Section 404 Resources	Wetlands Slope Stakes +25' (Slope Stakes only)	1.13 (0.89) acres	0.94 (0.59) acres	0.66 (0.43) acres	0.06 (0.05) acres	2.79 (1.96) acres
	Streams Slope Stakes +25' (Slope Stakes only)	4,687 (3,240) linear feet	1,197 (833) linear feet	1,588 (620) linear feet	1,392 (1,154) linear feet	8,864 (5,847) linear feet
	Surface Waters Slope Stakes +25' (Slope Stakes only)	0.02 (0) acres	0.01 (0) acres	<0.01 (0) acres	1.17 (0.67) acres	1.21 (0.67) acres
	Neuse River Basin Riparian Buffers – Zone 1 Slope Stakes +25' (Slope Stakes only)	281,761 (181,485) square feet	80,502 (56,342) square feet	95,405 (46,894) square feet	85,833 (61,936) square feet	543,501 (346,657) square feet
	Neuse River Basin Riparian Buffers – Zone 2 Slope Stakes +25' (Slope Stakes only)	219,665 (132,473) square feet	57,345 (39,897) square feet	60,837 (31,446) square feet	51,164 (33,121) square feet	389,011 (236,937) square feet
Natural Environment	100-Year Floodplain	2.9 acres	3.2 acres	0.6 acres	--	6.7 acres
	High Quality Waters	--	--	--	--	--
	Water Supply Watersheds	--	Critical = 0 acres Protected = 28.2 acres	Critical = 0 acres Protected = 3.1 acres	Critical = 0 acres Protected = 98.4 acres	Critical = 0 acres Protected = 129.7 acres
	Public Water Supply Wells (100' Buffer)	--	5	--	--	5
	Federal/State Threatened or Endangered Species Habitat Present	Yes	Yes	Yes	Yes	Yes
	Managed Areas	<0.1 acres	0.1 acres	<0.1 acres	--	<0.3 acres
	Wildlife Refuges and Game Lands	--	--	--	--	--
Human Environment	GeoEnvironmental Sites of Concern (Phase I Report)	9 parcels	4 parcels	4 parcels	6 parcels	23 parcels
	Potential Noise Abatement Areas	1	1	3	2	7
	Notable Environmental Justice Presence	Minority, Low-Income, Language Assistance	Minority, Language Assistance	Language Assistance	Low Income, Language Assistance	Minority, Low-Income, Language Assistance
	Parks – Section 4(f)/6(f) Resources	--	--	--	--	--
	Other Recreational Resources/Wake County Open Space	0.4 acres	--	--	--	0.4 acres
	Cemeteries	--	--	--	1	1
	Places of Worship	1	1	1	3	6
	Schools (Public, Charter, & Private)	--	--	--	--	--
	Public Library	--	--	--	--	--
	Transit Routes/Stops	2 routes + 4 stops	1 route + 0 stops	3 routes + 1 stop	1 route + 0 stops	4 routes, 5 stops (routes intersect multiple segments)
	Emergency Response Stations (Emergency Medical Service, Fire, Police)	--	1 EMS Station	--	1 EMS Station	2 EMS Stations
Historic Resources – Section 4(f)	--	--	Purefoy-Dunn Plantation, Powell House, CSX Railroad Bridge	Sutherland House	4 Historic Resources	
Right-of-Way	Residential Displacements	4 (1 minority)	8 (1 minority)	2	20 (4 minority)	34 (6 minority)
	Commercial Displacements	12 (1 minority)	16	0	7	35 (1 minority)
	Non-Profit Displacements	1	0	0	0	1
Project Cost	Right-of-Way	\$128,500,000	\$119,500,000	\$37,700,000	\$72,000,000	\$357,700,000
	Utilities	\$13,400,000	\$8,200,000	\$6,400,000	\$10,100,000	\$38,100,000
	Construction	\$247,500,000	\$112,100,000	\$153,900,000	\$133,300,000	\$646,800,000
	Total	\$408,750,000	\$239,800,000	\$203,710,000	\$216,060,000	\$1,068,320,000

4 Coordination and Comments

4.1 Section 404/NEPA Merger Process and Agency Coordination

This project utilized NCDOT's Merger Process. The sections below provide an overview of the concurrence points achieved so far through the Merger Process with the regulatory partners.

Additional details are available in Section 1.4 and Section 6.3 of the EA.

4.1.1 Concurrence Point 1

Purpose and Need, Study Area Defined (June 2018)

On June 14, 2018, the Merger Team met to discuss the Purpose and Need and Study Area for the referenced project. NCDOT presented the existing conditions, the project study area, the project's need, and the project's purpose. After the presentation and discussions, the Section 404/NEPA Merger Team reached a consensus and signed the formal Concurrence Point 1 Agreement.

Under this agreement, the purpose was defined as "Improve traffic congestion and travel times and maintain regional mobility and local connectivity", and the project need was determined to be "traffic congestion and trip time unreliability".

4.1.2 Concurrence Point 2

Detailed Study Alternatives Carried Forward (November 2018, April 2021)

On November 14, 2018, the Merger Team met to discuss Detailed Study Alternatives Carried Forward for the project. NCDOT presented the public comments from the October 2018 public meetings, proposed build alternatives, and stream and wetland impacts. Following the presentation and discussions, the Merger Team reached a consensus and signed the formal CP 2 Agreement outlining interchange alternatives to carry forward for additional study.

In February 2020, the Project Team and key agency team members determined that an update to the CP 2 agreement would be necessary. The CP 2 revisions include five minor study area modifications, due to adding the preliminary service/connector road designs for connectivity, as well as revising the interchange type to carry forward at two previously agreed upon locations (U.S. 1 at Durant Road/Perry Creek Road and U.S. 1 at Burlington Mills Road). After corresponding with the agencies, the Merger Team reached a consensus and signed the formal revised CP 2 Agreement on April 15, 2021.

4.1.3 Concurrence Point 2A

Bridging Decisions and Alignment Review (November 2021)

On August 18, 2021, the Merger Team met to discuss bridging recommendations and alignment review. During this meeting, the Merger Team reach a consensus and signed the formal CP 2A Agreement on November 11, 2021. Details can be found in Section 6.3.3 of the EA.

4.1.4 Concurrence Informational Meeting (December 2022)

Because of the amount of time that had passed since the last Merger Meeting in 2021, the Merger Team met on December 15, 2022. The meeting was held as an update meeting only. No decisions were made, and no concurrence was requested during the meeting.

During this meeting, the Merger Team reviewed updated alternatives, including service/connector road alignments (shown at the December 2021 Public Meeting), public outreach, traffic operations updates, Neuse River Crossings update, and Wake Union Church Road Extension.

4.1.5 Concurrence Point 3

Preferred Alternative/LEDPA Selection (September 2023)

The Merger Team met on September 13, 2023, to discuss the NCDOT Recommended Alternative as the project Preferred Alternative/LEDPA. NCDOT provided an overview of previous concurrence points and project aspects previously agreed to. The Merger Team was also provided with an overview of comments received during the Public Comment Period.

The Merger Team agreed to proceed with the NCDOT Recommended Alternative as the project's Preferred Alternative/LEDPA without any revisions. Concurrence included:

- ❖ Gresham Lake Road, Option 2
- ❖ Neuse River Crossing, Option 1
- ❖ Burlington Mills Road Interchange, Option A
- ❖ Purnell Road/Harris Road Interchange, Option 2

CAMPO, City of Raleigh, and Town of Wake Forest representatives agreed to the Preferred Alternative/LEDPA but noted a desire to revisit the active transportation crossing of the Neuse River following the updated traffic forecast and operations analysis.

A copy of the CP 3 Concurrence Form can be found in **Appendix A**.

4.1.6 Concurrence Point 4A

Avoidance and Minimization (December 2023)

Avoidance and minimization have been documented through the NEPA process and discussed at each Merger Meeting. No CP 4A meeting was held; instead, the CP 4A packet was distributed via email on November 17, 2023, for review by the Merger Team. Avoidance and minimization measures were outlined for the project as a whole, as well as by segment for both Section 404 resources and other human and natural environment resources.

The Merger Team had no comments on the completed and proposed avoidance and minimization measures. The Merger Team reached concurrence on December 13, 2023.

A copy of the CP 4A Concurrence Form can be found in **Appendix A**.

4.2 Municipal Coordination

Municipal coordination has been a crucial part of project coordination from the onset. The City of Raleigh, Town of Wake Forest, Wake County, and CAMPO have been engaged throughout project development and the Section 404/NEPA Merger Process. CAMPO is the official Merger Team member representing the municipalities.

Comments were received from local agencies following Public Meeting 2 in December 2021 which led to a series of meetings over the next year resulting in a list of recommendations by NCDOT that were included as part of the NCDOT Recommend Alternative at the Public Hearing and as part of the EA.

Additional comments were received from the City of Raleigh, Town of Wake Forest, and GoTriangle following the Public Hearing in June 2023 (see [Section 4.4.1.2](#) for additional details).

4.3 Public Involvement History

4.3.1 Public Meetings & Neighborhood Meetings

4.3.1.1 Public Meetings 1 (October 2018)

NCDOT held two Public Meetings (Public Meetings 1) 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.

4.3.1.2 Public Meeting 2 (December 2021)

NCDOT hosted a public meeting webinar via GoTo Meeting (Public Meeting 2) in December 2021 to present preliminary designs, including service/connector road options. 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.

4.3.1.3 Circle Drive Neighborhood Meeting (November 2022)

NCDOT held a small group, neighborhood meeting 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. Based on the feedback received at this meeting, a large majority of residents of Circle Drive preferred Burlington Millll Interchange Option 1.

4.3.1.4 Other Public Outreach and 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.

4.4 Environmental Assessment (May 2023) and Public Hearing (June 2023)

NCDOT conducted a Public Hearing as a result of the document shift from a CE to an EA to comply with federal requirements. The EA was approved by FHWA on May 31, 2023.

Per the updated Section 404/NEPA Merger Process Guidance, the U.S. Army Corps of Engineers (USACE) Public Notice was included as part of the NCDOT public notice distributed on May 22, 2023. The public notice opened 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 were registered between the initial public notice in May and the months immediately following the Public Hearing. NCDOT 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.

The USACE did not receive any comments regarding the project or environmental document during this Public Notice.

4.4.1 Comments Received During the Environmental Assessment Comment Period

NCDOT received comments on the EA and the NCDOT Recommended Alternative (now Preferred Alternative/LEDPA) from agencies, municipalities, and the public.

Comments from the above groups are addressed in their respective sections below. A summary of public involvement efforts for the EA is available here:

<https://publicinput.com/Custommer/File/Full/d7d359f6-cd02-4810-9919-a4470cc2f542>

4.4.1.1 Agency Comments

NCDOT received responses from 10 agencies regarding the EA. Six agencies submitted comments and four agencies had no comments or additional concerns. Submitting agencies are included in **Table 4-1**. Responses to comments are included below. Full copies of the original comments are included in **Appendix B**.

Table 4-1. Agencies Responding to Request for Comments on the EA

Agency	Representative	Date	Comments
NCDOT Roadside Environmental Unit	Mark Staley	6/20/2023	Yes
U.S. Fish and Wildlife Service	Gary Jordan	7/20/2023	Yes
NC Division of Environmental Quality – Division of Water Resources, Transportation Permitting Branch	Rob Ridings	6/26/2023	Yes
NC Division of Environmental Quality – Waste Management, Solid Waste Section	Amanda Thompson	6/30/2023	Yes
NC Division of Environmental Quality – Waste Management, Inactive Hazardous Sites Branch	Janet Macdonald	6/22/2023	Yes
NC Department of Public Safety, Division of Emergency Management	Jintao Win	7/20/2023	Yes
NC Wildlife Resources Commission	Travis Wilson	7/13/2023	No
NC Department of Agriculture	Joseph Hudyncia	7/20/2023	No
NCDOT Transportation Planning Division	Jessica Mosley	7/20/2023	No
NC State Historic Preservation Office	Ramona Bartos	7/31/2023	No

NCDOT Roadside Environmental Unit

- ❖ *According to the Merger Meeting information included in Section 6.3.2, the initial CP2 meeting was held on November 14, 2018, and that is also the date shown on the signature form in Appendix G. However, there are multiple references in Section 6.3.2 and in Appendix G to the initial CP2 form being signed and/or approved in 2019. When in 2019 did this occur? Should that date be noted on the signature form?*

NCDOT Response – Initial CP 2 concurrence was reached on November 14, 2018, followed by revised concurrence on April 15, 2021. See Section 4.1.2 for clarity regarding Concurrence Point 2 and the Revised Concurrence Point 2 meeting.

U.S. Fish and Wildlife Service

- ❖ *On page 57 and associated with Table 5-2, footnote 11 makes confusing and contradictory statements. While the aquatic species listed in the table are covered by Programmatic Biological Opinions, the statement about making payment into the NC Non-game Aquatic Resources Fund is contradictory if the biological conclusions are indeed MANLAA. Payments are made for May Affect, Likely to Adversely Affect (MALAA) conclusions. Automatic concurrence is provided for valid MANLAA conclusions (i.e. surveys did not find the species), and no payments are required. The EA does not give the justifications for the biological conclusions of MANLAA (e.g. survey information).*

NCDOT Response – The most recent surveys by the NCDOT Biological Surveys Group were completed in November 2021. Carolina madtom surveys were completed April 6-15, 2020; Neuse River Waterdog (NRWD) surveys were completed February 17-21, 2020; and mussel surveys were completed between April 22 and May 7, 2020. Based on survey results, biological conclusions of MANLAA were rendered for dwarf wedgemussel, Tar River spiny mussel, yellow lance, Carolina madtom, NRWD, Atlantic pigtoe, and green floater. Based on the newest USFWS Information for Planning and Consultation (IPaC), only NRWD, Carolina madtom, Atlantic pigtoe, and dwarf wedgemussel are listed for the project now.

NCDOT agrees that based on the Programmatic Biological Opinions and finding of MANLAA Biological Conclusion, no payment to the NC Non-game Aquatic Resource Fund is necessary.

- ❖ *Although there was extensive coordination regarding the large number of barn swallow and cliff swallow nests on the Neuse River bridges, there is no mention of this issue in the EA. This is a significant Migratory Bird Treaty Act (MBTA) issue and will need to involve careful timing of demolition or exclusion practices to avoid unauthorized take of migratory birds. There should probably be a green sheet commitment regarding this.*

NCDOT Response – A large number of barn swallow and cliff swallow nests have been observed on the undersides of both bridges crossing the Neuse River. Both species are protected under the Migratory Bird Treaty Act. NCDOT will work with USFWS to develop a plan to minimize potential impacts to nesting swallows, which may include phasing any demolition/under-bridge activities so that they are performed outside of the breeding season and/or employing the use of exclusion practices prior to nesting season to prevent nesting under the structures. A survey of the nesting colony will be performed prior to any proposed construction/demolition associated with the bridges to confirm that it is still active; if active, NCDOT will enact their migratory bird plan for the swallow colony.

A project commitment with these details has been added at the beginning of this environmental document. See [Section 3.1.2](#) for additional information.

NC Division of Environmental Quality – Division of Water Resources, Transportation Permitting Branch

- ❖ *In the EA, Appendix C, page 7, under the streams listing, it notes that as of the 2018 list, there are no 303(d) listed impaired streams in the project area. This information needs to now be updated to reflect the most recent list (2022). As of that newer listing, Smith Creek and its tributaries are now listed as 303(d) impaired waters of the state. Thus, NCDWR is very concerned with sediment and erosion impacts to 303(d) listed streams that could result from this project. The NCDWR recommends that the most protective sediment and erosion control BMPs be implemented in accordance with Design Standards in Sensitive Watersheds (15A NCAC 04B.0124) to reduce the risk of further impairment to Smith Creek and its tributaries. Post-construction stormwater BMPs should, to the MEP, be selected and designed to reduce target POCs in the 303(d) list for the receiving waters.*

NCDOT Response – See Errata, [Section 3.1.2](#) for additional details. Due to the number of updates to the Natural Resources Technical Report (NRTR) (April 2016, January 2020, and March 2021), language was included in the document to address the update to the 303(d) list and presence of Smith Creek 1.0 mile downstream of the project.

- ❖ *This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWR will continue to work with the team.*

NCDOT Response – Comment noted.

- ❖ *To meet the requirements of NCDOT's NPDES permit NCS000250, the road design plans shall provide treatment of the stormwater runoff through BMPs as detailed in the most recent version of the North Carolina Department of Transportation Stormwater Post-Construction Stormwater Program Manual, and the Best Management Practices Toolbox Manual. The BMPs should, to the MEP, be selected and designed to reduce impacts of the target pollutants of concern (POCs) for the receiving waters.*

NCDOT Response – Comment noted. This will be addressed in final design.

- ❖ *All surface waters in the project area are class NSW waters of the State. The NCDWR is very concerned with sediment and erosion impacts that could result from this project. The NCDWR recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk of nutrient runoff to all streams and tributaries. Post-construction stormwater BMPs should, to the MEP, be selected and designed to reduce nutrients.*

NCDOT Response – Comment noted. This will be addressed in final design.

- ❖ *This project is within the Neuse Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0714. New development activities located in the protected 50-foot-wide riparian areas within the basin shall be limited to "uses" identified within and constructed in accordance with 15A NCAC .02B .0295. Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, coordinated with the North Carolina Division of Mitigation Services, must be provided to the NCDWR*

prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as "allowable with mitigation" within the "Table of Uses" section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, coordinated with the North Carolina Division of Mitigation Services, must be provided to the NCDWR prior to approval of the Water Quality Certification.

NCDOT Response – Comment noted. If buffer mitigation is required, compensatory mitigation will be obtained from NC Department of Environmental Quality (NCDEQ), Division of Mitigation Services.

NC Division of Environmental Quality – Waste Management, Solid Waste Section

- ❖ *For any planned or proposed projects, it is recommended that during any land clearing, demolition, and construction, NCDOT and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. Any waste generated by and of the project that cannot be beneficially reused or recycled as described, may require disposal at a solid waste management facility permitted by the Division. The Section strongly recommends that NCDOT require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.*

NCDOT Response – Comment noted. This will be addressed during construction.

NC Division of Environmental Quality – Waste Management, Inactive Hazardous Sites Branch

- ❖ *Nine (9) Superfund Section sites and three (3) Brownfields Program Sites were identified within one mile of the project as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: <http://deq.nc.gov/waste-management-laserfiche>.*

NCDOT Response – Comment noted. This will be addressed during final design.

NC Department of Public Safety, Division of Emergency Management

- ❖ *The proposed project study area includes encroachment within the Special Flood Hazard Area (SFHA) and Floodway. North Carolina Executive Order 123 directs NCDOT to coordinate with and follow the FHWA floodplain management requirements which are found in the Federal Executive Order 11988. To ensure NCDOT compliance with EO 11988 and 44 CFR the NCDOT Hydraulics Section and the NC Floodplain Mapping Program have a Memorandum of Agreement (MOA). Please coordinate with NCDOT Hydraulics to determine if the proposed encroachments and crossings within this project are eligible to fall within the MOA.*

NCDOT Response – Comment noted. This will be addressed during final design.

4.4.1.2 Municipal Comments

Comments on the EA and the NCDOT Recommended Alternative were received from the City of Raleigh, Town of Wake Forest, and GoTriangle. No comments were received from CAMPO pertaining to the EA or proposed improvements.

Both municipalities submitted comments that were largely a reiteration of comments submitted at Public Meeting 2 in December 2021. The Town of Wake Forest noted additional concerns regarding the Falls of Neuse Road/South Main Street (U.S. 1A) and Burlington Mills Road intersections.

Complete municipal comment forms are available in **Appendix B**.

City of Raleigh Comments

- ❖ *City of Raleigh staff are supportive of Option 2, which includes a new structure connecting Y10 to Gresham Lake Road. This street is now in the City of Raleigh 2030 Comprehensive Plan Update, Map T-1: Street Plan (COR Street Plan) as a two-lane divided avenue. It is also a part of the US 1 Corridor Study. This connection is vital to the local connectivity element of the defined purpose and need of U-5307. It is also necessary to avoid an adverse effect on local traffic patterns and community cohesiveness.*

NCDOT Response – NCDOT will proceed with Option 2 (overpass and connection to Y10) as concurred upon by agencies at Concurrence Point 3. NCDOT is continuing with Option 2 predicated on the understanding that additional connections will be a local responsibility.

- ❖ *To support the City's Vision Zero initiative, the City supports the Gresham Lake Road/Capital Hills Drive Roundabout Option (intersection of Y9A and Y9C). [...]*

NCDOT Response – A roundabout at the intersection of Gresham Lake Road/Capital Hills Drive/Overlook Road was presented as an option at the Public Hearing and included in the EA. The inclusion of the roundabout at this location instead of the signalized intersection is a revision that may occur during the final design process. At this time, NCDOT will proceed with the signalized intersection as shown on preliminary plans concurred upon by agencies at Concurrence Point 3.

- ❖ *We would like to ask NCDOT to remove the proposed right turn slip lane at this roundabout. Due to the proposed multi-use path, and the proximity to greenway trails, neighborhoods, and employment centers, bike and pedestrian use is expected in this area. Per NCHRP Research Report 1043, "Guide for Roundabouts:"*

NCDOT Response – Based on initial review of traffic operations and volumes, a slip lane is needed at this location so that the roundabout functions acceptably. Additional design review and volumes from the updated TRM are needed prior to making a final recommendation for a roundabout at this location. This may be included as an option during the final design process. At this time, NCDOT will proceed with the signalized intersection as shown on preliminary plans concurred upon by agencies at Concurrence Point 3.

- ❖ *A roundabout in this location has the added benefits of reduced future maintenance cost compared to a signal, and reduced roadway cross section on the approaches to the intersection, due to elimination of turn lanes.*

NCDOT Response – Additional design review and volumes from the updated TRM are needed prior to making a final recommendation for a roundabout at this location. This may be included as an option during the final design process. At this time, NCDOT will continue with the preliminary design (Preferred Alternative) as concurred upon by agencies at Concurrence Point 3.

- ❖ *Include the Wadford Drive Bridge over the Neuse River Option in the base project, as shown in the COR Street Plan and the US 1 Corridor Study. [...]*

NCDOT Response – NCDOT will proceed with the bicycle/pedestrian structure (Option 1) connecting the MUP/side paths at Wadford Drive Extension and Meadstone Way cul-de-sacs, as concurred upon by agencies at Concurrence Point 3. The connection is a reasonable option that (1) provides for access for all modes across the Neuse River and (2) meets the project's purpose and need by maintaining regional mobility and local connectivity, and (3) addresses concerns expressed by the municipalities.

- ❖ *Provide a greenway connection from Wadford Drive to the Neuse River Trail, as supported by the City's Comprehensive Plan policies PR 3.1, PR 3.8, and PR 3.11. The City expects to pay for this connection as a betterment to the project.*

NCDOT Response – NCDOT has agreed to investigate a connection (as a betterment) from the existing greenway to the new bicycle/pedestrian connection spanning the Neuse River. This will be addressed during final design.

- ❖ *Accommodate planned east-west trail development along the Richland Creek (just south of N.C. 98) and NR Perry Creek Simms Branch (just south of Durant Road) corridors by providing a pedestrian culvert next to the stream culvert at each of these three planned greenway crossings. The project should not impede future buildout of these trail facilities, which are planned in the City of Raleigh Greenway Master Plan and supported by the City's Comprehensive Plan policies PR 3.1, PR 3.6, PR 3.11.*

NCDOT Response – NCDOT will continue with the preliminary design (Preferred Alternative) as concurred upon by agencies at Concurrence Point 3. Since no greenway is currently funded or under construction leading up to these locations, NCDOT does not agree to include a pedestrian culvert at this time. The project design does not preclude the City of Raleigh or Town of Wake Forest from pursuing this option independently of the U-5307 project.

Several locations were discussed in detail with the municipalities including Spring Forest Trail (under I-540), east-west trail development along Perry Creek (under U.S. 1), north-south trail development from Ruritania Street to Gresham's Lake (under I-540), and Richland Creek (under U.S. 1). These connections are not necessary to meet the project purpose and need and the construction of the U-5307 project has no bearing on how these greenways would need to be constructed and does not preclude construction of them in the future.

- ❖ *Keep the Neuse River Trail open during construction and provide detours around construction if necessary. This is supported by NCDOT's adopted Complete Streets Policy.*

NCDOT Response – NCDOT has addressed Neuse River Trail access as part of the project commitments. NCDOT will follow the NCDOT Guidelines for the Level of Pedestrian Accommodation in Work Zones (July 2018). NCDOT agrees to coordinate construction phasing with the City of Raleigh and Town of Wake Forest to maintain access to the Neuse River Trail to the best extent possible.

- ❖ *[...] the maps do not appear to include appropriate bikeways for [...] Y2: Durant Rd/Perry Creek Rd, Avenue 4-Lane, Divided.*

NCDOT Response – NCDOT agreed to incorporate the following revisions (as part of the final design process) after additional discussion with City staff:

Taper lane width to 11' outside of the DDI and shift bicycle/pedestrian accommodations to the center of the DDI along a 10' minimum (12' ideal if possible) path.

Include one sidewalk and one MUP/side path along Durant Road/Perry Creek Road instead of two sidewalks.

- ❖ *[...] the maps do not appear to include appropriate bikeways for [...] Y4: Falls of Neuse Rd west of US 1, Avenue 6-Lane, Divided.*

NCDOT Response – NCDOT agreed to incorporate the following revision (as part of the final design process) after additional discussion with City staff:

Shift bicycle/pedestrian accommodations to the center of the DDI along a 10' minimum (12' ideal if possible) path.

- ❖ *Reduce the through lanes on US 1 in the project to cut costs as necessary to meet the available budget while maintaining all service roads and multimodal local connections. Regardless of the number of lanes, conversion to a limited-access highway will improve safety, travel time reliability, and increase capacity on the corridor. Multimodal local connectivity should be prioritized over additional laneage, which is unlikely to reduce congestion due to induced demand. Investments in the parallel S-Line corridor are a higher priority than increasing capacity on US-1 to account for all potential increases in travel demand on the corridor. The Raleigh Comprehensive Plan Policies T 1.3, T 1.4, T 2.1, T 2.4, T 2.6, T 2.11, T 3.1, T 3.2, T 3.4, T 7.1 support this approach. [...]*

NCDOT Response – The U-5307 Project Team is currently updating the traffic forecast and operations analyses using the new TRM. Results of this analysis will determine if any changes to the Preferred Alternative are necessary.

The S-line is currently undergoing planning and development within the NCDOT Rail Group as a separate project. Funding is allocated and improvements are expected to be underway by FY 2030. This is not part of the U-5307 project.

- ❖ *Design all pedestrian crossings at signals in one phase to avoid stranding pedestrians in the median of wide roadways.*

NCDOT Response – NCDOT will address pedestrian refuges as part of the final design process and in accordance with the AASHTO Green Book and American with Disabilities Act.

- ❖ *Place all signal cabinets at locations accessible for field staff.*

NCDOT Response – NCDOT will place signal cabinets in locations where staff can access them for maintenance. The exact location of signal cabinets will be determined as part of the final design process.

- ❖ *Design signals with mast arms that are designed for additional equipment like CCTVs.*

NCDOT Response – NCDOT will assess signal design during the final design process. Details regarding mast arms would have to be included as part of a Municipal Agreement.

- ❖ *Provide pedestrian crosswalks and pedestrian signal heads at all crossings of all new or affected signals.*

NCDOT Response – NCDOT will address pedestrian crosswalks and signal heads as part of the final design process and in accordance with the Manual on Uniform Traffic Control Devices (MUTCD) and will be provided if warranted.

- ❖ *Provide street lighting along all impacted streets in Raleigh in accordance with Section 11.2.8 of the Raleigh Street Design Manual. According to the FHWA's Proven Safety Countermeasures, lighting can reduce crashes up to 42% for nighttime injury crashes at intersections, 33-38% for nighttime crashes at rural and urban intersections, and 28% for nighttime injury crashes on rural and urban highways. [...]*

NCDOT Response – The NCDOT Lighting Committee approved interchange and continuous lighting along U.S. 1 for Segments A-C on December 2, 2022. Lighting will be addressed as part of the final design process.

Any lighting infrastructure along service roads will need to be addressed as part of a Municipal Agreement. NCDOT also agreed with the City of Raleigh to discuss the installation of conduit later in the design process. This would be a betterment option included in a Municipal Agreement.

- ❖ *Minimize corner radii on all intersections of Y lines, such as at Y30 and Y2, to improve comfort and safety for pedestrians and slow vehicle turning speeds in accordance with polices T 2.1, T 3.1, T 3.2, and T 3.4 in the Raleigh Comprehensive Plan. [...]*

NCDOT Response – NCDOT will investigate the minimization of curb radii further as part of the final design process. Preliminary designs have been completed based on appropriate design vehicles and minimization of right-of-way impacts.

- ❖ *Maintain vehicular and ADA-accessible pedestrian connections to all properties that are not being acquired, including those numbered 263, 468, 530, 531, 660, 790, and 791.*

NCDOT Response – NCDOT will provide basic accommodations for pedestrians during construction, consistent with NCDOT Guidelines for the Level of Pedestrian Accommodation in

Work Zones (July 2018, updated July 2021)¹¹. The following includes access details on the noted parcels:

Parcel 263 – NCDOT will provide access to this parcel (parcel located adjacent to Gresham Lake Road/Capital Hills Drive on Map 2).

Parcel 468 – Structure impacts from Y10 are anticipated on this parcel; therefore, NCDOT will not maintain access (near Jacqueline Lane on Map 2).

Parcel 530 & 531 – NCDOT will provide access for both parcels to Paragon Park Road via an existing easement through Parcel 227. Both parcels will lose direct access to U.S. 1 as part of the freeway upgrade (south of Durant Road/Perry Creek Road ramps on Map 2).

Parcel 660 – Property and structure impacts by the new I-540 ramp are anticipated on this parcel; therefore, NCDOT will not maintain access (Map 2).

Parcel 790 & 791 – NCDOT will provide access to parcel 790 and 791 will be provided via Y10 (near Jacqueline Lane on Map 2).

Town of Wake Forest Comments

- ❖ *In June 2023, the NC Board of Transportation adopted the 2024-2033 State Transportation Improvement Program (STIP) removing committed funding for U-5307 Segments B & C. NCDOT District 5 Engineer, Brandon Jones, presented to the Town of Wake Forest Board of Commissioners on June 6, 2023 and noted that U-5307 Segments B-D would be eligible to re compete for funding in future STIPs; however, the best case scenario for completion of the project would be 2035. The Town of Wake Forest contracted with Exult Engineering to study two intersections, which are in U-5307 Segment B to understand the impact on level of services (LOS) and delays with no improvements being made until 2035 as part of the best-case scenario timeline NCDOT presented. The intersections studied were US-1 (Capital Boulevard) at South Main Street/Falls of Neuse Road and US-1 (Capital Boulevard) at Burlington Mills Road. In the PM Peak at US-1 and South Main Street, the overall intersection delay is anticipated to be 421 seconds (7 minutes); and at US-1 and Burlington Mills Road, the overall delay at the intersection is anticipated to exceed 740 seconds (12 minutes). See Tables 4 and 7. The results are abysmal and unacceptable.*

NCDOT Response – NCDOT understands the concerns with additional congestion and the delayed schedule for Segment B and is working to deliver the U-5307 project as efficiently as possible.

- ❖ *Review the modeling performed for U-5307 to ensure it is updated using the current Triangle Regional Model (TRM) as the TAZs have been updated and are more reflective of realistic development patterns projected to occur in Wake Forest.*

¹¹ Pedestrian Accommodation Count Tool Guidance (July 2021) -

https://connect.ncdot.gov/resources/Environmental/EAU/PICSViz/CSDocuments/Ped_Accommodation_Count_Tool_Guidance_07.21.docx

NCDOT Response – The U-5307 Project Team is currently updating the traffic forecast and operations analyses using the new TRM. Results of this analysis will determine if any changes to the Preferred Alternative are necessary.

- ❖ *Provide the service road over the Neuse River connecting Y12A in Raleigh to Y12A in Wake Forest providing regional vehicular, pedestrian and bicycle connectivity and contributes to the reduced travel times on US-1.*

NCDOT Response – NCDOT will proceed with the bicycle/pedestrian structure connecting the MUP/side paths at Wadford Drive Extension and Meadstone Way cul-de-sacs, as concurred upon by agencies at Concurrence Point 3. The connection is a reasonable option that (1) provides for access for all modes across the Neuse River and (2) meets the project's purpose and need by maintaining regional mobility and local connectivity, and (3) addresses concerns expressed by the municipalities.

- ❖ *Include Ligon Mill Road and the Ligon Mill Road extension in the study area as it is serving as primary north/south service road in Wake Forest on the east side of US-1.*

NCDOT Response – Ligon Mill Road is included as part of the new traffic forecast and operations analysis and will be included as part of the updated TRM review. However, Ligon Mill Road is not a service road, but simply a connector road that is part of the larger network that vehicles are expected to use as they navigate the region.

- ❖ *Extend Y25B to Purnell Road.*

NCDOT Response – The Y25B (Wake Union Church Road) extension to Purnell Road is not necessary to meet the project purpose and need. NCDOT will proceed with Y25B, as concurred upon by agencies at Concurrence Point 3, where the northern end of the proposed Wake Union Church Road terminates shy of the parcel behind the historic Wakefields/Sutherland House property, thus avoiding an adverse effect.

- ❖ *Provide an interchange instead of a grade separated crossing at Stadium and US-1 in accordance with the Northeast Area Plan hotspot study.*

NCDOT Response – NCDOT will proceed without an interchange at this time, as concurred upon by agencies at Concurrence Point 3. NCDOT agrees to reevaluate an interchange at U.S. 1 and Jenkins Road/Stadium Drive as part of the project prioritization process (Prioritization 7.0) and the reprioritization of Segment D. The current design does not preclude the interchange as a separate future project.

- ❖ *Revise the U-5307 Project Segments, specifically Segments C and D, to align with the descriptions in the STIP, November 2018 public meeting maps and MTP. It is imperative that the inclusion of NC98 Business interchange is in Segment C.*

NCDOT Response – NCDOT has engaged CAMPO in ongoing discussions regarding this topic. With the reprioritization of Segment D, the inclusion of the N.C. 98 Business interchange in Segment C

for Prioritization 7.0 is a possibility. This is a process independent of the U-5307 project and will need to be addressed as part of the STIP process.

- ❖ *Provide a full movement traffic signal at the intersection of Wake Drive and S. Main Street to ensure left turning movements may be made by residential and commercial activity on Star Road.*

NCDOT Response – The U-5307 Project Team is currently updating the traffic forecast and operations analyses using the new TRM. Results of this analysis will determine if any changes to the Preferred Alternative are necessary.

- ❖ *Ensure any radius improvements are made to accommodate a traffic signal at Wake Drive and S. Main Street.*

NCDOT Response – NCDOT has completed preliminary designs using the appropriate design vehicle and minimization of right-of-way impacts. Preliminary designs will be updated as part of the final design process where additional minimization efforts and cost-saving measures may be explored.

GoTriangle Comments

- ❖ *Bus on Shoulder: We support the inclusion of full-depth, 12-foot wide shoulders to provide for bus on shoulder. [...]*

NCDOT Response – Comment noted.

- ❖ *Park and Ride: The adopted Wake Transit Plan includes a new park and ride lot in the Capital Boulevard North corridor. We request that the project evaluate opportunities for ROW purchases necessary to construct the project to support a 2-3 acre park and ride lot in the vicinity of interchanges at NC 98 Bypass and Harris Road. [...]*

NCDOT Response – NCDOT will address remnants from right-of-way purchases in a manner consistent with NCDOT standard practices and policies. Remnants will need to be addressed on a case-by-case basis. The areas noted with potential for park-and-ride or transit opportunities can be explored further as part of ongoing coordination with GoTriangle and during the final design process.

4.4.1.3 Public Comments

105 comments were submitted by the public during the official comment period for the EA following the Public Hearing. The comments were placed into categories; categorized comment totals are shown in **Table 4-2** and **4-3**. Responses to these comments have been prepared and distributed and are available on the project website (<https://publicinput.com/capital-boulevard-upgrade>)¹² and included in **Appendix B**. Eight of the 105 comments required additional coordination and the project team addressed these comments via phone calls following completion of the public comment period.

Table 4-2. Public Comments - General Comment Totals

Category	Comment Total
Bicycles/Pedestrians and Transit	10
Funding and Project Timeline	10
General Support or Opposition	8
Public Hearing	4
Right-of-Way Impacts	4
Private Development and Environmental Impacts	3
General Service Road Impacts	3
Special Use Lanes	2
Travel Times	1
Emissions/Carbon Footprint	1
Total	46

Table 4-3. Public Comments - Location Specific Comment Totals

Location (sorted south to north)	Comment Total
U.S. 1 Overall	9
I-540 Interchange	1
Gresham Lake Road	16
Durant Road/Perry Creek Road Interchange	10
Burlington Mills Road Interchange	8
Ponderosa Service Road	2
Star Road	1
Falls of Neuse Road/South Main Street (U.S. 1A) Interchange	1
N.C. 98 Bypass Interchange	3
N.C. 98 Business Interchange	2
Stadium Drive/Jenkins Road Overpass	2
Purnell Road/Harris Road Interchange	4
Total	59

¹² Responses to Questions and Comments Received during the 2023 Public Comment Period. <https://publicinput.com/Customr/File/Full/4ef5dd76-167d-4d16-badb-ff8d09840ba1>.

5 Basis for Finding of No Significant Impact

Based upon a detailed study of the proposed project as documented in the EA, updates in this FONSI, and upon review of comments received from the public and federal, state, and local agencies, it is the finding of NCDOT and FHWA that this project will not have a significant impact upon the human or natural environment following implementation of identified mitigation measures. The project is not controversial from an environmental standpoint. No significant impacts to natural, ecological, cultural, or scenic resources are anticipated.

In addition, NCDOT will continue to coordinate with local jurisdictions and stakeholders regarding final design and construction of the project and will continue to look for ways to reduce impacts where feasible through final design.

In view of this evaluation, it has been determined a Finding of No Significant Impact is applicable for this project. Therefore, neither an Environmental Impact Statement nor further environmental analysis under the National Environmental Policy Act is required.

6 Contact information

The following persons can be contacted for additional information concerning this document:

Ms. Yolonda K. Jordan
Division Administrator
Federal Highway Administration
310 New Bern Avenue, Suite 410
Raleigh, NC 27601
(919) 856-4346

Mr. John Jamison, PWS, CPM
Environmental Policy Unit
NC Department of Transportation
1000 Birch Ridge Drive
Raleigh, NC 27610
(919) 707-6140

Mr. Terry Farr, PE
Project Management Unit
NC Department of Transportation
1000 Birch Ridge Drive
Raleigh, NC 27610
(919) 707-6017

This page intentionally left blank

Appendix A

Section 404/NEPA Merger Process Documents

Concurrence Point 3 Form

Concurrence Point 4A Form

This page intentionally left blank

NEPA/404 Merger Team Meeting Agreement

Concurrence Point 3: Least Environmentally Damaging and Practicable Alternative (LEDPA)

Project Name/Description: US 1 Upgrade to Controlled Access Highway from I-540 to Harris/Purnell Road, Wake County, NC

TIP Project No.: U-5307

Federal Aid Project No.: NHS-0001(138)

WBS No.: 47027.1.1

Least Environmentally Damaging and Practicable Alternative (LEDPA)

Note: These concurrence points are detailed in the meeting summary dated 09/13/2023.

US 1 Mainline (No Change from CP2 signed in 2019)

- Conversion to a controlled-access highway; best fit alignment for centerline with considering for maintenance of traffic during construction

I-540 Westbound Lane Addition (No change from CP 2 signed in 2018)

- Between Triangle Town Boulevard Interchange and the US 1 southbound on-ramp at I-540

Service Roads/Connector Streets

- As shown on Public Hearing Maps (dated June 2023) and CP 3 Merger Packet

New Interchanges/Grade Separations/ Bridges

Segment A:

- Gresham Lake Road – Option 2 (Grade Separation)
- Durant / Perry Creek Road – Option A (Minimized DDI) (No change from CP 2 Rev in 2021)

Segment B:

- Burlington Mills Road – Option A (Diamond Interchange)
- Neuse River Bridge Crossing – Option 1 (Multi-Use Path Connection)

Segment C:

- Falls of Neuse / US 1A – Option A (DDI) (No change from CP 2 signed in 2018)

Segment D:

- Stadium Drive / Jenkins Road – Grade Separation (No change from CP 2 signed in 2018)
- Purnell Road / Harris Road – Option 2 (Partial Cloverleaf Interchange)

Interchange Modifications

- I-540 – Flyover carrying southbound US 1 traffic to eastbound I-540 (No change from CP 2 Rev signed in 2021)
- NC 98 Bypass – ramp improvements only (No change from CP 2 Rev signed in 2021)
- NC 98 Business – bridge replacement, ramp and loop additions

The Project Team met and concurred on this date of September 13, 2023 with the Least Environmentally Damaging and Practicable Alternative (LEDPA) for the proposed project as stated above:

USACE DocuSigned by:
Eric Alsmeyer
BBEF8D962D56417...

NCDOT DocuSigned by:
Terry E. Farr
3518531A6C5E423...

USEPA DocuSigned by:
Amanetta Somerville
5356466460FC4E3...

NCDCCR DocuSigned by:
Renee Gledhill-Earley
47DA664AE2B746C...

FHWA DocuSigned by:
Seth Wilcher
B34ADF9A292349B...

NCDWR DocuSigned by:
Robert Ridinger
80ECA32C7C38490...

USFWS DocuSigned by:
Mary Jordan
B47D3BC047C44DC...

NCWRC DocuSigned by:
Travis Wilson
EEBEB6D9D3EC4ED...

NOAA DocuSigned by:
Fritz Road
7D10D31C923E7AC...

NCDCM N/A

CAMPO DocuSigned by:
Shelby Powell
241713CA80C9410...

NEPA/404 Merger Team Meeting Agreement

Concurrence Point 4A: Avoidance and Minimization Measures

Project Name/Description: US 1 Upgrade to Controlled Access Highway from I-540 to Harris/Purnell Road, Wake County, NC

TIP Project No.: U-5307

Federal Aid Project No.: NHS-0001(138)

WBS No.: 47027.1.1

Avoidance and Minimization Measures (AMMs)

Note: CP 4A review and approval was conducted via email. These concurrence points are detailed in the CP 4A packet dated November 17, 2023.

Overall Project Avoidance and Minimization

- Service/connector roadways cross streams perpendicularly wherever possible to minimize stream impacts.
- This project involves construction activities on or adjacent to FEMA-regulated stream(s). Therefore, the NCDOT Division 5 shall: (1) construct all vertical and horizontal elements within the floodplain as designed; and (2) consult with the NCDOT Hydraulics Unit of any planned deviation of these elements within the floodplain prior to commencing any such changes; and (3) submit sealed as-built construction plans to the Hydraulics Unit upon completion of project construction. The Hydraulics Unit will then verify either: (1) the drainage structure(s) and roadway embankment located within the 100-year floodplain were built as shown in the construction plans, both horizontally and vertically; or (2) any changes made to the plans were reviewed and approved to meet FEMA SFHA compliance; or (3) appropriate mitigation measures will be achieved prior to project close-out.

Segment A Avoidance and Minimization (Refer to Figure 3-1 for Site Locations)

Section 404 AMMs

- 1) I-540 at US 1 Interchange – Ramp Y1RPD3 (from I-540 west) was unbraided from flyover ramp (Y1FLY2) and retied to US 1 northbound. This reduced parallel stream impacts on the northeast side of the interchange. An option for a loop from I-540 west to US 1 south in Quadrant A was eliminated during CP 2 reducing wetland impacts.
- 2) Gresham Lake Road Extension (including bridge across US 1) typical section was reduced from a four-lane, median-divided facility to a two-lane facility with reduced median and lane widths in order to reduce stream impacts on east side of US 1.
- 3) Durant Road/Perry Creek Road Diamond Interchange and Partial Cloverleaf Interchange were eliminated due to higher stream impacts than other alternatives. The preferred design was coordinated with developer of Quadrant B to reduce required stream relocation.

- 4) Site 3 Bridge Crossing (Gresham Lake Road Extension/Triangle Town Boulevard extension) – A 300’ bridge will be constructed instead of a culvert to minimize stream impacts.
- 5) Site 6 Bridge Crossing (Y10 Service/Connector Road) – A 60’ bridge will be constructed instead of a culvert to minimize stream impacts.
- 6) Site 11 Bridge Crossing (Y10 Service/Connector Road) – This option was eliminated due to potential stream impacts associated with the new crossing.

Other AMMs for Human and Natural Environment

- 7) Driveway access will be given on Y9A Service/Connector Road (Capital Hills Drive) to allow access for the Casa de Su Presencia Church.

Segment B Avoidance and Minimization (Refer to Figure 3-8 for Site Locations)

Other AMMs for Human and Natural Environment

- 8) Site 8 Bridge Crossing (US 1 and service/connector road bridges over the Neuse River) – Through coordination with USFWS, the replacement bridges will be extended by an additional 65’ to the south to accommodate wildlife crossings underneath.
- 9) Migratory Bird Treaty Act – barn swallow and cliff swallow nests are present on the US 1 bridges over the Neuse River. NCDOT will ensure the birds are removed/excluded the season prior to demolition of the existing structures.
- 10) Construction Moratorium – A project commitment was included in the EA to require an in-water work moratorium from February 15 to June 30 since the Neuse River is an anadromous fish spawning area.
- 11) Burlington Mills Road Interchange – Option A (Diamond Interchange) was selected as the preferred alternative to reduce impacts and relocations (residential) to the Circle Drive community. Additional impact reduction will be explored during final design.

Segment C Avoidance and Minimization (Refer to Figure 3-12 for Site Locations)

Other AMMs for Human and Natural Environment

- 12) Powell House Historic Property (National Register of Historic Places) – A project commitment was included in the EA to provide a new driveway extending from Stroller Ridge Drive to preserve access to the residence and comply with Section 106.

Segment D Avoidance and Minimization (Refer to Figure 3-14 for Site Locations)

Section 404 AMMs

- 13) Jenkins Road/Stadium Drive Overpass and Y25B Service/Connector Road – Y25B Service/Connector Road (as currently designed) impacts a pond, wetland, and stream crossing. NCDOT reviewed potential options for shifting this alternative away from the pond/wetland/stream; however, the preferred alternative utilizes the minimum design curve at the tie-in with Jenkins Road which does not allow for further shifting/avoidance. Additional AMMs may be explored during final design.

- 14) NC 98 Business Interchange and Y24B Service/Connector Road – The Y24B Service/Connector Road (Ligon Mill Road Extension) starts at NC 98 Bypass and provides access to the Wake Forest Shopping Center. A stream runs parallel to the Y24B Service/Connector Road. NCDOT has reviewed this site. The Service/Connector cannot be totally relocated away from the stream due to an adjacent neighborhood (to the east), but there may be an opportunity to further reduce impacts to this stream during final design with a minor shifting of the roadway to the east.

Other AMMs for Human and Natural Environment

- 15) Wakefields/Sutherland House (National Register of Historic Places) – Wake Union Church Road Extension from the current terminus near Wake Union Baptist Church to Purnell Road was removed from additional consideration due to its potential for opening (currently undeveloped) areas for new development, thus resulting in an adverse effect on a historic property. The terminus of the extension is proposed to stop shy of adjacent property boundaries to minimize the risk of future development. The current design has a no adverse effect on the historic property.
- 16) Wakefields/Sutherland House (National Register of Historic Places) - A project commitment was included in the EA to propose a retaining wall along the property boundary adjacent to US 1 to minimize encroachment on the historic property boundary.

The Project Team reviewed the materials distributed via email and concurred on this date of **December 6, 2023**, with the Avoidance and Minimization Measures implemented to-date for the proposed project as stated above:

USACE	_____	NCDOT	_____
	Eric Alsmeyer		Terry Farr
USEPA	_____	NCDCCR	_____
	Amanetta Somerville		Renee Gledhill-Earley
FHWA	_____	NCDWR	_____
	Seth Wilcher		Robert Ridings
USFWS	_____	NCWRC	_____
	Gary Jordan		Travis Wilson
NOAA	_____	NCDCM	N/A
	Fritz Rohde		
CAMPO	_____		
	Shelby Powell		

This page intentionally left blank

Appendix B

Environmental Assessment & Public Hearing Comments

Agency Comments

Municipal Comments

Public Comments and Responses

This page intentionally left blank



NORTH CAROLINA
Environmental Quality

ROY COOPER
Governor

ELIZABETH S. BISER
Secretary

To: Crystal Best
State Clearinghouse
NC Department of Administration

From: Lyn Biles
Division of Environmental Assistance and Customer Service
Washington Regional Office

Re: 23-0254
Environmental Assessment - Proposed project is for the US 1 (Capital Boulevard) Freeway Upgrade from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads, STIP U-5307.
Wake County

Date: July 18, 2023

The Department of Environment Quality has reviewed the proposal for the referenced project. Based on the information provided, several of our agencies have identified permits that may be required and offered some valuable guidance. The comments are attached for the applicant's review.

The Department will continue to be available to assist the applicant with any questions or concerns.

Thank you for the opportunity to respond.

Attachments



North Carolina Department of Environmental Quality
217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601
919.707.8600



☒ North Carolina Wildlife Resources Commission ☒

Cameron Ingram, Executive Director

MEMORANDUM

TO: Lyn Hardison, Environmental Assistance Coordinator
Division of Environmental Assistance and Outreach, DENR

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: July 13, 2023

SUBJECT: North Carolina Department of Transportation (NCDOT) Environmental Assessment for the proposed US 1 freeway upgrade from I-540 to SR 1909 in Wake Forest, in Wake County, North Carolina. TIP No. U-5307. SCH Project No. 23-0254

Staff biologists with the N. C. Wildlife Resources Commission have reviewed the subject EA and are familiar with habitat values in the project area. The purpose of this review was to assess project impacts to fish and wildlife resources. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

NCDOT is proposing to upgrade approximately 10.5 miles of US 1 from I-540 to SR 1909 in Wake county. This project is being planned under the NEPA/Section 404 Merger 01 process. WRC is represented in this process as part of the 404 Merger Team and comments provided in conjunction with this process have been documented. At this time, we do not have any additional concerns. Thank you for the opportunity to comment on this EA. If we can be of any further assistance please call me at (919) 707-4057.

ROY COOPER

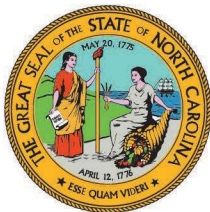
Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



NORTH CAROLINA
Environmental Quality

June 26, 2023

MEMORANDUM

To: Terry Farr, Project Manager, NCDOT Project Services Unit

From: Rob Ridings, Division of Water Resources, Transportation Permitting Branch

Subject: Comments on the Environmental Assessment related to the proposed widening and freeway upgrade of Highway US 1 from I-540 to SR 1909/SR 1931, Wake County. Federal Aid Project #NHS-0001(138), State Project No. 47027.1.1. NCDOT TIP No. U-5307.

This office has reviewed the referenced document dated May 30, 2023. The NC Division of Water Resources (NCDWR) is responsible for the issuance of the Section 401 Water Quality Certification for activities that impact Waters of the U.S., including wetlands. It is our understanding that the project as presented will result in impacts to jurisdictional wetlands, streams, buffers and/or other surface waters. The NCDWR offers the following comments based on review of the aforementioned document:

Project Specific Comments:

1. In the EA, Appendix C, page 7, under the streams listing, it notes that as of the 2018 list, there are no 303(d) listed impaired streams in the project area. This information needs to now be updated to reflect the most recent list (2022). As of that newer listing, Smith Creek and its tributaries are now listed as 303(d) impaired waters of the state. Thus, NCDWR is very concerned with sediment and erosion impacts to 303(d) listed streams that could result from this project. The NCDWR recommends that the most protective sediment and erosion control BMPs be implemented in accordance with *Design Standards in Sensitive Watersheds* (15A NCAC 04B.0124) to reduce the risk of further impairment to Smith Creek and its tributaries. Post-construction stormwater BMPs should, to the MEP, be selected and designed to reduce target POCs in the 303(d) list for the receiving waters.
2. This project is being planned as part of the 404/NEPA Merger Process. As a participating team member, the NCDWR will continue to work with the team.
3. To meet the requirements of NCDOT's NPDES permit NCS000250, the road design plans shall provide treatment of the stormwater runoff through BMPs as detailed in the most recent version of the North Carolina Department of Transportation Stormwater Post-Construction Stormwater Program Manual, and the Best Management Practices Toolbox Manual. The BMPs should, to the MEP, be selected and designed to reduce impacts of the target pollutants of concern (POCs) for the receiving waters.
4. All surface waters in the project area are class NSW waters of the State. The NCDWR is very concerned with sediment and erosion impacts that could result from this project. The NCDWR recommends that highly protective sediment and erosion control BMPs be implemented to reduce the risk



of nutrient runoff to all streams and tributaries. Post-construction stormwater BMPs should, to the MEP, be selected and designed to reduce nutrients.

5. This project is within the Neuse Basin. Riparian buffer impacts shall be avoided and minimized to the greatest extent possible pursuant to 15A NCAC 2B.0714. New development activities located in the protected 50-foot wide riparian areas within the basin shall be limited to “uses” identified within and constructed in accordance with 15A NCAC .02B .0295. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, coordinated with the North Carolina Division of Mitigation Services, must be provided to the NCDWR prior to approval of the Water Quality Certification. Buffer mitigation may be required for buffer impacts resulting from activities classified as “allowable with mitigation” within the “Table of Uses” section of the Buffer Rules or require a variance under the Buffer Rules. A buffer mitigation plan, coordinated with the North Carolina Division of Mitigation Services, must be provided to the NCDWR prior to approval of the Water Quality Certification.

General NC DWR Comments for all Linear Public Transportation Projects:

1. The environmental documents and/or permit applications should provide a detailed and itemized presentation of the proposed impacts to wetlands and streams with corresponding mapping. If mitigation is necessary as required by 15A NCAC 2H.0506(h), it is preferable to present a conceptual (if not finalized) mitigation plan with the environmental documentation. Appropriate mitigation plans will be required prior to issuance of a 401 Water Quality Certification.
2. Environmental impact statement alternatives shall consider design criteria that reduce the impacts to streams and wetlands from storm water runoff. To meet the requirements of NCDOT’s NPDES permit NCS000250, these alternatives should include road designs that allow for treatment of the storm water runoff through best management practices as detailed in the most recent version of the North Carolina Department of Transportation Stormwater Best Management Practices Toolbox manual, which includes BMPs such as grassed swales, buffer areas, preformed scour holes, retention basins, etc.
3. After the selection of the preferred alternative and prior to an issuance of the 401 Water Quality Certification, the NCDOT is respectfully reminded that they will need to demonstrate the avoidance and minimization of impacts to wetlands (and streams) to the maximum extent practical. In accordance with the Environmental Management Commission’s Rules (15A NCAC 2H.0506[h]), mitigation will be required for impacts of greater than 0.1 acre to wetlands. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The North Carolina Division of Mitigation Services may be available to assist with wetland mitigation.
4. In accordance with the Environmental Management Commission’s Rules (15A NCAC 2H.0506[h]), mitigation will be required for impacts of greater than 300 linear feet to any single perennial stream. In the event that mitigation is required, the mitigation plan shall be designed to replace appropriate lost functions and values. The North Carolina Division of Mitigation Services may be available to assist with stream mitigation.
5. Future documentation, including the 401 Water Quality Certification Application, shall continue to include an itemized listing of the proposed wetland and stream impacts with corresponding mapping.
6. The NCDWR is very concerned with sediment and erosion impacts that could result from this project. The NCDOT shall address these concerns by describing the potential impacts that may occur to the aquatic environments and any mitigating factors that would reduce the impacts.



7. An analysis of cumulative and secondary impacts anticipated as a result of this project is required. The type and detail of analysis shall conform to the NC Division of Water Resources Policy on the assessment of secondary and cumulative impacts dated April 10, 2004.
8. The NCDOT is respectfully reminded that all impacts, including but not limited to, bridging, fill, excavation and clearing, and rip rap to jurisdictional wetlands, streams, and riparian buffers need to be included in the final impact calculations. These impacts, in addition to any construction impacts, temporary or otherwise, also need to be included as part of the 401 Water Quality Certification Application.
9. Where streams must be crossed, the NCDWR prefers bridges be used in lieu of culverts. However, we realize that economic considerations often require the use of culverts. Please be advised that culverts should be countersunk to allow unimpeded passage by fish and other aquatic organisms. Moreover, in areas where high quality wetlands or streams are impacted, a bridge may prove preferable. When applicable, the NCDOT should not install the bridge bents in the creek, to the maximum extent practicable. (If you want specific bridging locations, put in here.)
10. Whenever possible, the NCDWR prefers spanning structures. Spanning structures usually do not require work within the stream or grubbing of the streambanks and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges shall allow for human and wildlife passage beneath the structure. Fish passage and navigation by canoeists and boaters shall not be blocked. Bridge supports (bents) should not be placed in the stream when possible.
11. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS000250 [delete if non-DOT project], please refer to the most recent version of the North Carolina Department of Transportation Stormwater Best Management Practices Toolbox manual for approved measures.
12. Sediment and erosion control measures should not be placed in wetlands or streams.
13. Borrow/waste areas should avoid wetlands to the maximum extent practical. Impacts to wetlands in borrow/waste areas will need to be presented in the 401 Water Quality Certification and could precipitate compensatory mitigation.
14. The 401 Water Quality Certification application will need to specifically address the proposed methods for stormwater management. More specifically, stormwater shall not be permitted to discharge directly into streams or surface waters.
15. Based on the information presented in the document, the magnitude of impacts to wetlands and streams may require an Individual Permit (IP) application to the Corps of Engineers and corresponding 401 Water Quality Certification. Please be advised that a 401 Water Quality Certification requires satisfactory protection of water quality to ensure that water quality standards are met and no wetland or stream uses are lost. Final permit authorization will require the submittal of a formal application by the NCDOT and written concurrence from the NCDWR. Please be aware that any approval will be contingent on appropriate avoidance and minimization of wetland and stream impacts to the maximum extent practical, the development of an acceptable stormwater management plan, and the inclusion of appropriate mitigation plans where appropriate.
16. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills. Concrete shall be handled in accordance with the NPDES Construction General Permit NCG010000.
17. If temporary access roads or detours are constructed, the site shall be graded to its preconstruction contours and elevations. Disturbed areas shall be seeded or mulched to stabilize the soil and appropriate native woody species shall be planted. When using temporary structures the area shall be cleared but not grubbed. Clearing the area with chain saws, mowers, bush-hogs, or other mechanized equipment and leaving the stumps and root mat intact allows the area to re-vegetate naturally and minimizes soil disturbance.



18. Unless otherwise authorized, placement of culverts and other structures in waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and downstream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required.

19. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation, floodplain benches, and/or sills may be required where appropriate. Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.

20. If foundation test borings are necessary; it shall be noted in the document. Geotechnical work is approved under General 401 Certification Number 4242/Nationwide Permit No. 6 for Survey Activities.

21. Sediment and erosion control measures sufficient to protect water resources must be implemented and maintained in accordance with the most recent version of North Carolina Sediment and Erosion Control Planning and Design Manual and the most recent version of NCS000250.

22. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of the NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.

21. Heavy equipment should be operated from the bank rather than in stream channels in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into streams. This equipment shall be inspected daily and maintained to prevent contamination of surface waters from leaking fuels, lubricants, hydraulic fluids, or other toxic materials.

22. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.

23. Riparian vegetation (native trees and shrubs) shall be preserved to the maximum extent possible. Riparian vegetation must be reestablished within the construction limits of the project by the end of the growing season following completion of construction.

The NCDWR appreciates the opportunity to provide comments on your project. Should you have any questions or require any additional information, please contact Rob Ridings at rob.ridings@deq.nc.gov or 919-707-8786.



ROY COOPER

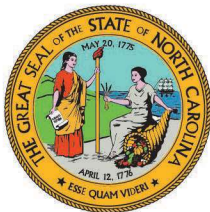
Governor

ELIZABETH S. BISER

Secretary

MICHAEL SCOTT

Director



NORTH CAROLINA
Environmental Quality

MEMORANDUM

TO: Michael Scott, Division Director through Sharon Brinkley

FROM: Amanda Thompson, Environmental Senior Specialist – Solid Waste Section

DATE: June 30, 2023

SUBJECT: Review: SW 23-0254 – Wake County (Environmental Assessment – NCDOT – Proposed project is for the US 1 (Capital Blvd.) Freeway upgrade from I-540 in Raleigh to SR 1909 (Purnell Rd.)/SR 1931 (Harris Rd.) in Wake Forest.)

The Division of Waste Management, Solid Waste Section (Section) has reviewed the documents submitted for the subject project in Wake County, NC. Based on the information provided in this document, the Section at this time does not see an adverse impact on the surrounding communities and likewise knows of no situations in the communities which would affect this project.

For any planned or proposed projects, it is recommended that during any land clearing, demolition, and construction, NCDOT and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. **Any waste generated by and of the project that cannot be beneficially reused or recycled as described, may require disposal of at a solid waste management facility permitted by the Division. The Section strongly recommends that NCDOT require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.**

Permitted solid waste management facilities are listed on the Division of Waste Management, Solid Waste Section portal site at: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules-data/solid-waste-management-annual-reports/solid-waste-permitted-facility-list>

And the site locator tool at:

<https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=7dd59be2750b40bebebf49fc383f688>

Questions regarding solid waste management for this project should be directed to Mr. Tim Davis, Environmental Senior Specialist, Solid Waste Section, at (919) 707-8290.

cc: Tim Davis, Environmental Senior Specialist



State of North Carolina Department of Environmental Quality
INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh
Project Number: 23-0254 Due Date: 07/17/2023
County: Wake

After review of this project, it has been determined that the DEQ permit(s) and/or approvals indicated may need to be obtained for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begins activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received, and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted, and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
<input checked="" type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.	60 days (90 days)
<input type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of \$100 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input checked="" type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with _____ Local Government's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		Based on Local Program
<input type="checkbox"/>	Compliance with 15A NCAC 04B .0125 – Buffers Zones for Trout Waters shall have an undisturbed buffer zone 25 feet wide or of sufficient width to confine visible siltation within the twenty-five percent (25%) of the buffer zone nearest the land-disturbing activity, whichever is greater.		
<input checked="" type="checkbox"/>	Compliance with 15A NCAC 2H .0126 - NPDES Stormwater Program which regulates three types of activities: Industrial, Municipal Separate Storm Sewer System & Construction activities that disturb ≥1 acre.		30-60 days (90 days)
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 -State Stormwater Permitting Programs regulate site development and post-construction stormwater runoff control. Areas subject to these permit programs include all 20 coastal counties, and various other counties and watersheds throughout the state.		45 days (90 days)

State of North Carolina Department of Environmental Quality
INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh
Project Number: 23-0254 Due Date: 07/17/2023
County: Wake

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory time limit)
<input checked="" type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input checked="" type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage, or the total project cost will be required upon completion.	30 days (60 days)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application forms.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
<input type="checkbox"/>	401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)
<input type="checkbox"/>	Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program		
<input type="checkbox"/>	Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Falls Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information		
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 - \$475.00 fee must accompany application	75 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$100.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input checked="" type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input checked="" type="checkbox"/>	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of the _____ water system must be approved through the _____ delegated plan approval authority. Please contact them at _____ for further information.		

State of North Carolina Department of Environmental Quality
INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh
Project Number: 23-0254 Due Date: 07/17/2023
County: Wake

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No comment	Comments	Date Review
DAQ	SH	<input type="checkbox"/>	See checked boxes above.	6/21/2023
DWR-WQROS (Aquifer & Surface)	&	<input type="checkbox"/>	&	/ /
DWR-PWS	SG	<input type="checkbox"/>	See checked boxes above.	7/3/2023
DEMLR (LQ & SW)	CA	<input type="checkbox"/>	See checked boxes above. Project appears to intersect/come in close proximity to the following: - Gresham Lake Dam (WAKE-003) - Raleigh Quarry	7/12/2023
DWM – UST	MRP	<input type="checkbox"/>	See checked box above. Be aware that additional petroleum-contaminated sites in the project area may be reported before the start date.	7/12/2023
Other Comments		<input type="checkbox"/>		/ /

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

- | | | |
|---|--|--|
| <input type="checkbox"/> Asheville Regional Office
2090 U.S. 70 Highway
Swannanoa, NC 28778-8211
Phone: 828-296-4500
Fax: 828-299-7043 | <input type="checkbox"/> Fayetteville Regional Office
225 Green Street, Suite 714,
Fayetteville, NC 28301-5043
Phone: 910-433-3300
Fax: 910-486-0707 | <input type="checkbox"/> Mooresville Regional Office
610 East Center Avenue, Suite 301,
Mooresville, NC 28115
Phone: 704-663-1699
Fax: 704-663-6040 |
| <input type="checkbox"/> Raleigh Regional Office
3800 Barrett Drive,
Raleigh, NC 27609
Phone: 919-791-4200
Fax: 919-571-4718 | <input checked="" type="checkbox"/> Washington Regional Office
943 Washington Square Mall,
Washington, NC 27889
Phone: 252-946-6481
Fax: 252-975-3716 | <input type="checkbox"/> Wilmington Regional Office
127 Cardinal Drive Ext.,
Wilmington, NC 28405
Phone: 910-796-7215
Fax: 910-350-2004 |
| | <input type="checkbox"/> Winston-Salem Regional Office
450 Hanes Mill Road, Suite 300,
Winston-Salem, NC 27105
Phone: 336-776-9800
Fax: 336-776-9797 | |

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
MICHAEL SCOTT
Director



Date: June 22, 2023

To: Michael Scott, Director
Division of Waste Management

Through: Janet Macdonald
Inactive Hazardous Sites Branch

From: Katie C Tatum
Inactive Hazardous Sites Branch

Subject: NEPA Project # 23-0254 NC Department of Transportation, Wake County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the NC Department of Transportation project. Proposed project is for the US 1 (Capital Boulevard) Freeway Upgrade from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads. STIP U-5307

Nine (9) Superfund Section sites and three (3) Brownfields Program Sites were identified within one mile of the project as shown on the attached report. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: <http://deq.nc.gov/waste-management-laserfiche>.

Please contact Janet Macdonald at 919.707.8349 if you have any questions concerning the Superfund Section review portion of this SEPA/NEPA inquiry.



North Carolina Department of Environmental Quality | Division of Waste Management
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646
919.707.8200



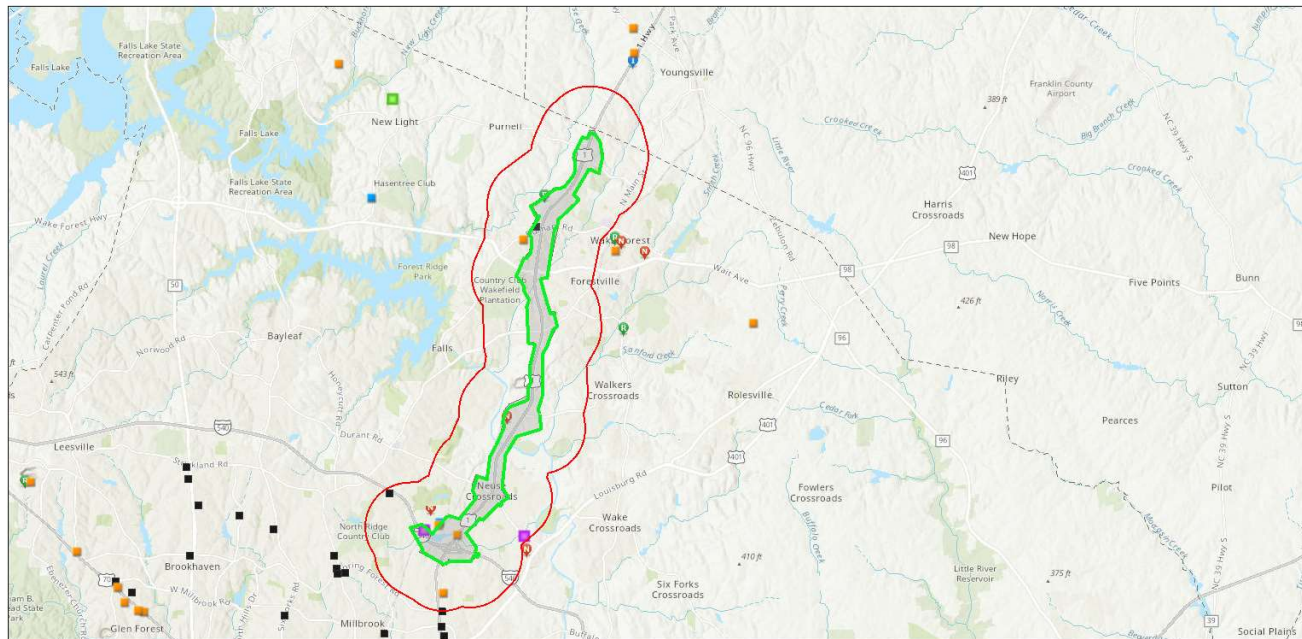
Superfund & Brownfield Sites SEPA/NEPA Review Report

Area of Interest (AOI) Information

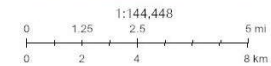
Wake County NEPA project 23-0254

Area : 21,435.49 acres

Jun 22 2023 11:23:07 Eastern Daylight Time



- Inactive Hazardous Sites
- Federal Remediation Branch
- DryCleaning Contaminated
- Remediation
- Activity Pending
- Inactive Eligible
- No Further Interest
- Recorded
- Pre Regulatory Landfill Sites



City of Raleigh, Wake County, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnology, Inc, METI/NASA, USGS, EPA, NPS, USDA, Esri, NASA, NGA, USGS

Superfund & Brownfield Sites
Wake County NEPA project 23-0254

Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	2	N/A	N/A
Federal Remediation Branch Sites	1	N/A	N/A
Inactive Hazardous Sites	4	N/A	N/A
Pre-Regulatory Landfill Sites	2	N/A	N/A
Brownfields Program Sites	3	N/A	N/A

Certified DSCA Sites

#	Site_ID	Site_Name	Count
1	DC920054	Litchford Ivory Cleaners	1
2	DC920061	Best Dry Cleaners	1

Federal Remediation Branch Sites

#	SITE_ID	SITE_NAME	Count
1	NCD986232379	GRESHAM'S LAKE INDUSTRIAL PARK	1

Inactive Hazardous Sites

#	EPAID	SITENAME	Count
1	NCD986232379	GRESHAMS LAKE INDUSTRIAL PARK	1
2	NONCD0002374	RAY PAVING (FORMER)/98 FOOD MART	1
3	NONCD0002377	RC MOTOR COMPANY	1
4	NONCD0003067	LEITH CHRYSLER JEEP	1

Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NONCD0000669	Bentley woods site	1
2	NCD065300113	Rowland LF	1

Brownfields Program Sites

#	BF_ID	BF_Name	Count
1	702903092	Parker-Hannifin	1
2	1802214092	Gresham Lake Lane	1
3	1400210092	Wake Forest Technology Park	1

Department of Environmental Quality Project Internal Review

Project Number: 23-0254**County: Wake****Date Received: 6-20-2023****Due Date: 7-17-2023**

Project Description: *Environmental Assessment - Proposed project is for the US 1 (Capital Boulevard) Freeway Upgrade from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads. STIP U-5307*

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input type="checkbox"/> Coastal Management
<input type="checkbox"/> Fayetteville	<input type="checkbox"/> DWR	<input checked="" type="checkbox"/> Waste Mgmt	<input type="checkbox"/> Marine Fisheries
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR - Public Water	<input type="checkbox"/> Water Resources Mgmt (Public Water, Planning & Water Quality Program)	<input type="checkbox"/> CC & PS Div. of Emergency Mgmt
<input type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR (LQ & SW)	<input checked="" type="checkbox"/> DWR-Transportation Unit <u>Dave</u>	<input type="checkbox"/> DMF-Shellfish Sanitation
<input type="checkbox"/> Washington	<input checked="" type="checkbox"/> DWM		<input type="checkbox"/> Wildlife
<input type="checkbox"/> Wilmington			<input checked="" type="checkbox"/> Wildlife/DOT <u>Dave</u>
<input checked="" type="checkbox"/> Winston Salem			

Manager Sign-Off/Region:	Date: 7/13/23	In-House Reviewer/Agency: Melodi Deaver, DWM Hazardous Waste Section
--------------------------	------------------	---

Response (check all applicable)

- No objection to project as proposed.
 No Comment
- Insufficient information to complete review
 Other (specify or attach comments)

Control No.: 23-E-4220-0254

Date Received: 6/20/2023

County.: WAKE

Agency Response: 7/20/2023

Review Closed: 7/20/2023

DEVON BORGARDT
CLEARINGHOUSE COORDINATOR
DEPT OF NATURAL & CULTURAL
RESOURCE

Project Information

Type: National Environmental Policy Act ironmental Assessment

Applicant: NC Department of Transportation

Project Desc.: Proposed project is for the US 1 (Capital Boulevard) Freeway Upgrade from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads. STIP U-5307

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: DEVON BORGARDT

Date: 8/1/2023



**North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

July 31, 2023

MEMORANDUM

TO: Crystal Best crystal.best@doa.nc.gov
North Carolina State Clearing House
Department of Administration

FROM: Ramona M. Bartos, Deputy State Historic Preservation Officer *RS&H for Ramona M. Bartos*

SUBJECT: US 1/Capital Boulevard Improvements to Franklin County Line, U-5307, Wake County, 23-E-4220-0254, ER 16-1916

Thank you for your email of June 26, 2023, concerning the above project.

We have conducted a review of **“NCDOT STIP Project U-5307 (Capital Boulevard) Freeway Upgrade, From I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest, Wake County, North Carolina, Administrative Action, Environmental Assessment”** prepared by RS&H Architects-Engineers-Planners, Inc., for FHWA and NCDOT, and offer the following comments.

We concur with the findings of no effect to the Raleigh & Gaston Rail Corridor (NC0008) and the Purefoy-Dunn Plantation (WA0221), and findings of no adverse effect with the environmental commitments listed to the Powell House (WA0040) and Wakefields (WA0047).

According to the Environmental Assessment (EA), two archaeological sites were determined to have been contributing resources to historic properties in this project’s area of potential effects. One cemetery (31WA2365) is a contributing element of the Powell House historic property, which is listed in the National Register of Historic Places. The Project requires removal of driveway access to U.S. 1, but no direct impacts to the cemetery are proposed.

The other site is associated with the National Register-listed Wakefields Plantation. As previously noted, we do not consider the archaeological component of Wakefields (31WA2385) fully delineated; however, the area of potential impacts is unlikely to contain significant archaeological materials given its limited extent.

We concur with the findings of the EA.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@dncr.nc.gov.

Control No.: 23-E-4220-0254

Date Received: 6/20/2023

County.: WAKE

Agency Response: 7/20/2023

Review Closed: 7/20/2023

JOSEPH HUDYNIA
CLEARINGHOUSE COORDINATOR
DEPT OF AGRICULTURE

Project Information

Type: National Environmental Policy Act ironmental Assessment

Applicant: NC Department of Transportation

Project Desc.: Proposed project is for the US 1 (Capital Boulevard) Freeway Upgrade from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads. STIP U-5307

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: JOSEPH HUDYNIA

Date: 7/12/2023

Control No.: 23-E-4220-0254

Date Received: 6/20/2023

County.: WAKE

Agency Response: 7/20/2023

Review Closed: 7/20/2023

JINTAO WEN
CLEARINGHOUSE COORDINATOR
DPS - DIV OF EMERGENCY MANAGEMENT

Project Information

Type: National Environmental Policy Act ironmental Assessment

Applicant: NC Department of Transportation

Project Desc.: Proposed project is for the US 1 (Capital Boulevard) Freeway Upgrade from I-540 in Raleigh to SR 1909 (Purnell Road)/SR 1931 (Harris Road) in Wake Forest. Proposed improvements include upgrading U.S. 1 from a four-lane, median-divided roadway with partial access control to a fully controlled-access, six-lane plus auxiliary lanes, median divided freeway as well as improving existing and constructing new interchanges and service/connector roads. STIP U-5307

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

The proposed project study area includes encroachment within the Special Flood Hazard Area (SFHA) and Floodway. North Carolina Executive Order 123 directs NCDOT to coordinate with and follow the FHWA floodplain management requirements which are found in the Federal Executive Order 11988. To ensure NCDOT compliance with EO 11988 and 44 CFR the NCDOT Hydraulics Section and the NC Floodplain Mapping Program have a Memorandum of Agreement (MOA). Please coordinate with NCDOT Hydraulics to determine if the proposed encroachments and crossings within this project are eligible to fall within the MOA.

Reviewed By: JINTAO WEN

Date: 7/10/2023

From: [Cox, Charles](#)
To: [Staley, Mark K](#)
Cc: [tefar](#); [Diane Wilson \(pdwilson1@ncdot.gov\)](#); [Berdeau, Ian](#); [Tanner, Ford](#); [Elbanhawy, Naglaa](#)
Subject: RE: [External] NEPA Environment Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County
Date: Tuesday, June 20, 2023 11:45:58 AM
Attachments: [image001.png](#)
[image002.gif](#)

Thanks Mark.

Charles R. Cox, PE

Raleigh Office Leader
8521 Six Forks Rd, Suite 400, Raleigh, NC 27615
O 919-926-4126 | M 919-815-6554

From: Staley, Mark K <mstaley@ncdot.gov>
Sent: Tuesday, June 20, 2023 11:42 AM
To: Cox, Charles <Charles.Cox@rsandh.com>
Subject: RE: [External] NEPA Environment Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

Charles,

I forgot to include that the Roadside Environmental Unit will want to see the FONSI or EIS, whichever is determined to be appropriate for this project. Please be sure to include REU when that notification is distributed. Thanks again.

Mark Staley, CPESC, CPSWQ

Roadside Environmental Engineer
Erosion Control Engineering Section
Roadside Environmental Unit
North Carolina Department of Transportation

919 707 2948 office
mstaley@ncdot.gov

Transportation Building
1557 Mail Services Center
Raleigh, NC 27699-1557



Email correspondence to and from this address is subject to the

North Carolina Public Records Law and may be disclosed to third parties.

From: Staley, Mark K

Sent: Tuesday, June 20, 2023 11:23 AM

To: Cox, Charles <Charles.Cox@rsandh.com>

Subject: RE: [External] NEPA Environment Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

Charles,

I have scanned through the EA for U-5307. I did not see any real issues of concern for the Roadside Environmental Unit in the document but did have one question about something that seems a bit confusing.

According to the Merger Meeting information included in Section 6.3.2, the initial CP2 meeting was held on November 14, 2018, and that is also the date shown on the signature form in Appendix G. However, there are multiple references in Section 6.3.2 and in Appendix G to the initial CP2 form being signed and/or approved in 2019. When in 2019 did this occur? Should that date be noted on the signature form? It may not be an issue, but it just seems like the actual date that CP2 was officially signed and approved should be in the EA. As it is now, it is a little confusing to me. But for what REU is concerned about for this project, these dates are not critical. I just wanted to raise the question in case it was critical to other units or agencies. As always, let me know if you have any questions for REU concerning this project. Thanks.

Mark Staley, CPESC, CPSWQ

Roadside Environmental Engineer

Erosion Control Engineering Section

Roadside Environmental Unit

North Carolina Department of Transportation

919 707 2948 office

mstaley@ncdot.gov

Transportation Building

1557 Mail Services Center

Raleigh, NC 27699-1557



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Cox, Charles <Charles.Cox@rsandh.com>

Sent: Sunday, June 18, 2023 8:45 PM

To: Anne.Conlon@raleighnc.gov; Myers, Jason <Jason.Myers@raleighnc.gov>; kenneth.ritchie@raleighnc.gov; jcurrin@wakeforestnc.gov; Tanner, Courtney <ctanner@wakeforestnc.gov>; Lukasina, Chris <Chris.Lukasina@campo-nc.us>; Gaby Lawlor <Gaby.Lawlor@campo-nc.us>; Jones, Brandon H <bhjones@ncdot.gov>; Parrott, Tracy N <tnparrott@ncdot.gov>; Craig, Mark W <mwcraig1@ncdot.gov>; Keilson, David P <dpkeilson@ncdot.gov>; Montague, Heather W <hwmontague@ncdot.gov>; Wimberley, Mitchell C <mcwimberley@ncdot.gov>; Alford, Kristy <kalford@ncdot.gov>; Hanks, Brian <bhanks@ncdot.gov>; Goodwin, Jeremy A <jagoodwin@ncdot.gov>; Staley, Mark K <mstaley@ncdot.gov>; Chandler, William J <wjchandler@ncdot.gov>; Sanderson, Mike <jmsanderson@ncdot.gov>; Jamison, John <johnjamison@ncdot.gov>; Wilkerson, Matt T <mtwilkerson@ncdot.gov>; Furr, Mary P. <mpfurr@ncdot.gov>; Turchy, Michael A <maturchy@ncdot.gov>; Dilday, Jason L <jldilday1@ncdot.gov>; Cartner, Wesley <wcartner@ncdot.gov>; Lovinggood, Ray D <rlovinggood@ncdot.gov>; York, Matthew J <mjyork@ncdot.gov>; Clodgo, David J <djclodgo1@ncdot.gov>; Nguyen, Han C <hcnguyen@ncdot.gov>; Woodard, Jordan A <jawoodard4@ncdot.gov>; Copple, Matthew B <mbcopple@ncdot.gov>; Pilipchuk, John L <jpilipchuk@ncdot.gov>; York, Amy D <adyork@ncdot.gov>; Martin, Dayton <daytonmartin@ncdot.gov>; Harris, James B <jbharris@ncdot.gov>; Jim Mason <james.mason@threeoaksengineering.com>

Cc: Farr, Terry E <tefarr@ncdot.gov>; Feltes, Katrina M <kmfeltes@ncdot.gov>; Berdeau, Ian <Ian.Berdeau@rsandh.com>; Tanner, Ford <Ford.Tanner@rsandh.com>; Elbanhawy, Naglaa <Naglaa.Elbanhawy@rsandh.com>

Subject: [External] NEPA Environment Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

CAUTION: External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

All,

NCDOT has completed an Environmental Assessment for U-5307. This document can be found on NCDOT's Preconstruction site at:

<https://connect.ncdot.gov/site/Preconstruction/division/div05/U-5307/Project%20Development%20Collaboration/>

The document may be accessed by outside agencies as well as the general public at:

<https://www.ncdot.gov/projects/capital-boulevard-upgrade/Pages/environmental-documents.aspx>

Distribution of the Environmental Assessment is being made on behalf of the Federal Highway Administration in accordance with 23 CFR 771. The document is being submitted to the NC State Clearinghouse, area wide planning agencies, and the counties, towns, and cities involved. The document is being distributed for review to other agencies as appropriate. It is anticipated this project will be processed with a "Finding of No Significant Impact"; however, should comments

received on the Environmental Assessment or at the public hearing demonstrate a need for preparing a Draft Environmental Impact Statement you will be contacted as part of our scoping process.

We respectfully request any comments concerning the Environmental Assessment be forwarded to Terry Farr (tefarr@ncdot.gov) by July 17, 2023. If you desire a copy of the "Finding of No Significant Impact", please so indicate.

Additionally, NCDOT is hosting a Public Hearing next week on June 21 – more details can be found at <https://publicinput.com/Capital-Boulevard-Upgrade>.

Thank you for your coordination and involvement on this project!

Charles R. Cox, PE

Raleigh Office Leader

8521 Six Forks Rd, Suite 400, Raleigh, NC 27615

O 919-926-4126 | M 919-815-6554

Charles.Cox@rsandh.com

rsandh.com | [Facebook](#) | [Twitter](#) | [LinkedIn](#) | [Blog](#)

[Stay up-to-date with our latest news and insights.](#)



Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

From: [Farr, Terry E](#)
To: [Cox, Charles](#)
Cc: [Tanner, Ford](#)
Subject: FW: [External] NEPA Environmental Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County
Date: Thursday, June 22, 2023 9:05:13 AM
Attachments: [image001.png](#)
[image002.png](#)

See below.

Thanks,

Terry E. Farr, PE
Senior Project Manager, Project Management Unit
North Carolina Department of Transportation

919 707 6017 Office
tefarr@ncdot.gov

1000 Birch Ridge Drive (Delivery)
Raleigh, NC 27610

1582 Mail Service Center (Mail)
Raleigh, NC 27699-1582



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Jamison, John <johnjamison@ncdot.gov>
Sent: Wednesday, June 21, 2023 5:15 PM
To: Farr, Terry E <tefarr@ncdot.gov>
Cc: charles.cox@rsandh.com
Subject: FW: [External] NEPA Environmental Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

FYI – see Jared’s response below. Still need followup on the MBTA issue/commitment.

https://connect.ncdot.gov/site/Preconstruction/division/div05/U-5307/Natural%20Environment/U-5307_AquaticSurveyReport.pdf.aspx

John Jamison, PWS
Unit Manager, [NCDOT EPU](#)
919 707 6140 office
919 801 8471 mobile

Customer Service is important to us. Please provide your feedback at
<https://connect.ncdot.gov/resources/Environmental/EPU/Pages/EPU-Survey.aspx>.

Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties

From: Gray, Jared S <jgray@ncdot.gov>
Sent: Tuesday, June 20, 2023 10:59 AM
To: Jamison, John <johnjamison@ncdot.gov>; Cox, Marissa R <mrcox@ncdot.gov>; Stanton, Tyler P <tstanton@ncdot.gov>
Subject: RE: [External] NEPA Environmental Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

John,

I have talked to Gary about this project. There is an identified stream reach for waterdog in the study area, but Gary said since habitat is not great and surveys didn't find any we could go with MANLAA call for this project. I have attached the report for reference that gives the justifications. So, the document should say we will use the Programmatic and get automatic concurrence with a MANLAA call and no payment required..

Jared Gray

Environmental Program Supervisor
Biological Surveys Group
Environmental Analysis Unit
North Carolina Department of Transportation

919.707.6120 Office
919-819-1207 Mobile
jgray@ncdot.gov

1000 Birch Ridge Drive (Delivery)
1598 Mail Service Center
Raleigh, NC 27699-1598



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties.

From: Jamison, John <johnjamison@ncdot.gov>
Sent: Tuesday, June 20, 2023 9:15 AM
To: Cox, Marissa R <mrcox@ncdot.gov>; Gray, Jared S <jgray@ncdot.gov>; Stanton, Tyler P <tstanton@ncdot.gov>
Subject: Fwd: [External] NEPA Environmental Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

Fyi

John J.
Environmental Policy Unit Head

From: Jordan, Gary <gary_jordan@fws.gov>
Sent: Tuesday, June 20, 2023 8:53:43 AM
To: Farr, Terry E <tefarr@ncdot.gov>
Cc: Wilcher, Seth (FHWA) <seth.wilcher@dot.gov>; Wilson, Travis W. <travis.wilson@ncwildlife.org>; Eric Alsmeyer <eric.c.alsmeyer@usace.army.mil>; Jamison, John <johnjamison@ncdot.gov>
Subject: [External] NEPA Environmental Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

CAUTION: External email. Do not click links or open attachments unless verified. Report suspicious emails with the Report Message button located on your Outlook menu bar on the Home tab.

Terry,

I have reviewed the EA for U-5307. I only have comments on two issues:

1. On page 57 and associated with Table 5-2, footnote 11 makes confusing and contradictory statements. While the aquatic species listed in the table are covered by Programmatic Biological Opinions, the statement about making payment into the NC Non-game Aquatic Resources Fund is contradictory if the biological conclusions are indeed MANLAA. Payments are made for May Affect, Likely to Adversely Affect (MALAA) conclusions. Automatic concurrence is provided for valid MANLAA conclusions (i.e. surveys did not find the species), and no payments are required. The EA does not give the justifications for the biological conclusions of MANLAA (e.g. survey information).
2. Although there was extensive coordination regarding the large number of barn swallow and cliff swallow nests on the Neuse River bridges, there is no mention of this issue in the EA. This is a significant Migratory Bird Treat Act (MBTA) issue and will need to involve careful timing of demolition or exclusion practices to avoid unauthorized take of migratory birds. There should probably be a green sheet commitment regarding this.

Gary Jordan
Fish and Wildlife Biologist, Liaison to NCDOT
U.S. Fish and Wildlife Service, Raleigh Ecological Services Field Office

551-F Pylon Drive, Raleigh, NC 27606

gary_jordan@fws.gov

From: Jamison, John <johnjamison@ncdot.gov>

Sent: Friday, June 16, 2023 10:51 AM

To: State Clearinghouse <State.Clearinghouse@doa.nc.gov>; Somerville.amanetta@Epa.gov <Somerville.Amanetta@epa.gov>; Alsmeyer, Eric C CIV USARMY CESAW (US) <Eric.C.Alsmeier@usace.army.mil>; Jordan, Gary <gary_jordan@fws.gov>; Ridings, Rob <rob.ridings@deq.nc.gov>; Wilson, Travis W. <travis.wilson@ncwildlife.org>; Gledhill-earley, Renee <renee.gledhill-earley@ncdcr.gov>; Mintz, John <john.mintz@ncdcr.gov>; Powell, Shelby <shelby.powell@campo-nc.us>; fritz.rohde <fritz.rohde@noaa.gov>

Cc: Farr, Terry E <tefarr@ncdot.gov>; Coleman, Clarence (FHWA) <Clarence.Coleman@dot.gov>; Wilcher, Seth (FHWA) <seth.wilcher@dot.gov>

Subject: [EXTERNAL] NEPA Environmental Assessment for STIP No. U-5307 (Capital Boulevard Upgrade), Wake County

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

All,

NCDOT has completed an Environmental Assessment for U-5307. This document can be found on NCDOT's Preconstruction site at:

<https://connect.ncdot.gov/site/Preconstruction/division/div05/U-5307/Project%20Development%20Collaboration/>

The document may be accessed by outside agencies as well as the general public at:

<https://www.ncdot.gov/projects/capital-boulevard-upgrade/Pages/environmental-documents.aspx>

Distribution of the Environmental Assessment is being made on behalf of the Federal Highway Administration in accordance with 23 CFR 771. The document is being submitted to the NC State Clearinghouse, area wide planning agencies, and the counties, towns, and cities involved. The document is being distributed for review to other agencies as appropriate. It is anticipated this project will be processed with a "Finding of No Significant Impact"; however, should comments received on the Environmental Assessment or at the public hearing demonstrate a need for preparing a Draft Environmental Impact Statement you will be contacted as part of our scoping process.

We respectfully request any comments concerning the Environmental Assessment be forwarded to Terry Farr (tefarr@ncdot.gov) by July 17, 2023. If you desire a copy of the "Finding of No Significant Impact", please so indicate.

Additionally, NCDOT is hosting a Public Hearing next week on June 21 – more details can be found at <https://publicinput.com/Capital-Boulevard-Upgrade>.

Thank you for your coordination and involvement on this project!

Customer Service is important to us. Please provide your feedback at <https://connect.ncdot.gov/resources/Environmental/EPU/Pages/EPU-Survey.aspx>.

John Jamison, PWS
Unit Manager
[Environmental Policy Unit](#)
North Carolina Department of Transportation

919 707 6140 office
919 801 8471 mobile
JohnJamison@ncdot.gov

1000 Birch Ridge Drive
Raleigh, North Carolina 27610
or
1582 Mail Service Center
Raleigh, North Carolina 27699-1582



Email correspondence to and from this address is subject to the North Carolina Public Records Law and may be disclosed to third parties

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.



July 7, 2023

Terry E. Farr, PE
NCDOT Project Management Unit
1582 Mail Service Center
Raleigh, NC 27699-1582

Subject: U-5307 Environmental Assessment Public Hearing Comments

Mr. Farr:

Thanks for the opportunity to review the Environmental Assessment Documents for the Capital Boulevard North Upgrade (U-5307). City of Raleigh staff have the following comments and questions on this document.

- City of Raleigh staff are supportive of option 2, which includes a new structure connecting Y10 to Gresham Lake Road. This street is now in the *City of Raleigh 2030 Comprehensive Plan Update, Map T-1: Street Plan (COR Street Plan)* as a two lane divided avenue. It is also a part of the *US 1 Corridor Study*. This connection is vital to the local connectivity element of the defined purpose and need of U-5307. It is also necessary to avoid an adverse effect on local traffic patterns and community cohesiveness.
- To support the City's Vision Zero initiative, the City supports the Gresham Lake Road/Capital Hills Drive Roundabout Option (intersection of Y9A and Y9C). According to NCDOT's roundabout information page, a roundabout is predicted to reduce crashes by 46%, and fatal/injury crashes by 76%, compared to other intersection types.
- We would like to ask NCDOT to remove the proposed right turn slip lane at this roundabout. Due the proposed Multi-use path, and the proximity to greenway trails, neighborhoods, and employment centers, bike and pedestrian use is expected in this area. Per NCHRP Research Report 1043, "Guide for Roundabouts:"
 - "A bypass lane creates one or two additional pedestrian crossings. The potentially higher speeds of bypass lanes and the lower expectation of drivers to stop may require active traffic control and increase the risk of pedestrian collisions. Bypass lanes also introduce additional complexity for pedestrians who are blind or have low vision navigating the intersection."
- A roundabout in this location has the added benefits of reduced future maintenance cost compared to a signal, and reduced roadway cross section on the approaches to the intersection, due to elimination of turn lanes.

- Include the Wadford Drive Bridge over the Neuse River Option in the base project, as shown in the *COR Street Plan* and the *US 1 Corridor Study*. This connection is vital to the local connectivity element of the defined purpose and need of U-5307. It is also necessary to avoid an adverse effect on local traffic patterns and community cohesiveness. It is not reasonably foreseeable that improvements to eliminate these impacts can be made outside of the U-5307 and therefore the impacts are permanent. Changes to the proposed design made in this area since our comments dated February 11, 2022 are positive, but do not fully address the purpose and need set forth in the *US-1 Corridor Study*. Including a wider bridge for Wadford Drive has the additional benefits of increase safety during temporary use during construction as well as resiliency during adverse events after the completion of the project.
- Provide a greenway connection from Wadford Drive to the Neuse River Trail, as supported by the City's *Comprehensive Plan* policies PR 3.1, PR 3.8, and PR 3.11. The City expects to pay for this connection as a betterment to the project.
- Accommodate planned east-west trail development along the Richland Creek (just south of NC 98) and NR Perry Creek Simms Branch (just south of Durant Road) corridors by providing a pedestrian culvert next to the stream culvert at each of these three planned greenway crossings. The project should not impede future buildout of these trail facilities, which are planned in the *City of Raleigh Greenway Master Plan* and supported by the City's *Comprehensive Plan* policies PR 3.1, PR 3.6, PR 3.11.
- Keep the Neuse River Trail open during construction and provide detours around construction if necessary. This is supported by NCDOT's adopted *Complete Streets Policy*.
- Provide lane configurations, sidewalks, and bike facilities for all Y-lines in accordance with the street designations in the *COR Street Plan* and the cross-sections laid out in Raleigh's *Unified Development Ordinance (UDO)*. These sections include sidewalks on both sides of all street types and bike facilities appropriate to the context and characteristics of the street. Sidewalk-level bikeways behind the curb are included in all Avenue designations. Specifically, the maps do not appear to include appropriate bikeways for the following Y-lines:
 - Y2: Durant Rd/Perry Creek Rd, Avenue 4-Lane, Divided
 - Y4: Falls of Neuse Rd west of US 1, Avenue 6-Lane, Divided
- Reduce the through lanes on US 1 in the project to cut costs as necessary to meet the available budget while maintaining all service roads and multimodal local connections. Regardless of the number of lanes, conversion to a limited-access highway will improve safety, travel time reliability, and increase capacity on the corridor. Multimodal local connectivity should be prioritized over additional laneage, which is unlikely to reduce congestion due to induced demand. Investments in the parallel S-Line corridor are a higher priority than increasing capacity on US-1 to account for all potential increases in travel demand on the corridor. The Raleigh *Comprehensive Plan* Policies T 1.3, T 1.4, T 2.1, T 2.4, T 2.6, T 2.11, T 3.1, T 3.2, T 3.4, T 7.1 support this approach. Subsequent to the comments provided by the City of Raleigh on February 7, 2022, NCDOT has communicated a willingness to revisit the traffic project in the future and has reduced the number of lanes where US-1 crosses the Neuse River. City of Raleigh staff are supportive of these developments, but a deeper re-evaluation of traffic projections is necessary.

- Design to the following criteria at all new or affected signals in accordance with polices T 2.1, T 3.1, T 3.2, and T 3.4 in the Raleigh *Comprehensive Plan*:
 - Design all pedestrian crossings at signals in one phase to avoid stranding pedestrians in the median of wide roadways.
 - Place all signal cabinets at locations accessible for field staff.
 - Design signals with mast arms that are designed for additional equipment like CCTVs.
 - Provide pedestrian crosswalks and pedestrian signal heads at all crossings of all new or affected signals.
- Provide street lighting along all impacted streets in Raleigh in accordance with Section 11.2.8 of the *Raleigh Street Design Manual*. According to the FHWA's Proven Safety Countermeasures, lighting can reduce crashes up to 42% for nighttime injury crashes at intersections, 33-38% for nighttime crashes at rural and urban intersections, and 28% for nighttime injury crashes on rural and urban highways. The following Y-lines should have lighting added in conjunction with other U-5307 improvements:
 - Y9C – Bridge connecting Gresham Lake Road and Triangle Town Blvd and realigned sections of Gresham Lake Road (Y9A).
 - Y10 – Frontage Street from Jacqueline Lane to Perry Creek Road, on the east side of US-1
 - Y12A – Extension of Wadford Drive
 - Y13 – Realignment and extension of Ponderosa Service Road
- Minimize corner radii on all intersections of Y lines, such as at Y30 and Y2, to improve comfort and safety for pedestrians and slow vehicle turning speeds in accordance with polices T 2.1, T 3.1, T 3.2, and T 3.4 in the Raleigh *Comprehensive Plan*. Design radii in accordance with the Roadway Classification Design Vehicle Type and street cross section criteria in Articles 2.3 and 3.1 of the *Raleigh Street Design Manual*, respectively. Use mountable truck aprons where needed to accommodate large vehicles with larger radii.
- Maintain vehicular and ADA-accessible pedestrian connections to all properties that are not being acquired, including those numbered 263, 468, 530, 531, 660, 790, and 791.

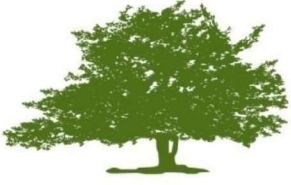
Thank you again for the opportunity to comment on the project maps. If you have any questions about these comments or require additional feedback, please feel free to contact me at the number or email below.

Many thanks,



Paul Kallam
Assistant Director
919-996-2406, paul.kallam@raleighnc.gov

City of Raleigh Department of Transportation



TOWN *of*
WAKE FOREST

301 S. Brooks Street
Wake Forest, NC 27587
t 919.435.9400

www.wakeforestnc.gov

Memo

To: North Carolina Department of Transportation

From: Jennifer Currin, Assistant Planning Director

CC: Kip Padgett, Town Manager
Joe Guckavan, Town Engineer
Courtney Tanner, Planning Director

Date: July 7, 2023

Re: U-5307 Public Hearing Map Comments

US-1 (Capital Boulevard) is the major north/south arterial the Town of Wake Forest providing local, regional, and state access via connections to I-540, I-440, and I-85. US-1 has 2020 average daily traffic (ADT) volumes of almost 60,000, and it is anticipated that the ADT in 2040 will be approaching 110,000 trips through Wake Forest. The Town of Wake Forest Board of Commissioners approved a Resolution of Support with Recommended Changes to North Carolina Department of Transportation's (NCDOT) November 2021 Proposed U-5307 US-1 (Capital Boulevard) Interchange and Service Road Public Meeting Maps in January 2022 (Attachment A). The resolution included 23 comments for NCDOT consideration based on the [November 2021 public meeting maps](#).

Since January 2022, Town staff has been meeting with NCDOT and RS&H to advocate for the Town's position and comments in Attachment A.

In May 2023, CAMPO and Town staff were notified that NCDOT is reallocating the funding assigned to U-5307 Segments B and C in Wake Forest to a project in Cumberland County. U-5307 Segment A, located in Raleigh, remains funded in the STIP.

This memo outlines the Town's comments from Attachment A that have not been satisfactorily addressed and critical concerns related to Segments B and C being unfunded in the STIP. If these comments are not adequately addressed as

part of U-5307, the project will not meet the stated purpose and need and will continue to have a detrimental impact on the quality of life for those living and working in the Town of Wake Forest.

1. In June 2023, the NC Board of Transportation adopted the 2024-2033 State Transportation Improvement Program (STIP) removing committed funding for U-5307 Segments B & C. NCDOT District 5 Engineer, Brandon Jones, presented to the Town of Wake Forest Board of Commissioners on June 6, 2023 and noted that U-5307 Segments B-D would be eligible to re compete for funding in future STIPs; however, the best case scenario for completion of the project would be 2035. The Town of Wake Forest contracted with Exult Engineering to study two intersections, which are in U-5307 Segment B to understand the impact on level of services (LOS) and delays with no improvements being made until 2035 as part of the best-case scenario timeline NCDOT presented. The intersections studied were US-1 (Capital Boulevard) at South Main Street/Falls of Neuse Road and US-1 (Capital Boulevard) at Burlington Mills Road. In the PM Peak at US-1 and South Main Street, the overall intersection delay is anticipated to be 421 seconds (7 minutes); and at US-1 and Burlington Mills Road, the overall delay at the intersection is anticipated to exceed 740 seconds (12 minutes). See Tables 4 and 7. The results are abysmal and unacceptable.

Table 4: Level-of-Service: Existing and No-Build Results – US 1 (Capital Boulevard) at South Main Street/Falls of Neuse Road

Condition	AM Peak		PM Peak	
	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length
2023 Existing	Overall – F (120.3) EB – F (87.3) WB – F (445.3) NB – D (38.0) SB – E (67.3)	EBL – 320’/430’ EBR – 187’/211’ WBL/U – 474’/325’ NBL – 245’/468’ NBR – 228’/282’ SBL/U – 246’/270’ SBR – 581’/340’	Overall – E (72.1) EB – E (63.8) WB – E (59.7) NB – D (41.0) SB – F (115.0)	EBL – 159’/291’ EBR – 118’/257’ WBL – 257’/341’ NBL – 112’/128’ NBR – 230’/258’ SBL/U – 313’/302’ SBR – 357’/332’
2035 No-Build	Overall – F (365.4) EB – F (266.0) WB – F (532.7) NB – F (273.5) SB – F (409.8)	EBL – 206’/281’ EBR – 285’/348’ WBL/U – 429’/260’ NBL – 350’/410’ NBR – 558’/241’ SBL/U – 252’/248’ SBR – 904’/340’	Overall – F (421.2) EB – F (501.9) WB – F (742.5) NB – F (401.1) SB – F (231.1)	EBL – 208’/306’ EBR – 242’/460’ WBL – 546’/336’ NBL – 218’/89’ NBR – 684’/192’ SBL/U – 342’/279’ SBR – 550’/340’

Table 7: Level-of-Service: Existing and No-Build – US 1 (Capital Boulevard) at Burlington Mills Road

Condition	AM Peak		PM Peak	
	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length
2023 Existing	Overall – F (132.8) EB – F (112.4) WB – F (100.1) NB – F (110.2) SB – F (163.0)	EBL – 26’/34’ WBL – 457’/642’ NBL/U – 203’/479’ NBR – 160’/525’ SBL/U – 478’/627’ SBR – 23’/155’	Overall – F (207.0) EB – F (145.7) WB – F (115.9) NB – D (51.9) SB – F (405.8)	EBL – 106’/100’ WBL – 332’/653’ NBL/U – 262’/574’ NBR – 236’/525’ SBL/U – 981’/756’ SBR – 24’/252’
2035 No-Build	Overall – F (688.1) EB – F (306.6) WB – F (864.6) NB – F (613.5) SB – F (748.8)	EBL – 531’/1100’ WBL – 709’/668’ NBL/U – 385’/575’ NBR – 371’/525’ SBL/U – 541’/748’ SBR – 162’/340’	Overall – F (740.6) EB – F (278.5) WB – F (600.2) NB – F (682.3) SB – F (898.0)	EBL – 456’/1087’ WBL – 490’/666’ NBL/U – 583’/575’ NBR – 605’/525’ SBL/U – 771’/865’ SBR – 195’/340’

- Review the modeling performed for U-5307 to ensure it is updated using the current Triangle Regional Model (TRM) as the TAZs have been updated and are more reflective of realistic development patterns projected to occur in Wake Forest.
- Provide the service road over the Neuse River connecting Y12A in Raleigh to Y12A in Wake Forest providing regional vehicular, pedestrian and bicycle connectivity and contributes to the reduced travel times on US-1.

While NCDOT has agreed to construct a permanent bridge across the Neuse River connecting a multi-use path (MUCP) from the Wadford Dr. extension and Meadstone Way cul-de-sacs, the Town does not believe that this solution addresses the project’s statement of purpose which is to improve traffic congestion and travel times and to maintain regional mobility and local connectivity. Without the vehicular connectivity, local connectivity is not achieved, and traffic congestion is not reduced. All vehicular traffic is still being routed to US-1.

- Include Ligon Mill Road and the Ligon Mill Road extension in the study area as it is serving as primary north/south service road in Wake Forest on the east side of US-1.

Again, Section 1.2 of the Concurrence Point 2 Revisions project’s statement of purpose which is to improve traffic congestion and travel times and to maintain regional mobility and local connectivity. Without the vehicular connectivity, local connectivity is not achieved, travel

times are not maintained, and traffic congestion is not reduced. NCDOT is treating Ligon Mill Road as a service road to address traffic capacity and distribution while at the same time not including it in the study area.

5. Extend Y25B to Purnell Road.

From our understanding, NCDOT will proceed with the preliminary designs as shown at the December 2021 Public Meeting with minor changes to the northern end of the proposed Wake Union Church Rd terminus to avoid impacting the parcel behind the historic Sutherland House property. Per the Historic Preservation Office (HPO), this revision will allow a No Adverse Effects finding, which would have avoided the need for an Environmental Assessment. However, an Environmental Assessment is needed for the project and the benefits of extending Y25B to Purnell significantly contribute to meeting the project's statement of purpose and need by providing local connectivity and reduce traffic congestion on US-1.

6. Provide an interchange instead of a grade separated crossing at Stadium and US-1 in accordance with the Northeast Area Plan hotspot study.

7. Revise the U-5307 Project Segments, specifically Segments C and D, to align with the descriptions in the STIP, November 2018 public meeting maps and MTP. It is imperative that the inclusion of NC98 Business interchange is in Segment C.

8. Provide a full movement traffic signal at the intersection of Wake Drive and S. Main Street to ensure left turning movements may be made by residential and commercial activity on Star Road.

According to NCDOT, due right-of-way constraints along this section, NCDOT will proceed with preliminary designs as shown at the December 2021 Public Meeting since additional widening of the typical section would result in impacts to adjacent properties. The Town of Wake Forest finds NCDOT's comment inadequate due to the development existing and approved on Star Road. Residents and businesses will be significantly impacted and will be forced to travel on Ligon Mill Rd. or Main Street to access US-1. This scenario further demonstrates that NCDOT is considering Ligon Mill Road as a service road and therefore, it is critical that Ligon Mill Road is included in the study area and extended as part of the project scope.

9. Ensure any radius improvements are made to accommodate a traffic signal at Wake Drive and S. Main Street.

According to NCDOT, due right-of-way constraints along this section, NCDOT will proceed with preliminary designs as shown at the December 2021 Public Meeting since additional widening of the typical section would result in impacts to adjacent properties. The Town of Wake Forest finds NCDOT's comment inadequate due to the development existing and approved on Star Road. Residents and businesses will be significantly impacted and will be forced to travel on Ligon Mill Rd. or Main Street to access US-1. This scenario further demonstrates that NCDOT is considering Ligon Mill Road as a service road and therefore, it is critical that Ligon Mill Road is included in the study area and extended as part of the project scope.

RESOLUTION 2022-01-A

RESOLUTION OF SUPPORT OF THE BOARD OF COMMISSIONERS OF THE TOWN OF WAKE FOREST WITH RECOMMENDED CHANGES TO NORTH CAROLINA'S DEPARTMENT OF TRANSPORTATION (NCDOT) NOVEMBER 2021 PROPOSED U-5307: US-1 (CAPITAL BOULEVARD) INTERCHANGE AND SERVICE ROAD PUBLIC MEETING MAPS

WHEREAS, the Town of Wake Forest ("Town") is committed to preserving the quality of life for all those living in the Town by ensuring an adequate transportation network is provided; and

WHEREAS, US-1 (Capital Boulevard) is the major north/south arterial in the Town of Wake Forest providing local, regional, and state access via connections to I-540, I-440 and I-85; and

WHEREAS, US-1 has 2020 average daily traffic (ADT) volumes of almost 60,000, and it is anticipated that ADT in 2040 will be approaching 110,000 trips through Wake Forest; and

WHEREAS, to address safety and increasing traffic on US-1, the US-1 Corridor Study was originally completed in 2006 in a joint effort between NCDOT, CAMPO, City of Raleigh, Town of Wake Forest, Town of Youngsville, Wake County, Franklin County, Triangle Transit (now GoTriangle) and the Kerr-Tarr RPO; and

WHEREAS, the project purpose of the 2006 US-1 Corridor Study was to develop "...an integrated multimodal transportation plan that provides for a high level of mobility along the US 1 Corridor while maintaining a high quality environment for the surrounding communities by providing for well-planned and sustainable growth along this corridor"; and

WHEREAS, to address increasing traffic and safety concerns, NCDOT is proposing to convert US-1 to a controlled access freeway by removing direct driveway connections and providing access via interchanges; and

WHEREAS, this project is referenced by the NCDOT STIP project number U-5307; and

WHEREAS, in June 2018, the US 1 (Capital Boulevard) Freeway Upgrade Concurrence Point 1 Final Document for STIP Project U-5307 was provided; and

WHEREAS, Section 4 of the Concurrence Point 1 document noted the overall need of the project is to relieve traffic congestion, improve travel times and reduce or eliminate crashes; and

WHEREAS, Section 5 of the Concurrence Point 1 document stated the overall purpose of the project is to improve traffic congestion and travel times; and

WHEREAS, in June 2018 Concurrence Point 1 was discussed among the NEPA/404 Merger Team and one of the consensus items identified was that the Need of Proposed Action and Purpose for Proposed Action needed to be revised; and

WHEREAS, in March 2021, the US 1 (Capital Boulevard) Freeway Upgrade Concurrence Point 2 Revisions Document for STIP Project U-5307 was provided; and

WHEREAS, Section 1.2 of the Concurrence Point 2 Revisions document noted that the overall need of the project is due to traffic congestion and trip time unreliability; and stated that the purpose for proposed action was to improve traffic congestion and travel times and to maintain regional mobility and local connectivity; and

WHEREAS, the Town of Wake Forest supports U-5307 and the rationale for the improvements to US-1; and

WHEREAS, NCDOT's proposed U-5307: US-1 (Capital Boulevard) project will have a significant impact on the Town of Wake Forest's transportation network and landowners; and

WHEREAS, due to the Town's proximity along US-1, the properties along US-1 are vital to the Town's economic development success; and

WHEREAS, the Town finds that proposed U-5307: US-1 (Capital Boulevard) November 2021 public meeting maps are well intentioned but fall short at providing an adequate transportation network in Wake Forest and ensuring the project allows for successful economic development opportunities along the corridor; and

WHEREAS, the Town has coordinated with NCDOT to ensure the impacts to the quality of life of Wake Forest citizens, businesses and landowners are minimized to the greatest extent possible; and

WHEREAS, based on the Town concerns raised at the coordination meetings, NCDOT addressed some of the Town of Wake Forest staff comments, such as including multi-use paths where appropriate and some additional service road segments; and

WHEREAS, NCDOT has not addressed all the Town's outstanding comments related to U-5307; and

WHEREAS, this project is likely to have many unintended consequences for municipalities and counties in North Carolina, to established neighborhoods, thriving commercial uses, and future proposed developments and the Town of Wake Forest needs to protect the interests of these parties as much as possible; and

WHEREAS, the Town of Wake Forest believes that, unless the following comments are incorporated into STIP U-5307: US-1 (Capital Boulevard), the project will not meet the stated purpose and need included in the Concurrence Point 1 document:

1. Review the modeling performed for U-5307 to ensure it is updated using the current Triangle Regional Model (TRM) as the TAZs have been updated and are more reflective of realistic development patterns projected to occur in Wake Forest.
2. Provide the service road over the Neuse River connecting Y12A in Raleigh to Y12A in Wake Forest providing regional vehicular, pedestrian and bicycle connectivity and contributes to the reduced travel times on US-1.
3. Provide 16' wide outside shoulders on US-1 for transit and emergency service access.
4. Include Ligon Mill Road and the Ligon Mill Road extension in the study area as it is serving as primary north/south service road in Wake Forest on the east side of US-1.
5. Extend Y25B to Purnell Road.
6. Provide an interchange instead of a grade separated crossing at Stadium and US-1 in accordance with the Northeast Area Plan hotspot study.
7. Revise the U-5307 Project Segments, specifically Segments C and D, to align with the descriptions in the STIP, November 2018 public meeting maps and MTP.
8. Provide a 5' sidewalk on both sides of Y16.
9. Pedestrian infrastructure is a crucial component of this project. Therefore, NCDOT needs to ensure appropriate pedestrian refuges and/or pedestrian signals are being provided at and/or on the proposed ramps and interchanges.
10. Provide a full movement traffic signal at the intersection of Wake Drive and S. Main Street to ensure left turning movements may be made by residential and commercial activity on Star Road.
11. Ensure any radius improvements are made to accommodate a traffic signal at Wake Drive and S. Main Street.
12. Provide a 10' multi-use path on both sides of Durham Road (Y6).
13. Ensure the Y24B T-intersection at Agora Drive can accommodate the ultimate 4-lane median divided cross section identified in the Town of Wake Forest Comprehensive Transportation Plan (CTP).
14. Continue the sidewalk on Jenkins Road (Y7).

15. Provide outstanding portions of Y25A and Y25B not shown on public meeting maps for review and comment.
16. Include sidewalk on Country Club Drive (Y25B-1).
17. Revise the sidewalk to a multi-use path at the intersection of Y7 and Y26B.
18. Provide sidewalk on both sides of Templeridge Road (Y26B-1).
19. Eliminate the easements on the cemetery property (PIN 1831842795) in the Wake Forest Crossing Shopping Center.
20. Include 5' sidewalks on both sides of Y28 in Option 1 to connect to existing infrastructure.
21. Provide 5' sidewalks on both sides of Y28 in Option 2.
22. Show 5' sidewalks on both sides of DR2 at Wallridge Road to connect to existing infrastructure in Option 2.
23. Allow an additional 30-day comment period due to the current comment period falling over the holidays.

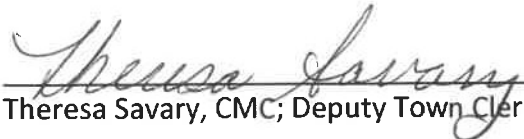
NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Town of Wake Forest provide these comments to the North Carolina Department of Transportation for inclusion in the U-5307 design to ensure the project need and purpose are met and severe harm to the Town of Wake Forest is reduced to the greatest extent possible.

This the 18th day of January 2022.

ATTEST:



Vivian A. Jones, Mayor



Theresa Savary, CMC; Deputy Town Clerk





July 10, 2023

Mr. Terry Farr, P.E.
Project Manager
NCDOT Project Management Unit
1582 Mail Service Center
Raleigh, NC 27699-1582

RE: U-5307 Capital Boulevard North Upgrade (Raleigh to Wake Forest)

Dear Mr. Farr:

GoTriangle appreciates our partnership with NCDOT and the opportunity to provide comments on this project. The project provides a cost-effective opportunity to deliver meaningful improvements to existing transit service, providing enhanced alternatives for travelers within the corridor. GoTriangle is supportive of the overall design and offers the following comments:

- **Bus on Shoulder:** We support the inclusion of full-depth, 12-foot wide shoulders to provide for bus on shoulder. The recently adopted BOSS (Bus on Shoulder System) Implementation Blueprint includes the US 1 North corridor. We request that the project include necessary signage and coordinate with GoTriangle, CAMPO, and the North Carolina State Highway Patrol to develop an operations plan to enable bus on shoulder operations concurrent with the opening of each project phase.
- **Park and Ride:** The adopted Wake Transit Plan includes a new park and ride lot in the Capital Boulevard North corridor. We request that the project evaluate opportunities for ROW purchases necessary to construct the project to support a 2-3 acre park and ride lot in the vicinity of interchanges at NC 98 Bypass and Harris Road. In particular, there could be the potential for existing ROW and remnant parcels to support such a park and ride at the northeast quadrant of the interchange at NC 98 Bypass as well as the southeast quadrant of the interchange with Harris Road.

We look forward to continued partnership with NCDOT to address these comments as design progresses on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles Lattuca".

Charles Lattuca
President and CEO
clattuca@gotriangle.org



Cc via email:

Brandon Jones, Division 5 Engineer, NCDOT
Chris Lukasina, Executive Director, CAMPO



General Comments Received From the June 2023 Public Hearing

Table of Contents

General Project Comments.....	1
Bicycles, Pedestrians, and Transit Comments.....	1
Funding and Project Timeline	1
General support and Opposition.....	2
Public Hearing	3
Right-of-Way Impacts	3
Private Development and Environmental Impacts	4
General Service Road Comments	4
Special Use Lanes	4
Travel Times	5
Emissions/Carbon Footprint	5
Location Specific Comments.....	6
U.S. 1 Overall Comments	6
I-540 Interchange Comments.....	6
Gresham Lake Road Comments	6
Durant Road/Perry Creek Road Interchange Comments.....	7
Burlington Mills Road Interchange Comments	7
Ponderosa Service Road Comments:.....	7
N.C. 98 Bypass Comments	7
N.C. 98 Business Comments.....	8
Stadium Drive/Jenkins Road Overpass Comments	8
Purnell Road/Harris Road Interchange Comments	8
Municipal/Stakeholder Comments	9
City of Raleigh Public Hearing Comments.....	9
Town of Wake Forest Public Hearing Comments.....	12
GoTriangle Public Hearing Comments.....	21

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



General Project Comments

Bicycles, Pedestrians, and Transit Comments

Why aren't bicycle and pedestrian accommodations included along U.S. 1?

NCDOT is committed to Complete Streets improvements to provide for all modes of transportation and has continued to coordinate efforts with the City of Raleigh, Town of Wake Forest, and GoTriangle to incorporate these improvements into the project in compliance with applicable design and cost-sharing guidelines.

Bicycle and pedestrian facilities cannot be provided along U.S. 1 for safety reasons since this will be converted to a fully controlled-access freeway. As a result, where existing accommodations are being disturbed along service/connector roads, the proposed design shows these resources being replaced. Along new service/connector roadways, NCDOT is proposing either sidewalk, multi-use path (MUP)/side path, or both.

What facilities are included for bicycles and pedestrians in a Diverging Diamond Interchange?

For the Diverging Diamond Interchanges (DDI) at Durant Road/Perry Creek Road and Falls of Neuse Road/U.S. 1A (S Main Street), bicycles and pedestrians will use signalized crossings before traveling through the DDI along a 10' minimum path. Additional information on DDIs is available here - https://www.ncdot.gov/projects/i40-i77-interchange/Documents/diverging_diamond.pdf.

Can Bus Rapid Transit be included along the project corridor?

NCDOT is providing 12' full depth shoulders that can accommodate transit and/or EMS vehicles. These shoulders are consistent with the CAMPO/GoTriangle Triangle Region Bus on Shoulder Study (October 2020). Current designs do not preclude bus on shoulder in the future, but this will be dependent upon municipal involvement.

How is the project accounting for future development and the S-line? The current plans are car dependent.

The Project Team has maintained coordination with the NCDOT Rail Group, the City of Raleigh, Town of Wake Forest, and GoTriangle throughout the U-5307 project development and how it might relate to future non-vehicular development. GoTriangle is completing studies to evaluate potential temporary and permanent park-and-ride locations. The NCDOT Integrated Mobility Division is partnering with a seven communities along a 95-mile-long section of the S-line rail corridor to develop the [S-Line Transit-Oriented Development Study](#).

Funding and Project Timeline

Why are Segments B-D delayed in the most recent State Transportation Improvement Program (STIP)?

NCDOT capital projects are evaluated and identified for funding through a process called Strategic Prioritization. Projects are submitted into the prioritization process by MPO, RPO, and Division partners, and each project is assigned a score via a data-driven approach that also involves local input. Projects involved in this process include Highway, Aviation, Bicycle/Pedestrian, Ferry, Public Transportation, and Rail improvements. Prioritization occurs approximately every two years and uses the project scores to determine which projects will be scheduled for funding in the next 10-year STIP (State Transportation

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Improvement Program). Due to limited funds, NCDOT is unable to fund every requested improvement. Additional information about Strategic Prioritization can be found at the following links:

- <https://www.ncdot.gov/initiatives-policies/Transportation/stip/Pages/strategic-prioritization.aspx>
- <https://connect.ncdot.gov/projects/planning/pages/prioritizationresources.aspx>.

Currently, Segment A is planned to be Let for construction in October 2025. The remaining segments are funded for preliminary engineering only. The purpose of the project planning phase is to identify the best transportation solution for the project. The funding and schedule challenges currently faced by the U5307 project are being experienced across the state. NCDOT and the NC Legislature are diligently working to find solutions to deliver projects as efficiently as possible.

Why is the project so expensive?

The right-of-way, construction, and utility costs presented at the Public Hearing are based on preliminary design plans and are subject to change. In the last few years, we have seen a substantial increase in the costs of labor and materials further impacting projected project cost.

General support and Opposition

How does NCDOT address noise since U.S. 1 will be a freeway?

During planning and design for highway projects, NCDOT must identify traffic noise impacts, examine potential noise abatement, incorporate feasible and reasonable noise abatement measures, and coordinate with local officials to provide helpful information on compatible land use planning and control. The procedures for doing this are stipulated by Federal regulation (23 CFR 772) and the NCDOT Traffic Noise Policy.

NCDOT has performed preliminary noise analyses for this project and an initial Traffic Noise Report has been prepared. Based on that analysis, traffic noise levels due to the project are predicted to be high enough in the project's design year to constitute a traffic noise impact as defined by NCDOT Traffic Noise Policy. Where noise impacts are predicted, noise abatement was considered. Noise walls were evaluated and found to preliminarily meet feasibility and reasonableness criteria defined in the NCDOT Traffic Noise Policy in seven locations and can be seen on the Public Hearing maps (areas with red outline with red hatching).

A more detailed analysis will be completed during final design. Noise barriers preliminarily found to be feasible and reasonable during the preliminary noise analysis may not be found to be feasible and reasonable during the final design noise analysis due to changes in proposed project alignment and other design considerations, surrounding land use development, or utility conflicts, among other factors.

Conversely, noise barriers that preliminarily were not considered feasible and reasonable may meet the established criteria and be recommended for construction.

How will the project impact property values?

The project is not expected to have negative impacts to property values and is expected to provide a benefit to adjacent neighborhoods. The project will provide operational improvements and safety enhancements in the project study area. An improved and more efficient project corridor can be expected to improve market-reach of businesses along and in the vicinity of the project.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



How did NCDOT decide on the proposed improvements? Is a freeway needed? Why can't we just add a few lanes and improve signals along U.S. 1?

Development activity has increased travel demand in the project study area as municipalities have approved/allowed substantial growth. The project is needed to improve traffic congestion and travel times and maintain regional mobility and local connectivity.

Based on existing and future traffic projections, simply adding a lane and/or adjusting signals would not be sufficient to address this growth. Conditions along U.S. 1 are already deteriorating, with a trip in the evening peak hour taking nearly four times longer than non-peak travel times.

After extensive review of options, and coordination with local and agency partners, the current designs were developed. See *Section 3* of the [Environmental Assessment](#) for details regarding Alternatives Analysis.

Why not construct an alternate route to U.S. 1? This will also help during major accidents and road closures.

The purpose of the project is to address traffic congestion and travel times. Constructing an alternate route would be extremely impactful to the community, especially in heavily developed areas like Raleigh and Wake Forest. The service/connector roads included as part of the project maintain, and improve, local connectivity and will help to provide residents with an alternate option if they choose.

Public Hearing

The maps are confusing. Can someone help me understand what's going on?

All the materials from the Public Hearing are available on the project website, <https://publicinput.com/capital-boulevard-upgrade>. There is also a recording of the Public Hearing presentation where the Environmental Assessment and maps are explained. If you still have questions, please reach out to the Project Team at capital-boulevard-upgrade@publicinput.com or 984-205-6615 (project code 3243) and someone will contact you.

Right-of-Way Impacts

I'm concerned about the amount of right-of-way needed for this project.

Since the project is being funded with federal dollars, NCDOT must follow specific procedures, which include presenting preliminary designs to the public for review and comment. The hearing maps are labeled with property owners' names so that attendees can easily identify their property on the map.

Once a preferred alternative corridor is determined this fall, the design will be further refined and will take into consideration engineering feasibility, safety, economics, public well-being, and the least amount of impact and inconvenience to the public. NCDOT will continue to avoid and minimize property impacts to the greatest extent practicable. After decisions are made regarding the final design, the proposed right-of-way limits will be noted.

If right-of-way or easement is required, NCDOT will offer fair market value for the property. A right-of-way agent will contact property owners and work with them directly during the right-of-way acquisition phase of the project.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Private Development and Environmental Impacts

Does the project account for all of the development going on in Raleigh and Wake Forest right now? Can it support all of this additional traffic coming from new developments?

The project is being designed to address future traffic volume needs which include both local and regional growth in traffic, as well as the other identified needs in the purpose and need section of the Environmental Assessment. The scale of the project is appropriate to meet future traffic needs and to maintain adequate traffic operations for all road users. NCDOT will continue to make efforts to further avoid and minimize impacts due to the project to the greatest extent practicable during final design and construction.

General Service Road Comments

Will new signage be included as part of this project? Navigating our local streets can be very challenging.

Signage will be included throughout the project area along new and improved roadways in accordance with NCDOT policies and standards and FHWA's Manual on Uniform Traffic Control Devices.

I think that the plan should include service roads and/or median U-turns.

Upgrading U.S. 1 to a controlled access freeway has been determined as the best option for reducing traffic congestion and improving travel times, and as a result, direct access to U.S. 1 will be removed. To provide access to properties adjacent to U.S. 1 and maintain local connectivity, service/connector roadways are proposed throughout the project area giving businesses and residents connection options to/from proposed interchanges and other major roadways.

Special Use Lanes

Are you able to incorporate emergency lanes for EMS, fire, or police use only?

The entire project corridor is expected to experience improved emergency response times during peak hours due to reduced congestion. In addition to the general widening, 12' paved shoulders (inside and outside) are being incorporated in the project which can be utilized during emergency responses.

I think you should use two (2) SMART lanes that reverse direction for the morning and evening peak hours rather than widen in both directions.

Multiple alternatives have been studied throughout the development of the project and each considered the impacts to the human and natural environments while also meeting the purpose and need of the project. In addition to the alternatives requested to be investigated by the public, NCDOT has also investigated modifications of existing alignments to further avoid and minimize impacts.

The NCDOT Recommended Alternative presented at the Public Hearing considers all of these elements and has been determined to be the best option for balancing impacts with improving traffic congestion and trip time unreliability. Once a preferred alternative is chosen, NCDOT will update traffic projections, impact studies, and refine engineering designs.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Travel Times

Is this going to reduce traffic traveling south from Harris Road? What will travel times through the corridor be after the project is completed?

The project is being designed to account for existing and future (2040) traffic projections along the U.S. 1 corridor. Construction of the project is not expected to reduce traffic traveling through the project corridor, but rather improve the efficiency of which it flows through the corridor.

Based on travel time studies for future (2040) traffic projections, AM and PM peak hour travel times through are estimated to be 15 to 17 minutes for the entire 15-mile segment from south of Sumner Boulevard to North of Holden Road.

Emissions/Carbon Footprint

What is the project's carbon footprint during and after construction? I am concerned with pollution levels and loss of tree canopy.

A quantitative assessment of greenhouse gases (GHG) and mobile source air toxins (MSAT) is currently being completed. Results will be presented in the final environmental document (anticipated Spring 2024).

Additional information regarding traffic speeds and carbon emissions can be found here - <https://www.nrdc.org/stories/speed-sweet-spot>.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Location Specific Comments

U.S. 1 Overall Comments

Instead of freeway conversion, I think you should turn the traffic signals off after 6:30 PM and before 6:30 AM to create a free-flow corridor.

Multiple alternatives have been studied throughout the development of the project and each considered the impacts to the human and natural environments while also meeting the purpose and need of the project. In addition to the alternatives requested to be investigated by the public, NCDOT has also investigated modifications of existing alignments to further avoid and minimize impacts.

The NCDOT Recommended Alternative presented at the Public Hearing considers all of these elements and has been determined to be the best option for balancing impacts with improving traffic congestion and trip time unreliability. Once a preferred alternative is chosen, NCDOT will update traffic projections, impact studies, and refine engineering designs.

I-540 Interchange Comments

The two (2) lights at I-540 need to be removed. The traffic signals at this location are counterproductive.

Since the project's southern limit is I-540, the freeway design must taper back down to meet existing conditions and laneage just south of the I-540 interchange. The two (2) traffic signals at I-540 are not new signals, but existing, and will remain to help control the flow of traffic exiting the I-540 ramps.

NCDOT is aware of the Capital Boulevard corridor study from I-440 to I-540 and is in discussions with the City of Raleigh and other stakeholders regarding the future of this corridor.

Gresham Lake Road Comments

Why are you recommending Option 2? I prefer Option 4 since it has better connectivity for our community.

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 U.S. 1 without substantial detours, especially once the northeast quadrant of the I-540/U.S. 1 interchange 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.

I think a roundabout at the intersection of Gresham Lake Road and Capital Hills Drive should be constructed.

A roundabout at this location is still an option but a decision has not yet been made, as a roundabout requires additional traffic evaluation and design review with local stakeholders.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Durant Road/Perry Creek Road Interchange Comments

How will we access U.S. 1 during construction?

Access to U.S.1 will be maintained during construction; however, temporary lane closures and night construction should be expected. It is expected that service/connector roadways will be constructed prior to removal of direct access to U.S. 1.

Does the recommended alternative consider the rail crossing project about ½ mile west of U.S. 1 along Durant Road?

Yes, the U-5307 project accounts for NCDOT STIP Project No. P-5720 and the projects will be coordinated accordingly.

Burlington Mills Road Interchange Comments

Why is NCDOT recommending the Diamond Interchange (Option A) over the Partial Cloverleaf Interchange (Option B)?

Based on traffic operations, Option A is able to process more vehicles with less delay than Option B and provides more long-term stability with the industrial truck traffic at this interchange. Additionally, Option B would result in total displacement of the residents along Circle Drive which can be reduced substantially through Option A.

I am concerned about the potential impacts to the Circle Drive community.

In order to help address these concerns, NCDOT is recommending Option A which results in notably less right-of-way and relocation impacts than Option B. Impacts shown on the public hearing maps reflect the “worst-case” scenario anticipated based on the most current data; they are preliminary and subject to change. NCDOT will continue to make every effort to minimize impacts and relocations where possible, and additional measures to minimize relocations will be investigated during the final design.

Ponderosa Service Road Comments:

The impacts to residences and businesses near Wakefield Commons are concerning.

In certain instances, private property must be acquired to provide North Carolinians with a safe and modern transportation system. When a property is shown to be impacted, many factors have been taken into consideration in determining that the affected site is the most practical location for the needed connections.

Impacts shown on the public hearing maps reflect the “worst-case” scenario anticipated based on the most current data; they are preliminary and subject to change. NCDOT will continue to make every effort to minimize impacts and relocations where possible, and additional measures to minimize relocations will be investigated during the final design.

N.C. 98 Bypass Comments

Can you explain how we’ll navigate the area surrounding this interchange? I don’t understand the service roads and connectivity around the interchange.

Due to the recent construction of the N.C. 98 Bypass, it was determined that there was no need to replace this interchange at this time. Improvements at N.C. 98 Bypass include minor modifications to the end of the existing ramps to tie into the work along U.S. 1 mainline. Access to and from U.S. 1 will remain the same since this section of U.S. 1 is currently a controlled-access corridor.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



N.C. 98 Business Comments

There is a lot of development in this area. Are the service roads NCDOT is recommending going to be able to keep up with demand?

The project is being designed to address current and future (2040) traffic volume needs which include both local and regional growth in traffic, as well as the other identified needs in the purpose and need section of the Environmental Assessment. The scale of the project is appropriate to meet future traffic needs and to maintain adequate traffic operations for all road users.

Stadium Drive/Jenkins Road Overpass Comments

Why is the overpass designed in its current location? It seems like it could be moved closer to U.S. 1 and minimize some of the residential impacts.

A Hot SPOT analysis was completed as part of the CAMPO Northeast Area Study (NEAS) on possibly adding an interchange as a future project. The currently recommended project design does not preclude the NEAS recommendations of an interchange in the future.

More information of the CAMPO NEAS is available here - <https://www.campo-nc.us/programs-studies/area-studies/northeast-area-study>.

Purnell Road/Harris Road Interchange Comments

There is a lot of empty, undeveloped, space in the southwest quadrant of the current intersection. It seems like you could have used this space for the interchange and avoided some other impacts. Several configurations of a Partial Cloverleaf Interchange were evaluated at this location. These options vary based on constructability and geometric constraints. The current recommendation accounts for the Wakefields/Sutherland House which is listed on the National Register of Historic Places. Impacts to the southwest quadrant of the Purnell Road/Harris Road interchange would have resulted in an adverse effect on this historic resource.

How do people in Devon Square get to U.S. 1?

As part of the Devon Square development, the developer has constructed Devon Square Boulevard and connected to Harris Road. The NCDOT Recommended Alternative includes an additional connection to Devon Square and the neighborhoods along Templeridge Road and St. Catherines Drive via the Y26B service road.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Municipal/Stakeholder Comments

City of Raleigh Public Hearing Comments



July 7, 2023

Terry E. Farr, PE
NCDOT Project Management Unit
1582 Mail Service Center
Raleigh, NC 27699-1582

Subject: U-5307 Environmental Assessment Public Hearing Comments

Mr. Farr:

Thanks for the opportunity to review the Environmental Assessment Documents for the Capital Boulevard North Upgrade (U-5307). City of Raleigh staff have the following comments and questions on this document.

- City of Raleigh staff are supportive of option 2, which includes a new structure connecting Y10 to Gresham Lake Road. This street is now in the *City of Raleigh 2030 Comprehensive Plan Update, Map T-1: Street Plan (COR Street Plan)* as a two lane divided avenue. It is also a part of the *US 1 Corridor Study*. This connection is vital to the local connectivity element of the defined purpose and need of U-5307. It is also necessary to avoid an adverse effect on local traffic patterns and community cohesiveness.
- To support the City's Vision Zero initiative, the City supports the Gresham Lake Road/Capital Hills Drive Roundabout Option (intersection of Y9A and Y9C). According to NCDOT's roundabout information page, a roundabout is predicted to reduce crashes by 46%, and fatal/injury crashes by 76%, compared to other intersection types.
- We would like to ask NCDOT to remove the proposed right turn slip lane at this roundabout. Due the proposed Multi-use path, and the proximity to greenway trails, neighborhoods, and employment centers, bike and pedestrian use is expected in this area. Per NCHRP Research Report 1043, "Guide for Roundabouts:"
 - "A bypass lane creates one or two additional pedestrian crossings. The potentially higher speeds of bypass lanes and the lower expectation of drivers to stop may require active traffic control and increase the risk of pedestrian collisions. Bypass lanes also introduce additional complexity for pedestrians who are blind or have low vision navigating the intersection."
- A roundabout in this location has the added benefits of reduced future maintenance cost compared to a signal, and reduced roadway cross section on the approaches to the intersection, due to elimination of turn lanes.

Municipal Building | 222 West Hargett Street | Raleigh, North Carolina 27601
One Exchange Plaza | 1 Exchange Plaza | Raleigh, North Carolina 27601
Mailing address: City of Raleigh | Post Office Box 590 | Raleigh, North Carolina 27602-0590

NCDOT STIP PROJECT NO. U-5307
 U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Page 2

- Include the Wadford Drive Bridge over the Neuse River Option in the base project, as shown in the *COR Street Plan* and the *US 1 Corridor Study*. This connection is vital to the local connectivity element of the defined purpose and need of U-5307. It is also necessary to avoid an adverse effect on local traffic patterns and community cohesiveness. It is not reasonably foreseeable that improvements to eliminate these impacts can be made outside of the U-5307 and therefore the impacts are permanent. Changes to the proposed design made in this area since our comments dated February 11, 2022 are positive, but do not fully address the purpose and need set forth in the *US-1 Corridor Study*. Including a wider bridge for Wadford Drive has the additional benefits of increase safety during temporary use during construction as well as resiliency during adverse advents after the completion of the project.
- Provide a greenway connection from Wadford Drive to the Neuse River Trail, as supported by the City's *Comprehensive Plan* policies PR 3.1, PR 3.8, and PR 3.11. The City expects to pay for this connection as a betterment to the project.
- Accommodate planned east-west trail development along the Richland Creek (just south of NC 98) and NR Perry Creek Simms Branch (just south of Durant Road) corridors by providing a pedestrian culvert next to the stream culvert at each of these three planned greenway crossings. The project should not impede future buildout of these trail facilities, which are planned in the *City of Raleigh Greenway Master Plan* and supported by the City's *Comprehensive Plan* policies PR 3.1, PR 3.6, PR 3.11.
- Keep the Neuse River Trail open during construction and provide detours around construction if necessary. This is supported by NCDOT's adopted *Complete Streets Policy*.
- Provide lane configurations, sidewalks, and bike facilities for all Y-lines in accordance with the street designations in the *COR Street Plan* and the cross-sections laid out in Raleigh's *Unified Development Ordinance (UDO)*. These sections include sidewalks on both sides of all street types and bike facilities appropriate to the context and characteristics of the street. Sidewalk-level bikeways behind the curb are included in all Avenue designations. Specifically, the maps do not appear to include appropriate bikeways for the following Y-lines:
 - Y2: Durant Rd/Perry Creek Rd, Avenue 4-Lane, Divided
 - Y4: Falls of Neuse Rd west of US 1, Avenue 6-Lane, Divided
- Reduce the through lanes on US 1 in the project to cut costs as necessary to meet the available budget while maintaining all service roads and multimodal local connections. Regardless of the number of lanes, conversion to a limited-access highway will improve safety, travel time reliability, and increase capacity on the corridor. Multimodal local connectivity should be prioritized over additional laneage, which is unlikely to reduce congestion due to induced demand. Investments in the parallel S-Line corridor are a higher priority than increasing capacity on US-1 to account for all potential increases in travel demand on the corridor. The Raleigh *Comprehensive Plan* Policies T 1.3, T 1.4, T 2.1, T 2.4, T 2.6, T 2.11, T 3.1, T 3.2, T 3.4, T 7.1 support this approach. Subsequent to the comments provided by the City of Raleigh on February 7, 2022, NCDOT has communicated a willingness to revisit the traffic project in the future and has reduced the number of lanes where US-1 crosses the Neuse River. City of Raleigh staff are supportive of these developments, but a deeper re-evaluation of traffic projections is necessary.

Municipal Building | 222 West Hargett Street | Raleigh, North Carolina 27601
 One Exchange Plaza | 1 Exchange Plaza | Raleigh, North Carolina 27601
 Mailing address: City of Raleigh | Post Office Box 590 | Raleigh, North Carolina 27602-0590

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Page 3

- Design to the following criteria at all new or affected signals in accordance with polices T 2.1, T 3.1, T 3.2, and T 3.4 in the *Raleigh Comprehensive Plan*:
 - Design all pedestrian crossings at signals in one phase to avoid stranding pedestrians in the median of wide roadways.
 - Place all signal cabinets at locations accessible for field staff.
 - Design signals with mast arms that are designed for additional equipment like CCTVs.
 - Provide pedestrian crosswalks and pedestrian signal heads at all crossings of all new or affected signals.
- Provide street lighting along all impacted streets in Raleigh in accordance with Section 11.2.8 of the *Raleigh Street Design Manual*. According to the FHWA's Proven Safety Countermeasures, lighting can reduce crashes up to 42% for nighttime injury crashes at intersections, 33-38% for nighttime crashes at rural and urban intersections, and 28% for nighttime injury crashes on rural and urban highways. The following Y-lines should have lighting added in conjunction with other U-5307 improvements:
 - Y9C – Bridge connecting Gresham Lake Road and Triangle Town Blvd and realigned sections of Gresham Lake Road (Y9A).
 - Y10 – Frontage Street from Jacqueline Lane to Perry Creek Road, on the east side of US-1
 - Y12A – Extension of Wadford Drive
 - Y13 – Realignment and extension of Ponderosa Service Road
- Minimize corner radii on all intersections of Y lines, such as at Y30 and Y2, to improve comfort and safety for pedestrians and slow vehicle turning speeds in accordance with polices T 2.1, T 3.1, T 3.2, and T 3.4 in the *Raleigh Comprehensive Plan*. Design radii in accordance with the Roadway Classification Design Vehicle Type and street cross section criteria in Articles 2.3 and 3.1 of the *Raleigh Street Design Manual*, respectively. Use mountable truck aprons where needed to accommodate large vehicles with larger radii.
- Maintain vehicular and ADA-accessible pedestrian connections to all properties that are not being acquired, including those numbered 263, 468, 530, 531, 660, 790, and 791.

Thank you again for the opportunity to comment on the project maps. If you have any questions about these comments or require additional feedback, please feel free to contact me at the number or email below.

Many thanks,

Paul Kallam
Assistant Director
919-996-2406, paul.kallam@raleighnc.gov

City of Raleigh Department of Transportation

Municipal Building | 222 West Hargett Street | Raleigh, North Carolina 27601
One Exchange Plaza | 1 Exchange Plaza | Raleigh, North Carolina 27601
Mailing address: City of Raleigh | Post Office Box 590 | Raleigh, North Carolina 27602-0590

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Town of Wake Forest Public Hearing Comments



TOWN of
WAKE FOREST

301 S. Brooks Street
Wake Forest, NC 27587
t 919.435.9400

www.wakeforestnc.gov

Memo

To: North Carolina Department of Transportation

From: Jennifer Currin, Assistant Planning Director

CC: Kip Padgett, Town Manager
Joe Guckavan, Town Engineer
Courtney Tanner, Planning Director

Date: July 7, 2023

Re: U-5307 Public Hearing Map Comments

US-1 (Capital Boulevard) is the major north/south arterial the Town of Wake Forest providing local, regional, and state access via connections to I-540, I-440, and I-85. US-1 has 2020 average daily traffic (ADT) volumes of almost 60,000, and it is anticipated that the ADT in 2040 will be approaching 110,000 trips through Wake Forest. The Town of Wake Forest Board of Commissioners approved a Resolution of Support with Recommended Changes to North Carolina Department of Transportation's (NCDOT) November 2021 Proposed U-5307 US-1 (Capital Boulevard) Interchange and Service Road Public Meeting Maps in January 2022 (Attachment A). The resolution included 23 comments for NCDOT consideration based on the [November 2021 public meeting maps](#).

Since January 2022, Town staff has been meeting with NCDOT and RS&H to advocate for the Town's position and comments in Attachment A.

In May 2023, CAMPO and Town staff were notified that NCDOT is reallocating the funding assigned to U-5307 Segments B and C in Wake Forest to a project in Cumberland County. U-5307 Segment A, located in Raleigh, remains funded in the STIP.

This memo outlines the Town's comments from Attachment A that have not been satisfactorily addressed and critical concerns related to Segments B and C being unfunded in the STIP. If these comments are not adequately addressed as

NCDOT STIP PROJECT NO. U-5307
 U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



part of U-5307, the project will not meet the stated purpose and need and will continue to have a detrimental impact on the quality of life for those living and working in the Town of Wake Forest.

1. In June 2023, the NC Board of Transportation adopted the 2024-2033 State Transportation Improvement Program (STIP) removing committed funding for U-5307 Segments B & C. NCDOT District 5 Engineer, Brandon Jones, presented to the Town of Wake Forest Board of Commissioners on June 6, 2023 and noted that U-5307 Segments B-D would be eligible to recomplete for funding in future STIPs; however, the best case scenario for completion of the project would be 2035. The Town of Wake Forest contracted with Exult Engineering to study two intersections, which are in U-5307 Segment B to understand the impact on level of services (LOS) and delays with no improvements being made until 2035 as part of the best-case scenario timeline NCDOT presented. The intersections studied were US-1 (Capital Boulevard) at South Main Street/Falls of Neuse Road and US-1 (Capital Boulevard) at Burlington Mills Road. In the PM Peak at US-1 and South Main Street, the overall intersection delay is anticipated to be 421 seconds (7 minutes); and at US-1 and Burlington Mills Road, the overall delay at the intersection is anticipated to exceed 740 seconds (12 minutes). See Tables 4 and 7. The results are abysmal and unacceptable.

Table 4: Level-of-Service: Existing and No-Build Results – US 1 (Capital Boulevard) at South Main Street/Falls of Neuse Road

Condition	AM Peak		PM Peak	
	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length
2023 Existing	Overall – F (120.3) EB – F (87.3) WB – F (445.3) NB – D (38.0) SB – E (67.3)	EBL – 320'/430' EBR – 187'/211' WBL/U – 474'/325' NBL – 245'/468' NBR – 228'/282' SBL/U – 246'/270' SBR – 581'/340'	Overall – E (72.1) EB – E (63.8) WB – E (59.7) NB – D (41.0) SB – F (115.0)	EBL – 159'/291' EBR – 118'/257' WBL – 257'/341' NBL – 112'/128' NBR – 230'/258' SBL/U – 313'/302' SBR – 357'/332'
2035 No-Build	Overall – F (365.4) EB – F (266.0) WB – F (532.7) NB – F (273.5) SB – F (409.8)	EBL – 206'/281' EBR – 285'/348' WBL/U – 429'/260' NBL – 350'/410' NBR – 558'/241' SBL/U – 252'/248' SBR – 904'/340'	Overall – F (421.2) EB – F (501.9) WB – F (742.5) NB – F (401.1) SB – F (231.1)	EBL – 208'/306' EBR – 242'/460' WBL – 546'/336' NBL – 218'/89' NBR – 684'/192' SBL/U – 342'/279' SBR – 550'/340'

NCDOT STIP PROJECT NO. U-5307
 U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Table 7: Level-of-Service: Existing and No-Build – US 1 (Capital Boulevard) at Burlington Mills Road

Condition	AM Peak		PM Peak	
	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length	LOS and Delay (sec/veh)	Turn Lane Synchro 95% Queue Length/SimTraffic Max Queue Length
2023 Existing	Overall – F (132.8) EB – F (112.4) WB – F (100.1) NB – F (110.2) SB – F (163.0)	EBL – 26'/34' WBL – 457'/642' NBL/U – 203'/479' NBR – 160'/525' SBL/U – 478'/627' SBR – 23'/155'	Overall – F (207.0) EB – F (145.7) WB – F (115.9) NB – D (51.9) SB – F (405.8)	EBL – 106'/100' WBL – 332'/653' NBL/U – 262'/574' NBR – 236'/525' SBL/U – 981'/756' SBR – 24'/252'
2035 No-Build	Overall – F (688.1) EB – F (306.6) WB – F (864.6) NB – F (613.5) SB – F (748.8)	EBL – 531'/1100' WBL – 709'/668' NBL/U – 385'/575' NBR – 371'/525' SBL/U – 541'/748' SBR – 162'/340'	Overall – F (740.6) EB – F (278.5) WB – F (600.2) NB – F (682.3) SB – F (898.0)	EBL – 456'/1087' WBL – 490'/666' NBL/U – 583'/575' NBR – 605'/525' SBL/U – 771'/865' SBR – 195'/340'

- Review the modeling performed for U-5307 to ensure it is updated using the current Triangle Regional Model (TRM) as the TAZs have been updated and are more reflective of realistic development patterns projected to occur in Wake Forest.
- Provide the service road over the Neuse River connecting Y12A in Raleigh to Y12A in Wake Forest providing regional vehicular, pedestrian and bicycle connectivity and contributes to the reduced travel times on US-1.

While NCDOT has agreed to construct a permanent bridge across the Neuse River connecting a multi-use path (MUCP) from the Wadford Dr. extension and Meadstone Way cul-de-sacs, the Town does not believe that this solution addresses the project's statement of purpose which is to improve traffic congestion and travel times and to maintain regional mobility and local connectivity. Without the vehicular connectivity, local connectivity is not achieved, and traffic congestion is not reduced. All vehicular traffic is still being routed to US-1.

- Include Ligon Mill Road and the Ligon Mill Road extension in the study area as it is serving as primary north/south service road in Wake Forest on the east side of US-1.

Again, Section 1.2 of the Concurrence Point 2 Revisions project's statement of purpose which is to improve traffic congestion and travel times and to maintain regional mobility and local connectivity. Without the vehicular connectivity, local connectivity is not achieved, travel

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



times are not maintained, and traffic congestion is not reduced. NCDOT is treating Ligon Mill Road as a service road to address traffic capacity and distribution while at the same time not including it in the study area.

5. Extend Y25B to Purnell Road.

From our understanding, NCDOT will proceed with the preliminary designs as shown at the December 2021 Public Meeting with minor changes to the northern end of the proposed Wake Union Church Rd terminus to avoid impacting the parcel behind the historic Sutherland House property. Per the Historic Preservation Office (HPO), this revision will allow a No Adverse Effects finding, which would have avoided the need for an Environmental Assessment. However, an Environmental Assessment is needed for the project and the benefits of extending Y25B to Purnell significantly contribute to meeting the project's statement of purpose and need by providing local connectivity and reduce traffic congestion on US-1.

6. Provide an interchange instead of a grade separated crossing at Stadium and US-1 in accordance with the Northeast Area Plan hotspot study.

7. Revise the U-5307 Project Segments, specifically Segments C and D, to align with the descriptions in the STIP, November 2018 public meeting maps and MTP. It is imperative that the inclusion of NC98 Business interchange is in Segment C.

8. Provide a full movement traffic signal at the intersection of Wake Drive and S. Main Street to ensure left turning movements may be made by residential and commercial activity on Star Road.

According to NCDOT, due right-of-way constraints along this section, NCDOT will proceed with preliminary designs as shown at the December 2021 Public Meeting since additional widening of the typical section would result in impacts to adjacent properties. The Town of Wake Forest finds NCDOT's comment inadequate due to the development existing and approved on Star Road. Residents and businesses will be significantly impacted and will be forced to travel on Ligon Mill Rd. or Main Street to access US-1. This scenario further demonstrates that NCDOT is considering Ligon Mill Road as a service road and therefore, it is critical that Ligon Mill Road is included in the study area and extended as part of the project scope.

9. Ensure any radius improvements are made to accommodate a traffic signal at Wake Drive and S. Main Street.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



According to NCDOT, due right-of-way constraints along this section, NCDOT will proceed with preliminary designs as shown at the December 2021 Public Meeting since additional widening of the typical section would result in impacts to adjacent properties. The Town of Wake Forest finds NCDOT's comment inadequate due to the development existing and approved on Star Road. Residents and businesses will be significantly impacted and will be forced to travel on Ligon Mill Rd. or Main Street to access US-1. This scenario further demonstrates that NCDOT is considering Ligon Mill Road as a service road and therefore, it is critical that Ligon Mill Road is included in the study area and extended as part of the project scope.

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



Attachment A

RESOLUTION 2022-01-A

RESOLUTION OF SUPPORT OF THE BOARD OF COMMISSIONERS OF THE TOWN OF WAKE FOREST WITH RECOMMENDED CHANGES TO NORTH CAROLINA'S DEPARTMENT OF TRANSPORTATION (NCDOT) NOVEMBER 2021 PROPOSED U-5307: US-1 (CAPITAL BOULEVARD) INTERCHANGE AND SERVICE ROAD PUBLIC MEETING MAPS

WHEREAS, the Town of Wake Forest ("Town") is committed to preserving the quality of life for all those living in the Town by ensuring an adequate transportation network is provided; and

WHEREAS, US-1 (Capital Boulevard) is the major north/south arterial in the Town of Wake Forest providing local, regional, and state access via connections to I-540, I-440 and I-85; and

WHEREAS, US-1 has 2020 average daily traffic (ADT) volumes of almost 60,000, and it is anticipated that ADT in 2040 will be approaching 110,000 trips through Wake Forest; and

WHEREAS, to address safety and increasing traffic on US-1, the US-1 Corridor Study was originally completed in 2006 in a joint effort between NCDOT, CAMPO, City of Raleigh, Town of Wake Forest, Town of Youngsville, Wake County, Franklin County, Triangle Transit (now GoTriangle) and the Kerr-Tarr RPO; and

WHEREAS, the project purpose of the 2006 US-1 Corridor Study was to develop "...an integrated multimodal transportation plan that provides for a high level of mobility along the US 1 Corridor while maintaining a high quality environment for the surrounding communities by providing for well-planned and sustainable growth along this corridor"; and

WHEREAS, to address increasing traffic and safety concerns, NCDOT is proposing to convert US-1 to a controlled access freeway by removing direct driveway connections and providing access via interchanges; and

WHEREAS, this project is referenced by the NCDOT STIP project number U-5307; and

WHEREAS, in June 2018, the US 1 (Capital Boulevard) Freeway Upgrade Concurrence Point 1 Final Document for STIP Project U-5307 was provided; and

WHEREAS, Section 4 of the Concurrence Point 1 document noted the overall need of the project is to relieve traffic congestion, improve travel times and reduce or eliminate crashes; and

WHEREAS, Section 5 of the Concurrence Point 1 document stated the overall purpose of the project is to improve traffic congestion and travel times; and

WHEREAS, in June 2018 Concurrence Point 1 was discussed among the NEPA/404 Merger Team and one of the consensus items identified was that the Need of Proposed Action and Purpose for Proposed Action needed to be revised; and

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



WHEREAS, in March 2021, the US 1 (Capital Boulevard) Freeway Upgrade Concurrence Point 2 Revisions Document for STIP Project U-5307 was provided; and

WHEREAS, Section 1.2 of the Concurrence Point 2 Revisions document noted that the overall need of the project is due to traffic congestion and trip time unreliability; and stated that the purpose for proposed action was to improve traffic congestion and travel times and to maintain regional mobility and local connectivity; and

WHEREAS, the Town of Wake Forest supports U-5307 and the rationale for the improvements to US-1; and

WHEREAS, NCDOT's proposed U-5307: US-1 (Capital Boulevard) project will have a significant impact on the Town of Wake Forest's transportation network and landowners; and

WHEREAS, due to the Town's proximity along US-1, the properties along US-1 are vital to the Town's economic development success; and

WHEREAS, the Town finds that proposed U-5307: US-1 (Capital Boulevard) November 2021 public meeting maps are well intentioned but fall short at providing an adequate transportation network in Wake Forest and ensuring the project allows for successful economic development opportunities along the corridor; and

WHEREAS, the Town has coordinated with NCDOT to ensure the impacts to the quality of life of Wake Forest citizens, businesses and landowners are minimized to the greatest extent possible; and

WHEREAS, based on the Town concerns raised at the coordination meetings, NCDOT addressed some of the Town of Wake Forest staff comments, such as including multi-use paths where appropriate and some additional service road segments; and

WHEREAS, NCDOT has not addressed all the Town's outstanding comments related to U-5307; and

WHEREAS, this project is likely to have many unintended consequences for municipalities and counties in North Carolina, to established neighborhoods, thriving commercial uses, and future proposed developments and the Town of Wake Forest needs to protect the interests of these parties as much as possible; and

WHEREAS, the Town of Wake Forest believes that, unless the following comments are incorporated into STIP U-5307: US-1 (Capital Boulevard), the project will not meet the stated purpose and need included in the Concurrence Point 1 document:

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



1. Review the modeling performed for U-5307 to ensure it is updated using the current Triangle Regional Model (TRM) as the TAZs have been updated and are more reflective of realistic development patterns projected to occur in Wake Forest.
2. Provide the service road over the Neuse River connecting Y12A in Raleigh to Y12A in Wake Forest providing regional vehicular, pedestrian and bicycle connectivity and contributes to the reduced travel times on US-1.
3. Provide 16' wide outside shoulders on US-1 for transit and emergency service access.
4. Include Ligon Mill Road and the Ligon Mill Road extension in the study area as it is serving as primary north/south service road in Wake Forest on the east side of US-1.
5. Extend Y25B to Purnell Road.
6. Provide an interchange instead of a grade separated crossing at Stadium and US-1 in accordance with the Northeast Area Plan hotspot study.
7. Revise the U-5307 Project Segments, specifically Segments C and D, to align with the descriptions in the STIP, November 2018 public meeting maps and MTP.
8. Provide a 5' sidewalk on both sides of Y16.
9. Pedestrian infrastructure is a crucial component of this project. Therefore, NCDOT needs to ensure appropriate pedestrian refuges and/or pedestrian signals are being provided at and/or on the proposed ramps and interchanges.
10. Provide a full movement traffic signal at the intersection of Wake Drive and S. Main Street to ensure left turning movements may be made by residential and commercial activity on Star Road.
11. Ensure any radius improvements are made to accommodate a traffic signal at Wake Drive and S. Main Street.
12. Provide a 10' multi-use path on both sides of Durham Road (Y6).
13. Ensure the Y24B T-intersection at Agora Drive can accommodate the ultimate 4-lane median divided cross section identified in the Town of Wake Forest Comprehensive Transportation Plan (CTP).
14. Continue the sidewalk on Jenkins Road (Y7).

NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS




15. Provide outstanding portions of Y25A and Y25B not shown on public meeting maps for review and comment.
16. Include sidewalk on Country Club Drive (Y25B-1).
17. Revise the sidewalk to a multi-use path at the intersection of Y7 and Y26B.
18. Provide sidewalk on both sides of Templeridge Road (Y26B-1).
19. Eliminate the easements on the cemetery property (PIN 1831842795) in the Wake Forest Crossing Shopping Center.
20. Include 5' sidewalks on both sides of Y28 in Option 1 to connect to existing infrastructure.
21. Provide 5' sidewalks on both sides of Y28 in Option 2.
22. Show 5' sidewalks on both sides of DR2 at Wallridge Road to connect to existing infrastructure in Option 2.
23. Allow an additional 30-day comment period due to the current comment period falling over the holidays.

NOW, THEREFORE, BE IT RESOLVED by the Board of Commissioners of the Town of Wake Forest provide these comments to the North Carolina Department of Transportation for inclusion in the U-5307 design to ensure the project need and purpose are met and severe harm to the Town of Wake Forest is reduced to the greatest extent possible.

This the 18th day of January 2022.

ATTEST:


Vivian A. Jones, Mayor


Theresa Savary, CMC; Deputy Town Clerk



NCDOT STIP PROJECT NO. U-5307
U.S. 1 (CAPITAL BOULEVARD) IMPROVEMENTS



GoTriangle Public Hearing Comments



July 10, 2023

Mr. Terry Farr, P.E.
Project Manager
NCDOT Project Management Unit
1582 Mail Service Center
Raleigh, NC 27699-1582

RE: U-5307 Capital Boulevard North Upgrade (Raleigh to Wake Forest)

Dear Mr. Farr:

GoTriangle appreciates our partnership with NCDOT and the opportunity to provide comments on this project. The project provides a cost-effective opportunity to deliver meaningful improvements to existing transit service, providing enhanced alternatives for travelers within the corridor. GoTriangle is supportive of the overall design and offers the following comments:

- **Bus on Shoulder:** We support the inclusion of full-depth, 12-foot wide shoulders to provide for bus on shoulder. The recently adopted BOSS (Bus on Shoulder System) Implementation Blueprint includes the US 1 North corridor. We request that the project include necessary signage and coordinate with GoTriangle, CAMPO, and the North Carolina State Highway Patrol to develop an operations plan to enable bus on shoulder operations concurrent with the opening of each project phase.
- **Park and Ride:** The adopted Wake Transit Plan includes a new park and ride lot in the Capital Boulevard North corridor. We request that the project evaluate opportunities for ROW purchases necessary to construct the project to support a 2-3 acre park and ride lot in the vicinity of interchanges at NC 98 Bypass and Harris Road. In particular, there could be the potential for existing ROW and remnant parcels to support such a park and ride at the northeast quadrant of the interchange at NC 98 Bypass as well as the southeast quadrant of the interchange with Harris Road.

We look forward to continued partnership with NCDOT to address these comments as design progresses on this project.

Sincerely,

Charles Lattuca
President and CEO
clattuca@gotriangle.org



Cc via email:
Brandon Jones, Division 5 Engineer, NCDOT
Chris Lukasina, Executive Director, CAMPO

4600 Emperor Blvd., Suite 100, Durham, NC 27703 | P: 919.485.7510 | F: 919.485.7547 | gotriangle.org