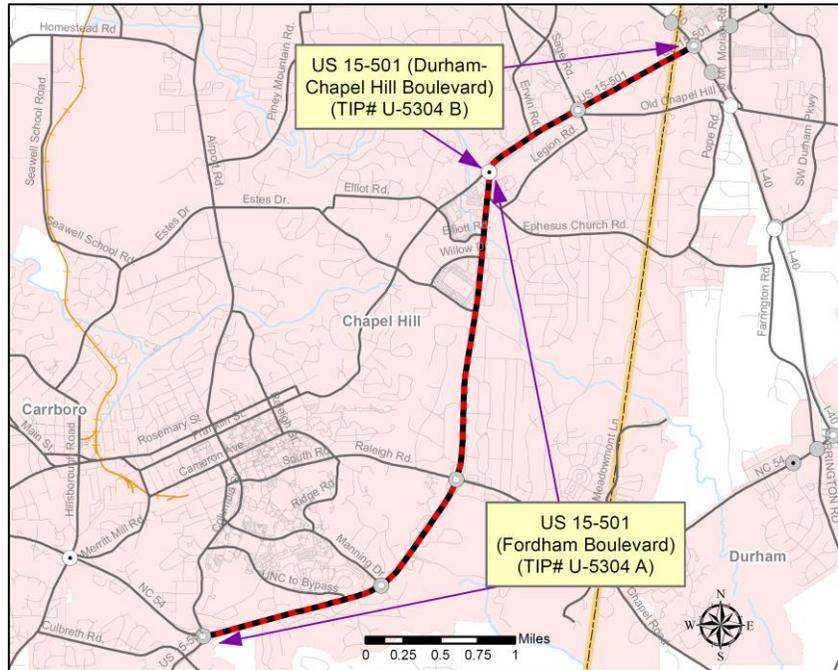


US 15-501 (Fordham Boulevard) NC 86 (South Columbia Street) to I-40

- Local ID: TIP# U-5304 A (South Columbia Street to East Franklin Street), and TIP# U-5304 B (East Franklin Street to I-40)
- Last Updated: 08/02/16

US 15-501 (Fordham Boulevard), from NC 86 (South Columbia Street) to Ephesus Church Road (SR 1742), is currently a four lane divided boulevard. It is a statewide highway that does not provide adequate pedestrian, bicycle, and transit facilities. Improvements are needed to meet current design standards and accommodate pedestrian, bicycle, and transit traffic.



This section of US 15-501 currently has a 200-foot right-of-way and a raised grassy median. The section has a LOS “D” capacity of 36,600 vehicles per day (vpd) for the existing right-of-way, and is broken down into four smaller segments, each with a separate calculated traffic impact.

From	To	Lanes	2011 AADT	Existing Capacity	2040 Volume	2040 V/C	2040 Cross-Section
NC 86 (South Columbia Street)	Manning Drive	4D	41,000	36,600	43,500	1.2	6F
Manning Drive	Raleigh Road (SR 2048)	4D	51,000	36,600	57,800	1.6	6F
Raleigh Road (SR 2048)	East Franklin Street (SR 1010)	4D	28,000	36,600	37,100	1.0	6F
East Franklin Street (SR 1010)	I-40	4D	41,000	36,600	46,700	1.3	4G

There are many residential units, shops, offices, University Mall, Eastgate Shopping Center, and the University of North Carolina near to this stretch of US 15-501. The traffic volumes on US 15-501 will continue to increase, not only because of the trips generated by the neighboring developments, but because US 15-501 serves as a critical connector between Chapel Hill, Durham, and the rest of the Triangle via I-40.

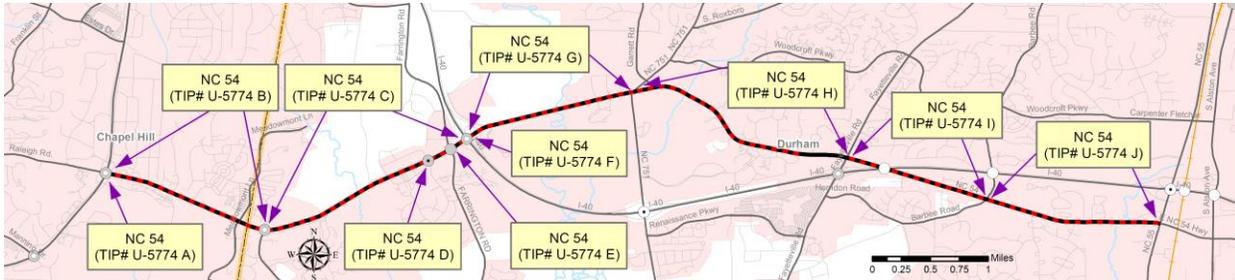
The current and future development around the US 15-501/NC 54 interchange will generate increased bicycle, pedestrian, and transit traffic. There are some paved shoulders and segments of sidewalks on this segment of US 15-501. However, the shoulders and sidewalks are not continuous and additional

improvements are needed to provide adequate facilities for bicyclists and pedestrians. The nearby bus stops do not have any amenities and do not include bus pull-outs resulting in blocked traffic. The need for pedestrian, bicycle, and transit facilities will only increase with additional development around US 15-501. In the Chapel Hill Bicycle Facilities Plan, there are proposed wide shoulders from NC 86 to Ephesus Church Road. In the Chapel Hill Pedestrian Facilities Plan, there are proposed off road bicycle/pedestrian paths from around Mason Farm Road to near Old Mason Farm Road, more proposed off road bicycle/pedestrian paths from around Estes Drive to Willow Drive, proposed sidewalks from Ephesus Church Road to Booker Creek, and proposed greenway paths that will cross US 15-501 at Booker Creek, Bolin Creek and the creek near Manning Drive. There are also proposed crossing improvements at US 15-501 and the intersections of Oteys Road, Kings Mill Road, Manning Drive, Old Mason Farm Road (SR 1900), Brandon Road, Cleland Road, Estes Drive (SR 1750), Willow Drive, and Ephesus Church Road.

The greatest delays and safety concerns are concentrated among several intersections and interchanges that are identified in the CTP for improvements, including those with: South Columbia Street; Manning Drive, NC 54 (Raleigh Road); and, Sage Road.

NC 54 (US 15-501 to NC 55)

- Local ID: TIP# U-5774 A-J (For section details, see bulleted items in the section below.)
- Last Updated: 08/02/16



Identified Problem

NC 54 is a principal arterial that parallels the most important travel corridor in the Triangle, I-40, and provides regional access to some of the most important employment centers, including the Research Triangle Park (RTP) and the University of North Carolina at Chapel Hill and its hospitals. Capacity improvements are needed to ensure that a LOS D or better is attained in several sections that already exceed capacity and maintain that level of service in the remaining sections.

This problem statement will address the corridor by the roadway sections and interchanges identified below. The letter for each of the bulleted items below matches the letter designation in the TIP ID for project U-5774 in the FY 2016-2025 Transportation Improvement Program (TIP). This TIP ID is also the CTP ID. The sections denoted with an asterisk (*) were studied in detail in the DCHC MPO's *NC 54/I-40 Corridor Study*, which was completed in November 2011. This study can be referenced for detailed deficiency analyses and transportation facilities that were considered and selected for the corridor.

- A. US 15-501 interchange (Orange County)*
- B. US 15-501 to Barbee Chapel Road (SR 1110) (Orange County)*
- C. Barbee Chapel Road to I-40*
- D. Falconbridge Road interchange*
- E. Farrington Road (SR 1109) grade separation*
- F. I-40/NC 54 interchange improvements*
- G. I-40 to NC 751
- H. NC 751 to Fayetteville Road (SR 1118)
- I. Fayetteville Road to Barbee Road (SR 1106)
- J. Barbee Road to NC 55
- K. Barbee Chapel Road intersection/interchange*

Justification of Need

The NC 54 corridor is among the most important travel corridors in the Triangle. It parallels I-40 and provides regional access to large employment centers. The roadway cross-section ranges from two in the eastern sections to six lanes in the western sections that are in Chapel Hill. The entire corridor experiences significant delays especially at the interchanges and intersections, and during peak travel

periods. The table directly below uses current and forecasted (year 2040) traffic count data from the CTP deficiency analysis to demonstrate the role that high traffic volumes plays in the corridor congestion. The Ref column refers to the letter in the bulleted sections above.

Ref	From	To	Lanes	2011 AADT	Existing Capacity	2040 Volume	2040 V/C	2040 Cross-Section
B	US 15-501	Barbee Chapel Road (SR 1110)	6D	46,000	55,000	56,800	1.0	6E
C	Barbee Chapel Road (SR 1110)	I-40	4D	43,000	36,600	47,800	1.3	6ESS
G	I-40	NC 751	2	18,000	12,700	24,500	1.9	4D
H	NC 751	Fayetteville Road (SR 1118)	2	16,000	13,800	19,800	1.4	4D
I	Fayetteville Road (SR 1118)	Barbee Road (SR 1106)	2	16,000	12,700	21,300	1.7	4D
J	Barbee Road (SR 1106)	NC 55	2	21,000	12,700	28,100	2.2	4D

The DCHC MPO 2014 Mobility Report Card designates these roadway sections as operating at a LOS E and LOS F. In addition, the NCDOT feasibility study (FS-1005C), which was completed in 2012 and covered all the sections east of I-40, showed that all those sections would operate at a LOS E and LOS F in 2035 and that ¾ of the intersections would operate at a LOS E or LOS F.

The section immediately west of I-40 experiences a high number of automobile crashes (see the DCHC MPO's 2014 Mobility Report Card for this crash data at the following link: <http://www.dchcmo.org/programs/cmp/default.asp>).

The proposed interchange, interchange improvements and grade separation projects shown below have been justified in the detailed deficiency analysis of the *NC 54/I-40 Corridor Study*. The information below is from additional sources such as the CTP Deficiency Analysis and the DCHC MPO's 2014 Mobility Report Card.

- A. US 15-501 interchange – This bridge is functionally obsolete (based on the Deficient Bridge section of the CTP Deficiency Analysis), which means that the bridge is safe but does not meet today's higher standards.
- D. Falconbridge Road interchange – This interchange is needed to provide north-south access to NC 54 and to ensure that the traffic merging movements are an adequate distance from the adjacent I-40/NC 54 interchange to maintain safety and capacity.
- E. Farrington Road grade separation – This at-grade intersection is too close to the I-40/NC54 interchange, causing backups on the westbound lanes of the interstate when the I-40 westbound to NC 54 westbound movement experiences long delays at the Farrington Road intersection.
- F. I-40/NC 54 interchange improvements – Several movements on this interchange are under capacity and the delays will get worse given the forecasted increase, i.e., up to 47,800 daily volume.

- K. Barbee Chapel Road interchange/intersection – Turning movements on this roadway experience long delays especially the Barbee Chapel Road northbound to NC 54 westbound movement in the morning peak period.

Both Chapel Hill Transit and Go Triangle operate buses in the corridor west of the I-40/NC 54 interchange to accommodate the regional commutes, and Go Durham operates bus service east of that interchange. The entire corridor currently has a moderate bus transit frequency, 16 to 30 minute headways, during the peak periods. The section west of Friday Center Drive has a very high frequency, 5-minute headways, because shuttle buses operate between the Friday Center park-and-ride lots and the university and hospitals.

The CTP Deficiency Analysis showed that the expected demand for transit, based on the projected population and employment density in the adjacent areas, will require 15-minute bus headways. Go Triangle is in the process of planning the Durham-Orange Light Rail Transit (D-O LRT) that will pass through the NC 54 corridor essentially from US 15-501 to I-40. The D-O LRT will carry passengers traveling between Durham and Chapel Hill and will also provide a transit link to the park-and-ride facilities used by regional commuters from southern Durham County and Wake County. The D-O LRT Alternatives Analysis estimates that there will be approximately 23,000 passengers using the system each day.

There is significant pedestrian activity because of the proximity of the residential neighborhoods, retail centers and employment centers. Pedestrians need adequate facilities to safely travel among the high automobile traffic volumes. The CTP Deficiency Analysis showed that 2040 forecasted population and employment densities along the NC 54 corridor would generate significant bicycle and pedestrian trips. These trips will be as high as a few thousand trips from US 15-501 to Barbee Chapel Road, to several hundred trips from Rollingwood Drive to NC 55.

Community Vision and Problem History

The NC 54 corridor from Chapel Hill through south Durham and the Research Triangle Park is among the most important travel corridors in the Triangle region. The capacity deficiencies and safety problems have been well vetted with the community through several plans and studies. The *NC 54/I-40 Corridor Study* conducted community workshops attended by over 150 citizens. The DCHC MPO has planned for capacity, safety, bicycle and pedestrian improvements in the long-range plans completed over the last few decades and worked to get those projects in the Transportation Improvement Program (TIP). In the most recent prioritization process, i.e., SPOT 3.0, the MPO assigned the maximum allowable points, i.e., 100 points, to NC 54 improvements. Go Triangle has conducted workshops to gather citizen comments on the proposed D-O LRT. All of these processes included public hearings as well. The community wants to address the automobile and transit capacity problems of the corridor, but they also want to improve the bicycle and pedestrian facilities in the corridor. The inclusion of alternative transportation modes is an important goal of the DCHC MPO, as well.

CTP Project Proposal

Project Description and Overview

The project proposals are described below. Generally, travel lanes are to be added to from Barbee Chapel to NC 55, and superstreets and interchanges from US 15-501 to I-40. Projects are to improve bicycle and pedestrian travel the complete length of the corridor, and accommodate the D-O LRT.

- A. US 15-501 interchange – upgrade the current interchange
- B. US 15-501 to Barbee Chapel Road – construct superstreets
- C. Barbee Chapel Road to I-40 – add two travel lanes, and extend off-road multiuse path
- D. Falconbridge Road interchange – construct interchange
- E. Farrington Road grade separation – construct grade separation, and add access road from Falconbridge Road to Farrington Road
- F. I-40/NC 54 interchange improvements – construct interchange improvements, including eastbound I-40 to eastbound NC 54 cloverleaf and Farrington Road to eastbound I-40 slip ramp
- G. I-40 to NC 751 – add two travel lanes
- H. NC 751 to Fayetteville Road – add two travel lanes
- I. Fayetteville Road to Barbee Road – add two travel lanes
- J. Barbee Road to NC 55 – add two travel lanes
- K. Barbee Chapel Road intersection/interchange – construct new interchange or intersection

Natural and Human Environment Context

The NC 54 corridor crosses wetlands and Army Corps of Engineering (ACOE) lands at three different locations:

- Little Creek – between Downing Creek Pkwy and Huntingbridge Road
- New Hope Creek – between the I-40/NC 54 interchange and NC 751
- Third Fork Creek – Garrett Road and Park Ridge Road

The impacts and possible mitigation measures related to these wetlands will be addressed at the environmental impact analysis stage of the any project development.

Relationship to Land Use

Currently, the land use in the vicinity of this corridor is suburban. However, the socioeconomic growth maps from the CTP Deficiency Analysis show that substantial residential growth is expected to occur near Barbee Chapel and the northwest quadrant of the I-40/NC 54 interchange, and much employment growth will occur around the future light rail stations at Hamilton, Friday Center, Hillmont (near Barbee Chapel) and Leigh Village (northwest quadrant of I-40/NC 54). These areas will function like urban centers in the future. In addition, continued employment growth around the UNC-Chapel Hill campus and hospitals will attract more commuters through the NC 54 corridor. The D-O LRT plan has identified park-and-ride facilities at some of the light rail transit stations to accommodate these commuters.

Linkages to Other Plans and Proposed Project History

Many studies have been focused in whole, or part, on the NC 54 corridor. The following studies have important deficiency and project proposal information:

- *NC 54/I-40 Corridor Study*, 2011, addresses section from US 15-501 to I-40

- Feasibility Study, Widening of NC 54 from I-40 to NC 55 (FS-1005C), 2012, addresses sections east of I-40
- *DCHC MPO's 2014 Mobility Report Card*, 2015, addresses roadway, intersections and non-auto travel
- Draft Environmental Impact Statement (DEIS) for the Durham-Orange Light Rail Transit, 2015, addresses rail alignment and station location
- *2040 Metropolitan Transportation Plan (MTP)* for the DCHC MPO, 2013, has NC 54 and related projects

Besides the NC 54 projects already identified in this statement, the 2040 MTP has the following projects and policies that will impact the NC 54 corridor:

- Complete Streets, the MPO policy to ensure that transportation facilities are built to accommodate alternative transportation modes such as transit, bicycling and walking
- US 15-501, from S Columbia Street to I-40, capacity improvements that might include additional travel lanes or superstreets
- Durham-Orange Light Rail Transit (D-O LRT), note that the preferred rail alignment changed in 2015 from the original alignment through Meadowmont to one that parallels NC 54 between Friday Center Drive and I-40
- Southwest Durham Drive, new alignment from I-40 to NC 54, mostly along George King Road
- Falconbridge Road extension, from NC 54 to Farrington Road, to move NC 54 access away from Farrington Road
- NC 751, widening from NC 54 to I-40
- I-40, capacity improvements from I-440 (Wake County) to NC 86 (Orange County), which might be managed lanes

Multimodal Considerations

The CTP transit, bicycle and pedestrian plans have identified many alternative mode projects in the NC 54 corridor. Among the most significant are the D-O LRT stations, park-and-ride facilities, multiuse path extension from Friday Center Drive to I-40, and sidewalk and bicycle lanes the entire extent of the corridor.

Public/Stakeholder Involvement

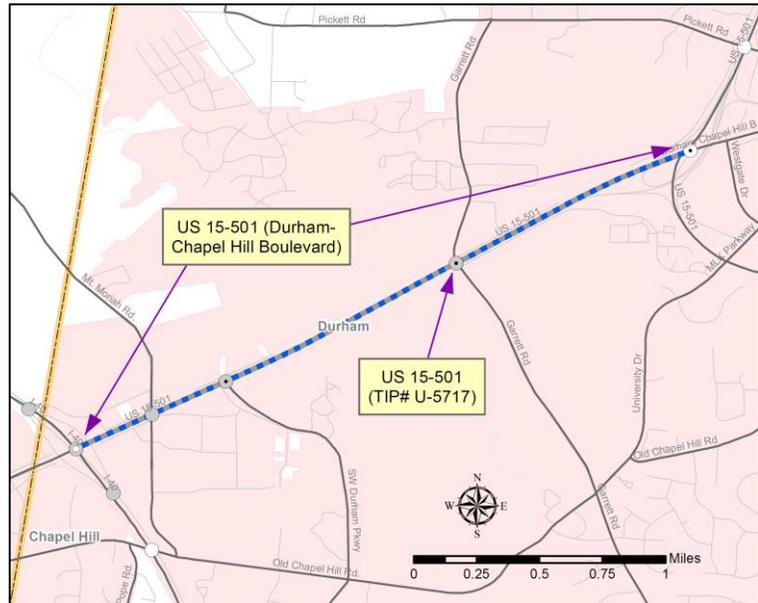
(to be completed after public involvement)

US 15-501 (I-40 to US 15-501 Bypass)

- Local ID: to be determined
- Last Updated: 08/03/16

Identified Problem

US 15-501 is the most direct major roadway between the city of Durham and the town of Chapel Hill. Federally Classified as Other Freeway, it provides access between I-40 and Duke University and Medical Center and between I-40 and I-85. Currently, several Go Triangle and Go Durham express and regional bus routes use the roadway and the future Durham-Orange Light Rail Transit (D-O LRT) will run parallel to this roadway. A D-O LRT station will be located near the US 15-501/ Southwest Durham Drive (SR 1110) intersection. Although this roadway segment was widened from four to six lanes in the last ten years, capacity improvements are needed to ensure that a LOS D or better is maintained in this important corridor in the future.



In addition, there are bicycle and pedestrian safety concerns in this area. There are apartments and houses near the Garrett Road (SR 1116) intersection and along Southwest Durham Drive. The residential development is generating bicycle and walking trips to the nearby retail centers, and people can be seen walking immediately adjacent to US 15-501 as vehicle travel 50 mph or higher, and trying to cross wide, multi-phased intersections and roadway.

This section of US 15-501 currently has a 260-foot right-of-way, two interchanges with ramps, and three signalized intersections. The residential and commercial development around US 15-501 will generate increased bicycle, pedestrian, and transit traffic. New bicycle, pedestrian, and transit facilities may be required to accommodate the increased non-motorized or transit trips generated. In the Durham *Comprehensive Bicycle Transportation Plan*, side paths have been proposed along this route, in addition to some greenway paths that are near the route and cross US 15-501 in a couple of places.

Justification of Need

The US 15-501 corridor is among the most important travel corridors in the Triangle and likely the most important corridor in Durham after the interstates and Durham Freeway. The corridor experiences significant delays at the I-40 interchange, where the 2014 Mobility Report Card shows that interchange operating at LOS E. The three intersections at Mt. Moriah Road, Southwest Durham Drive and Garrett Road operate at LOS C and LOS D currently. Traffic volume is expected to steadily increase in this corridor, and thus these delays will grow worse.

Traffic forecasts in the table below indicate that the corridor will experience long travel delays without significant capacity improvements.

US 15-501 Daily Traffic Counts/Volume

From	To	Lanes	2013 AADT	Existing Capacity	2040 Volume	2040 Volume (*)	2040 V/C	2040 Cross-Section
I-40	Garrett Road (SR 1116)	6D	46,000	55,000	67,000	89,000	1.2 to 1.6	6A
Garrett Road (SR 1116)	US 15-501 Bypass	6D	51,000	55,000	63,000	76,000	1.1 to 1.4	6A

(*) The CTP deficiency analysis used two different model forecast methods and this corridor is one in which the resulting forecasts were quite different.

Safety is a concern in this corridor. The Mobility Report Card indicates that there was a fatality at the US 15-501/Mt. Moriah Road intersection in the last several years and there were several bicycle and pedestrian collisions as well. Given the proximity of residential development, retail centers and employment centers, there is a high demand for pedestrian and bicycle activity. The CTP Deficiency Analysis showed that 2040 forecasted population and employment densities near Garrett Road and along Southwest Durham Drive would generate significant bicycle and pedestrian trips. These daily trips will range from 750 to 3,000 in these areas. The I-40 interchange has a bridge classified as deficient because it is functionally obsolete – this means that the bridge does not meet current standards.

The entire corridor currently has a moderate bus transit frequency, 16 to 30 minute headways, during the peak periods. Go Triangle has an express route on US 15-501 and both Go Durham and Go Triangle have service along a parallel route, Old Durham/Chapel Hill Road (SR 2220), that serves the Patterson Place retail center and the US 15-501/Garrett Road retail area. The CTP Deficiency Analysis showed that the expected demand for transit, based on the projected population and employment density in the adjacent areas, will require 15-minute bus headways in the Mt. Moriah Road (SR 2294) and Southwest Durham Drive area.

Go Triangle is in the process of planning the Durham-Orange Light Rail Transit (D-O LRT) that will pass through the US 15-501 corridor from I-40 to the US 15-501 Bypass. The D-O LRT will carry passengers traveling between Durham and Chapel Hill and will also provide a transit link to the park-and-ride facilities used by regional commuters. The D-O LRT Alternatives Analysis estimates that there will be approximately 23,000 passengers using the system each day. Although the D-O LRT will attract commuters who might have otherwise operated a vehicle on US 15-501, the light rail facility will attract vehicles to the roadway of commuters using the park-and-ride facilities at the light rail stations.

Community Vision and Problem History

The capacity deficiencies and safety problems have been well vetted with the community through several long-range plans, a corridor study, a major investment study and a collector street plan. The DCHC MPO has planned for capacity, safety, bicycle and pedestrian and transit improvements in the long-range plans completed over the last few decades and worked to get those projects in the Transportation Improvement Program (TIP). In the most recent prioritization process, i.e., SPOT 3.0, the MPO submitted the freeway upgrade of this corridor and the interchange projects at I-40, Southwest

Durham Drive and Garrett Road – these projects proved to be fairly competitive. Go Triangle has conducted workshops to gather citizen comments on the proposed D-O LRT. There were four alignment alternatives along this section of US 15-501 that attracted considerable input from business owners near the Garrett Road intersection and environmental interests associated with New Hope Creek. All of these processes included public hearings, as well. The community wants to address the automobile and transit capacity problems of the corridor, but they also want to improve the bicycle and pedestrian facilities in the corridor. The inclusion of alternative transportation modes is an important goal of the DCHC MPO.

CTP Project Proposal

Project Description and Overview

The project proposes to make this section of US 15-501 into a controlled access freeway to increase the roadway capacity. Given the existing median and relatively few access points, the freeway conversion mostly requires an improvement of the I-40 interchange and the conversion of the Southwest Durham Drive and Garrett Road intersections into interchanges. The Mt. Moriah Road intersection might be converted to either a grade separated overpass or a right-in/right-out only intersection. Facilities will be needed to allow pedestrians to safely cross US 15-501 and the intersecting roadways, e.g., Southwest Durham Drive, and bus facilities such as stop shelters and bus pullouts might be needed nearby on the intersecting roadways. Pedestrian and bicycle facilities are planned along Old Chapel Hill Road, which will offer alternative transportation modes along a parallel roadway that has lower vehicle travel speeds and volume.

The FY 2016-2025 TIP has identified the right-of-way and construction of the Garrett Road/US 15-501 interchange in FY 2023 and FY2024, respectively. Considering the NCDOT prioritization process and the 2015 changes to transportation funding by the North Carolina General Assembly (i.e., funding increase), the build date for this interchange could move forward or backwards.

Natural and Human Environment Context

Environmental concerns are present. New Hope Creek crosses the section between Southwest Durham Drive and Garrett Road and Sandy Creek crosses the section immediately west of the US 15-501 Bypass interchange. There are wetlands and floodplains on both sides of these creeks, however, Army Corps of Engineering (ACOE) lands are not present (ACOE land reaches from the south but stops about 2,500 feet south of US 15-501). During the design phase of the US 15-501 widening (from four to six lanes), environmental and recreational interests demanded, and eventually received, an extended bridge span on the US 15-501 to make animal and human movement easier along a trail on New Hope Creek. The New Hope Preserve is on both the north and south side of US 15-501 and the creek trail connects these sections. There is a maintained trail loop in the so-called bottomlands that are immediately south of this section of US 15-501. Sandy Creek Park, which is north the of the roadway section that is immediately west of the US 15-501 Bypass interchange, has a trail and multiuse path.

The impacts and possible mitigation measures related to these wetlands and creeks will be addressed at the environmental impact analysis stage of the project development.

The 20-year maintenance requirement for carbon monoxide (CO) in Durham County ended as of September 18, 2015. The Triangle Area is now in attainment for all the National Ambient Air Quality

Standards including CO and Ozone (O3) and as a result the transportation plans will not need to demonstrate conformity with Air Quality (AQ) standards for the foreseeable future.

Relationship to Land Use

Currently, the land use in the vicinity of this corridor is suburban. There are regional retail centers in the northeast and southeast quadrants of the I-40 interchange, including some medical office and hotel development and several large apartment complexes in the southeast quadrant. The Garrett Road intersection area has medium-scaled retail, including at least two new car dealers, and some apartment development. The 2040 socioeconomic (SE Data) projection indicates that a large amount of employment and residential growth will likely occur at both ends of this roadway segment, i.e., adjacent to the I-40 interchange and in the east side of the US 15-501 Bypass interchange. This growth will be related to the planned light rail transit stations in those areas. It will generate trips in the corridor and add to the many trips that already traverse the corridor between Durham and Chapel Hill, and between I-40 and I-85.

Linkages to Other Plans and Proposed Project History

Many studies have been focused in whole, or part, on the US 15-501 corridor. The following studies have important deficiency and project proposal information:

- *US 15-501 Corridor Master Plan*, 1994, designates intersections at Southwest Durham Drive and Garrett Road, and two east/west collector roads that cross I-40 north and south of the interchange
- *Southwest Durham/Southeast Chapel Hill Collector Street Plan*, 2008, includes the collector roads from the 1994 Master Plan
- *Major Investment Study (MIS)*, Phase I in 1998 and Phase II in 2001, evaluates several potential transit technologies and alignments
- *DCHC MPOs 2014 Mobility Report Card*, 2015, addresses roadway, intersections and non-auto travel
- Final *Environmental Impact Statement (FEIS)* for the Durham-Orange Light Rail Transit, 2016, addresses rail alignment and station location
- *2040 Metropolitan Transportation Plan (MTP)* for the DCHC MPO, 2013, has the freeway conversion, light rail and related projects

The 2040 MTP has the following proposed projects and policy that will impact the US 15-501 corridor. Projects funded in the FY 2016-2025 Transportation Improvement Program are shown in **bold font**.

- Complete Streets, the MPO policy to ensure that transportation facilities are built to accommodate alternative transportation modes such as transit, bicycling and walking
- I-40, capacity improvements from I-440 (Wake County) to NC 86 (Orange County), which might be managed lanes
- Garrett Road/US 15-501 interchange, funding begins in 2023 and 2024 for right-of-way and construction in the FY 2016-2025 TIP as U-5717
- US 15-501, from South Columbia Street (NC 86) to I-40, capacity improvements that might include additional travel lanes or superstreets – Right-of-way and utilities funding begins in 2024 in the FY 2016-2025 TIP as U-5304A through U-5304E
- US 15-501 Bypass, from US 15-501 interchange (former South Square area) to NC 147, widened from four to six lanes

- Southwest Durham Drive, new alignment from US 15-501 to Mt. Moriah Road, and widened to four lanes from Witherspoon Boulevard to Old Chapel Hill Road
- Durham-Orange Light Rail Transit (D-O LRT), note that the preferred rail alignment changed in 2015 from the original alignment that created a new crossing of New Hope Creek to one that parallels US 15-501 between Southwest Durham Drive and Garrett Road
- Old Chapel Hill Road, bicycle, pedestrian and transit facilities, and a proposed roundabout from US 15-501 to Garrett Road – funded in the FY 2016-2025 TIP as EB-4707, EB-4707A and EB-4707B

Multimodal Considerations

The CTP transit, bicycle and pedestrian plans have identified several alternative mode projects in, and adjacent to, the US 15-501 corridor. The most important are:

- bicycle and pedestrian access to the D-O LRT stations at Gateway, Patterson Place and MLK Parkway (SR 2733)
- park-and-ride facilities at the stations
- a multiuse path that follows the D-O LRT alignment and US 15-501
- a trail that follows New Hope Creek
- bicycle lanes on Mt Moriah Road, Southwest Durham Drive and Garrett Road

Public/Stakeholder Involvement

(to be completed after public involvement)

US 15-501 Bypass (US 15-501 Business to I-85)

- Local ID: to be determined
- Last Updated: 08/03/16

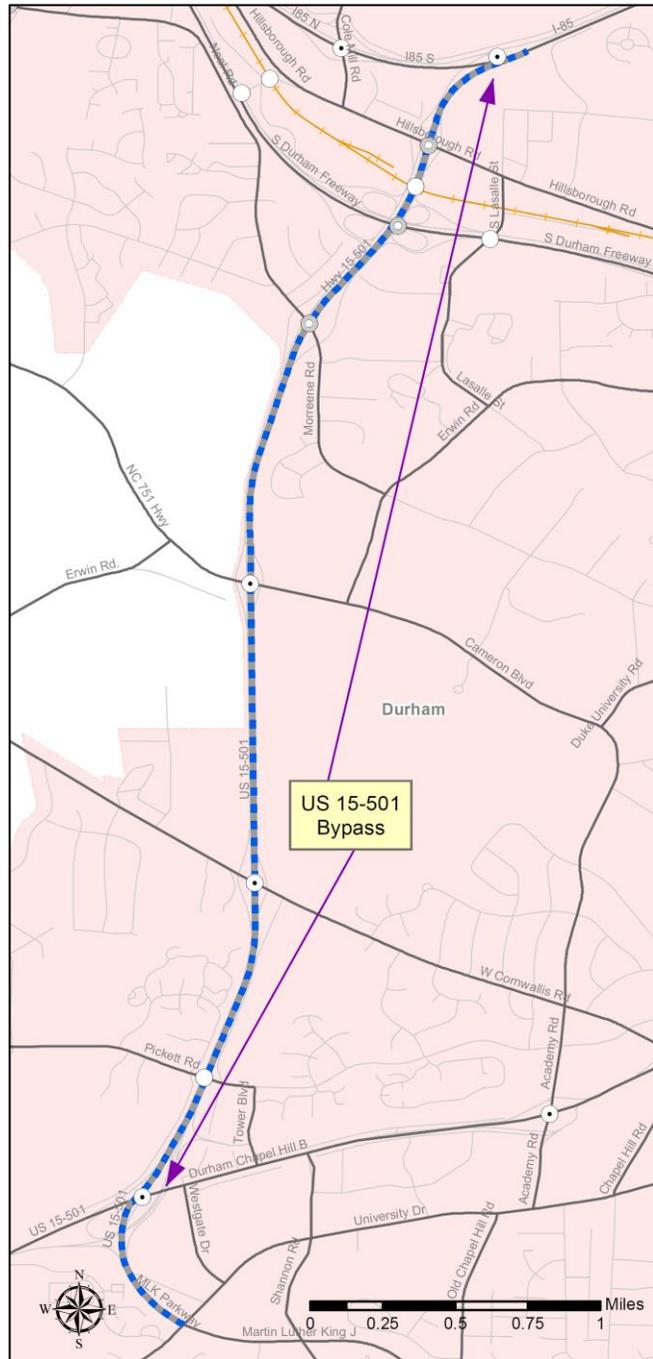
Identified Problem

US 15-501 Bypass is a controlled access freeway between US 15-501 Business (Durham-Chapel Hill Boulevard) and I-85. This is a segment of US 15-501 which is the major roadway connection between Durham and Chapel Hill and between I-40 and I-85 in southwest Durham. Federally Classified as Other Freeway, it provides access between I-40, the retail areas along US 15-501, and Duke University and Medical Center. Currently, several Go Triangle and Go Durham express and regional bus routes use the roadway and the future Durham-Orange Light Rail Transit (D-O LRT) will run parallel to this roadway. Two D-O LRT stations will be located near the US 15-501 Business (Durham-Chapel Hill Boulevard) and Martin Luther King Jr. Parkway interchanges (MLK and South Square Stations) and two D-O LRT stations will be located near the Morreene Road and NC 147 interchanges (LaSalle and Duke/VA Hospitals Stations).

This section of US 15-501 currently has a 260-foot right-of-way, four traffic lanes, and six interchanges with ramps. Significant future employment and population growth is forecasted for the Duke University area and the South Square area. The residential, institutional, and commercial development around US 15-501 will generate increased trips.

In addition, there are bicycle and pedestrian safety concerns in this area. There are many housing and employment centers nearby this corridor and US 15-501 bypass should not be a barrier for access across the corridor. There are few parallel roadways that provide alternative bicycle and pedestrian access in the north-south direction along this corridor.

Capacity improvements are needed to ensure this segment operates at an acceptable level of service in the future. Safety improvements are needed to improve high crash locations. Bicycle, pedestrian, and



transit improvements parallel to the corridor and at interchanges are needed to serve all of the travel demand in the corridor.

Justification of Need

The next table shows that the 2040 forecasts will exceed LOS D capacity. The Mobility Report Card indicates that the bypass is operating at a LOS A or B currently.

From	To	Lanes	2013 Count	Existing Capacity	2040 Volume	2040 V/C	2040 Cross-Section
US 15-501 Business	Cornwallis Road (SR 1308)	4D	50,000	61,700	72,000	1.17	6B
Cornwallis Road (SR 1308)	NC 751	4D	58,000	61,700	82,000	1.32	6B
NC 751	Morreene Road (SR 1317)	4D	55,000	61,700	80,000	1.30	6B
Morreene Road	Hillsborough Road (US 70 Bus)	4D	58,000	61,700	85,000	1.38	6B
Hillsborough Road (US 70 Bus)	I-85	4D	58,000	61,700	83,000	1.34	6B

US 15-501 is a regional connector route between I-85 and I-40. As such, the growth projected for northern and southern Durham County will drive the need for increased capacity on US 15-501. In addition, significant employment growth is projected for Duke University which will attract commute trips particularly to the NC 751 and Morreene Road (SR 1317) interchanges. The South Square area is also expected to grow as an employment center.

There is a complex series of interchanges from Morreene Road (SR 1317) to I-85. These interchanges include many very tight loops and curves that require speeds as low as 15 miles per hour. Damaged guardrails and tire ruts are a constant sight on these ramps.

The Mobility Report Card reveals that there are crashes on this corridor including one recent fatality. The US 15-501 and US 15-501 Business interchange has been noted as a Potentially Hazardous Section Location due to night crashes.

There are five functionally obsolete bridges along this corridor.

Community Vision and Problem History

US 15-501 is envisioned to continue to be a major transportation corridor in Durham providing access to the employment centers at Duke University, the Duke/VA Hospitals area, and the retail areas near South Square. It will also serve as the freeway linkage between I-40 and I-85 and NC 147 on the west side of the city of Durham. The D-O LRT parallels this corridor and will also serve the employment centers. It is envisioned that the D-O LRT would be completed first and would divert some of the current and near-term traffic growth, but ultimately the US 15-501 Bypass would need to be widened to accommodate

further growth in vehicle traffic and growth in traffic to destinations not accessible by transit. The conversion of US 15-501 to a freeway between the bypass and I-40 would also contribute to increased growth in traffic and the need for capacity improvements on the bypass.

CTP Project Proposal

Project Description and Overview

The project proposes to widen US 15-501 bypass to six lanes, three in each direction. The widening is mostly envisioned to occur in the median, but some additional auxiliary lanes or widening to the outside may be needed. The interchanges may also require improvements to improve safety and mobility. In particular the collector-distributor system from Morreene Road (SR 1317) to I-85 should be studied for potential safety and mobility improvements. There are many closely spaced ramps and tight curvature ramps along this section, and as a result the CTP has identified the Morreene Road (SR 1317), NC 147 and Hillsborough Road interchanges for improvements. Bicycle and pedestrian movements across the corridor and parallel to the corridor need to be improved. Transit accommodations need to be included as well as potential accessibility improvements for motorists, buses, pedestrians, and bicyclists to the nearby D-O LRT stations.

Natural and Human Environment Context

Sandy Creek runs parallel to US 15-501. South of Cornwallis Road (SR 1308) it runs on the west side, it crosses under US 15-501 just south of Cornwallis Road, then runs on the east side north of Cornwallis Road. The city of Durham's greenway plan includes a trail along Sandy Creek in this area. The city of Durham also operates Sandy Creek Park and Morreene Road Park adjacent to the corridor.

The Durham Housing Authority operates a low-income housing project on Morreene Road adjacent to US 15-501. There are also other residential developments nearby including American Village, Colony Hill, Morreene West Apartments, etc. The project should be sensitive to the impact to environmental justice communities. Noise walls and visual screening need to be evaluated.

Duke University owns a large amount of land on both sides of US 15-501. The Duke University golf course is adjacent to US 15-501 from Cornwallis Road to Cameron Boulevard. In addition, a natural surface greenway trail encircles the golf course. Sensitivity to these popular recreational uses is needed for the proposed project. Duke University uses the land on the west side of US 15-501 for the Duke Lemur Center and as part of Duke Forest, a natural area that is used for both recreational uses and environmental research. Mitigation for impacts to natural areas needs to be evaluated.

Relationship to Land Use

This corridor contains a variety of land uses. There is a suburban commercial center at the southern end, a high rise office building near Pickett Road, conservation/recreational land at the Duke golf course and Lemur Center, dense multi-family development near Erwin Road/Morreene Road, and strip commercial development near Hillsborough Road.

The future lane use similarly anticipates a variety of uses into the future. Growth is expected to be concentrated near the future Durham-Orange Light Rail Transit stations in the Compact Neighborhood

District boundaries. This includes the area along Erwin Road (SR 1320) near Duke Hospitals and the area near South Square. Significant population and employment growth is projected in these areas.

Linkages to Other Plans and Proposed Project History

Development of this project should be coordinated with the following plans:

- Durham-Orange Light Rail Transit (D-O LRT) Final Environmental Impact Statement/Record of Decision, 2016
- Durham Trails and Greenways Master Plan, 2011
- Durham Comprehensive Bicycle Transportation Plan, 2006
- DurhamWalks! Pedestrian Plan, 2006
- DCHC MPO 2040 Metropolitan Transportation Plan, 2013
- DCHC MPO Mobility Report Card, 2015

The city of Durham is developing a bicycle and pedestrian project on Morreene Road from Neal Road (SR 1314) to Erwin Road.

Multimodal Considerations

According to the 2013 American Community Survey, Census Tracts abutting US 15-501 have Commute to Work shares of up to 9.1% for public transportation, 3.5% for bicycle, and 26.1% for walking. The nearby concentration of employment at Duke University and Duke University Medical Center makes these neighborhoods more conducive for non-vehicular commuting.

Buses traveling between Durham and Chapel Hill currently use US 15-501 Bypass. The D-O LRT is proposed to travel parallel to this route which will likely replace some of the bus routes between Durham and Chapel Hill. However, the bypass corridor may be used more in the future for feeder bus service to the nearby D-O LRT stations.

As a controlled access freeway facility, pedestrian and bicycle travel is prohibited on the bypass. However, there is a need for pedestrian and bicycle travel on routes across the bypass. There is also a need for pedestrian and bicycle travel parallel to the freeway on a separated facility. The South Square and Duke University areas will have development that generates high rates of bicycle and pedestrian trips.

The DurhamWalks! Pedestrian Plan recommends sidewalks on Morreene Road, Cameron Boulevard (NC 751), Cornwallis Road, Pickett Road (SR 1303), and US 15-501 Business.

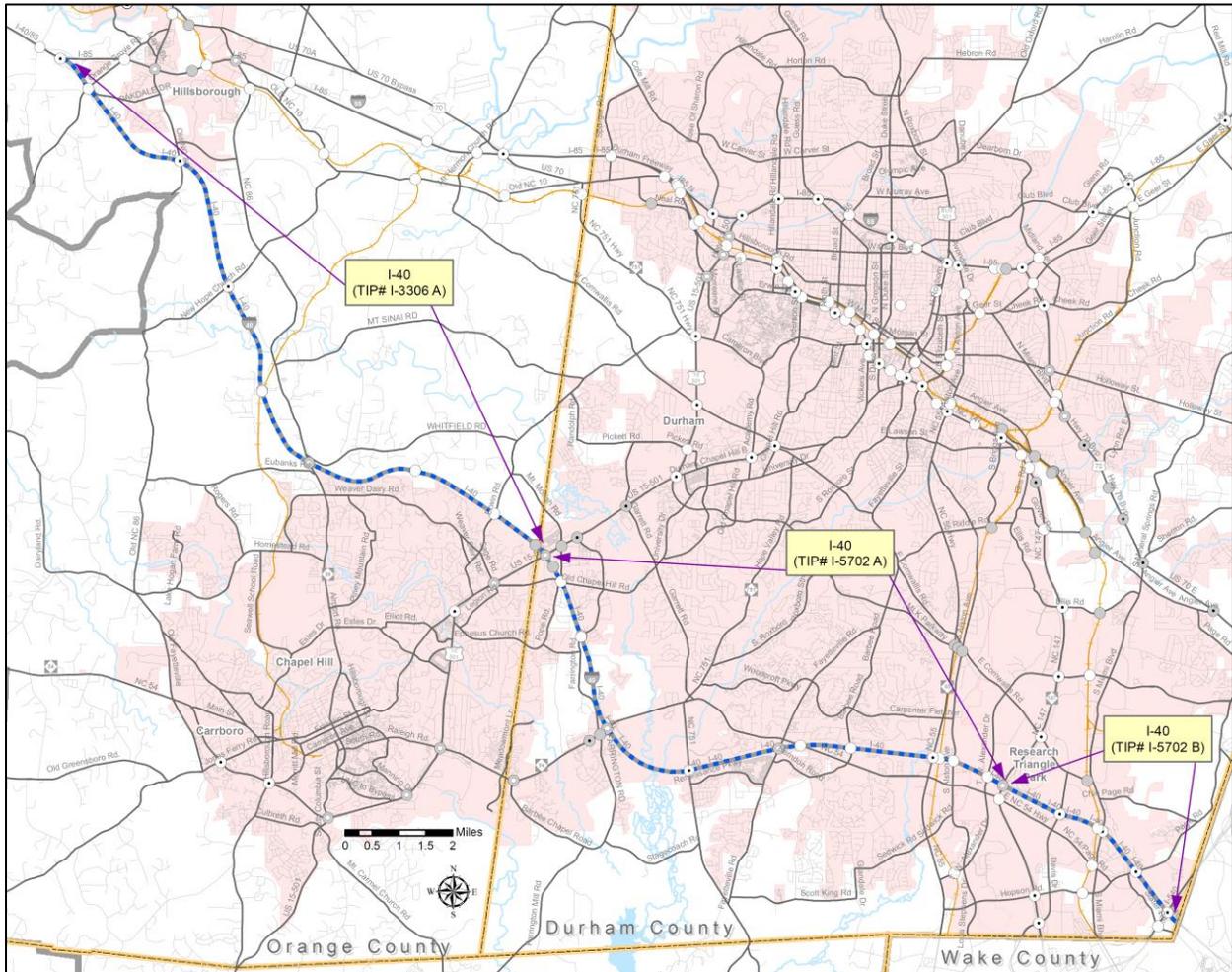
In the Durham Comprehensive Bicycle Transportation Plan, greenways are proposed parallel to US 15-501 from US 15-501 Business to Hillsborough Road. Bike lanes are proposed for Hillsborough Road, Morreene Road, Cameron Boulevard, Cornwallis Road, and Pickett Road (SR 1303). A sidepath is proposed for US 15-501 Business.

The Trails and Greenways Master Plan recommends an extension of the Sandy Creek Trail from Pickett Road (1303) to Cornwallis Road and a connection along Cornwallis Road under US 15-501 to the Al Buehler Trail.

Public/Stakeholder Involvement
(to be completed after public involvement)

I-40 (I-85 to Wake County)

- Local ID: TIP# I-5702 A (US 15-501 to NC 147), managed lanes
TIP# I-5702 B (NC 147 to Wade Avenue (SR 1728), managed lanes
TIP# I-3306 A (I-85 to Durham/Orange line), widening
TIP# I-3306 B (Durham/Orange line to NC 147), widening -- COMPLETE
- Last updated: 08/03/16



Identified Problem

I-40 is the major interstate through the Triangle and is critical for regional mobility. It is utilized for a variety of traffic including national, statewide, regional, and local needs. It also has a great deal of influence on regional traffic patterns, connectivity, land use, economic development, and local streets. Commuters and freight operators depend on reliable travel times on I-40. As the State and the region continue to grow, I-40 is expected to have increased traffic demand and slower travel times.

The right-of-way width and current lane configurations vary along this segment. I-40 in Orange County is currently four lanes, while in the Research Triangle Park there are eight lanes with two auxiliary lanes. The spacing of interchanges also varies considerably along the segment. There are several tightly spaced interchanges in the Research Triangle Park. Transit buses utilize the entire corridor, primarily for express routes between cities. Currently transit buses are able to operate on the shoulder during congested periods. The future Durham-Orange Light Rail Transit (D-O LRT) will run parallel to part of I-40 between US 15-501 and NC 54, and three D-O LRT stations will be located near I-40 at Leigh Village, Gateway Center, and Patterson Place.

In addition, there are bicycle, pedestrian and transit safety and access concerns in this area. There are many housing and employment centers nearby this corridor and I-40 should not be a barrier for bicycle and pedestrian access across the corridor, and for transit service.

Justification of Need

The following table below shows that I-40 will exceed a LOS D capacity.

From	To	Lanes	2013 AADT	LOS D Cap.	2040 Vol.	2040 V/C	X-Section
I-85	Old NC 86	4D	58,000	59,900	71,000	1.19	6B
Old NC 86	New Hope Church Road	4D	63,000	59,900	73,000	1.21	6B
New Hope Church Road (SR 1723)	NC 86	4D	66,000	59,900	82,000	1.36	6B
NC 86	US 15-501	4D	72,000	59,900	94,000	1.57	6D
US 15-501	NC 54	6D	85,000	90,700	118,000	1.3	8D
NC 54	NC 751	6D	110,000	90,700	135,000	1.49	8D
NC 751	Fayetteville Road (SR 1118)	6D	109,000	90,700	135,000	1.49	8D
Fayetteville Road	NC 55	6D	117,000	90,700	141,000	1.55	8D
NC 55	NC 147	6D	122,000	90,700	146,000	1.61	8D
NC 147	Davis Drive (SR 1999)	8D	157,000	121,900	196,300	1.62	12A
Davis Drive	Miami Boulevard (SR 1959)	8D	160,000	121,900	199,000	1.63	12A
Miami Boulevard	Page Road (SR 1973)	8D	169,000	121,900	212,000	1.74	12A
Page Road	Wake County	8D	174,000	121,900	211,000	1.73	12A

I-40 is a major interstate through the Triangle area. Through traffic as well as inter-regional and inter-city traffic will drive the increase in traffic on I-40. The overall increase in population and employment in Orange, Durham, and Wake counties will result in increased demand for travel on I-40. Furthermore, there are many I-40 interchanges that have significant development or redevelopment potential. Old NC 86, NC 86, US 15-501, NC 54, and Fayetteville Road will have nearby population growth. Old NC 86, NC 86, US 15-501, NC 54, Fayetteville Road, NC 55, and all interchanges in the Research Triangle Park are expected to have nearby employment growth.

There are functionally obsolete bridges at Sunrise Lane (SR 1732), Erwin Road (SR 1734), US 15-501, Barbee Road, and I-540.

Community Vision and Problem History

I-40 is envisioned to continue to be the major interstate corridor through the Triangle area. It will primarily serve national, statewide, and regional traffic demand. As the region grows, travel times on I-40 are anticipated to increase. In order to maintain economic growth and quality of life in the Triangle, capacity improvements are needed as well as a way to maintain travel times.

The recommendation is envisioned to include two additional general purpose lanes in Orange County from I-85 to NC 86, two additional managed lanes from NC 86 to NC 147, and four additional managed lanes from NC 147 into Wake County. The managed lanes will include direct access ramps at existing or new interchanges depending on conditions. These managed lanes will be constructed to accommodate and facilitate use by transit buses, especially to access the nearby D-O LRT stations and any transfer centers. Overall, the community vision for I-40 is to use a combination of general purpose widening as well as managed lanes and complementary transit improvements to ensure that commuters and freight operators have more reliable travel times as well as alternatives to driving through the I-40 corridor. Achieving a LOS D in the future for all users at all times on I-40 will not be able to be met, but the envisioned improvements should help address many transportation needs.

The recommendation is envisioned to include safety improvements, especially at interchanges and merge locations. All interchanges, intersections and bridges should include bicycle and pedestrian facilities consistent with adopted plans or current safety standards.

CTP Project Proposal

Project Description and Overview

The recommendation would widen I-40 from I-85 to NC 86 to six general purpose lanes. From NC 86 to US 15-501 the project would widen I-40 by adding two managed lanes. From US 15-501 to NC 147, I-40 would be widened to include two managed lanes in addition to the existing six general purpose lanes. From NC 147 into Wake County, the project would include four managed lanes and eight general purpose lanes. The project is recommended to include ramp interchange reconfigurations to improve safety, capacity, and access. Interchange improvements identified in the CTP include: NC 86; US 15-501; NC 54; Fayetteville Road; NC 147, and I-540. The segments with managed lanes will include new access ramps for these facilities. Access ramps for managed lanes are most critical at the highest demand interchanges such as US 15-501, NC 54, Fayetteville Road, NC 147, Miami Boulevard, and NC 540. Bridges, overpasses, underpasses, and interchanges should include bicycle and pedestrian facilities to safely cross I-40.

Natural and Human Environment Context

I-40 is a major transportation corridor with a wide footprint that is proposed to get even larger with the proposed improvements. Run-off from the roadway is a major environmental concern. In addition, the

grading and hydrological structures that would be required with any widening improvements would be significant.

I-40 crosses numerous creeks and streams from I-85 to Wake County. The most significant watersheds that are affected are the Eno River, New Hope Creek, Northeast Creek, and Stirrup Iron Creek watersheds. I-40 is within the protected watershed for Jordan Lake. There is a major stream crossing of New Hope Creek between the NC 54 and NC 751 interchanges that includes land owned by the U.S. Army Corps of Engineers.

The development context of I-40 includes rural and suburban areas. Orange County has a rural buffer in between Hillsborough and Chapel Hill along I-40. From NC 86 to the east, I-40 has mostly suburban type development with major commercial areas, residential, and the Research Triangle Park. Durham maintains a Major Transportation Corridor buffer which prohibits development around I-40. This should limit the amount of impacts to the human environment for the proposed improvements.

Schools directly adjacent to the I-40 corridor include Cedar Ridge High School, Grady Brown Elementary School, and Lowe's Grove Middle School. Recreational facilities include Leigh Farm Park.

Relationship to Land Use

This is a very long segment that has a variety of land uses along the length. This includes the suburban type development in the town of Hillsborough, the rural buffer in Orange County, more suburban development in Chapel Hill and Durham, and the Research Triangle Park.

Population growth is expected in Hillsborough, NC 86, from US 15-501 to NC 54, and in the areas west and east of the Research Triangle Park. Employment growth is focused near the Old NC 86 interchange near Hillsborough, NC 86 interchange, US 15-501 interchange, NC 54 interchange, Fayetteville Road interchange, and all of the area in the Research Triangle Park from NC 55 into Wake County.

Regional population and employment growth will affect congestion on I-40. Both population and employment are forecast to grow at about a 1.5% annual rate.

Linkages to Other Plans and Proposed Project History

Development of this project should be coordinated with the following plans:

- The DCHC MPO, CAMPO and NCDOT began the Triangle Tolling Study in late 2016. The study will be complete in 2018.
- Durham-Orange Light Rail Transit (D-O LRT) *Final Environmental Impact Statement/Record of Decision*, 2016
- *Durham Trails and Greenways Master Plan*, 2011
- *Durham Comprehensive Bicycle Transportation Plan*, 2006
- *DurhamWalks! Pedestrian Plan*, 2006
- DCHC MPO *2040 Metropolitan Transportation Plan*, 2013
- *DCHC MPO Mobility Report Card*, 2015

Managed lanes are not currently utilized in the Triangle area. NCDOT completed a feasibility study for the construction of managed lanes on I-40 in 2016. Future revenue and financing studies as well as

more detailed design, construction, and the NEPA analyses are necessary to fully understand this type of project.

NCDOT conducted a NEPA study for the widening of I-40 from I-85 to US 15-501 in Orange County. However, due to lack of funding in the TIP, further development of this project has stalled.

NCDOT is developing a bicycle and pedestrian project on Old Durham-Chapel Hill Road (SR 2220) across I-40.

Multimodal Considerations

According to the 2013 American Community Survey, Orange County has a Commute to Work share by public transportation rate of 7.5%, the highest in the State, and Durham County's share is 3.6%, the second highest in the State. Public Transportation is important for the two counties, and I-40, as the regional spine, must also include public transit accommodations. Several bus routes use I-40 for regional service. I-40 in Durham County currently is part of the Bus on Shoulder System (BOSS). The I-40 project needs to accommodate and improve bus transit service using the corridor. Transit buses should be allowed to use the managed lanes at no cost to provide for on-time reliability for these routes.

The D-O LRT project is immediately adjacent to the I-40 corridor in between US 15-501 and NC 54. There are three nearby stations: Patterson Place, Gateway, and Leigh Village. All of these stations are anticipated to have park-and-ride lots and bus transfers. The I-40 project needs to allow for quick and convenient access to these transit stations. The managed lanes access points should be convenient to these stations.

Bicycle and pedestrian access across I-40 is imperative. I-40 is a major barrier for bicycle and pedestrian traffic. I-40 interchanges and intersections are often some of the busiest, high volume, and inhospitable roads for bicyclists and pedestrians. For example, NC 86, US 15-501, NC 54, NC 751, Fayetteville Road, NC 55, Miami Boulevard, etc. are all multi-lane, high traffic streets that are very dangerous for bicyclists and pedestrians. Separated bicycle facilities are necessary on these routes similar to the American Tobacco Trail bridge. The generally lower volume grade separations along I-40 such as Sunrise Road, Erwin Road, Old Durham-Chapel Hill Road, Farrington Road, Barbee Road, Alston Avenue (SR 1945), etc. may be suitable for on-road bicycle facilities and sidewalks. Adequate space must be provided to allow for these facilities.

The DurhamWalks! Pedestrian Plan recommends priority sidewalks on US 15-501, Old Durham-Chapel Hill Road, NC 751, Fayetteville Road, NC 54, Barbee Road, NC 55, and Alston Avenue. The plan also recommends the addition of sidewalks on all roads in Durham by policy.

The Durham Comprehensive Bicycle Transportation Plan recommends a sidepath on US 15-501. The plan recommends bike lanes on Old Durham-Chapel Hill Road, Farrington Road, NC 54 (interchange), NC 751, Fayetteville Road, NC 54 (underpass), Barbee Road, NC 55, South Alston Avenue, T W Alexander Drive (SR 2028), Davis Drive, Miami Boulevard, and Page Road. The plan recommends a greenway parallel to the D-O LRT project as it crosses over I-40 and runs parallel to I-40, a greenway parallel to I-40 on both the north and south sides between NC 751 and Crooked Creek, a greenway along Crooked

Creek, a greenway along Northeast Creek between Barbee Road and NC 55, and a greenway between NC 147 and Davis Drive.

The Durham Trails and Greenways Master Plan recommends a street trail on Farrington Road over I-40, Crooked Creek Trail under I-40, trail along T W Alexander Drive, and a trail along Davis Drive.

Public/Stakeholder Involvement

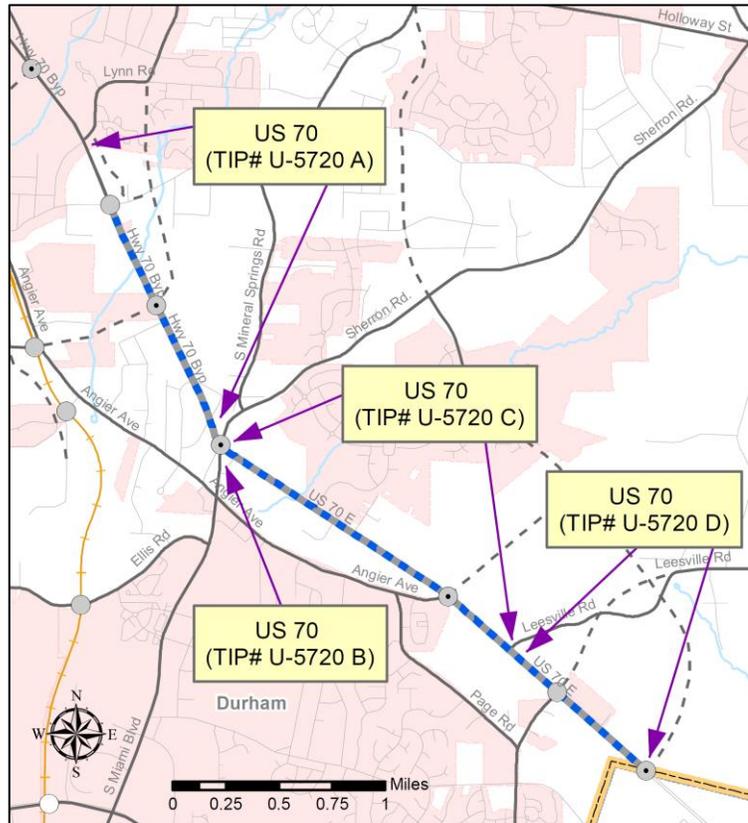
(to be completed after public involvement)

US 70 (Pleasant Drive to Wake County Line)

- Local ID: TIP# U-5720 A (Lynn Road to Sherron Road/Miami Boulevard)
TIP# U-5720 B (US 70/Miami Boulevard Interchange)
TIP# U-5720 C (Sherron Road/Miami Boulevard to Leesville Road)
TIP# U-5720 D (Leesville Road to west of T.W. Alexander Drive in Wake County)
- Last updated: 08/09/16

Identified Problem

US 70 is a major route connecting Durham and Raleigh and runs parallel to I-40. The segment of US 70 north of NC 98 is a controlled access freeway and the East End Connector is reconstructing part of US 70 from NC 98 to Pleasant Drive (SR 1815) as a controlled access freeway. With the construction of the East End Connector and growth in eastern Durham County and northern Wake County, traffic demand on US 70 is expected to grow and improvements are needed. In addition, US 70 serves as an alternative for congestion on I-40 for traffic between Durham and Raleigh.



The right-of-way varies from about 100 to 180 feet along the segment. There are many signalized and unsignalized intersections and driveways on the route. From Pleasant Drive to Miami Boulevard, the road is generally a four lane section with a two-way left turn lane, and from Miami Boulevard to the Wake County line the road is generally a four lane section with a wide center median.

US 70 is used for both inter-regional traffic, as an alternative to I-540, I-40, and NC 147, and to serve local traffic and local businesses. There are many driveways to businesses and residences which are safety concerns. There are very few sidewalks or bike accommodations on US 70. There is some transit bus service but conditions are very poor and unsafe for bus riders accessing stops on foot.

Improvements are recommended to increase capacity, improve safety for motorists, pedestrians, and bicyclists, and to provide better freeway connectivity through the Triangle region.

Justification of Need

The table on the next page shows that US 70 will exceed a LOS D capacity.

From	To	Lanes	2011 AADT	Existing Capacity	2040 Volume	2040 V/C	2040 Cross-Section
Pleasant Drive	South Miami Boulevard	5	37,000	36,600	64,000	2.2	6B
South Miami Boulevard	Wake County	4D	31,000	36,600	49,000	1.34	6B

The US 70 corridor through eastern Durham County is forecasted to have significant population growth and moderate employment growth. The population growth will create a demand for US 70 as a transportation corridor to jobs in downtown Durham and the Duke University area. Growth in northern Wake County will also contribute to demand on US 70.

The intersections at Pleasant Drive, Miami Boulevard and Page Road Extension (SR 2095) cause lengthy backups during peak commuting hours, which is expected to grow with increased development.

The intersections of US 70 and Marly Drive (SR 1957) and Peyton Avenue (SR 1957), both near Miami Boulevard have been noted as Potentially Hazardous Intersection Locations due to frontal impact crashes. See the Crashes section of the CTP Deficiency Analysis.

There are functionally obsolete bridges at NC 98 and Norfolk and Western Railroad.

Community Vision and Problem History

US 70 is envisioned to become a six lane access controlled freeway from I-85 in Durham to I-540 Raleigh. This will enable the road to increase capacity and regional freeway connectivity. Several interchanges will be constructed along this route to maintain access to major local roadways such as Glover Road Extension (SR 1940), Miami Boulevard, Angier Avenue Extension (SR 1926), and Northern Durham Parkway. Several grade separations will be constructed as well to maintain connectivity.

Frontage roads or other access roads will be needed to maintain access to properties and businesses along the corridor with the freeway conversion. In addition, bicycle and pedestrian facilities need to be constructed with the project which may include facilities on these access roads and sidepaths or greenways in the corridor. As the area grows and more transit-supportive land uses and density is built, transit accommodations must also be evaluated with the project.

The DCHC MPO, Capital Area MPO and NCDOT began the Triangle Tolling Study in late 2016 and will complete the study by 2018. US 70 will be part of the tolling study to ascertain whether or not managed lanes are feasible and logical.

CTP Project Proposal

Project Description and Overview

The proposed project would widen US 70 to six lanes and convert it to a freeway with controlled access. Interchanges would be located at Glover Road Extension, Miami Boulevard, Angier Avenue Extension, and Northern Durham Parkway. Grade separations would be located at Lynn Road (SR 1921), Pleasant

Drive, and Page Road (SR 2095)/Leesville Road Extension (SR 1906). Additional grade separations may be necessary as the area around US 70 continues to grow and develop. Bicycle and pedestrian facilities should be included on all interchanges and there may be need for a parallel multi-use path along US 70 in segments. Access roads will need to be built to ensure there is access to properties and connectivity between the grade separations and interchanges.

Natural and Human Environment Context

Nearly all of the US 70 corridor in Durham County is within the Falls Lake protected watershed. There are multiple small stream crossings. Much of the corridor is near the ridge line between the Neuse and Cape Fear watersheds.

US 70 crosses through suburban style development from Pleasant Drive to the Wake County Line. There is mostly commercial development, few residential areas, and some undeveloped forested areas along this corridor.

Relationship to Land Use

The US 70 corridor is fully within the suburban development tier for the city of Durham. There is significant opportunity for growth in this area compared to the relatively sparse development that currently exists. Significant population growth is projected for eastern Durham County between US 70 and NC 98. Furthermore, continued employment growth is projected for the nearby Research Triangle Park.

Commercial and industrial future land use is projected immediately adjacent to the corridor with more medium to low density residential development off of the corridor. With the freeway conversion, access roads and an increased surface street network along US 70 will be necessary to provide land access to these parcels. There are many currently industrial land tracts and future industrial developments projected near the US 70 corridor. As a result, these land uses will likely increase the amount of truck traffic on US 70 in the future.

Linkages to Other Plans and Proposed Project History

Development of this project should be coordinated with the following plans:

- The DCHC MPO, CAMPO and NCDOT began the Triangle Tolling Study in late 2016. The study will be complete in 2018
- This project is funded and thus the NEPA planning process began in 2016
- *Durham Trails and Greenways Master Plan, 2011*
- *Durham Comprehensive Bicycle Transportation Plan, 2006*
- *DurhamWalks! Pedestrian Plan, 2006*
- *DCHC MPO 2040 Metropolitan Transportation Plan, 2013*
- *DCHC MPO Mobility Report Card, 2015*

Multimodal Considerations

There is one GoDurham route that uses US 70 today. The land uses and pedestrian access on US 70 is not conducive to public transportation ridership. As eastern Durham County continues to develop, demand for bus service is likely to increase. When US 70 is converted to a controlled access facility, the bus service most likely to use the road will be express routes. BOSS may be desired on US 70 and the shoulders should be built to accommodate this.

As a controlled access freeway, US 70 will not include bicycle and pedestrian facilities. However, it is important to consider bicycle and pedestrian access across the facility and along interchanges. Separated facilities should be provided at busy interchange areas. On-street bicycle and pedestrian facilities should be provided at grade separations.

The DurhamWalks! Pedestrian Plan recommends priority sidewalks on Lynn Road. By policy, the plan also recommends the addition of sidewalks on all roads in Durham except in special cases such as along controlled access roads.

The Durham Comprehensive Bicycle Transportation Plan recommends a sidepath along US 70 from the Wake County Line to Miami Boulevard and bicycle lanes on US 70 from Miami Boulevard to Lynn Road. Bicycle lanes are not recommended to be included when US 70 is converted to a freeway. Wide shoulders are recommended for Lynn Road, Pleasant Drive, Sherron Road (SR 1811), and Leesville Road. Bike lanes are recommended for Miami Boulevard, Angier Avenue, and Page Road extension. A greenway is recommended to cross US 70 at Miami Boulevard and in between Leesville Road and Page Road extension.

The Durham Trails and Greenways Master Plan does not recommend any greenways parallel or perpendicular to US 70.

Public/Stakeholder Involvement

(to be completed after public involvement)

Northern Durham Parkway (US 70 to I-85)

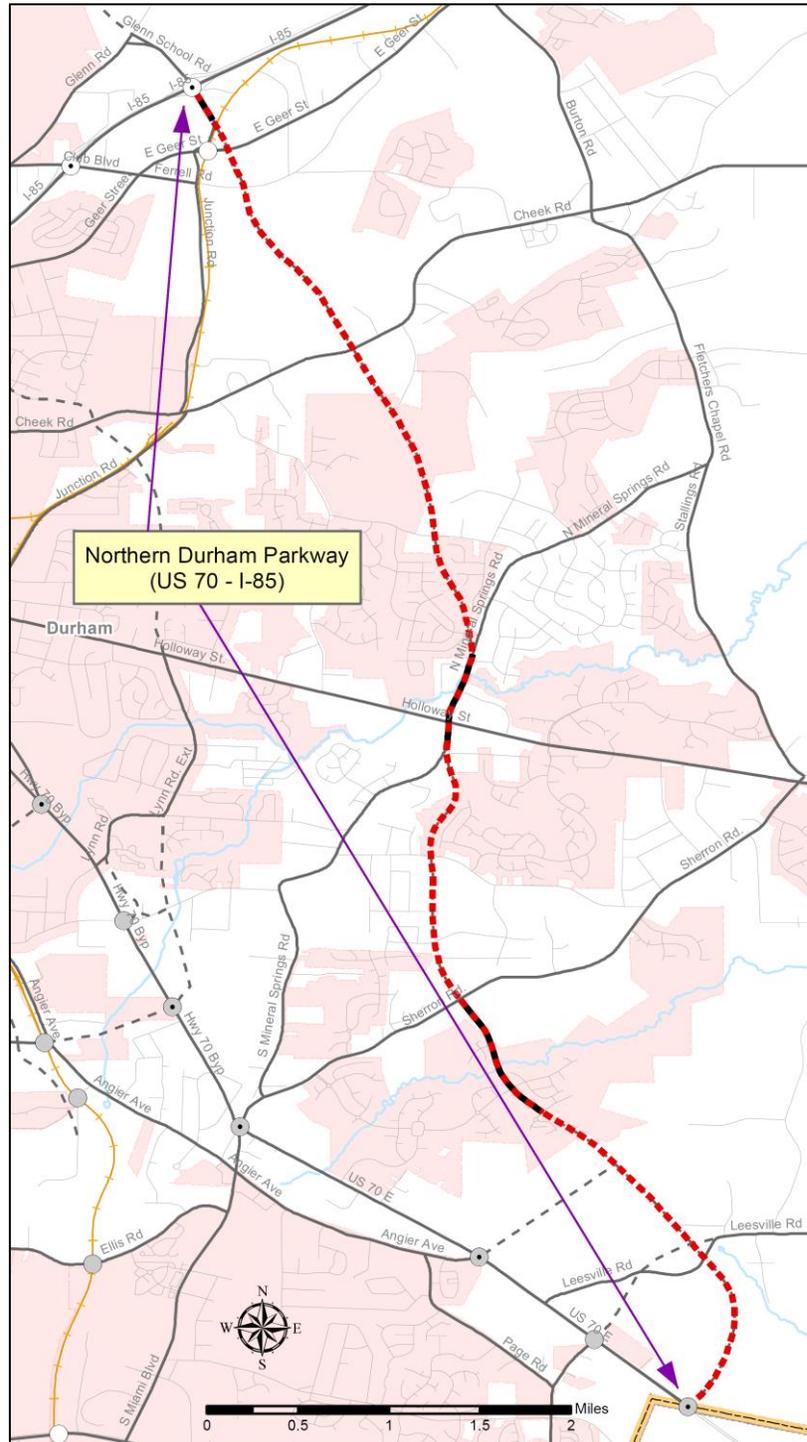
- Local ID: to be determined
- Last Updated: 08/03/16

Identified Problem

Population and employment are growing in Durham, the Research Triangle Park, and northwestern Wake County. The Research Triangle Park is and will continue to be a major employment center. Residential growth is forecasted to continue in northern and eastern Durham County, as well as Person and Granville counties. Furthermore, the existing routes between the population and employment centers travel primarily through the central city of Durham area and there are many negative impacts to increasing the capacity of many of these routes. As a result, there is a need for a new major arterial from northern Durham County to eastern Durham County, the Northern Durham Parkway.

The Northern Durham Parkway is needed to provide an alternative to routes such as US 501, US 501 Business, US 70, and NC 55 through central Durham. It is also needed to provide better connectivity between growing communities in northern and eastern Durham County and it must provide direct access to these communities. It is needed to provide a bicycle and pedestrian route through this area

as well and to provide a cross-town route for transit buses in the future. The Northern Durham Parkway should be constructed to serve both regional and local traffic and provide a multi-modal facility for all users.



Justification of Need

As the Northern Durham Parkway would be a new facility, traffic counts are not available based on the existing network. A 2013 Traffic Forecast and 2014 Feasibility Study were developed for the Northern Durham Parkway (NDP).

The “2040 Volume (E+C without NDP)” in the table below was developed for the CTP using the 2040 TRM Existing plus Committed (E+C) network and the “2040 Volume (MTP with NDP)” was developed for the 2013 TIP Project U-4721 (NDP) Traffic Forecast using the 2040 TRM standard MTP network. In comparing these two table columns, the US 70 2040 Volume (E+C without NDP) is considerably lower than the 2040 Volume (MTP with NDP) south of NC 98 due to US 70 not being upgraded to a freeway in the E+C network. In the standard MTP network US 70 is upgraded to a freeway. The E+C network also does not include the NDP, whereas the standard MTP network does include the NDP.

Road	From	To	Lanes	2011 AADT	Existing Capacity	2040 Volume (E+C without NDP)	2040 Volume (MTP with NDP*)	2040 V/C (without NDP)	2040 Cross-Section
US 70	I-85	NC 98	4D	46,000	59,900	96,200	89,700 - 102,300*	1.6	6B
US 70	NC 98	S Miami Boulevard (SR 1959)	4, 4D, 5	36,000 - 42,000	27,600 - 59,900	63,700	98,800 - 107,000*	2.2	6B
US 70	S Miami Boulevard (SR 1959)	NDP	4D	26,000 - 31,000	40,500	49,200	82,300 - 83,800*	1.1	6B
NDP	I-85	NC 98	4D	--	--	--	12,900 – 21,700*	--	4G
NDP	NC 98	Sherron Road (SR 1811)	4D	--	--	--	18,700 – 19,600*	--	4G
NDP	Sherron Road (SR 1811)	US 70	4D	--	--	--	23,900 – 27,900*	--	4G

However, there are several unaddressed needs identified in CTP on other routes that the Northern Durham Parkway is expected to help ameliorate. Cheek Road (SR 1800), Fletchers Chapel Road (SR 1815), Glenn School Road (SR 1675), Mineral Springs Road (SR 1917), and Red Mill Road (SR 1632) are nearby roads that have unaddressed needs that should be helped by the Northern Durham Parkway.

Significant population growth is anticipated for eastern Durham County, particularly between NC 98 and US 70. In addition, growth in population in Person County to the north and Granville County to the northeast will contribute towards demand for north-south travel through Durham County. Employment growth in this area is more modest, but the employment growth in the Research Triangle Park will also drive the demand for north-south travel through Durham County.

Community Vision and Problem History

The Northern Durham Parkway has a long history in Durham. For many decades, the Durham Thoroughfare Plan included a circumferential road, Eno Drive, which arced from I-85 in Durham County

to I-85 in Orange County and was eligible for Highway Trust Fund “loop” project funding. This road was the subject of a controversial NEPA study by NCDOT in the early 2000’s that concluded with a decision to not construct the project. The eastern part of this road morphed into the Northern Durham Parkway project. Through much community and governmental discussion, NCDOT and the city of Durham decided to support the Northern Durham Parkway as one of five projects that would replace Eno Drive in the state legislation for “loop” projects.

Eno Drive was proposed as an expressway-type facility. In contrast, the Northern Durham Parkway was envisioned to be a two or four-lane parkway or boulevard type facility. The city of Durham decided that a controlled access freeway or expressway type loop road was not compatible with the land use and growth direction of that part of the city. Northern Durham Parkway is not envisioned to carry solely regional traffic. It is envisioned to serve some regional traffic but also local traffic. Longer regional trips should be directed to I-85 and US 70. Northern Durham Parkway is envisioned to be a complete street that is fully integrated into the neighborhoods that it travels through and includes facilities for transit, bicycles, and pedestrians. It is likely to have residential, commercial, and institutional uses along it such as subdivisions, retail centers, and schools. Access management should be included and driveways should be consolidated whenever possible.

CTP Project Proposal

Project Description and Overview

The proposed project would construct a new location four lane boulevard from US 70 to Old Oxford Road. The proposed cross-section includes a median, bicycle lanes, and sidewalks. However, a separated bicycle facility should be included such as a curb-separated or delineator-separated facility where possible to increase safety and usage for all cyclists. Sidewalks are an essential part of the project. Interchanges will be located at US 70 and I-85.

Natural and Human Environment Context

The Northern Durham Parkway is nearly all within the protected watershed for Falls Lake. It includes multiple stream crossings including the Cabin Branch, Eno River, Ellerbee Creek, Panther Creek, Chunky Pipe Creek, and Lick Creek. Segments near the Cabin Branch and Eno River are through land owned by the U.S. Army Corps of Engineers. This includes the Penny’s Bend Nature Preserve near the Eno River.

The proposed route crosses near multiple schools including Spring Valley Elementary School, Oak Grove Elementary School, Southern High School, Glenn Elementary School, Little River Elementary School, and Lucas Middle School. A branch of the Durham Tech Community College is also nearby.

Most of the human environmental context is currently rural or suburban. There are many new subdivisions being built along the corridor and many have included the dedication of right-of-way for the proposed road to minimize potential impacts to properties. There are also multiple commercial areas particularly where the proposed route crosses an existing route such as near NC 98 and I-85.

Relationship to Land Use

The Northern Durham Parkway arcs through the eastern side of Durham County within the suburban development tier. Land uses will vary along the corridor from medium to low density residential, conservation land, industrial, and commercial. Population growth is anticipated in this area of the county, especially in between NC 98 and US 70. Some employment growth is also anticipated, primarily near I-85 and US 70.

Some of Northern Durham Parkway has already been built by existing large developments. For example, Brightleaf at the Park has built a segment south of Sherron Road. Entrances to residential neighborhoods and Spring Valley Elementary School currently exist on the Northern Durham Parkway in this neighborhood. Northern Durham Parkway is expected to provide both a transportation and land access function. While driveways directly onto Northern Durham Parkway will generally be limited and discouraged, the road will need to provide access to other streets and large properties such as schools. As a result, a freeway or expressway would not function well because of the bicycle, pedestrian and transit safety concerns and access limitations.

Linkages to Other Plans and Proposed Project History

Development of this project should be coordinated with the following plans:

- *Durham Trails and Greenways Master Plan, 2011*
- *Durham Comprehensive Bicycle Transportation Plan, 2006*
- *DurhamWalks! Pedestrian Plan, 2006*
- *DCHC MPO 2040 Metropolitan Transportation Plan, 2013*
- *DCHC MPO Mobility Report Card, 2015*

NCDOT Program Development Branch completed a feasibility study for the Northern Durham Parkway in 2013. However due to a lack of funding in the TIP, further development of the project has been stalled.

Multimodal Considerations

Northern Durham Parkway will become a major north-south connector through Durham County. It is envisioned to help alleviate traffic demand on current routes that go directly through residential neighborhoods and have high current and projected traffic volumes, including:

- Duke Street and Gregson Street, 10,000 (2015 AADT), and 11,100 (2040 volume)
- Alston Avenue and Avondale Drive, 19,000 (2015 AADT), and 19,800 (2040 volume)
- US 15-501 Bus (Roxboro Street), 15,000 (2015 AADT), 19,600 (2040 volume)

Many of these routes are greatly constrained by development and do not provide adequate bicycle and pedestrian facilities. As such, Northern Durham Parkway provides an excellent opportunity to divert traffic away from residential neighborhoods that have high vehicle traffic volumes and high pedestrian and bicycle activity, as well.

As a new facility, Northern Durham Parkway provides an opportunity to build a fully integrated bicycle and pedestrian facility through the County. And, it can be constructed based on a state-of-the-practice guideline for safety and accessibility. A separated bicycle facility should be provided along the Northern Durham Parkway. Sidewalks should be provided on both sides of the entire facility. Special attention should be given to intersections, especially the major intersections at NC 98, I-85, and US 501.

It is likely that public transportation services will use the Northern Durham Parkway for future routes. As eastern and northern Durham County continues to develop, public transportation demand will increase. Northern Durham Parkway should include bus pullouts, stops, and shelters throughout the route.

The DurhamWalks! Pedestrian Plan recommends priority sidewalks on Freeman Road (SR 1846) and Geer Street (SR 1670). The plan also recommends the addition of sidewalks on all roads in Durham by policy.

The Durham Comprehensive Bicycle Transportation Plan recommends bicycle lanes and a greenway path along Northern Durham Parkway. Several greenways are proposed to cross the Northern Durham Parkway as described in the next paragraph. Bicycle lanes are recommended to be located on Leesville (SR 1906)/Page Road Extension (SR 2095). Wide shoulders are recommended on Sherron Road (SR 1811), Mineral Springs Road, Freeman Road, Cheek Road, Ferrell Road (SR 1671), Geer Street, Glenn Road (SR 1636), Hamlin Road (SR 1634), and Old Oxford Road (SR 1004).

The Durham Trails and Greenways Master Plan recommends a Brier Creek Trail, Lick Creek Trail (two branches), Oak Grove Trail, Little Lick Creek Trail, Chunky Pipe Creek Trail, Panther Creek Rail Trail, North Ellerbee Creek Trail, Roxboro Rail Trail, Eno River Trail (part of the Mountains to Sea Trail), and Cabin Branch Trail (two branches) along the Northern Durham Parkway. Most streams and creeks in eastern/northern Durham County flow from west to east and the Northern Durham Parkway is proposed to mostly these streams perpendicularly in a north-south direction. Thus there are many potential greenway crossings parallel to these streams along the route. Special attention must be given to provide safe greenway crossings or overpasses/underpasses.

Public/Stakeholder Involvement

(to be completed after public involvement)

NC 147 (I-40 to I-85)

- Local ID: to be determined
- Last Updated: 08/03/16

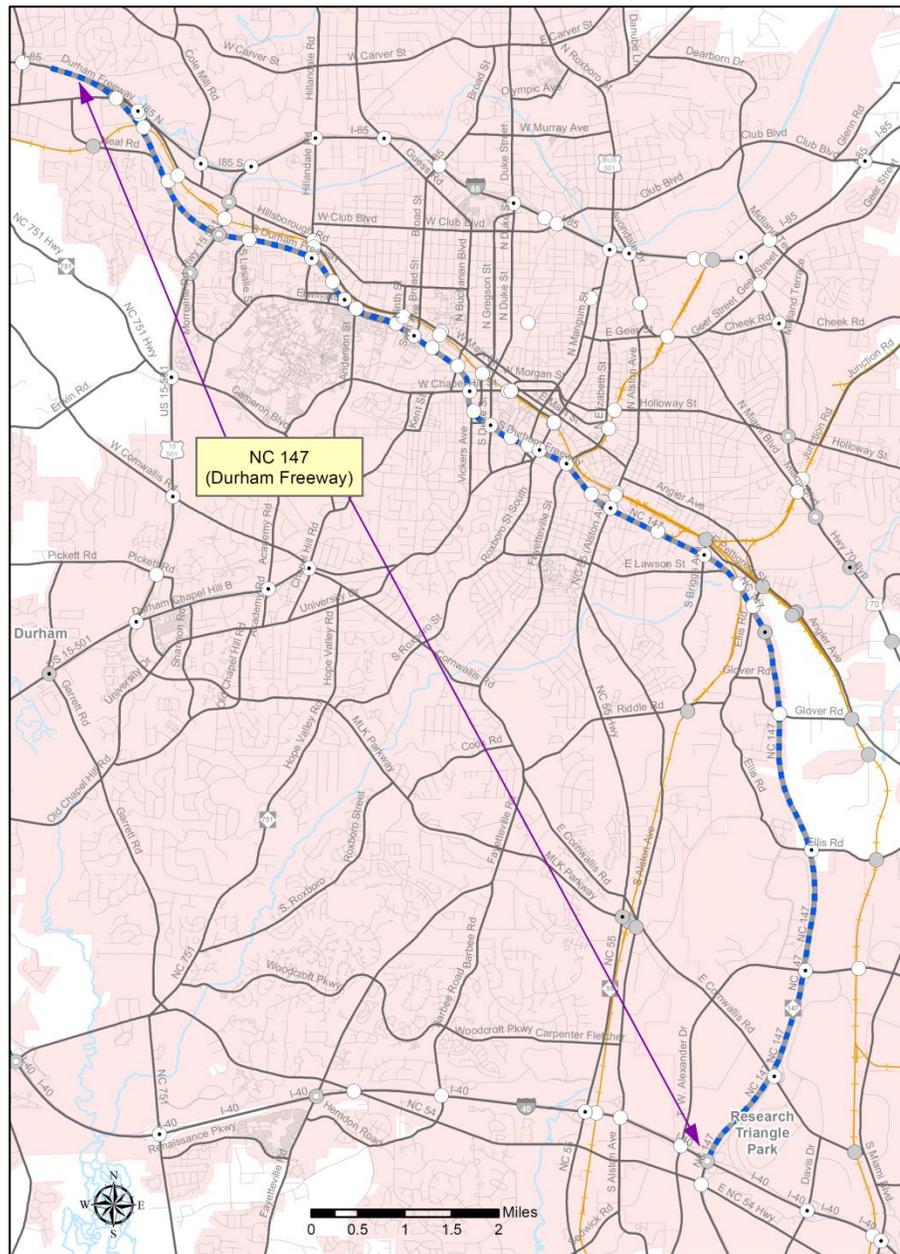
Identified Problem

NC 147, or the Durham Freeway, is a primarily a four-lane freeway from I-85 to I-40. It provides proximate access to several of Durham's top employment centers such as Duke University, downtown Durham, and the Research Triangle Park. It was built in segments with some of the oldest segments through downtown Durham. Currently, the section from Vickers Avenue to South Briggs Avenue experiences backed up traffic during the peak travel periods and the daily traffic counts exceed the roadway capacity. The interchange geometry and short ramps are considered far below today's standards.

Justification of Need

NC 147 crosses through the most significant employment centers in Durham: the Duke University area, downtown Durham, and the Research Triangle Park. Further employment growth in these three areas will drive the demand for travel on NC 147. Population growth is also expected around downtown Durham and nearby neighborhoods.

There are lengthy backups from southbound NC 147 onto eastbound I-40 during peak commuting hours, and a corresponding backup from westbound I-40 to northbound NC 147.



From	To	Lanes	2013 AADT	LOS D Cap.	2040 Vol.	2040 V/C	X-Section
I-40	Cornwallis Road (SR 1121)	6	68,000	90,700	76,700	0.93	8D
Cornwallis Road	T.W. Alexander Drive (SR 2028)	4	62,000	90,700	92,400	1.49	8D
T.W. Alexander Drive	Ellis Road (SR 1954)	4	67,000	61,700	97,000	1.57	8D
Ellis Road	East End Connector	4	59,000	61,700	77,000	1.25	8D
East End Connector	S. Briggs Avenue (SR 1171)	4	59,000	61,700	77,000	1.25	6A
S. Briggs Avenue	NC 55 (Alston Avenue)	4	67,000	61,700	87,000	1.41	6A
NC 55	Fayetteville Street (SR 1118)	4	79,000	61,700	87,000	1.41	4A
Fayetteville Street	Blackwell Street	4	71,000	61,700	84,000	1.37	4A
Blackwell Street	Vickers Avenue (SR 1361)	4	62,000	61,700	80,000	1.29	4A
Vickers Avenue	Swift Avenue (SR 1322)	4	61,000	61,700	81,000	1.32	4A
Swift Avenue	Anderson Street	4	57,000	61,700	72,000	1.16	4A
Anderson Street	Elba Street (SR 2411)	4	42,000	61,700	61,000	0.98	4A
Elba Street	US 15-501	4	42,000	61,700	48,000	0.78	4A
US 15-501	I-85	4	45,000	61,700	55,000	0.89	4A

There are functionally obsolete bridges on NC 147 at NC 55, US 15-501, West Chapel Hill Street (SR 1127), Vickers Avenue, South Duke Street (SR 1445), Grant Street, Southern Railroad, E. Cornwallis Road, NC 54, LaSalle Street (SR 2403), and Anderson Street.

CTP Project Proposal

Project Description and Overview

The proposed project will vary along the length. From I-40 to the East End Connector the project will be an eight lane divided freeway and from the East End Connector to NC 55 there will be six lanes. From NC 55 to I-85, the project will be a four lane divided freeway. Managed lanes should be evaluated for use in the section from NC 55 to I-40 to both help fund the capacity improvements and encourage higher vehicle occupancy rates, especially during peak periods. Based on the feasibility study for NC 147, the CTP has identified managed lanes for the section from I-40 to the East End Connector.

From NC 55 through downtown, the project will include operational improvements with the primary objective to improve safety for both vehicles on NC 147 and all road users at interchanges. Access improvements should also be considered. The safety and access improvements may include speed limit reductions, ramp closures or consolidations, lengthening on- and off-ramps to provide for more merging space, additional connectivity on local streets to maintain or improve access, auxiliary lanes, shoulder

improvements, bridge replacements, guardrails, geometric changes, modifications to local streets and intersections at interchanges to improve bicycle and pedestrian facilities and safety, etc. Free flow movements from freeway on- and off-ramps to local streets should be eliminated to improve bicycle and pedestrian safety. The I-40 and US 15-501 Bypass interchanges need capacity and safety improvements.

The DCHC MPO, Capital Area MPO and NCDOT began the Triangle Tolling Study in late 2016 and will complete the study by 2018. NC 147 will be part of the tolling study to ascertain whether or not managed lanes are feasible and logical.

Natural and Human Environment Context

NC 147 crosses through suburban and urban development. Near I-40 the road is the major route through the Research Triangle Park. It then transitions to suburban style development briefly before entering the center of urban downtown Durham and the Duke University/Hospital area. Closer to I-85, the context is again more suburban.

The section of NC 147 from the Briggs Avenue to US 15-501 goes through the most intensely developed portion of Durham. There are many nearby neighborhoods, urban development, dense residential areas, and large institutional uses. The section from Chapel Hill Road to Alston Avenue was built first before the National Environmental Policy Act (NEPA) required study and mitigation for natural and human environmental impacts. This section greatly impacted many neighborhoods in Durham including the African American Hayti neighborhood. A later extension to the west impacted the Crest Street neighborhood but required mitigation for these impacts according to NEPA. The original construction of NC 147 had a significant impact on the growth and development of Durham. Many residents are concerned and wary about any additional negative impacts that a proposed project through the densely developed portion of the city may cause. In addition, there are lingering negative impacts to the city from the original project such as disconnected streets and neighborhoods, high speed on and off ramps that are incompatible with safe pedestrian and bicycle travel and urban type development, noise, and visual impacts. The proposed project needs to mitigate for these prior impacts as well as minimize any additional impacts.

There are multiple stream crossings on this long corridor. However most are relatively small as NC 147 is generally near the ridge line between the Neuse River and Cape Fear River watersheds. There is a larger stream crossing at Northeast Creek near Ellis Road.

Relationship to Land Use

NC 147 crosses through the urban and suburban tier in Durham. It also crosses through or abuts the Compact Neighborhood Districts near Alston Avenue, downtown Durham, and Ninth Street/Duke Hospitals.

The urban and compact neighborhood districts are expected to have the densest development that is more conducive to transit, walking and bicycling transportation. A significant amount of employment growth is projected from Alston Avenue to Duke Hospitals. Population growth is also anticipated in this corridor, much of it in multi-family developments.

The southern segment of NC 147 through the Research Triangle Park is also expected to have significant employment growth, but population growth will continue to be limited. The employment centers in the Research Triangle Park have traditionally been in large campus style developments with a suburban style. The Research Triangle Park will become denser with the anticipated growth, but it will not be the same as downtown Durham.

While NC 147 is a freeway for its entire length, the segment through downtown has many more access points and interchanges than the southern segment through the Research Triangle Park. Attention must be made to designing a project that continues to provide access to the densest part of the city while improving safety for all users. The local vision is that NC 147 should not serve as a through route for regional traffic. I-85 to the north and I-40 to the south serve this role. Traffic on NC 147 through downtown should primarily be headed to or from a destination in downtown. This may mean that a lower design speed is necessary to ensure safety in this segment.

In contrast, the segment of NC 147 to the south will serve more regional traffic due to the more dispersed land uses in the Research Triangle Park. Furthermore, the connection of NC 147 to the East End Connector and US 70/I-85 will result in more regional traffic demand for this segment. NC 147 through this area is appropriate for a high speed freeway design with fewer access points and interchanges.

Linkages to Other Plans and Proposed Project History

Development of this project should be coordinated with the following plans:

- The DCHC MPO, CAMPO and NCDOT began the Triangle Tolling Study in late 2016. The study will be complete in 2018.
- (Draft) Feasibility Study Improvements to NC 147 (Durham Freeway), From I-40 to NC 55 (Alston Avenue), FS-2015C, 2016
- D-O LRT *Final Environmental Impact Statement/Record of Decision*, 2016
- *Durham Trails and Greenways Master Plan*, 2011
- *Durham Comprehensive Bicycle Transportation Plan*, 2006
- *DurhamWalks! Pedestrian Plan*, 2006
- DCHC MPO *2040 Metropolitan Transportation Plan*, 2013
- *DCHC MPO Mobility Report Card*, 2015

The NCDOT Feasibility Studies Unit completed a draft feasibility study in 2016 for the NC 147 section from NC 55 (Alston Avenue) to I-40, FS-1205C. The study recommended further study of a cross section with 8 general purpose lanes, and a cross-section with 6 general purpose and 2 managed lanes.

Multimodal Considerations

Several GoDurham and GoTriangle bus routes use NC 147. Many of these are express routes. Any improvements to NC 147 should consider how public transportation can use the facility easily and with less impact by potential congestion. BOSS should be considered. If managed lanes are considered in any location, bus transit routes should be able to use the facility at no cost.

The 2013 American Community Survey data show that Census Tracts bordering NC 147 have some of the highest public transit usage in the State for Commuting to Work. In fact, Census Tract 14 near the intersection of NC 147 and Alston Avenue and Briggs Avenue has the highest public transportation mode share in the State at 32.1%. The NC 147 corridor from Briggs Avenue to the north/west has high public transportation ridership. The NC 147 corridor from Briggs Avenue to the south/east has lower ridership typical of the suburban style development in the Research Triangle Park.

Commuting by bicycle and walking are also high along the central Durham segment of the project from Briggs Avenue to the west. Future development is expected to generate high rates of bicycle and pedestrian trips. Durham's top employment centers are near NC 147 and are within a reasonable walking or biking distance to neighborhoods on the opposite side of the freeway. NC 147 currently is a barrier for safe bicycle and pedestrian access to Duke Hospitals from the north and to downtown Durham from the south. The high speed on and off ramps create dangerous conflicts for bicyclists and pedestrians at many interchanges through the downtown. The NC 147 project must include improvements to the bicycle and pedestrian crossings.

The DurhamWalks! Pedestrian Plan recommends priority sidewalks on Alston Avenue, Pettigrew Street, Morehead Avenue (SR 1365), Buchanan Boulevard, Broad Street (SR 1322), Erwin Road (SR 1320), LaSalle Street, Morreene Road (SR 1317), and Hillsborough Road (US 70 Bus). The plan also recommends the addition of sidewalks on all roads in Durham by policy.

The Durham Comprehensive Bicycle Transportation Plan recommends bicycle lanes on T W Alexander Drive, Ellis Road (east/south), Glover Road (SR 1954), Ellis Road (west/north), Briggs Avenue, Bacon Street, Alston Avenue, Fayetteville Street, Roxboro Street (US 15 Bus), Mangum Street (US 15 Bus), Blackwell Street, Duke Street, Gregson Street, Chapel Hill Street, Buchanan Boulevard, Broad Street, Erwin Road, Anderson Street, Fulton Street (SR 1321), LaSalle Street, Neal Road (SR 1314), and US 70. This plan also recommends greenway trails parallel to NC 147 between US 15-501 and Fulton Street and crossing under NC 147 at Fulton Street, parallel to the D-O LRT project and crossing NC 147 near Erwin Road, a greenway extending north and south from the Bryant Bridge, and a greenway along the rail line between Briggs Avenue and Ellis Road.

The Durham Trails and Greenways Master Plan recommends a trail on Cornwallis Road and T W Alexander Drive. These are both part of the Research Triangle Park trails system.

Public/Stakeholder Involvement

(to be completed after public involvement)