



U.S. 70 / Glenwood Avenue Improvements T.W. Alexander Drive and Brier Creek Parkway Area STIP Project No. U-5518

April 6, 2017

Welcome!

Your input is important.

NCDOT is seeking comments from the public, local officials and agencies about the proposed alternatives for the project

Today's meeting is an important step in NCDOT's efforts to involve the public in the planning and development process. This meeting is being held to obtain your input on proposed alternatives and design features of the Project.

Questions? Comments? Concerns? Please Contact Us!

Please visit our Web Site for the latest information as well as provide questions/comments on the project:

www.ncdot.gov/projects/US70BrierCreek/

Project Managers

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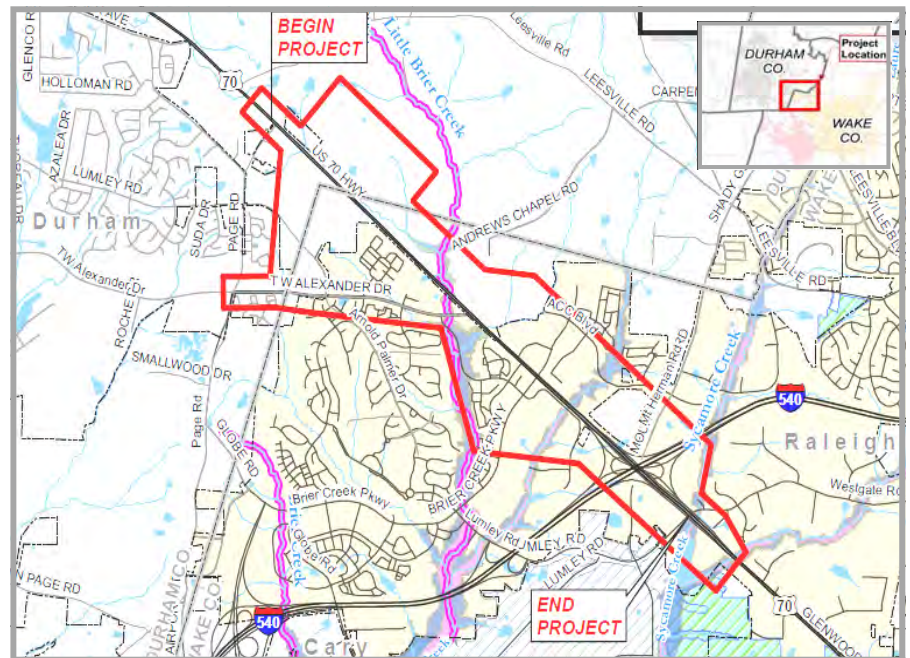
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Comments will be accepted until
May 8, 2017.

Project Overview

The N.C. Department of Transportation is proposing to improve U.S. 70 (Glenwood Avenue) from west of T.W. Alexander Drive (S.R. 3067) to Interstate 540 (I-540), in the City of Raleigh and City of Durham.

This project will also upgrade the at-grade intersections of U.S. 70 with T.W. Alexander Drive and Brier Creek Parkway (S.R. 3109/S.R. 3100) to interchanges.



State & Federal Relationship



This proposed project is a Federal-Aid Highway Project and would be constructed under the State-Federal Aid Highway Program. Financing of this project would be 80% Federal funds and 20% State funds.

Planning Process

The proposed project is following a process outlined by the National Environmental Policy Act (NEPA).

NEPA is a law that requires federally-funded projects to consider the environmental effects of their proposals.

An environmental document called an Environmental Assessment (EA) will be prepared for this project.

State Transportation Improvement Plan

This project is funded in the current State Transportation Improvement Program (STIP). This plan serves as a 10 year (2016 -2025) State and Federal plan which identifies construction funding for, and scheduling of, transportation projects throughout the state.

Project prioritization, the project selection process, is based on a data-driven process which relies on specific criteria to identify and score transportation needs across the state.

Additional information about the current North Carolina STIP and the STIP development process can be found on the NCDOT Web site (www.ncdot.gov)

Project Schedule

- **February 2014** - Start of Study
- **November 2016** - Preliminary Designs Completed
- **April 2017** - First Public Meeting
- **Fall 2017** - Federal Environmental Assessment
- **Spring 2018** - Public Hearing
- **Summer 2018** - Final Environmental Decision Document
- **Summer 2019** - Right-of-Way Acquisition begins
- **Summer 2021** - Construction begins

What's Next?

This U.S. 70 project is in a preliminary phase. All design alternatives are subject to change as the project team continues to study the best ways to minimize impacts to homes, businesses, communities and natural resources in the area.

The environmental document, an Environmental Assessment (EA) will discuss all of the alternatives studied (including those eliminated) and the processes followed to date. It will include specific parameters such as traffic analysis, cost, and impacts to the human and natural environment for each of the detailed study alternatives. NCDOT expects to complete the EA in Fall 2017.

After this information is published and before any decisions are made on a selected alternative, NCDOT will conduct a Public Hearing to seek public input on the various alternatives analyzed in the EA.

NCDOT is presenting a new way to provide input on the project, SmartComment.

SmartComment will allow you to submit comments or questions in an online format.

Check out Smart Comment from the project website or directly at

<http://US70BrierCreek.ncdot.commentinput.com>



Why is the project needed?

The need to improve U.S. 70 between I-540 and T.W. Alexander Drive has been demonstrated by:

- existing traffic congestion
- increasing traffic volumes
- poor operating conditions
- higher than average number of vehicle crashes

The current conditions are substandard and anticipated to worsen without action.



What is the purpose of the project?

The purpose of the project is to improve traffic flow and operations on U.S. 70, and associated intersections and/or interchanges, from west of T.W. Alexander Drive to I-540. This will be accomplished by reducing anticipated travel delays and queue lengths as compared to those anticipated in the future 'no-build' condition.



Safety Concerns

Within the project area, crash rates are significantly higher than the statewide averages for similar roadway facilities. The table below compares crash rates and types between August 1, 2008 and July 31, 2012 along U.S. 70 from T.W. Alexander Drive to the Lumley Road bridge, with statewide data.

Rate	Crashes	Crashes per 100 million vehicle miles	Statewide Rate ¹
Total	469	325.44	172.49
Fatal	2	1.39	0.86
Non-Fatal	115	79.80	52.31
Night	136	94.37	38.77
Wet	75	52.04	31.30

¹ 2009-2011 crash rate for urban U.S. Routes with 4 or more lanes and partial control of access

Increasing Traffic Volumes

Current traffic volumes on U.S. 70, Brier Creek Parkway and T.W. Alexander Drive are high and additional growth is anticipated. The table below indicates the average range of traffic in vehicles per day (VPD) 2013 and a forecast (design) year of 2040. Traffic volumes are forecast to nearly double by 2040.

Route	Traffic Volume (2013) VPD	Forecasted Traffic Volume (2040) VPD
U.S. 70	33,600 — 59,400	69,300 — 114,900
Brier Creek Parkway	22,700 — 30,400	43,100 — 61,900
T.W. Alexander Drive	4,200 — 22,200	38,200 — 40,100

Level of Service

Highway and intersection performance is usually described using a "Level of Service" (LOS) analysis, much like a standard school grading scale, with A being the best and F being the worst.

For traffic, a LOS A would indicate free flow traffic with traffic flowing at or above the posted speed limit and complete mobility between lanes and turning movements.

LOS F would indicate that traffic volumes are higher than the capacity of a roadway, and results in stop and go traffic, sometimes referred to as a traffic jam. The current and anticipated future LOS for pertinent intersections are graphically shown on the next page.

Please note, meeting maps and other information is available on the Project Web site:

www.ncdot.gov/projects/US70BrierCreek/

Level of Service and Delay (Worst Movement)

Intersection	Existing (2013)		Future 2040 (No Build)	
	LOS	Delay (Sec)	LOS	Delay (Sec)
U.S. 70 at Brier Creek Pkwy.	E	73	F	457
U.S. 70 at T.W. Alexander Dr.	D	47	F	393







Level of Service and Delay with Improvements

Interchange	Alt. 1 (2040)		Alt. 2 (2040)	
	LOS	Delay (Sec)	LOS	Delay (Sec)
U.S. 70 at Brier Creek Pkwy.	F	124.5	F	97.7
U.S. 70 at T.W. Alexander Dr.	D	N/A*	F	N/A*

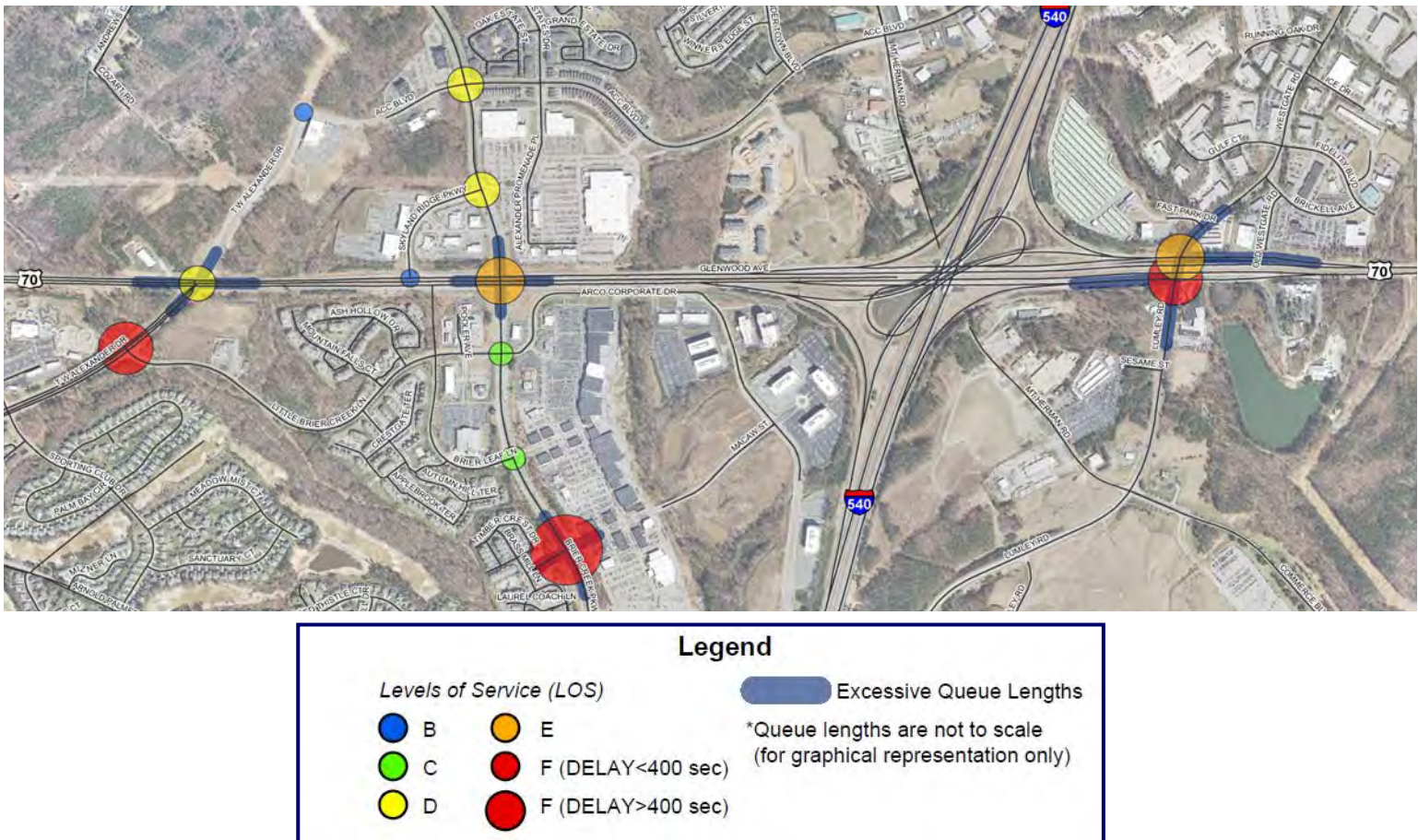
*Delay is not a standard computation for a free flow interchange.

Excessive Queue Lengths

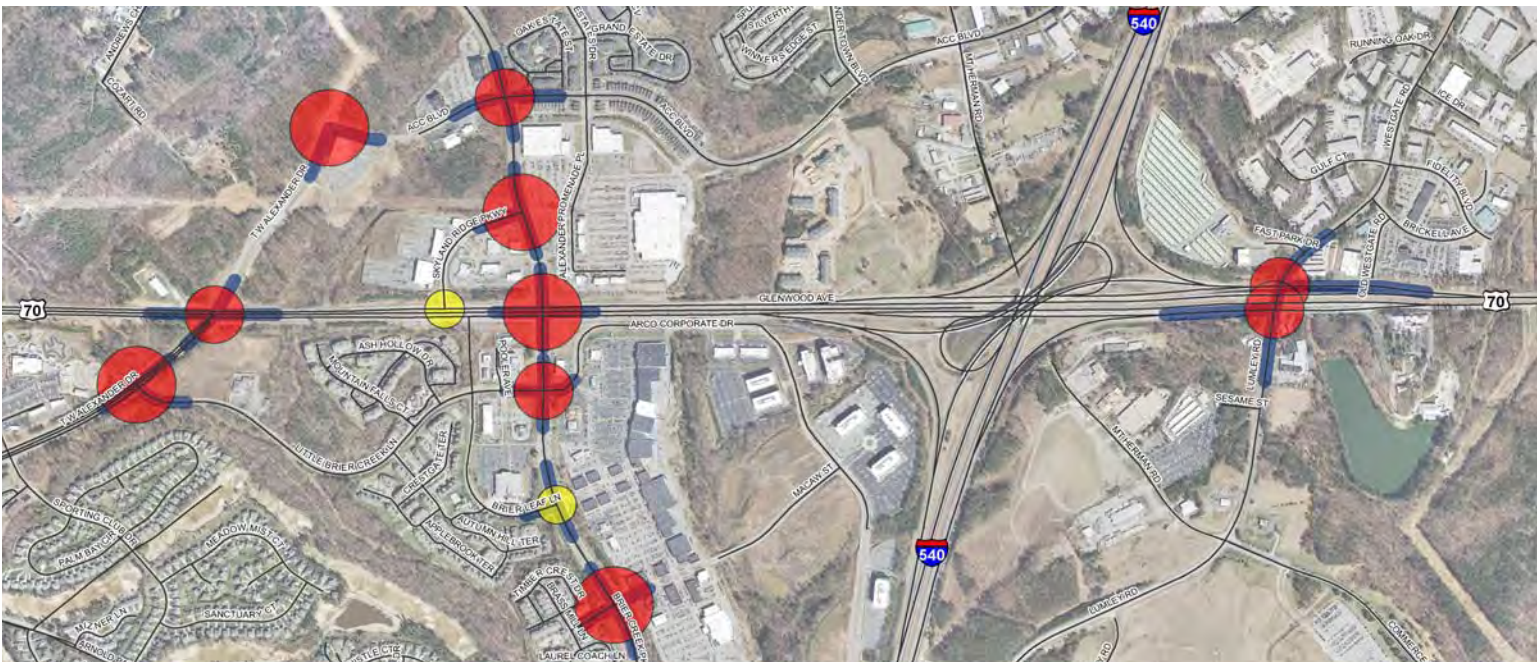
For the purposes of this projects traffic analysis, excessive queue lengths are defined as any queue which exceeds the provided storage length by more than 200 feet. For example, if a left-turn lane at an intersection is 400 feet long, and the total queue length during a red light phase exceeds 600 feet, the queue is considered excessive. Intersections with excessive queue lengths are graphically shown on the next page.

Level of Service	Typical Conditions
A	
B	
C	
D	
E	
F	

2013 Traffic Operations — The following figure shows the existing (2013) traffic Level of Service and excessive queue lengths for intersections in the Project area.



2040 Traffic Operations — Likewise, the following figure is a representation of forecasted (2040) traffic Level of Service and excessive queue lengths for intersections in the Project area, if no improvements are made.



Freeway Standards?

Purpose: High Mobility, Low Access

Speed Limit: 55 mph or greater

Access: Fully Controlled

Traffic Signals: Not Allowed

Driveways: Not Allowed

Connections: Only at Interchanges

Examples: I-40, I-540, I-85, U.S. 1(Cary/Apex), N.C. 147 (Durham Freeway)



Expressway Standards?

Purpose: High Mobility, Moderate Access

Speed Limit: 45 mph to 60 mph

Access: Limited or Partial Control

Traffic Signals: Not Allowed

Driveways: Not allowed if Limited Control
Allowed if Partial Control

Connections: At interchanges, at-grade intersections and driveways

Examples: U.S. 64 (Apex), U.S. 70 (Currently), N.C. 55 (Holly Springs)



How Did We Get Here?

During the development of alternatives, a number of obstacles related to the high density of development, environmental concerns, large traffic volumes and topographical constraints were encountered. Multiple conceptual design alternatives were developed and analyzed for future traffic operations; however, only two alternatives were carried forward to the preliminary design stage.

Many of the conceptual design alternatives were eliminated from consideration due to poor traffic operations or substantial impacts to surrounding areas.

U.S. 70 Options

Two options were considered for upgrading of U.S. 70. Each has specific guidelines that must be met. Either option may be combined with the Alternative selected to create the total project.

Upgrade to Freeway

This option would provide a 55 mph posted speed limit, with access to U.S. 70 provided only at interchanges. *Current direct access driveways along U.S. 70 would be removed.*

Upgrade to Expressway

This option would allow for a 45 mph posted speed limit, with access to U.S. 70 provided at interchanges, at-grade intersections and driveways.

Selection of either option will not affect which interchange alternative is selected (see page 7).

What is a SPUI?

SPUI is an acronym for a Single-Point Urban Interchange, and is a type of highway interchange. This interchange design was created in order to help more large volumes of traffic through limited amounts of space (urban areas) safely and efficiently. A local example of a SPUI is the I 40 interchange for The Streets at Southpoint, in Durham.



What are braided ramps, and when are they used?

Braided ramps occur when ramps cross over or under another.

For example, on Alternative 1 the ramp from Brier Creek Parkway to westbound U.S. 70 crosses under the westbound off ramp from U.S. 70 to T.W. Alexander Drive.

This type of ramp configuration also means that traffic entering U.S. 70 from Brier Creek Parkway would not have access to T.W. Alexander Drive, and vice versa.



The Alternatives

Alternative 1:

U.S. 70's current at-grade intersections, with T.W. Alexander Drive and Brier Creek Parkway would be replaced with new interchanges.

This alternative would construct a Single-Point Urban Interchange (SPUI) at Brier Creek Parkway.

A limited access directional interchange would be constructed at T.W. Alexander Drive.

This Alternative would require the use of braided ramps between the two new interchanges, due to the short distance between them. Braided ramps occur when one highway ramp crosses over another via a bridge.

Alternative 2:

This alternative was developed to eliminate the need for braided ramps between the two new interchanges. Like Alternative 1, this alternative would also construct a SPUI at Brier Creek Parkway.

To create additional space between the interchanges, Alternative 2 would construct a new interchange west of the existing U.S. 70 and T.W. Alexander Drive intersection. This would provide a new connection from T.W. Alexander Drive (new location) to U.S. 70.

The existing T.W. Alexander Drive intersection with U.S. 70 would then be grade separated (T.W. Alexander bridging over U.S. 70), with no access to or from U.S. 70.

Potential Impacts

Temporary impacts associated with construction activity will likely include:

- prolonged road closures/detours
- limited movements onto Brier Creek Parkway
- slower than normal traffic
- changes to access for local businesses and facilities.

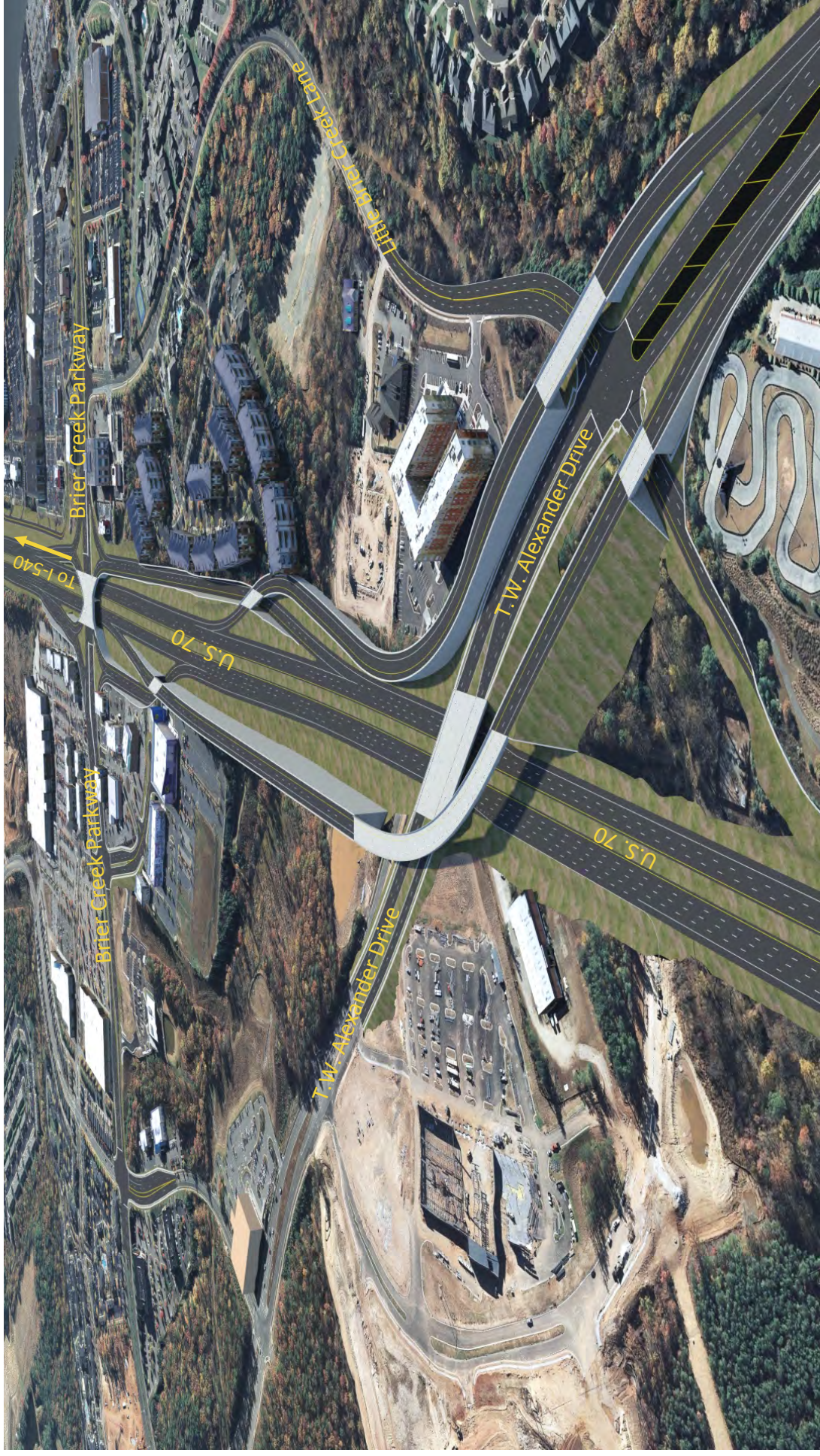
Permanent impacts will likely include:

- right of way acquisitions
- business relocations
- modification of access to and from U.S. 70 / Brier Creek Parkway and T.W. Alexander Drive.

Alternative 1



Visualization of potential upgrades at the intersections of U.S. 70 at T.W. Alexander Drive and U.S. 70 at Brier Creek Parkway, under Alternative 1.



Alternative 2



Visualization of a potential interchange at the new location extension from T.W. Alexander Drive to U.S. 70, under Alternative 2.



Visualization of a potential new location extension from T.W. Alexander Drive to U.S. 70, and the grade separation of U.S. 70 at T.W. Alexander Drive, under Alternative 2.



Visualization of potential upgrades to the intersection of U.S. 70 at Brier Creek Parkway, under Alternative 2.



Visualization of potential upgrades to the intersections of U.S. 70 at Brier Creek Parkway and U.S. 70 at T.W. Alexander Drive, under Alternative 2.



A visualization of potential upgrades at U.S. 70 and Brier Creek Parkway, under Alternative 2.





Comment Sheet

Wake & Durham Counties April 2017

U.S. 70 Improvements

STIP Project U-5518

Name:

-Please Print-

Email:

Address (including zip code):

Public involvement is an important part of the Planning Process and NCDOT encourages your involvement on transportation projects. Please consider answering the items below and feel free to attach additional pages if more space is needed to fully explain your thoughts.

- 1) Do you have comments or questions that were not answered tonight?
- 2) What are the features or resources in the study area that are important to you?
- 3) Do you have any concerns about the project?
- 4) Do you have any suggestions for improving the project?

Please submit comments by May 8, 2017, via any method below:

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SmartComment Web site:
<http://US70BrierCreek.ncdot.commentinput.com>

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Please fold this paper in half and seal at the top if a separate envelope is not used for mailing. Thank you.

TITLE VI PUBLIC INVOLVEMENT FORM

Completing this form is **completely** voluntary. You are not required to provide the information requested in order to participate in this meeting.

Meeting Type: Public Meeting Location: Embassy Suites by Hilton 8001 Arco Corporate Drive Raleigh, NC 27617	Date: April 6, 2017
STIP No.: U-5518 Project Description: U.S. 70 Improvements - Brier Creek to TW Alexander	

In accordance with Title VI of the Civil Rights Act of 1964 and related authorities, the North Carolina Department of Transportation (NCDOT) assures that no person(s) shall be excluded from participation in, denied the benefits of, or subjected to discrimination under any of the Department's programs, policies, or activities, based on their race, color, national origin, disability, age, income, or gender.

Completing this form helps meet our data collection and public involvement obligations under Title VI and NEPA, and will improve how we serve the public. Please place the completed form in the designated box on the sign-in table, hand it to an NCDOT official or mail it to the PDEA-Human Environment Section, 1598 Mail Service Center, Raleigh, NC 27699-1598.

All forms will remain on file at the NCDOT as part of the public record.

Zip Code: _____ Street Name: _____	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female
Total Household Income: <input type="checkbox"/> Less than \$12,000 <input type="checkbox"/> \$47,000 – \$69,999 <input type="checkbox"/> \$12,000 – \$19,999 <input type="checkbox"/> \$70,000 – \$93,999 <input type="checkbox"/> \$20,000 – \$30,999 <input type="checkbox"/> \$94,000 – \$117,999 <input type="checkbox"/> \$31,000 – \$46,999 <input type="checkbox"/> \$118,000 or greater	Age: <input type="checkbox"/> Less than 18 <input type="checkbox"/> 45-64 <input type="checkbox"/> 18-29 <input type="checkbox"/> 65 and older <input type="checkbox"/> 30-44
	Have a Disability: <input type="checkbox"/> Yes <input type="checkbox"/> No
Race/Ethnicity: <input type="checkbox"/> White <input type="checkbox"/> Black/African American <input type="checkbox"/> Asian <input type="checkbox"/> American Indian/Alaskan Native <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Other (please specify): _____	National Origin: (if born outside the U.S.) <input type="checkbox"/> Mexican <input type="checkbox"/> Central American: _____ <input type="checkbox"/> South American: _____ <input type="checkbox"/> Puerto Rican <input type="checkbox"/> Chinese <input type="checkbox"/> Vietnamese <input type="checkbox"/> Korean <input type="checkbox"/> Other (please specify): _____

How did you hear about this meeting? (newspaper advertisement, flyer, and/or mailing) _____

For more information regarding Title VI or this request, please contact the NCDOT Title VI Section at (919) 508-1896 or toll free at 1-800-508-1886, or by email at sddickens@ncdot.gov.

**Diane Wilson
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Raleigh, NC 27699-1598**

**Attn: Diane Wilson
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