



U.S. 64 Widening

From I-85 East of Lexington to the Asheboro Bypass

Davidson and Randolph Counties | STIP Project No. R-2220

Concurrence Point 1

September 2019





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1.0 **INTRODUCTION**

1.1 **Meeting Purpose**

The North Carolina Department of Transportation (NCDOT) is proposing improvements to US 64, from east of I-85 in Lexington to the Asheboro Bypass, STIP R-2536 (currently under construction). The project is included in the NCDOT Draft 2020-2029 *State Transportation Improvement Program* (STIP) as Project R-2220 (Sections B, CA, CB, and DA). In accordance with the National Environmental Policy Act (NEPA) Section 404 Merger Process, NCDOT is seeking consensus from the NEPA/404 Merger Team (Merger Team) on the following:

- Concurrence Point 1 (Purpose and Need, Study Area Defined)

For Concurrence Point 1, this report provides a brief description of the existing conditions, defines the project study area, explains the project's need, and defines the project's purpose.

1.2 **Project Description**

NCDOT is proposing to upgrade US 64 from east of I-85 in Lexington to the Asheboro Bypass (see **Figure 1**). The corridor is approximately nineteen miles long and will include tie-in connections with the I-85 interchange, NC 109 interchange (STIP R-4734), and the Asheboro Bypass interchange (STIP R-2536). The project will include a grade-separated railroad bridge and will replace the bridge over the Uwharrie River.

1.3 **Project History**

A feasibility study with study limits from I-85 Business in Davidson County to US 220 in Asheboro in Randolph County was completed in 2011. The feasibility study recommended that US 64 be widened to a multi-lane roadway, with 12-foot lanes and a 46-foot median. The project was funded in the STIP. Section A of the project (I-85 Business in Lexington to east of I-85) has been completed. Part of Section D is now STIP Project U-5813 (US 64 from the Asheboro Bypass to east of I-73 / I-74 / US 220 in Asheboro).

1.4 **Document Type and Schedule**

Project R-2220 is divided into four sections: B, CA, CB, DA (see **Figure 1**). Currently, the environmental document and section DA are state-funded. However, due to the uncertainty of funding for the remaining sections, a federal Categorical Exclusion is being prepared.

R-2220 Section Descriptions:

- A – from I-85 Business in Lexington to east of I-85 – COMPLETE
- B – from I-85 east of Lexington to NC 109 (R-4734)
- CA – from NC 109 (R-4734) to SR 2098 (Kindley Road)
- CB – from SR 2098 (Kindley Road) to SR 1409 (Lake Park Road)
- DA – from SR 1409 (Lake Park Road) to Asheboro Bypass (R-2536)

NCDOT's Draft 2020-2029 STIP schedule for R-2220 is:

- Categorical Exclusion – Spring 2020
- Section DA – Right of Way, FY 2021; Construction, FY 2024
- Sections B, CA, and CB – Right of Way and Construction, Unfunded / Future Years



2.0 EXISTING CONDITIONS

2.1 Roadway Description

US 64 between Raleigh and Asheboro is primarily a four-lane, median divided and four-lane with a two-way left-turn lane facility. In the project area, US 64 is a two-lane highway with no control of access, except at the I-85 interchange and the NC 109 interchange, which have full control of access. The typical section includes 12-foot lanes and 2-foot shoulders. The shoulders are narrow and steep and clear recovery areas are limited; vehicles do not have adequate/safe areas to stop on the side of the road during an emergency or recover when forced off the road to avoid conflicts in the road. There are a high number of driveways along the project. The posted speed limit along the corridor ranges from 45-55 mph. Rolling terrain (sags and crests) creates issues with vehicles passing trucks, school buses, and platoons of vehicles, and results in sight distance issues.

Utility lines are located parallel to the roadway throughout US 64. The Uwharrie River crossing is a two-lane bridge (Section CB). There is one gated, at-grade railroad crossing (Section B).

2.2 Environmental Features

Based on a field review and delineation of resources, there are 69 jurisdictional streams and 119 jurisdictional wetlands within the study corridor (see **Figure 4**).

As of June 27, 2018, the USFWS lists three protected species for Davidson and Randolph Counties (see **Table 1**). Based on field investigations, the Schweinitz's sunflower has a biological conclusion of May Effect, Not Likely to Affect. The Northern long-eared bat has a biological conclusion of Unresolved. The Cape Fear shiner has a biological conclusion of No Effect.

Table 1 – ESA Federally Protected Species Listed for Davidson and Randolph Counties

Scientific Name	Common Name	County	Federal Status	Habitat Present	Biological Conclusion
<i>Helianthus schweinitzii</i>	Schweinitz's sunflower	Davidson/Randolph	E	Yes	May Effect, Not Likely to Affect
<i>Myotis septentrionalis</i>	Northern long-eared bat	Davidson	T	Yes	Unresolved
<i>Notropis mekistocholas</i>	Cape Fear shiner	Randolph	E	No	No Effect

E – Endangered, T- Threatened, MA-NLAA – May Affect-Not Likely to Adversely Affect

No streams within the study area are identified by the National Marine Fisheries Services (NMFS) as Essential Fish Habitat.

The project crosses the Uwharrie River/Lake Reese, a recreational area owned by the City of Asheboro.

GIS data showed no other publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historic sites on or eligible for the National Register of Historic



Places (NRHP) or state study lists existing within the proposed project corridor that would qualify under Section 4(f). Historic and archaeological surveys are currently underway.

2.3 Land Use

Land uses surrounding the project corridor are primarily rural, with single family homes on small lots. Larger businesses are scattered along the project. Agricultural operations are present along the corridor. The land use and industries transition to more commercial on the western end of the project near Lexington and in the vicinity of the NC 109 interchange.

There are twelve churches, seven cemeteries, one school, and one fire station along this section of US 64.

3.0 GENERAL PROJECT INFORMATION

3.1 Transportation Plans

The *2010 Davidson County Comprehensive Transportation Plan (CTP)* lists US 64 as an expressway that needs improvements and recommends widening US 64 to a four-lane divided facility from Davie County to Randolph County. Additionally, the Davidson County CTP notes that US 64 was listed as the top safety concern by the respondents to the transportation survey conducted in the development of this CTP.

The *2010 Randolph County CTP* explicitly lists R-2220 as a recommended improvement noting that US 64 should be improved from Davidson County to the proposed Asheboro Southern Bypass by widening the existing facility from two to four-lanes with a median under this project. Additionally, the Randolph County CTP notes that US 64 was identified most frequently as a key transportation issue in the county by the respondents to the transportation survey conducted in conjunction with the CTP study. Respondents ranked US 64 as their number one concern on the following issues: safety (particularly at intersections with other US and NC routes), truck traffic, congestion, and access.

North Carolina Strategic Highway Corridor Plan - The designation of Strategic Highway Corridors (SHC) recognizes the need to improve, protect, and maximize the use of a set of (primarily existing) highways critical to statewide mobility and regional connectivity. US 64 is designated as a SHC.

Statewide Strategic Corridors Criteria

1. *Part of a National, Statewide, Economic, or Military Highway System.*
 - The segment of US 64 from Lexington to Asheboro is on the North Carolina portion of the National Highway System.

Criterion is fully satisfied.
2. *Connects an existing major activity center to another major activity center, seaport, major airport, or major military base.*
 - Existing major activity centers served directly by US 64 include the Davidson and Randolph county seats of Lexington and Asheboro.



Criterion is fully satisfied.

3. *Connects an existing Interstate facility to another existing or planned Interstate facility.*
 - US 64 between Lexington and Asheboro connects I-85 and I-74.

Criterion is fully satisfied.

4. *Currently serves or has the potential to serve as a reliever route to an existing Interstate facility.*
 - I-85, I-74 and I-40 link Charlotte, the Triad and the Triangle and beyond. Since the same major urban regions are also interconnected by the US 64 Corridor, there is clearly an opportunity to serve as a reliever route when incidents occur on these Interstate facilities.

Criterion is fully satisfied.

NCDOT's *NC Moves 2050 Plan*, currently under development, states that one of the challenges in highway freight is two-lane rural freight routes, and that 77% of goods were carried across North Carolina's roads and highways by truck in 2015.

The *Public Transportation Strategic Plan* designates US 64 as a Public Transportation Strategic Route between Lexington and Raleigh. The segment of US 64 between Lexington and Asheboro is designated as T-8. Additionally, the *NC Moves 2050 Plan's* mission is to build a connected statewide public transportation network.

3.2 Adjacent Projects

The other projects that are adjacent to R-2220 are:

- R-4734: Widen NC 109 in Denton to I-85 in Thomasville; approx. 16.2 miles R/W – FY 2026, Const. – 2027
- R-2536: Construction of four-lane Asheboro Southern Bypass; approx. 2.2 miles Under Construction
- U-5813: Widen Asheboro Bypass to US 220, reconstruct interchange; approx. 2.2 miles R/W – FY 2019, Const. – 2020

3.3 Regional Mobility

The importance of US 64 as a regional roadway is shown in the following designations:

- US 64 is designated as a **principal arterial** on the National Highway System (NHS) throughout the project corridor. Principle arterials are the highest functioning classification of roadway in rural areas.
- US 64 connects two interstate routes, I-85 and I-74.
- US 64 is on the North Carolina Truck Network (NCTN) and has no restrictions, it is available to all trucks. It also connects two National Freight Routes (I-85 and I-74).
- US 64 provides an alternate route when I-85/I-74/I-40 traffic is congested, or when incidents occur.
- US 64 is a designated Public Transportation Strategic Route (T-8) that links Lexington and Asheboro to the Triangle.



- US 64 is a Corridor of Economic Development in Davidson County which recommends widening the facility from two- to four-lanes with a median.
- In both the *2010 Davidson County CTP* and the *2010 Randolph County CTP*, US 64 is identified as Expressway that needs improvement by widening the existing facility from two-lanes to four-lanes with median.

3.4 Traffic Forecast and Operations

The traffic forecast was completed in November 2018. The traffic operations analysis was completed in April 2019 (see **Table 2** for traffic volume range and the level of service for each section).

Table 2 – Traffic Volumes and Level of Service (No Build)

Section	Year	Traffic Volume Range	Level of Service
B	2018 (no-build)	8,200 - 13,900 vpd	B - D
	2040 (no-build)	9,200 - 16,000 vpd	C - E
CA	2018 (no-build)	6,700 vpd	B
	2040 (no-build)	7,300 vpd	C
CB	2018 (no-build)	6,100 - 7,900 vpd	B - C
	2040 (no-build)	6,800 - 7,900 vpd	B - C
DA	2018 (no-build)	7,900 - 9,500 vpd	B - C
	2040 (no-build)	8,900 - 11,500 vpd	C

A traffic analysis was also completed to compare average travel speed and percent time-spent-traveling (PTSF) (see **Table 3** for results). With a posted speed limit of 55 mph, the analysis shows that the average speed in 2040 is as low as 43 mph. The PTSF is up to 79% for the two-lane roadway.



Table 3 – Average Travel Speed and Percent Time-Spent-Following (No Build)

Segment	Analysis Year	AM Peak Hour		PM Peak Hour	
		Average Travel Time Speed (mph)	Percent Time-Spent-Following	Average Travel Time Speed (mph)	Percent Time-Spent-Following
US 64 W of Conrad Hill Mine Rd	2018 NB	45.8	69.6%	45.4	76.4%
	2040 NB	44.9	72.4%	44.6	78.8%
US 64 W of Clarksbury Rd	2018 NB	44.4	68.2%	43.9	75.5%
	2040 NB	43.8	70.0%	43.3	77.4%
US 64 W of NC 109	2018 NB	45.8	66.9%	45.4	72.6%
	2040 NB	45.3	68.8%	45.0	74.0%
US 64 E of NC 109	2018 NB	45.9	59.8%	45.7	66.6%
	2040 NB	45.6	60.0%	45.5	67.3%
US 64 W of Old US 64	2018 NB	48.9	58.8%	48.6	65.7%
	2040 NB	48.6	58.8%	49.1	64.2%
US 64 W of Gallimore Rd	2018 NB	50.1	61.8%	49.8	68.8%
	2040 NB	50.0	61.9%	49.4	69.0%
US 64 W of Bescher Chapel Rd	2018 NB	49.6	60.0%	49.2	68.1%
	2040 NB	49.4	61.1%	48.8	68.6%
US 64 W of Hoover Hill Rd	2018 NB	47.3	62.1%	46.9	68.4%
	2040 NB	46.9	64.2%	46.5	70.7%
US 64 W of Lexington Rd	2018 NB	46.7	64.4%	46.5	69.9%
	2040 NB	46.2	67.1%	45.9	71.2%
US 64 W of Spencer Meadows Rd	2018 NB	48.4	64.8%	48.4	68.4%
	2040 NB	47.8	67.2%	47.8	71.4%
US 64 E of Spencer Meadows Rd	2018 NB	47.5	67.5%	47.6	63.4%
	2040 NB	46.0	73.9%	46.4	65.9%

Note: Default Speed Limit of 55 mph was used for all Segments (Free Flow Speed set to 60 mph).



3.5 Crash Data

A crash data analysis was completed for the years 2013 – 2018. A total of 500 crashes occurred along the study corridor (see **Figures 2A-2C**). The crashes were dispersed along the entire corridor (no specific area is promoting crashes).

There were 10 fatal crashes and 10 additional serious injury (A class) crashes. A majority of the fatal and serious injury crashes were intersection related or lane departure type crashes.

There were 55 known crashes involving trucks (10%) on US 64. Of the fatal crashes, two (2) involved a large truck.

A comparison of the crash rates (crash rate per 100 million vehicle miles traveled) for this section of US 64 and the statewide crash rates for two-lane Rural US Routes is shown below (see **Table 4**). The comparison shows that both the fatal crash rate and the non-fatal crash rate are both higher along US 64 than the statewide rates.

Table 4 – Crash Rates along US 64 (per 100 Million Vehicle Miles Traveled)

Crash Rate Type	R-2220 Corridor Crash Rate	Statewide Average Crash Rate*
Total Crash Rate	145.57	148.81
Fatal Crash Rate	2.91	1.63
Non-Fatal Crash Rate	46.29	46.10
Night Crash Rate	50.29	51.67
Wet Crash Rate	16.60	24.50

*Comparison Facility Type – Rural US Routes, two-lanes, undivided (2015-2017)

The most common category of crashes that occurred were rear-end crashes (29.2%); ran off road crashes were lower (20%). In looking closer at the two-lane portion of US 64, the following was noted from the crash reports:

- Rear-end crashes (107 crashes):
 - 62 crashes – due to slow/stopped traffic
 - 39 crashes – due to left-turn traffic, where there was no left-turn lane
 - 6 crashes – did not denote either slow/stopped or left-turn traffic
- Ran off road crashes (89 crashes):
 - 7 crashes – due to slow/stopped traffic
 - 5 crashes – due to left-turn traffic, where there was no left-turn lane
 - 77 crashes – did not denote either slow/stopped or left-turn traffic

The patterns of severe injury crashes persist, even though various safety measures (e.g., centerline/ edgeline rumble strips and intersection treatments) have been implemented along this corridor.



In an interview with North Carolina State Highway Patrol staff, this section of US 64 is considered one of the most dangerous stretches of highway in Davidson and Randolph Counties. In their perspective, a higher rate of head-on collisions is due to drivers becoming impatient after leaving interstates with higher rates of speed and trying to pass slower-moving traffic on a two-lane road.

3.6 Trucking

US 64 is on the NCTN as an unrestricted truck route. This segment of US 64 is available to all trucks. Additionally, US 64 connects two National Freight Corridors.

There are up to 20% trucks along this section of US 64 (Dual – 5% to 6%; TTST – 9% to 14%). The high number of businesses generating a good portion of the truck traffic include: Fletcher Machines Industries, Jones Lumber Co., Prime Limber Co., Lowe's Flatbed Distribution Center, and Superior Wood Products.

The US 64 corridor between Lexington and Asheboro is an important thoroughfare for freight, both industrial and services related. For supply chain/freight planners, the corridor is a logical east/west route between I-85 and US 49 connecting Triad markets to the Triangle and points east, and the rapidly growing Charlotte metro area to the west. The corridor serves as an operational alternate routing for congestion-prone I-85/I-74 between Davidson and Randolph counties. These counties are primary county-level trade markets for each other. A review of AADT for this corridor showing increasing volume aligns with the current manufacturing, warehousing, and distribution footprint. Many of these sectors expect continued growth, including furniture and wood products manufacturing, transportation equipment manufacturing, and construction products.

By vehicle class the most active freight providers on the corridor are tractor-trailers, representing nearly 50% of the total truck traffic on the route. This illustrates the importance of large-scale industrial distribution on and through this corridor. The influx of freight volumes of NC 109 is also relevant with a corresponding spike in AADT near this important interchange. Meanwhile, the smaller and more agile Pickup/Delivery freight providers representing nearly 30% of all truck volumes on the road, demonstrate how US 64 is an important service link. Shifting trends in freight distribution also forecast additional increases in truck traffic as eCommerce volumes continue to grow. Improving freight fluidity on this corridor is vital to manage the growth of regional and local freight volumes, as well as populations served and connected by the road.

3.7 No-Passing Zones

Due to the rolling terrain and the narrow typical section, there are few designated passing zones along the route (see **Figure 3**). It is estimated that 62% of the roadway within the study limits has no-passing zones, and an additional 27% are only able to pass in one direction.

As noted in the crash data section, North Carolina State Highway Patrol staff noted that a higher rate of head-on collisions is due to drivers becoming impatient after leaving interstates with higher rates of speed and trying to pass slower-moving traffic on a two-lane road.



4.0 **CONCURRENCE POINT 1 – PURPOSE AND NEED**

4.1 **Summary of Need**

The need for the project is based on:

- **Regional Mobility**

Regional mobility is impeded due to the following:

- High number of driveways
- Slower traffic causing platooning
- Inadequate passing zones
- High percentage of rear-end crashes
- Average travel speed 5-10 mph slower than posted speed limit
- Percent time-spent-following is high (up to 79% of the time)

- **Facility Deficiencies**

The following facility deficiencies need to be addressed:

- Inadequate shoulders and clear recovery areas; vehicles do not have adequate and safe areas to stop on the side of the road during an emergency or recover when forced off the road to avoid conflicts in the road
- Rolling terrain (sags and crests) creates issues with passing sight distance
- Platooning of vehicles due to lack of ability to pass
- High percentage of lane departure crashes

4.2 **Summary of Purpose**

The purpose of the project is to:

- Improve Mobility along the Entire Corridor
 - *Measurable Goal: Provide an average travel speed of 10 mph below the design speed (60 mph) along the corridor for the AM and PM peak periods.*

Other desirable outcomes include:

- Ensure future safety along the corridor
- Reduce the number of rear-end crashes and lane departure crashes
- Improve at-grade intersections
- Improve the shoulder and clear recovery areas
- Improve sight distance and passing ability



4.3 Logical Termini

The proposed project satisfies the criterion for logical termini:

- Connects logical termini and is of sufficient length to address environmental matters on a broad scope;
- Has independent utility and can be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and
- Does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

4.4 Proposed Study Area

The study area begins east of the I-85 interchange and ends at the Asheboro Bypass. The study area corridor width is primarily 500 feet (see **Figure 4** for the study area limits).