DCHC MPO Board

Meeting Agenda

Wednesday, September 9, 2020

9:00 AM

Meeting to be held by teleconference.

Watch onFacebook Live at https://www.facebook.com/MPOfor DCHC/

Any member of the general public who wishes to make public comment should send an email to aaron.cain@durhamnc.gov and the comment will be read to the Board during the public comment portion of the meeting.

1. Roll Call

2. Ethics Reminder

It is the duty of every Board member to avoid conflicts of interest. Does any Board member have any known conflict of interest with respect to any matters coming before the Board today? If so, please identify the conflict and refrain from any participation in the particular matter involved.

3. Adjustments to the Agenda

4. Public Comments

5. Directives to Staff

20-100

Attachments: 2020-09-09 (20-100) MPO Board Directives to Staff.pdf

CONSENT AGENDA

6. August 12, 2020 Board Meeting Minutes

20-164

A copy of the August 12, 2020 Board Meeting minutes will be included in the October 14, 2020 Board Meeting packet.

Board Action: No action required at this time..

ACTION ITEMS

7. Locally Administered Projects and NCDOT Budget (30 minutes)

20-159

Van Argabright, NCDOT

Van Argabirght, Director of the NCDOT Division of Planning and Programming, will be present to answer questions and address issues regarding NCDOT finance and budget, particularly as it regards locally administered projects.

Board Action: No action is necessary at this time; this item is for informational and discussion purposes.

8. STIP Reprogramming (15 minutes) 20-165
Anne Phillips, LPA Staff

NCDOT has recently performed a reprogramming exercise to ensure that the STIP remains fiscally constrained in light of the COVID-19 pandemic and its resulting impact on revenues, the passage of House Bill 77 into law, and project cost increases that occurred over the past year.

The proposed STIP now goes to 2032 instead of 2029. A list of DCHC projects affected by the STIP reprogramming exercise is attached.

If these changes are adopted by the Board of Transportation in October, some of these projects will also require that the MPO amend the 2045 Metropolitan Transportation Plan (MTP). Amendments to the MTP are needed if a project is regionally significant and its operational year crosses one of the MTP horizon years (2025, 2035, or 2045).

Board Action: This item is for informational and discussion purposes.

Attachments: 2020-09-09 (20-165) STIP ReprogrammingPresentation.pdf
2020-09-09 (20-165) STIPReprogrammingProjectList.pdf

9. MPO Board Governance Committee (15 minutes) 20-153

Damon Seils, Town of Carrboro

In November 2019, the chair of the Board appointed a governance committee to develop and make recommendations to the Board regarding the governance, organization, and management of the DCHC MPO.

The committee recommends that the Board:

(1) authorize the Lead Planning Agency to issue a request for information (RFI) from the DCHC MPO's list of prequalified contractors about their capabilities to study and make recommendations to the Board by February 2021 regarding (a) the DCHC MPO's governance, organizational structure, and financial management; (b) the findings of the DCHC MPO's most recent joint certification review from the Federal Highway Administration and the Federal Transit Administration; and (c) the DCHC MPO's preparedness to address-in a manner that aligns with the values of the member jurisdictions-emerging issues relating to racial equity, environmental protection and environmental justice, changes in technology, and the link between transportation planning and land use; and

(2) appoint a selection committee consisting of two members of the Board, two members of the Technical Committee, and the director of the City of Durham's transportation department to finalize the scope of work, prepare an independent cost estimate and identify resources, review responses to the RFI, and select one or more contractors.

Board Action: Adopt the recommendations of the committee.

Attachments: 2020-09-09 (20-153) Durham-Chapel Hill Carrboro Certification Review Report(

10. 2050 MTP -- Goals and Objectives (15 minutes) 20-145

Andy Henry, LPA Staff

At their June meeting, the DCHC MPO Board reviewed the staff recommended Goals and Objectives, requested changes, and released them for a minimum 42-day public comment period. At their August meeting, the Board received a revised set of Goals and Objectives based on requests from their June meeting and received a presentation on the online survey, which evaluated support for the individual goals and proposed policies, and provided demographic data on survey respondents. Based on comments from Board members and those who spoke at the public hearing, staff made changes to the Goals and Objectives and presented those changes at the August Technical Committee (TC) meeting. Staff made additional changes based on the August TC meeting that further strengthened the issues of equity, environment, and safety.

The revised Goals and Objectives are attached. Changes to the Goals are indicated in the Goals column, and changes to the Objectives are shown in the Proposed Objectives column. A document that compiles comments through August 13 is also attached.

Among the next steps in the 2050 MTP process is the development of performance measures for the Objectives.

TC Action: Recommended that the MPO Board approve the Goals and Objectives for use in the development of the 2050 MTP.

Board Action: Review the Goals and Objectives, provide comments, and approve the Goals and Objectives for use in the development of the 2050 MTP.

Attachments: 2020-09-09 (20-145) Compilation of Comments.pdf
2020-09-09 (20-145) Goals and Objectives.pdf

11. 2050 MTP Public Engagement Plan and Schedule (10 minutes) 20-144

Andy Henry, DCHC MPO

The DCHC MPO Board released the draft Public Engagement Plan and schedule for the 2050 MTP at their June meeting for a minimum 42-day public comment period. The Board conducted a public hearing at their August meeting but no one from the public spoke on this particular agenda item. The MPO received one email comment on the Engagement Plan and no comments on the schedule. The comment is on page 2 of the comment compilation document that was attached to the previous agenda item. Staff does not recommend any changes to the draft Public Engagement Plan or schedule. Both documents are attached.

TC Action: Recommended that the MPO board approve the Public Engagement Plan and schedule for use in developing the 2050 Metropolitan Transportation Plan (MTP).

Board Action: Approve the Public Engagement Plan and schedule for use in developing the 2050 Metropolitan Transportation Plan (MTP).

Attachments: 2020-09-09 (20-144) 2050 MTP Public Engagement Plan.pdf
2020-09-09 (20-144) 2050 MTP Schedule.pdf

12. US 15-501 Corridor Study (30 minutes) 19-144

Andy Henry, LPA staff

Lynn Purnell, WSP (consultant)

Staff recommends that the MPO Board release the final US 15-501 Corridor Study for public comment (September 9 through October 15). The final Study consists of a summary report, a full report, and a conceptual design map. The purpose of the Corridor Study, which was funded by the DCHC MPO and NCDOT, is to identify multimodal transportation projects for inclusion in the MPO's Metropolitan Transportation Plan (MTP) and Comprehensive Transportation Plan (CTP), and for submittal to NCDOT's project evaluation process, called SPOT, for possible funding in the Transportation Improvement Program (TIP).

The US 15-501 Corridor Study began in 2018 and has completed an extensive public input process. The formal process included a corridor bus tour, three public workshops, several pop-up events in Durham and Chapel Hill, and an online public input map. Study development was guided by a project steering committee that consisted of staff from local governments, transportation related agencies and transit providers. On occasion, staff has presented the project and received input from the MPO's Technical Committee and Board, and local boards and commissions. In early 2019, the Corridor Study development schedule was extended because the Durham-Orange Light Rail Transit project was suspended in March 2019. Most recently, staff and local elected officials met several times to address issues related to the cross-section in Chapel Hill and the proposed local road network at the I-40/US 15-501 interchange area.

Throughout this extensive development process, there have been major interim products, including: a community profile; travel profile; vision and goals; and a set of strategies to address the different travel needs in the corridor. These interim products and additional background information are available on the project web site: <https://www.reimagining15501.com/>. The full report that is being released today presents the highlights from these interim products.

Attachments include:

- The full report - The recommended alternatives and implementation plan begin on page 39.
- Summary report - The recommendations and proposed cross-sections are shown graphically.
- Conceptual design - The scroll map shows a high-level design for the entire corridor; note that there are two scroll maps in this attachment.
- Presentation - Includes the development process and final recommendations.

The proposed public input schedule will be:

- September Board meeting -- Release reports and conceptual design for public comment
- October Board meeting -- Conduct a public hearing

- October 15 - last day to submit public comments
- November Board meeting - Approve final reports and conceptual design

TC Action: Recommended that the MPO Board release the US 15-501 Corridor Study for public comment.

Board Action: Provide comments and release the US 15-501 Corridor Study for public comment.

Attachments: 2020-09-09 (19-144) 15-501 Conceptual Design.pdf
2020-09-09 (19-144) Presentation.pdf
2020-09-09 (19-144) 15-501 Full Report.pdf
2020-09-09 (19-144) 15-501 Summary Report.pdf

13. Environmental Justice Report (5 minutes) 20-143

Anne Phillips, LPA Staff

The MPO Board released the 2020 draft Environmental Justice Report for a 45-day public comment period at its May meeting. The public comment period was advertised in the *Herald-Sun*, the *Triangle Tribune*, on the MPO's website, and on the MPO's Facebook and Twitter pages. So far, no comments have been received from the public.

Staff suggested including an appendix with thresholds for Orange, Chatham, and Durham counties and mapped communities of concern for each county. This addition will allow the counties to use the EJ report methodology for county specific projects, such as Transit Plans. The county level analysis has been added to the appendix.

The MPO Board held a public hearing for the 2020 draft Environmental Justice Report at its August meeting. No members of the public spoke during the hearing.

TC Action: Recommended that the Board adopt the 2020 Environmental Justice Report.

Board Action: Adopt the 2020 Environmental Justice Report.

Attachments: 2020-09-09 (20-143) EnvironmentalJusticeReport2020.pdf
2020-09-09 (20-143) Environmental Justice Report Resolution.pdf

14. Designation of I-885 (10 minutes) 20-158

John Grant, NCDOT

As a Federal Highway Administration (FHWA) requirement, NCDOT is requesting a resolution of support from DCHC MPO regarding the addition of I-885 in Durham County, which would be a continuous highway from I-85 to I-40 (see attached map). Upon completion of the East End Connector in Durham (U-0071), this highway would be designated as I-885. This designation would rename the portion of what is currently NC 147 from the East End Connector to I-40 as I-885. NC 147 south of I-40 would be redesignated as NC 885. NC 147 would remain from the new I-885 through downtown Durham to I-85.

Attached is a draft resolution supporting that designation.

TC Action: Recommended approval of the resolution supporting the designation of I-885 in Durham County with the inclusion of a statement that the new interstate designation does not impede the inclusion of future transit-priority lanes.

Board Action: Adopt the resolution redesignating a portion of NC 147 as I-885, with a statement that this designation should not impede the inclusion of future transit-priority lanes.

Attachments: 2020-09-09 (20-158) I-885 Designation Map.pdf

2020-09-09 (20-158) I-885 Designation Resolution.pdf

15. Air Quality Memorandum of Agreement (5 minutes) [20-163]

Andy Henry, LPA

In accordance with the Clean Air Act, the DCHC MPO is required to develop and adopt a transportation conformity Memorandum of Agreement (MOA) to ensure that the interagency consultation procedures are properly followed for the State Implementation Plan (SIP). The MOA outlines the responsibilities of the various state and federal agencies, the format for coordination meetings, documentation requirements, and the detailed procedures to be followed to determine air quality conformity for the MPO's Metropolitan Transportation Plan (MTP) and Transportation Improvement Program (TIP). This draft MOA is an update to the current MOA, which was adopted in February 2014. Most of the proposed changes are minor such as updating the name of an agency and describing technological improvements to procedures. One notable addition is the requirement to conduct project-level conformity analysis, or so-called "hotspot" analysis.

The EPA designated the Triangle area "attainment" with the 1997 8-hour ozone NAAQS on December 26, 2007. The area will remain under a maintenance plan through December 26, 2027. Currently, the MPO is required to complete "short form" conformity for the 1997 8-hour ozone NAAQS. The TJCOG has coordinated the conformity process for the Triangle region over the last decade. In addition, it is important to have a formal consultation process in place for contingency purposes, should the area be designated for a future NAAQS.

The draft MOA is attached - MPO duties begin in section 2.1, page 4, and the MPO signature is on page 22. Also, a summary of changes to the MOA is attached.

TC Action: Recommended that the Board direct the Board Chair to sign the Air Quality Memorandum of Agreement (MOA).

Board Action: Review the Air Quality Memorandum of Agreement (MOA) and direct the Board Chair to sign the MOA.

Attachments: 2020-09-09 (20-163) AQ MOA-.PDF

2020-09-09 (20-163) AQ MOA List of Changes.pdf

16. Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310) Grant - FFY19 and FFY20 Program of Projects (5 minutes) 20-162

Felix Nwoko, LPA Staff

The Enhanced Mobility of Seniors and Individuals with Disabilities program (Section 5310) provides funds to improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. The DCHC MPO is the Designated Recipient of the funds for the Durham UZA and distributes the funds to eligible sub-recipients through a competitive selection process every other year. A Call for Projects was conducted for $529,150 (in federal funds) which was the total funding apportioned to the Durham UZA for FFY2019 and FFY2020. Applications were reviewed by a staff, and the recommended Program of Projects (PoP) is attached. Once the PoP is approved by the Board, LPA staff will begin the grant application process.

TC Action: Recommend the Board approve the proposed Program of Projects.

Board Action: Approve the proposed Program of Projects.

Attachments: 2020-09-09 (20-162) 5310 POP 5310 2020 Proposed1.pdf

REPORTS:

17. Report from the Board Chair 20-101

Wendy Jacobs, Board Chair

Board Action: Receive the report from the Board Chair

18. Report from the Technical Committee Chair 20-102

Nishith Trivedi, TC Chair

Board Action: Receive the report from the TC Chair.

19. Report from LPA Staff 20-103

Felix Nwoko, LPA Manager

Board Action: Receive the report from LPA Staff.

Attachments: 2020-09-09 (20-103) LPA staff report.pdf

20. NCDOT Report 20-104

Joey Hopkins (David Keilson/Richard Hancock), Division 5 - NCDOT
Mike Mills (Pat Wilson, Stephen Robinson), Division 7 - NCDOT
Brandon Jones (Bryan Kluchar, Jen Britt), Division 8 - NCDOT
Julie Bogle, Transportation Planning Branch - NCDOT
John Grant, Traffic Operations - NCDOT

Board Action: Receive the reports from NCDOT.

Attachments: 2020-09-09 (20-104) NCDOT Progress Report.pdf

INFORMATIONAL ITEMS

21. Recent News Articles and Updates 20-105

Attachments: 2020-09-09 (20-105) news_articles_9-9-2020.pdf

Adjourn

Next meeting: October 14, 9 a.m., Meeting to be held by teleconference.

Dates of Upcoming Transportation-Related Meetings: None

MPO Board Directives to Staff

Active Directives (Complete/Pending/In Progress)

Meeting Date	Directive	Status
11-13-19	Chair Seils will set up a committee, including MPO staff, to address MPO resources and governance.	Underway. The committee will report back to the Board in September 2020.
8-12-20	Arrange for Van Argabright of NCDOT to discuss NCDOT financial situation and release of funds for Locally Administered Projects at a future meeting.	Underway. Van Argabright will attend the September 2020 MPO Board meeting.
8-12-20	Invite an NCDOT representative to inform the Board on the new law regarding road improvements adjacent to school sites.	Underway. Kevin Lacy, the State Traffic Engineer, will attend the October 2020 MPO Board meeting to answer questions regarding road improvements adjacent to school sites.

STIP Reprogramming

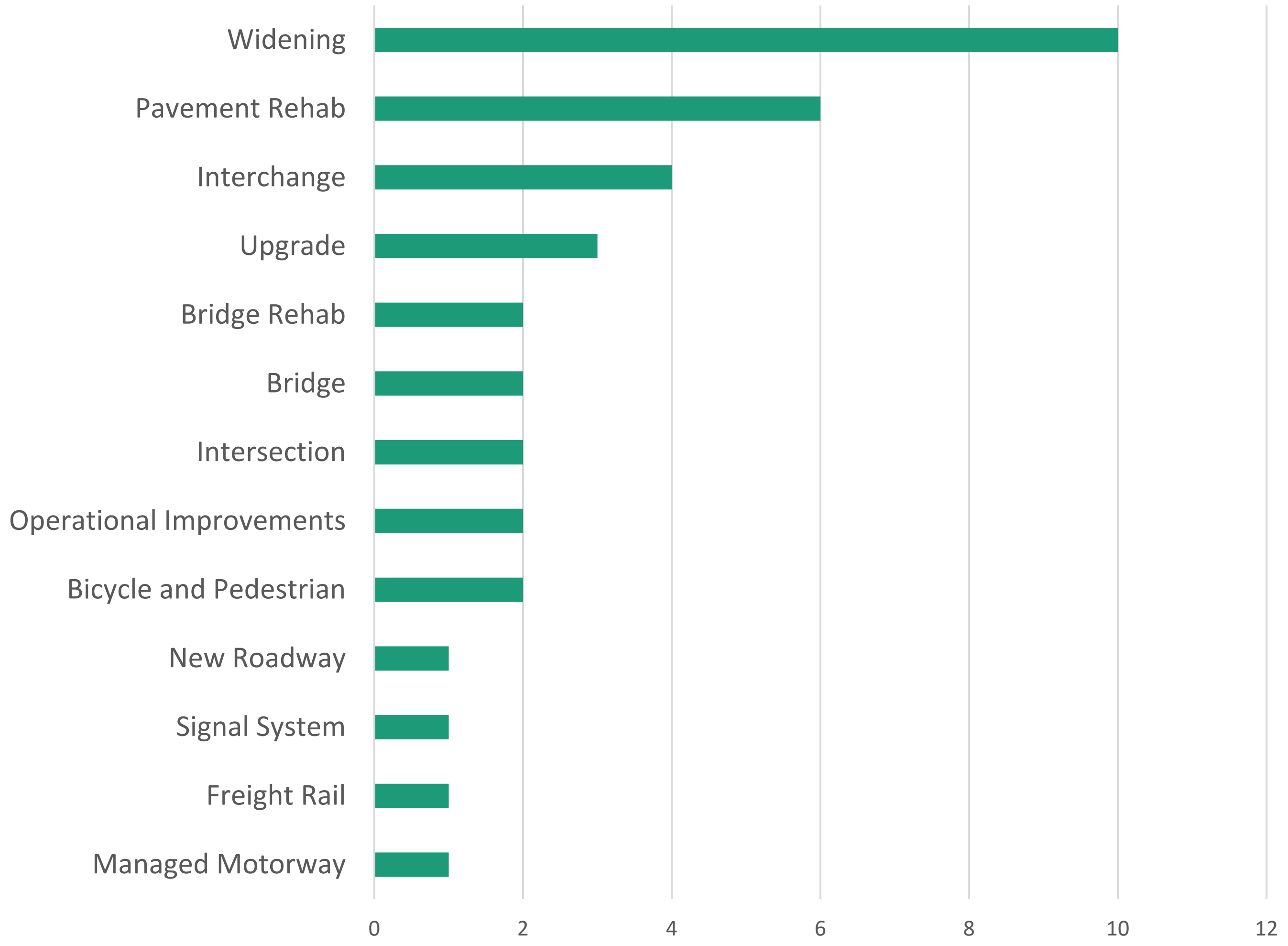
Anne Phillips & Aaron Cain
LPA Staff

DURHAM - CHAPEL HILL - CARRBORO
DCHC
Metropolitan Planning Organization
Planning Tomorrow's Transportation

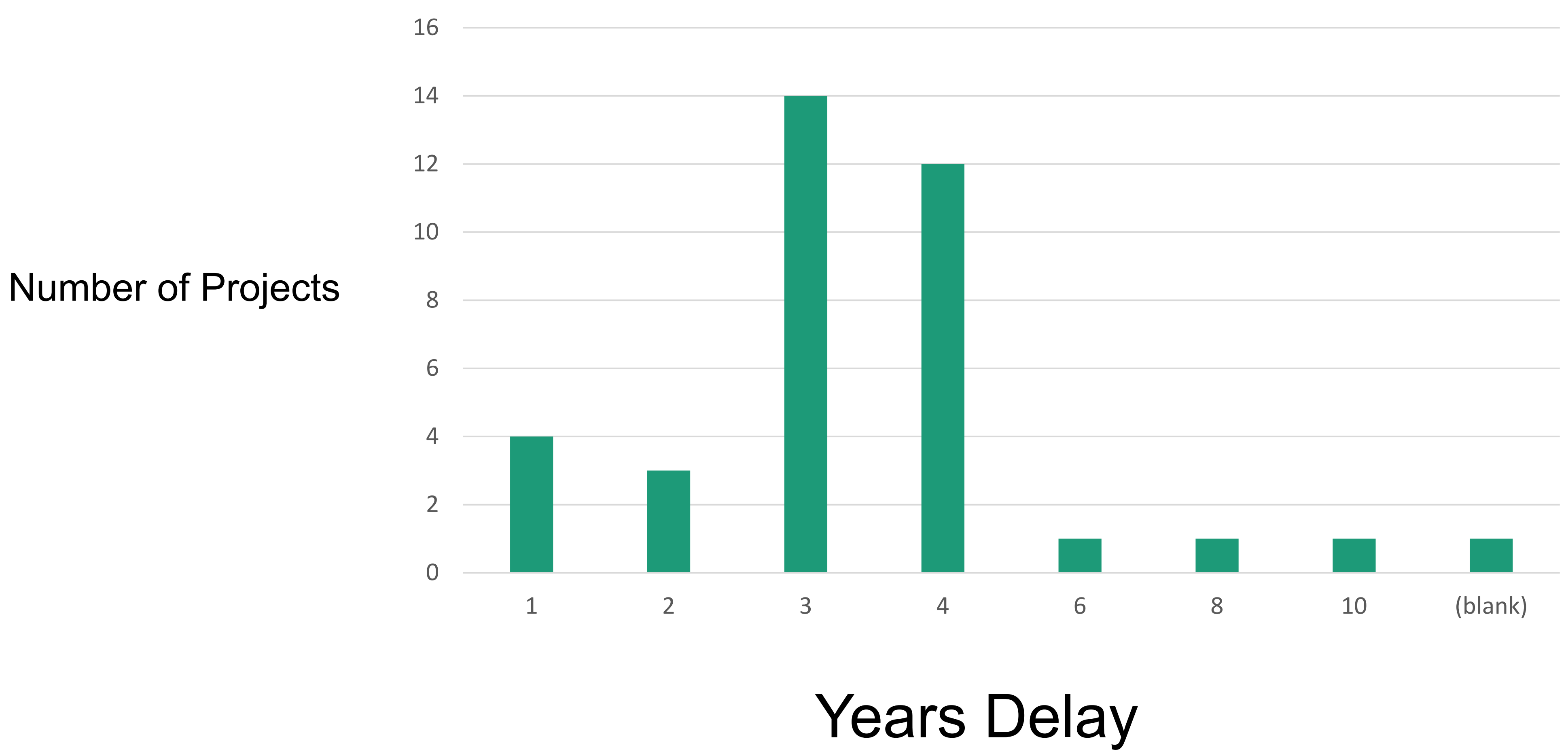
Overview of Projects

37 Projects total

- 2 in Chatham
- 22 in Durham
- 13 in Orange



Project Delay

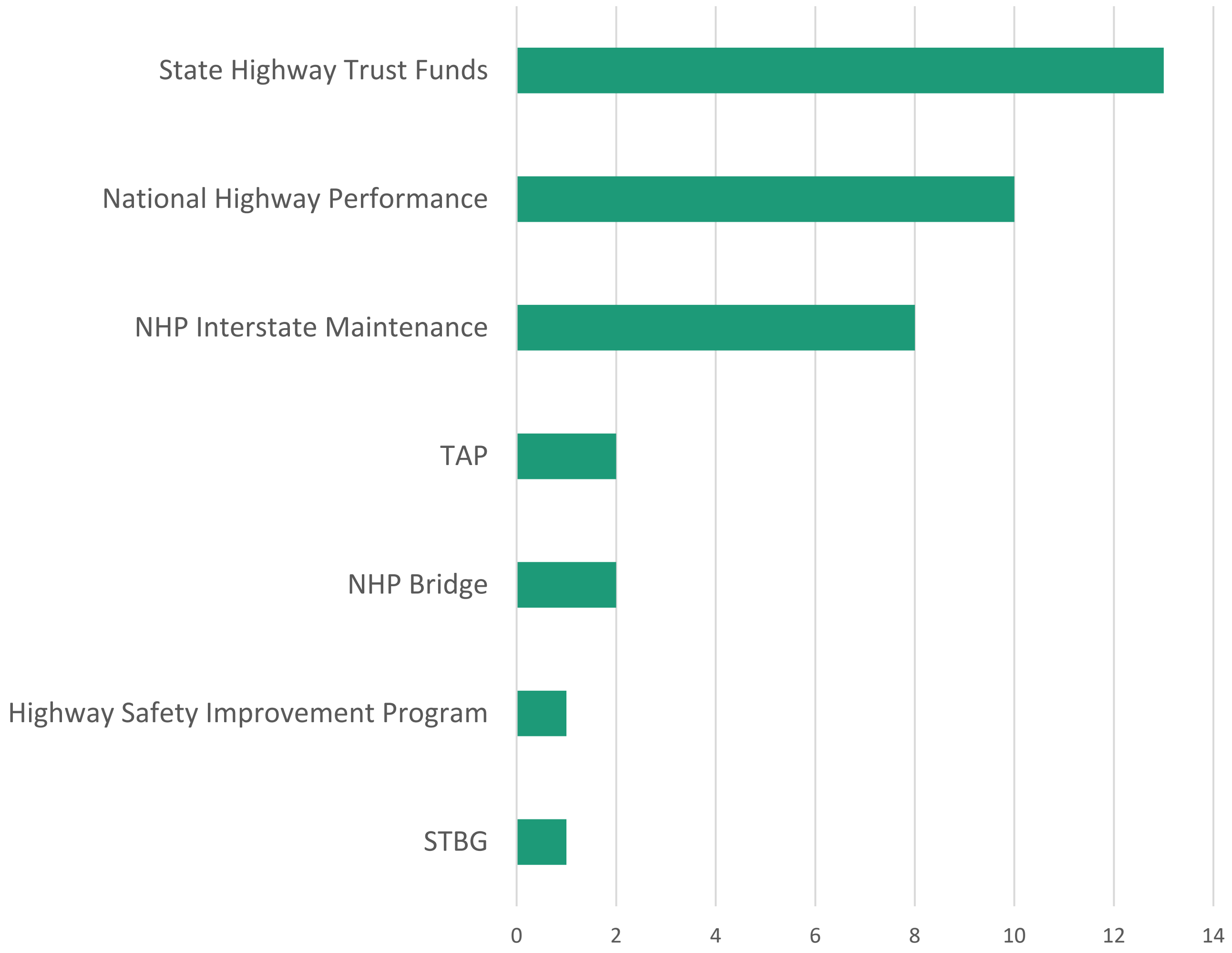


Project Funding

Division 7

Regional 8

Statewide 22



Chatham County

				ROW		CON	
Project Type	TIP Number	Description	Change	Old	New	Old	New
Upgrade	U-6192	US 15/501 convert to superstreet - Smith Level Road to US 64	ROW back 1 year; CON back 3 years	2025	2026	2027	2030
Intersection	R-5825	NC 751/O'Kelly Chapel Road intersection	Back 4 years			PY	2023

PY: Prior Year

FYU: Future Year Unfunded

Durham County

				ROW		CON	
Project Type	**TIP Number**	**Description**	**Change**	**Old**	**New**	**Old**	**New**
Intersection	U-5516	US 501/Latta/Infinity intersection	All phases back 4 years	2021	2025	2023	2027
Interchange	U-5717	US 15/501/Garrett Road interchange	Back 3 years			2023	2026
Interchange	U-5720	US 70 (Miami Blvd)/Sherron Road Upgrade to Controlled-Access Facility and convert Sherron Road intersection to interchange	ROW and CON delayed 3 years	2024	2027	2027	FYU
Widening	U-5774C/F	NC 54 widening - Barbee Chapel Road to I-40; improve I-40 interchange	All phases back 4 years	2025	2029	2029	FYU
New Roadway	U-5823	Woodcraft Parkway Extension	ROW back 9 years; CON back 10 years	2020	2029	2021	2031
Widening	U-5934	NC 147 widening - East End Connector to NC 147	All phases back 4 years	2024	2028	2024	2028
Operational Improvements	U-5937	NC 147 operational improvements - Chapel Hill Street to Briggs Avenue	ROW back 4 years; CON back 3	2023	2027	2027	2030
Widening	U-6021	Fayetteville Road widening - Barbee Road to Woodcroft Parkway	All phases back 8 years	2021	2029	2023	2031

Orange County

				ROW		CON	
Project Type	**TIP Number**	**Description**	**Change**	**Old**	**New**	**Old**	**New**
Bicycle and Pedestrian	EB-5886	Bicycle and Pedestrian improvements on Estes Drive from N. Greensboro St to NC 86	Phase B ROW and Construction moved back 1 year	2020	2021	2021	2022
Widening	I-0305	I-85 widening - Orange Grove Road to Sparger Road	ROW back 4 years; CON back 1	2025	2029	2029	2030
Widening	I-3306	Widen I-40 from I-85 to US 15-501; interchange improvements at NC 86	ROW back 1 year; CON moved up 1 year	2020	2021	2022	2021
Interchange	I-5967	I-85/South Churton interchange	All phases back 3 years	2022	2025	2025	2028
Interchange	I-5984	I-85/NC 86 interchange	Back 3 years	2024	2027	2026	2029
Operational Improvements	R-5821A	NC 54 operational improvements	Back 6 years	2020	2026	2022	2028
Widening	U-5304	US 15/501 widening and operational improvements	Back 3 years	2026	2029	2029	2032/FY U
Widening	U-5774B	NC 54 from US 15/501 to Barbee Chapel Road, upgrade roadway and convert Barbee Chapel Road from intersection to interchange	ROW back 3 years; CON back 1	2025	2027	2029	2030
Widening	U-5845	South Churton Street widening	ROW and CON delayed 4 years	2022	2026	2025	2029

MTP Amendments

TIP Number	Description	MTP Amendment	Horizon Year	Regionally Significant
I-5707	I-40 westbound auxiliary lane from NC 147 to NC 55	**Suggested**. Operational in 2026.	2025	No
U-5717	US 15/501/Garrett Road interchange	**Required**. Operational in 2026.	2025	Yes
U-5823	Woodcraft Parkway Extension	**Suggested**. Operational in 2031.	2025	No
U-5937	NC 147 operational improvements - Chapel Hill Street to Briggs Avenue	**Suggested**. Operational in 2033.	2025	No
I-0305	I-85 widening - Orange Grove Road to Sparger Road	**Required**. Operational in 2033?	2045	Yes
I-3306	Widen I-40 from I-85 to US 15-501; interchange improvements at NC 86	**Required** (NC 86 to US 15-501); 2025 MTP; 2032+ STIP	2025, 2035	Yes

Required = 2045 MTP amendment required because project is regionally significant, and operational year crossed MTP horizon year of 2025, 2035 or 2045

Suggested = 2045 MTP amendment not required because project is not regionally significant, however, MPO can amend MTP so operational year and horizon year do not conflict

DCHC Projects Affected by STIP Reprogramming

Project Type	TIP Number	Location	Description	Change	Old	New	Old	New
Intersection	R-5825	Chatham	NC 751/O'Kelly Chapel Road intersection	Back 4 years			PY	2023
Upgrade	U-6192	Chatham	US 15/501 convert to superstreet - Smith Level Road to US 64	ROW back 1 year; CON back 3 years	2025	2026	2027	2030
Bridge	B-5674	Durham	US 15/501 bridge replacement over Cornwallis Road	All phases back 2 years	2020	2022	2022	2024
Widening	I-5707	Durham	I-40 westbound auxiliary lane from NC 147 to NC 55	All phases back 3 years	2021	2024	2023	2026
Pavement Rehab	I-5942	Durham	I-85 pavement rehab - Midland Terrace to NC 56	Back 3 years			2025	2028
Pavement Rehab	I-5993	Durham	I-40 pavement rehab - US 15/501 to NC 147	Back 4 years			2021	2025
Bridge Rehab	I-5994	Durham	I-40 bridge rehab - US 15/501 to NC 147	Back 4 years			2021	2025
Pavement Rehab	I-5995	Durham	I-40 pavement rehab - NC147 to Airport Blvd	Back 3 years			2022	2025
Pavement Rehab	I-5998	Durham	I-540 pavement rehab - I-40 to US 70	Back 2 years			2023	2025
Bridge Rehab	I-6000	Durham	I-540 bridge rehab - I-40 to US 1	Back 3 years			2022	2025
Managed Motorway	I-6006	Durham	I-40 Managed Motorway from NC 54 to Wade Avenue	ROW back 3 years; CON back 4 years	2025	2028	2025	2029
Widening	I-6010	Durham	I-85 widening - Red Mill Road to Midland Terrace	ROW back 2 years	2027	2029	FYU	FYU
Freight Rail	P-5706	Durham	East Durham Railroad Safety Project (straightening a curve and a combination grade separations and closures)	Construction moved back 1 year			2026	2027
Intersection	U-5516	Durham	US 501/Latta/Infinity intersection	All phases back 4 years	2021	2025	2023	2027
Upgrade	U-5518	Durham	US 70 upgrade - I-540 to TW Alexander Drive	All phases back 4 years	2021	2025	2021	2025
Interchange	U-5717	Durham	US 15/501/Garrett Road interchange	Back 3 years			2023	2026
Interchange	U-5720	Durham	US 70 (Miami Blvd)/Sherron Road Upgrade to Controlled-Access Facility and Convert Sherron Road intersection to interchange	ROW and CON delayed 3 years	2024	2027	2027	FYU
Widening	U-5774C/F	Durham	NC 54 widening - Barbee Chapel Road to I-40; improve I-40 interchange	All phases back 4 years	2025	2029	2029	FYU
New Roadway	U-5823	Durham	Woodcraft Parkway Extension	ROW back 9 years; CON back 10 years	2020	2029	2021	2031

Signal System	U-5868	Durham	City of Durham Signal System Upgrade	Project to use BUILD NC Bonds, under construction				
Widening	U-5934	Durham	NC 147 widening - East End Connector to NC 147	All phases back 4 years	2024	2028	2024	2028
Operational Improvements	U-5937	Durham	NC 147 operational improvements - Chapel Hill Street to Briggs Avenue	ROW back 4 years; CON back 3	2023	2027	2027	2030
Widening	U-6021	Durham	Fayetteville Road widening - Barbee Road to Woodcroft Parkway	All phases back 8 years	2021	2029	2023	2031

August & September Amendments to the STIP: Statewide Projects

TIP Number	Description	Change
M-0414	Municipal Bridge Inspection Program Implementation	Add inspection funds at request of Structures Management Unit
R-5753	Road and bridge improvements to be constructed on transportation facilities that are owned by the federal government	Add Emergency Relief for Federally Owned Roads program funds not previously programmed.
RX-2100	Passenger Rail Crossing Safety Improvement Inventory Program	Add preliminary engineering not previously programmed at request of Rail Division
TC-0005	Statewide 5339(b) Discretionary Grant for Facility Construction.	New project developed for federal funding at the request of NCDOT
TC-0006	Statewide 5339(b) Discretionary Grant for Facility Construction.	New project developed for federal funding at the request of NCDOT
TC-0007	Statewide 5339(b) Discretionary Grant for Facility Construction.	New project developed for federal funding at the request of NCDOT
TC-0008	Statewide 5339(b) Discretionary Grant for Facility Construction.	New project developed for federal funding at the request of NCDOT
TC-0010	Statewide 5339(b) Discretionary Grant for Facility Construction.	New project developed for federal funding at the request of NCDOT
TC-0011	Statewide 5339(b) Discretionary Grant for Facility Construction.	New project developed for federal funding at the request of NCDOT
TC-0012	Statewide 5339(b) Discretionary Grant to Purchase Electric Buses and Charging Stations	New project developed for federal funding at the request of NCDOT
TC-0013	Mobility from All Grant Opportunity from the FTA 5310 Discretionary Grant Awarded by FTA	New project developed for federal funding award. Project added at the request of Integrated Mobility Division
TG-0002	FY21 5307 SBUS Capital	New project developed for federal funding at the request of NCDOT
TG-0004	FY21 5307 SBUS Capital	New project developed for federal funding at the request of NCDOT
TG-0005	FY21 5307 SBUS Capital	New project developed for federal funding at the request of NCDOT
TG-0006	FY21 5307 SBUS Capital	New project developed for federal funding at the request of NCDOT
TM-0010	FY21 5307 Operating Funds	New project developed for federal funding at the request of NCDOT
TM-0012	FY21 5307 Operating Funds	New project developed for federal funding at the request of NCDOT
TM-0014	FY21 5307 Operating Funds	New project developed for federal funding at the request of NCDOT
TM-0015	FY21 5307 Operating Funds	New project developed for federal funding at the request of NCDOT
TM-0020	FY21 5307 Operating Funds	New project developed for federal funding at the request of NCDOT
TM-0022	FY21 5307 Operating Funds	New project developed for federal funding at the request of NCDOT

U.S. Department of Transportation

Federal Highway Administration

Program Review

Federal Highway Administration

Federal Transit Administration

Durham, Chapel Hill, Carrboro (DCHC) Metropolitan Planning Organization (MPO)

FINAL REPORT

July 12, 2019

U.S. Department of Transportation
Federal Highway Administration

Table of Contents

U.S. Department of Transportation
Federal Highway Administration

U.S. Department of Transportation
Federal Highway Administration

Executive Summary

Purpose

Pursuant to 23 United States Code (USC) (i)(5) and 49 USC 1607, the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) must certify jointly the metropolitan transportation planning process in Transportation Management Areas (TMAs) at least once every four years. The Durham – Chapel Hill - Carrboro (DCHC) Metropolitan Planning Organization (MPO) is a TMA, a Metropolitan Planning Organization (MPO) with a population of at least 200,000 as defined by the United States Census Bureau.

Methodology

The review consisted of a desk audit, a public comment session conducted on Monday, May 20, 2019, and an on-site review also conducted on May 20, 2019. In addition to the formal review, routine oversight, including attendance at meetings, day-to-day interactions, review of work products, and working with the MPO on past certification review recommendations and corrective actions provide a major source of information upon which to base certification findings. After the on-site review is complete, a report is written to document the findings.

Statement of Finding

The FHWA and the FTA find that the metropolitan transportation planning process substantially meets Federal requirements and jointly certify the planning process.

Findings

The review identified four commendations and two recommendations. No corrective actions were issued.

Commendations:

- The MPO is commended for placing special emphasis on resiliency in its MTP.
- NCDOT is commended for their coordination with the MPO during the SPOT process, during TC meetings, and in helping the MPO solve its transportation issues.
- The MPO is commended for its website, which is public-facing, and contains readily accessible and current data.
- We commend the MPO for developing EJ metrics and for conducting detailed draft analyses.

U.S. Department of Transportation
Federal Highway Administration

Recommendations:

- It is recommended that the MPO seek best practices to improve public involvement efforts during MTP development.
- We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern.

The Durham – Chapel Hill - Carrboro Metropolitan Planning Organization's metropolitan transportation planning process is certified for four years from the date of this Report.

Introduction

Purpose

The purpose of the Certification Review is to assess the extent of compliance with the Federal metropolitan transportation planning requirements, to recognize noteworthy practices, to identify problem areas, and to provide assistance and guidance, as appropriate. The Review consisted of a desk audit followed by discussions on a variety of transportation planning topics with State and local transportation officials directly involved in the MPO's highway and transit planning activities. The Review, which was held at City Hall in Durham, included a public involvement meeting on Monday, May 20, 2019, to provide the public an opportunity to offer comments on the MPO's metropolitan transportation planning process. No participants attended the public meeting. This report contains the Review Team's findings.

Scope

Pursuant to 23 USC (i)(5) and 49 USC 1607, the FHWA and the FTA must certify jointly the Federal metropolitan transportation planning process in Transportation Management Areas (TMAs) at least once every four years. A TMA is an urbanized area with a population of greater than 200,000, as defined by the United States Census Bureau. Certification reviews generally consist of three primary activities: 1) an extensive desk audit consisting of a review of planning products, 2) an on-site visit, and 3) preparation of a certification review report, which summarizes the review and contains findings, including commendations, recommendations, and corrective actions. Certification reviews address compliance with federal regulations and challenges, successes, and experiences of the cooperative relationship between the MPO, State Department of Transportation (DOT), and transit operators, who conduct the Continuing, Cooperative, and Comprehensive (3C) metropolitan transportation planning process. Joint FHWA/FTA certification review guidelines afford agency reviewers flexibility in designing the review to reflect local issues and circumstances. Consequently, the scope of the certification review reports varies from TMA to TMA.

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Methodology

The FHWA North Carolina Division Office and the FTA Region 4 Office conducted a joint Certification Review of the Durham – Chapel Hill - Carrboro MPO's metropolitan transportation planning process, which included a site visit on May 20, 2019. The review was conducted in accordance with 23 Code of Federal Regulations (CFR) Part 450 and 49 CFR Part 613, which require FHWA and FTA to review and assess jointly the metropolitan transportation planning process for all TMAs at least once every four years. According to the 2010 Census, the DCHC MPO contained a population over 200,000, which makes it subject to the TMA transportation planning requirements.

The Federal Review team followed the guidance entitled, "A Risk-Based Transportation Management Area Planning Certification Review," "TMA Certification Review State-of-the-Practice Review Report," and the TMA Certification Process Field Handbook in conducting the Review. FHWA staff worked with the MPO to develop a schedule for the Certification Review that was compatible with ongoing workloads and the meeting schedules for the MPO's Technical Committee (TC) and MPO Board. An extensive desk audit of the MPO's planning documents was conducted prior to the on-site review. Advertisements for the certification review were posted in newspaper and public service announcement outlets. A public comment period was advertised as a part of the process for FHWA staff to receive comments. The topics addressed in this report document the regulatory basis, status, and findings. These terms are defined below.

Regulatory Basis – Defines where information regarding each planning topic can be found in the Code of Federal Regulations (CFR) and/or the United States Code (USC) – the "Planning Regulations" and background information on the planning topic.

Status – Defines what the Transportation Management Area (TMA) is currently doing regarding each planning topic.

Findings – Statements of fact that define the conditions found during the review, which provide the primary basis for determining commendations, recommendations, and corrective actions for each planning topic.

Commendation – A process or practice that demonstrates innovative, highly effective procedures for implementing the planning requirements. Examples include elements addressing items that have frequently posed problems nationwide, and significant improvements and/or resolution of past findings.

Recommendation – Addresses technical improvements to processes and procedures that, while somewhat less substantial and not regulatory, are still significant enough that FHWA and FTA are hopeful that State and local officials will take an action. The expected outcome is change that would improve the process, though there is no Federal mandate, and failure to respond could, but not necessarily, result in a more restrictive certification.

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Corrective Action – Indicates a serious situation that fails to meet one or more requirements of the metropolitan transportation planning statutes and regulations, thus seriously impacting the outcome of the overall planning process. The expected outcome is a change that brings the metropolitan planning process into compliance with a planning statute or regulation; failure to respond will likely result in a more restrictive certification.

Team Members

The Federal Review Team consisted of the following individuals:

- Mr. Bill Marley, Transportation Planner, FHWA, NC Division
- Mr. Joe Geigle, Congestion Management Engineer, FHWA, NC Division
- Ms. Lynise DeVance, Civil Rights Program Manager, FHWA, NC Division
- Mr. John Crocker, Community Planner, FTA, Region 4

Other participants consisted of staff from the DCHC MPO, the North Carolina Department of Transportation (NCDOT), Go Triangle, and the Triangle J Council of Governments (TJCOG), including:

- Mr. Felix Nwoko, DCHC MPO
- Mr. Andy Henry, DCHC MPO
- Ms. Meg Scully, DCHC MPO
- Mr. Kosok Chae, DCHC MPO
- Mr. Dale McKeel, DCHC MPO
- Mr. Aaron Cain, DCHC MPO
- Ms. Julie Bogle, NCDOT Transportation Planning Branch
- Mr. Jay Heikes, Go Triangle
- Mr. John Hodges-Copple, TJCOG

Findings from Previous Certification Review (2015)

The previous DCHC MPO Certification Review Report was issued on July 24, 2015. It contained six Commendations and six Recommendations. All Recommendations, listed below, have been addressed.

- It is recommended that the Raleigh-Durham-Chapel Hill (Triangle Area) continue to consider transportation conformity as they work on upcoming Metropolitan Transportation Plan (MTP) updates and beyond. As the project lists are prepared, they should be grouped by horizon years and projects should be identified as

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regionally significant, not regionally significant, or exempt. Doing this extra work will help keep the Triangle Area prepared for future conformity work in the event the area is designated under a future new National Ambient Air Quality Standard (NAAQS).

The DCHC MPO has continued the practice of identifying regionally significant projects and grouping their projects by horizon year. For the 2045 MTP update, completed on March 14, 2018, an unofficial conformity regional emissions analysis was completed even though it was not required since the Triangle Area was attainment for all NAAQS.

- It is recommended that the DCHC MPO consider all transportation modes in its federal metropolitan transportation planning activities, including highways, especially regarding the efficient intrastate and interstate movement of people and goods through the MPO.

  The DCHC MPO MTP and TIP include projects on all major roadways as well as many projects on non-motorized modes of transportation.

- It is recommended that the DCHC MPO separately identify African Americans since they are the largest Environmental Justice (EJ) population and racial minority within the DCHC MPO boundary. As a best practice, the MPO may also want to present individual raw data for each racial minority within the MPO boundaries for information purposes, keeping in mind that the only racial minority to be mapped and analyzed separately would be African Americans, due to their significant size.

  The DCHC MPO and CAMPO completed additional Environmental Justice work. The MPO's UPWP details this work and level of effort. A plan of action was developed and shared with FHWA.

- It is recommended that regarding public involvement and ensuring participation from all EJ populations that the MPO be more deliberate in seeking and documenting representatives from all its EJ populations to include on mailing lists, focus groups, advisory committees, etc.

  The DCHC MPO and CAMPO completed additional Environmental Justice work. The MPO's UPWP details this work and level of effort. A plan of action was developed and shared with FHWA.

- It is recommended that the MPO include language in its Public Involvement Plan (PIP) objectives that specifically target EJ populations.

  The DCHC MPO and CAMPO completed additional Environmental Justice work. The MPO's UPWP details this work and level of effort. A plan of action was

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developed and shared with FHWA.

- It is recommended that the DCHC MPO use measured data such as travel time and travel speeds in place of modeled/estimated measures such as Level of Service (LOS) and Volume to Capacity Ratio (V/C) to measure congestion.

  The DCHC MPO's current model accounts for travel time and travel speeds.

General Comments

The review team discussed the risk-based approach to certification reviews, emphasizing the desk audit and the abbreviated on-site review. The review team also discussed new planning requirements under the Fixing America's Surface Transportation (FAST) Act legislation, which includes planning factors and Transportation Performance Management (TPM).

Following this discussion, there was a brief question and answer session in which MPO staff asked questions of the review team and offered comments on the Federal metropolitan transportation planning requirements and processes.

Organizational Structure and Policy Board Involvement

Regulation: 23 CFR 450.104
23 CFR 450.310

Status

The MPO Lead Planning Agency (LPA) serves as staff to the MPO. The LPA is housed in the City of Durham's Department of Transportation, located in City Hall in Durham. The MPO manages the metropolitan transportation planning process required by Federal law. The MPO plans for the area's surface transportation needs, including highways, transit, bicycle, and pedestrian facilities. MPO priorities include: 1) promoting the safe and efficient management, operation, and development of transportation systems; 2) serving the mobility needs of people and freight; 3) fostering economic growth and development; and 4) minimizing the negative effects of transportation, including air pollution.

The MPO serves the City of Durham, Durham County, Town of Chapel Hill, Town of Hillsborough, Town of Carrboro, and portions of Orange County and Chatham County. The MPO voting structure is highlighted in a Memorandum of Understanding (MOU), documented in its Bylaws, and displayed on the MPO's website, www.dchcmpo.org. The MPO designation has not changed since the initial designation by the Governor. In March 2014, the MOU was

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updated by the MPO Board and GoTriangle (formerly Triangle Transit Authority (TTA)) became a voting member of the MPO Board. No proposed changes to the MOU are currently envisioned.

The MPO's Board is the MPO's policy board, as prescribed in the MPO's MOU and By-Laws. The Board has a key role in making decisions about public investment in transportation services, infrastructure, and planning within the region, and in communicating those decisions to its member agencies. The Board is comprised of the following elected officials:

- City of Durham – 2 members, weighted votes = 16
- Town of Chapel Hill – 1 member, weighted votes = 6
- Town of Carrboro – 1 member, weighted votes = 2
- Town of Hillsborough – 1 member, weighted votes = 2
- Durham County – 1 member, weighted votes = 4
- Orange County – 1 member, weighted votes = 4
- Chatham County – 1 member, weighted votes = 2
- NCDOT – 1 member, weighted vote = 1
- GoTriangle – 1 member, weighted vote = 1
- FHWA and FTA are ex-officio non-voting members

The MPO's Technical Committee (TC) is comprised of technical staff from each MPO member jurisdiction or agency. The TC provides general and technical review, guidance, and coordination of the transportation planning process. The TC and TAC meet monthly. All TC and TAC meetings are open to the public. Attendance is good and a quorum is always met. Proxies are seldom used. The Board operates efficiently and effectively. In general, they do not stall or otherwise delay important actions. Weighted voting is permitted but is seldom invoked. There have been no issues with the concept of weighted voting; however, this is an issue in some MPOs in North Carolina.

Metropolitan Planning Area (MPA) Boundaries

Regulation: 23 CFR 420.109
23 CFR 450.312
23 CFR 450.314
23 CFR 450.321

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Status

The MPO's Metropolitan Planning Area boundary (MPA), based on the 2010 United States Census, was adopted by the MPO on November 14, 2012, and signed by the Governor on June 14, 2014. In 2014, GoTriangle (formerly the Triangle Transit Authority) was granted voting membership status on the MPO Board.

Geographical portions of the MPO are shared with the adjacent Capital Area Metropolitan Planning Organization (CAMPO), which is also a TMA. A small portion of the MPO's Urbanized Area Boundary (UZA) lies within the CAMPO MPA. Similarly, a small portion of CAMPO's UZA lies within the MPO MPA. By letters of agreement, the two MPOs agreed to be responsible for planning within their respective UZAs.

Possible future MPO MPA expansions include Pittsboro in Chatham County to the south, and Butner in Granville County to the northeast. A renegotiation of the boundary agreement with the Burlington-Graham MPO to the west is possible. Also, as the municipalities of Cary and Apex annex into Chatham County, a renegotiation of the boundary agreement with the Capital Area MPO may be necessitated. Factors in determining future expansions include rapid development and urbanization potential within the next 20 years, population density, and input from local jurisdictions. There are no Federal Lands or Indian Tribal lands within the MPA.

Agreements and Contracts

Regulation: 23 CFR 450.314

Status

Cooperative agreements have been established between the State DOT, the MPO, public transit operators, and the North Carolina Department of Environment and Natural Resources (NCDENR). Memorandums of Agreement (MOAs) and Memorandums of Understanding (MOUs) exist between various parties for purposes of statewide inter-agency consultation, pass-through agreements between NCDOT and the LPA, and between the LPA and sub-recipients. The MPO has agreed to accept NCDOT's targets with respect to PM1, PM2, and PM3.

Unified Planning Work Program (UPWP) Development

Regulation: 23 CFR 450.308
23 CFR 420.111

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Status

The MPO's UPWP is a product of a cooperative approach to development of the region's transportation program. Most of the work tasks and products in the UPWP are completed on time, despite the changing schedules and priorities of the various Federal, State, and local agencies. The UPWP tasks are the vehicle for implementing the MTP goals, policies, and recommendations. UPWP emphasis areas include proactive public outreach and dissemination, integration of land use in transportation planning involving low income and minority populations, consideration of safety and security, and environmental and air quality factors.

UPWP activities are developed, selected, and prioritized with the input of the MPO member jurisdictions based on the approved Prospectus. Staff identifies, selects, and prioritizes the work tasks in the UPWP that need to be and can be accomplished. Planning priorities facing the metropolitan area, and all metropolitan transportation and transportation-related air quality planning activities anticipated within the timeframe (one or two years), are typically included in the required narrative text for each work task.

The UPWP development process typically begins in late fall or early winter each year. NCDOT, transit operators, and member jurisdictions are consulted through subcommittee meetings and the TC to identify projects, studies, and work tasks that need to be included in the UPWP for the upcoming fiscal year. Their involvement in the development of emphasis areas supports and adheres to Federal requirements and meets the MPO's MTP and other planning objectives. The NCDOT Transportation Planning Branch (TPB) and Public Transportation Division (PTD) calculate and inform the MPO what Section 104(f) Planning (PL) funds and Section 5303 transit planning funds are available for programming. The total amount of planning funds plus the required 20 percent local match are then used to develop a budget for the MPO staff to pay salaries and benefits, plus operations charges. STPG-DA funds are also used to fund salaries and staff operations. Reporting and invoicing narratives are submitted to NCDOT by task code. The budget is then utilized to identify what types and how much work can be accomplished in the fiscal year. The UPWP contains enhanced funding tables to track obligations in real time. The draft UPWP is typically released in December. It is then reviewed by the member jurisdictions and sent electronically to NCDOT's TPB and PTD for review and comment. A public hearing is held prior to Board approval. Any comments or changes are then incorporated into a final UPWP, which is approved by the TC and Board in May. NCDOT provides the MPO a final letter of approval by June.

The UPWP is broken into three major components: 1) routine tasks, 2) major emphasis areas, and 3) regional activities such as maintenance of the Triangle Regional Model (TRM). There is a strategic linkage between the UPWP and the implementation of the required 3C planning process as well as the MTP, TIP, Environmental Justice (EJ), air quality, etc. The UPWP accounts for performance measures through the execution of MTP and CMP updates, transportation needs studies, and transit and bicycle and pedestrian plans. The MTP describes the MPO's vision while the UPWP identifies proposed activities to help achieve desired outcomes.

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UPWP amendments generally follow the same sequence as the development process beginning with subcommittee review, TC and Board approval, then NCDOT and FHWA approval. Amendments are processed by the LPA on an annual basis. They typically occur in late winter or early spring to adjust spending levels in the various UPWP funding categories.

NCDOT recently changed its Planning (PL) funds distribution formula. Carryover funds are no longer allowed. Instead, these funds are redistributed to the State's 19 MPOs with the intent that they be obligated where projects can receive the required local 20 percent match.

Metropolitan Transportation Plan (MTP) Development

Regulation: 23 CFR 450.322
23 CFR 450.324
23 CFR 450.306

Status

DCHC and CAMPO adopted jointly an MTP extending to 2045. It incorporates Performance Management (PM) PM1, PM2, and PM3, and complies with the new planning factors. The planning factors serve as a basis for identifying projects for inclusion in the MTP and TIP. The MPO placed special emphasis on resiliency in the 2045 MTP. It encompasses both MPO's Metropolitan Area Boundaries (MABs).

The MPO, NCDOT, and transit operators practice a participatory and cooperative 3C planning process. Coordination of statewide and metropolitan planning occurs through regular subcommittee meetings, collaborative planning for MTP and Comprehensive Transportation Plan (CTP) projects, inter-agency air quality meetings on the Triangle Regional Model (TRM), regional freight, and regional incident management initiatives. DCHC, CAMPO and NCDOT are finishing a joint Toll Study that should be approved by October 2019,.and are working on a joint ITS plan. The Triangle J COG coordinates the MTP with CAMPO, which strengthens the MTP. There is a joint staff meeting of the two MPOs every other week, and the two MPO Boards meet twice a year. Regional Intelligent Transportation System (ITS) Architecture recommendations are reflected in the MPO planning process and the MTP. MTP and TIP ITS projects are derived from the Regional ITS Architecture and Deployment Plan. The Regional ITS Architecture tool is used for the evaluation of MTP and TIP ITS projects.

The MTP is multimodal. Funding for highway projects totals 58% while non-motorized projects total 42%. The highway element of the MTP includes contains projects on all major highways within the MAB. A significant amount of non-highway investment is earmarked for bus maintenance, bicycle facilities, and sidewalk maintenance and resurfacing. Pedestrian walkways and bicycle facilities are major components of the MTP. Pedestrian and bicycle facilities are an integral part of the MPO's goal of linking transportation and health issues. Sidewalk, bicycle,

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and transit projects figure prominently in the MPO's overall transportation initiatives and investments due to the MPO's demographics, which reflect a large numbers of students and persons over 65 years of age.

Consultation is carried out with State and local agencies responsible for land use management, natural resources, environmental protection, conservation, and historic preservation through the establishment of a demographic forecasting group and the development of a regional land use scenario tool. The MPO meets with resource agencies to apprise them of assumptions and alternatives being evaluated in the MTP process.

The MTP is financially constrained and is well supported by many different sources of revenue. The MPO developed a financial plan that demonstrates how the adopted MTP can be implemented. It contains cost estimates, analysis of cost components, both traditional and non-traditional revenue forecasts, prioritization, and fiscal constraint.

The MPO identifies transportation and services to determine which projects should be included in the MTP through evaluating deficiencies in the transportation system, gathering project specific studies, reviewing community needs, and requesting and determining the feasibility of obtaining funding over the horizon year timeframe.

The MTP is coordinated with the Triangle Regional Model for purposes of Air Quality Conformity. The Triangle Regional Model is supported by both MPOs, NCDOT, and the transit operators. Community Viz is used to plot Socioeconomic (SE) data. Demographic, socioeconomic, and land use data are inputs in the Triangle Regional Model (TRM), a travel demand forecasting tool for the region. These data are also useful in assessing trip generation and modal choice models. Two alternative scenarios are provided by the MTP: one is based heavily on transit; the other is based heavily on single occupancy vehicles (SOV). The MTP also contains two different land use scenarios.

The MPO provides early, proactive, and meaningful public engagement during various stages of the MTP development. Public involvement is incorporated during MTP development via the following means: 1) implementation of the Public Involvement Plan; 2) public notices via email, posters at public sites, including printed material in the MPO's office, on buses, and the MPO website; and 3) public meetings at transit accessible sites. Project maps are provided online. Public workshops are held when the MTP goals, objectives, and performance measures are developed. Public participation in the MTP development has been less than anticipated. The MPO noted that unless there is a controversial project, the public shows no appreciable interest in the MTP. NCDOT's Transportation Planning Branch; its Division 5, 7, and 8 Offices; and the MPO's transit operators all evaluate the MTP, and collaboratively update its plans and projects. The public involvement process complies with Title VI and the Executive Order on Environmental Justice.

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Distribution of impacts to different socioeconomic and ethnic minorities is identified and measured through various means. Block group data from the 2010 United States Census was used to establish areas of low-income and minority population concentration.

MPO staff coordinates with their NCDOT Transportation Planning Division (TPD) coordinator, and communicates with other NCDOT departments, including Program Development and the Public Transportation Division. Agreements are in place with transit operators.

Commendation:

The MPO is commended for placing special emphasis on resiliency in its MTP.

Recommendation:

It is recommended that the MPO seek best practices to improve public involvement efforts during MTP development.

Financial Planning

Regulation: 23 CFR 450.324
23 CFR 450.326

Status

The MPO's financial plan is included as an element in the overall MTP. Available financial resources are listed and described in the TIP, and are incorporated into the MTP. The MTP is based on reasonably expected financial resources, and identifies other funding mechanisms where a shortfall exists. The MTP uses the best available data provided by NCDOT projections based on the Statewide Transportation Improvement Program (STIP) and other State funding sources. MTP updates involve trend analysis, updated project costs, and available State and Federal revenue forecasts.

The MTP process typically includes a review of project cost estimates obtained from NCDOT. Project cost estimates are updated for MTP projects that are not yet in the TIP. Such estimates are revised per any scope changes. Costs are reviewed and updated for MTP projects that are in the TIP based on TIP cost changes. Where warranted and in consultation with NCDOT, TIP cost assumptions may be revised for projects where the TIP estimate appears outdated. Assumptions and data sources for each revenue source are documented in the financial plan. A set of financial assumptions and calculations are established that guide the general approach to forecasting future revenues, and are included in the plan.

The MPO maintains a positive relationship with its member jurisdictions and manages its projects well. Financial information is developed in cooperation with NCDOT and MPO

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member jurisdictions and agencies. Staff from the TJCOG worked with both the DCHC and CAMPO MPOs to develop the financial plan. Revenues are forecast by source, and the MTP document provides assumptions for each. Financial analysis for roadways, transit, rail, bicycle, and pedestrian investments are included in MTP's financial plan chapter. Both existing and forecasted numbers for costs and revenues are evaluated.

NCDOT Powell Bill funds are used for operations and maintenance of the transportation system, and are distributed twice a year. Transportation Alternatives Program (TAP) funding is used for non-highway bicycle and pedestrian projects, but is not enough to do meaningful projects. The MPO is revisiting its bicycle and pedestrian allocations since it is difficult to build a regional network with limited funding. The MPO has several special studies ongoing, including corridor studies on US15/501, NC 98, and NC 54. NCDOT has been helpful in identifying supplemental funds to cover cost overruns associated with TAP projects. Surface Transportation Program – Direct Allocation (STP-DA) funds are programmed further out to minimize any lags in obligating them. The MPO uses almost all its funding, including PL funds.

Where appropriate, new revenue sources for the MTP and TIP are identified in consultation with the MPO partners. Typically, such sources are identified in a plan, a policy, a forecast, or a proposal from a member agency. For example, the MTP financial plan involves a review and consideration of the NCDOT's current long-range revenue forecast. However, this forecast merely extrapolates existing revenue streams into the future. The MTP documents assumptions for each revenue source. To ensure the TIP financial plans are consistent with the STIP, the MPO requests a copy of the most recent version of the STIP when updating the TIP.

Project consistency between the TIP and MTP is established at the outset. Financial plan consistency is a function of that. The MPO consults with NCDOT to generate the latest project cost estimates, and to ensure that the TIP financial plan is consistent with the STIP. NCDOT provides the MPO trend analysis data to assist TIP development. Ratios and percentages are applied to base numbers and balanced against project cost estimates. The TIP and STIP are required to match, so they must be consistent with each other. NCDOT provides tables of expenditures by funding categories, which assists in preparing conceptual project estimates. Data are adjusted for time (schedule), location, and other project specific conditions on an as needed basis. Generally, an amount of 10-20 percent is used for contingencies when estimating a project cost. Usually, when the TIP is being generated, comparisons of older estimated figures are compared with current ones. Estimates are sometimes updated when project scope changes significantly, or a significant change in the delivery of the project is anticipated. When new estimates are known, they are updated on an ongoing basis as project development progresses.

The MPO follows NCDOT's thresholds for determining an amendment versus an administrative modification.

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Air Quality (AQ) and Transportation Conformity

Regulation: 23 CFR 450.314
23 CFR 450.324
23 CFR 450.322
23 CFR 450.326
23 CFR 450.328
23 CFR 450.336

Status

The Triangle Area, including both the DCHC and CAMPO MPOs, is in attainment for the Carbon Monoxide (CO) and ozone standards. However, transportation conformity is still required for the TIP, MTP, and project actions based on a February 2018 federal court case involving the EPA and the 1997 Ozone NAAQS. The DCHC and CAMPO MPOs work together with the TJCOG to produce the required conformity determination report on ozone emissions, ozone, CO, particulate matter, and greenhouse gases as part of the 2045 MTP performance measure process.

Transportation Improvement Program (TIP) Development

Regulation: 23 CFR 450.316
23 CFR 450.324
23 CFR 450.326
23 CFR 450.328
23 CFR 450.332
23 CFR 450.334

Status

The MPO TIP is typically developed every two years on a schedule that is compatible with STIP development. It is a consensus based process whereby the MPO, NCDOT, and transit operators cooperatively develop the TIP through subcommittee meetings and technical meetings. The MPO works with the NCDOT STIP Unit, Transportation Planning Division (TPD), PTD, and Bicycle and Pedestrian Unit during the preparation of the draft TIP and STIP. The MPO provides a prioritized list of projects to the NCDOT with relevant local data for inclusion in the Strategic Prioritization Office of Transportation (SPOT) process. The SPOT process involves a data driven quantitative scoring of projects based on the Strategic Transportation Investments (STI) law. The North Carolina State Legislature passed a law requiring each MPO to develop

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and approve a local prioritization process. The NCDOT SPOT Office provides oversight of this legislation. The draft STIP is released and the MPO provides a local version of the document for the public review. Both the NCDOT and the MPO provide opportunities for the public to make comments on the draft STIP and TIP via public hearings. The draft STIP is due to be released in August 2019.

The TIP serves as a management tool for implementing the MTP by including the policies, investment choices, and priorities identified in the MTP. The MTP's transportation investments between highway and non-highway projects are split approximately 58% highway and 42% non-highway, whereas the STI mode investment split is approximately 75% highway and 25% non-highway. There is a transit tax in Orange and Durham Counties for transit projects, which funds the local match. The MPO believes that the TIP and STIP should better reflect the MPO's MTP priorities, and continues to have dialogue with NCDOT on this matter. The SPOT funding methodology does not allow for projects in the TIP to be implemented as planned since it does not afford the same weight to non-highway projects as it does to highway projects. As a result, the MPO uses STP-DA funding for them. The MPO also disagrees with NCDOT's policy to generally not maintain sidewalks and to not include them in its bridge designs. Other concerns include lack of funding for non-highway projects, and difficulty small municipalities have in providing match requirements. Despite differing opinions, the MPO and NCDOT Divisions work together well to assign points to projects when submitting them to the SPOT office. The MPO has had success with their current project ranking and selection methodologies.

The MPO's TIP development process has improved significantly primarily due to the recently created web application that allows for real-time online management of transportation funding and projects by the MPO. Recent years have seen better coordination from NCDOT during the SPOT process, increased NCDOT Division participation during TC meetings, and a more proactive approach from NCDOT to solving the MPO's transportation issues. The TC and Board appreciate this.

The MPO maintains a web-based TIP application process to streamline the amendment process. The TIP amendment and modification processes are also working better now that NCDOT submits their proposed amendments within the MPO area to the MPO prior to taking their official action. The NCDOT may ask the MPO to modify and/or amend the TIP based on project scope or time changes, and the MPO may modify or amend the TIP for time, project scope, and/or funding changes. The MPO's TIP amendment procedures define major and minor amendments, what triggers an amendment, and public involvement requirements. The amendment is presented at one Board meeting for information purposes, and is generally brought back for approval at the following meeting. Resolutions and action items are sent to the NCDOT for final approval by the North Carolina Board of Transportation, or vice-versa. If the MPO wishes to modify or amend the TIP, it contacts NCDOT to discuss the proposal. The MPO provides background information on amendments to the TC and Board, and approval by resolution is requested. This documentation is forwarded to NCDOT for final approval.

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The MPO's project selection process begins with a call for projects from member jurisdictions. The MPO's project ranking process closely mirrors that used by NCDOT. The MPO developed an STI and TIP prioritization methodology, which was subsequently endorsed by the Board and approved by NCDOT. It focuses on congestion, safety, feasibility, intermodal and multimodal considerations, local funding, and land use compatibility. An initial list of projects is evaluated for need, readiness, and funding feasibility. They are then ranked using the MPO's prioritization process.

The MPO ranks and prioritizes TIP projects using an established methodology, and Surface Transportation Program – Direct Allocation (STP-DA) and Transportation Alternatives Program (TAP) project ranking and selection criteria. Projects are then submitted to the NCDOT SPOT Office for inclusion in the 5 and 10-Year Work Programs, which include the TIP.

When the final STIP is released, the TIP must match it. Prior to release of the final STIP, if the TIP does not match the STIP, adjustments to funding and minor time changes may be required. The MPO follows the guidelines of the SPOT process and submits projects in the MTP for funding. Point assignments are based on joint consideration of the MPO and Divisions 5, 7, and 8 to maximize the potential for projects to be included in the TIP. The TIP contains all regionally significant transportation projects regardless of funding source within the five-year STIP Work Plan.

The allocation of STP-DA funds occurs as needed for different project types such as greenways, bicycle and pedestrian facilities, intersections, small roadway projects, transit, and enhancement projects. Ideally, the STIP matches the time horizons established by the MPO; however, NCDOT funding priorities are subject to change. Also, the general lack of funds for sub-regional projects means that many local projects slip into later horizon years with each successive STIP. There is a renewed commitment by NCDOT to provide more certainty on project delivery within the first five years of the STIP. The NCDOT and public transit operators provide the MPO with estimates of available Federal and State funds for the metropolitan area.

Demonstrating TIP fiscal constraint has been difficult for the MPO at times. The NCDOT develops the STIP and provides the MPOs with their relevant TIP. Except for STP-DA funds, the NCDOT generally controls the STIP and TIP financial programs.

Commendation:

NCDOT is commended for their coordination with the MPO during the SPOT process, during TC meetings, and in helping the MPO solve its transportation issues.

Public Outreach

Regulation: 23 CFR 450.316

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23 CFR 450.324
23 CFR 450.326

Status

The MPO's Public Involvement Plan (PIP) conforms to Federal regulations. Its goals are to provide timely notice, education, and information to the public regarding planning activities, and to provide the public reasonable opportunity to share views with decision-makers. It also affords citizens the opportunity to have their views considered and receive responses where appropriate. The MPO records public comments and shares them with the TC and Board members.

The MPO's public involvement is extensive, proactive, and timely. Evaluation metrics include number of email and mail responses received compared to that sent, workshop attendance, Twitter and Facebook comments, number of calls, and feedback. Successful activities include holding "pop up" meetings and specialized workshops, interviewing bus riders, and consultant-run corridor studies meetings. Public involvement and outreach for the MPO's TIP is coordinated with NCDOT's STIP public involvement and outreach. The MPO routinely evaluates the effectiveness of its public involvement procedures and endeavors to get more people involved early in the MTP process instead of waiting until a project alternative goes through their property. The MPO is currently updating its Limited English Proficiency (LEP) document, Title VI Civil Rights document, and reassessing its PIP to evaluate its effectiveness. The MPO stated it wants to "take the MTP to the public." They are interested in using crowdsourcing data for the next MTP update specifically when looking at scenario planning. The MPO considers and responds to public input by providing direct responses, providing summaries of responses posted to the MPO's website, and providing responses to the MPO Boards in the agenda packets.

The MPO maintains a robust, public-facing website. The MPO considers its website the backbone of its PIP. The website incorporates Google translate, web based maps, and a traffic data portal, which affords the public access to field collected data such as volumes, speeds, and bicycle and pedestrian counts. The MPO plans to migrate much of the information on its website to a cloud-based platform.

Some public participation items are performed administratively with limited pubic involvement. Such items do not require a formal public involvement process outside the regular MPO meeting structure. Residents may attend and speak at each Board meeting upon recognition by the Board Chair, who may impose a reasonable time limit for speakers.

The MPO's public involvement process is coordinated with that of NCDOT. The MPO highlights any statewide plans, programs, and workshops that are available for the public. The MPO works closely with the NCDOT when public involvement events are held within the MPO to schedule convenient and appropriate venues, assists in advertising meetings, and attends all NCDOT sponsored events held within a reasonable distance. The MPO coordinates with

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NCDOT's Divisions 5, 7, and 8 on specific projects. MPO staff also attends project meetings. MPO staff provides local concerns or information during merger and project review meetings. The MPO documents its consideration and response to public input.

Methods and venues that are successful continue to be a part of the MPO's ongoing public outreach, while activities that generate low turnouts have been minimized. The MPO staff works to make the language and concepts in all its documents more understandable and accessible to the public. Piggybacking on other meetings yields successful public input and interaction.

The MPO's PIP provides for traditionally underserved communities through newspaper advertisements in minority targeted newspapers. Special strategies such as providing food or child care during meetings are also considered.

Commendation:

The MPO is commended for its website, which is public-facing, and contains readily accessible and current data.

Self-Certifications

Regulation: 23 CFR 450.336

Status

A Certification Review by FHWA and FTA of the transportation planning process is required at least once every four years in TMAs, in addition to the required self-certification by the MPO and State. The MPO annually self certifies its planning process during development of the UPWP.

Title VI, Environmental Justice (EJ), and Limited English Proficiency (LEP)

Regulation: 23 CFR 450.220
23 CFR 450.316
23 CFR 450.336

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Status

MPOs must ensure that both benefits and burdens of their transportation plans are equitably distributed when comparing EJ populations to non-EJ populations. To achieve this, MPOs must conduct both qualitative and quantitative analyses. Qualitative analyses usually focus on public involvement efforts while quantitative analyses use data gathered based on specific metrics developed by the MPO. The foundation of qualitative analyses is an MPO's demographic profile.

During the last Certification Review in 2015, the MPO had recently completed their "Environmental Justice Report for the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization." The report was an extremely well-written and comprehensive document that contained an up-to-date demographic profile and addressed all aspects of EJ. The purpose of the report was to serve as an excellent foundation for the MPO as it moved forward with addressing EJ concerns and conducting EJ analyses. The report, which was completed in 2014 and adopted by the MPO in 2015, included nine commitments, one of which was to "*Update this EJ report following, or in conjunction with the adoption of future MTPs"* (see page 4-22 of the report).

Although DCHC adopted their 2045 MTP in March 2018, the review team found that the MPO has not yet completed an update of the EJ report. Staff indicated that an update may be completed later in 2019. The MPO also indicated that they are working on enhancing their EJ analyses with the development of two EJ metrics – one for Safety and one for Displacement, for which they provided draft data. The draft data for the Safety metric was broken out by vehicular, pedestrian, and bicycle crashes as they relate to communities of concern versus the MPO in its entirety. The draft data for the Displacement metric was broken out by type of project (widenings, new location, and other) and type of displacement (residential, commercial, civic, and school), and compared communities of concern versus the MPO in its entirety.

We commend the MPO for developing EJ metrics and for conducting detailed draft analyses. However, the MPO needs to consider that the identified communities of concern, which are based on the demographic profile in the Environmental Justice Report, may have changed since the completion of the report in 2014, which relied on data from 2013 and earlier. We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern. We look forward to the completion of the safety and displacement EJ analyses as well as the update and republishing of the demographic profile and EJ report.

Commendation:

We commend the MPO for developing EJ metrics and for conducting detailed draft analyses.

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Recommendation:

We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern.

Congestion Management Process (CMP)

Regulation: 23 CFR 450.320
23 CFR 450.322

Status

The CMP defines a transportation network that was identified using the travel demand model, INRIX data, and shape files data. Bottlenecks have been identified and projects designed to alleviate congestion. CMP goals and objectives were derived from the goals within the MTP to effectively move vehicular traffic, expand public transportation, and reduce travel demand.

Consideration is given to examining traffic congestion conditions and problems on a regional basis since construction work, crashes, and other incidents along the Interstate highways, other freeways and expressways, and other major roads linking the entire Triangle area (Raleigh-Cary and Durham-Chapel Hill) may have impacts on congestion levels within the MPO boundary, and vice versa.

The MPO analyzes transportation deficiencies identified in the CMP and ensures projects are included in the MTP and TIP to address them. The effectiveness of the CMP is evaluated during each biennial report as the progress toward goals is measured, deficient segment data is updated with the latest information, the effectiveness of proposed projects and congestion management strategies is reviewed, and future initiatives are pursued. The CMP is also reevaluated during the MTP update process.

The major congestion issue in the MPO is vehicular; therefore, the main data source for the CMP is traffic counts. Congested locations exist along NCDOT roadways including I-40, I-85, and the Durham Freeway (NC 147). Proposed improvements incorporate additional ITS Architecture, which is being updated to include signal system upgrades.

The first step in data collection is the Average Annual Daily Traffic (AADT) values provided by NCDOT. If the AADT value and the corresponding V/C ratio show a segment or corridor is congested, additional data collection is collected if the segment or corridor contains signalized intersections. In this case, turning movement counts at signalized intersections and travel time/speed studies would be conducted to verify if there is an issue on the segment, or to show that level of service values and travel times and speeds are acceptable. This data collection and

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analysis allows for the evaluation of projects and proposed improvements as they are completed during the biennial report process.

Performance measures in the CMP include Volume to Capacity Ratio (V/C) and Level of Service (LOS); however, a transition to travel time data and volume data is underway. These performance measures provide a generalized analysis of roadway segments and allow for further data collection and analysis, if needed.

List of Obligated Projects

Regulation: 23 CFR 450.334
23 CFR 450.314

Status

The MPO provides the required list of obligated projects annually. It includes projects in all transportation modes. The listed projects are compared to the TIP. The list is included on the MPO's website, and made available to the public in accordance with the MPO's adopted PIP.

Environmental Mitigation

Regulation: 23 CFR 450.320
23 CFR 450.324
23 CFR 450.316
23 CFR 450.324

Status

The MPO's process for estimating potential environmental mitigation activities builds upon the existing consultation process through coordination with the NCDOT Leadership Team and State resource agencies, including the North Carolina Department of Environment and Natural Resources (NCDENR). The MPO assigns staff to a Merger Team to review project scoping. Federal, State, and local agencies are consulted during regularly held interagency consultation meetings. Minutes documenting consultation and coordination are prepared following each meeting. The consultation process has yielded a better understanding of the resources requiring avoidance, and impacts requiring minimization.

The MPO used a resource agency contact list for the latest MTP update, which includes agencies responsible for land use management, natural resources, environmental protection, conservation,

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and historic preservation. The resource agencies were contacted during MTP development and later when the draft MTP was available. The MTP includes maps of projects and environmental factors, and a table identifying impact areas and potential mitigation measures. As part of the consultation process, resource agencies can review the proposed mitigation measures in the MTP and recommend additional mitigation measures. The Environmental Mitigation Section of the MTP focuses on linking the environment with planning.

Geographic Information System (GIS) layers are analyzed using data from the NC One mapping resource. GIS environmental overlays, shape files, and screening maps are used to identify the location and condition of environmental features that could be impacted by proposals outlined in the TIP. Such features include hazardous waste sites, endangered species, 303D listed streams, wetland inventories, historic properties, and farmlands.

Consultation and Coordination

Regulation: 23 CFR 450.316
23 CFR 450.324

Status

The MTP consultant process was developed to include the MPO, CAMPO, NCDOT, local and regional staff, FHWA, and the Institute for Transportation Research and Education (ITRE). This group meets bi-weekly at the TJCOG during MTP updates. Inter-agency consultation meetings occur monthly and are guided through an approved Memorandum of Agreement (MOA).

Agency consultation is obtained at key decision points during transportation planning, programming, and decision-making. The Historic Resources Commission, NCDENR Division of Air Quality, Environmental Protection Agency (EPA), and all agencies that are consulted during Environmental Assessments (EAs) and National Environmental Policy Act (NEPA) projects are involved during MPO project planning and development.

Statewide Interagency Consultation Meetings (SICM), as well as the TIP and MTP specific Interagency Consultation (IC) meetings, held monthly during plan development and review, are well coordinated at the Federal, State, regional, and MPO levels. MTP coordination with other natural and cultural resources is accomplished during preliminary and draft document review. The MTP is compared with State conservation plans and maps, and with inventories of natural and historic resources. The MTP projects are overlaid on natural and historic resources maps culled from numerous sources on the NC ONE map, and other agency's GIS files.

Regional partners work together to share information and mapping. The MPO typically develops a comprehensive list of agencies and resource groups to locate data and create an overlay mapping system to compare MPO projects to identified natural, cultural, and agricultural

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resources, as well as hazardous conditions. The MPO refreshes the NC ONE environmental data every four years during the MTP development and uses it to review roadway and fixed guideway projects.

Air Quality Conformity consultation is a direct feedback with questions posed by the environmental agencies and responses provided by the MPO with corrections to either the TIP or MTP documents, or further explanation of the discrepancies in language between the two documents. The response and coordination between the planning and design phase is iterative during project development. All comments and responses become public record within the environmental documents and assist the MPOs in refining their processes. The MTP relies on environmental agency input to update the document with current data, policies, rulemaking, and other issues that may affect or conflict with the content and meaning of the plan.

Visualization techniques are used to assist agencies in understanding the transportation plan elements. Overlay maps incorporate all the projects within the MTP time horizons and indicate which resources may be affected by the projects. Any project having multiple resources within the general corridor or alignment will be noted as having an environmental component in the project listing table.

Management and Operations (M&O) Considerations

Regulation: 23 CFR 450.324
23 CFR 450.326

Status

The MPO's CMP network covers the MPO area and includes a modeled multimodal network. Modes include roadway, bicycle, pedestrian, and public transportation. The MPO is expanding the network with the collection of data for the evaluation of performance measures, and seeking better sources of data. The CMP includes M&O strategies. The operations community has reviewed the CMP goals, objectives, and strategies. The CMP is the mechanism by which they will be evaluated. The MPO also uses a Mobility Report Card and a surveillance of change analysis to measure M&O goals and objectives performance.

The MPO's MTP includes M&O strategies supported by specific goals and measurable objectives. Mechanisms for measuring M&O goals and objectives performance are under development. The MTP and TIP do not currently include a documented methodology for assessing the costs associated with maintaining and operating the existing Federal-aid transportation system. The MPO works with NCDOT and the City of Durham's Engineering Public Works to assess the costs associated with maintaining and operating the existing Federal-aid transportation system.

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The ITS Regional Architecture contains projects that are consistent with the MTP and are included in the overall planning process. The ITS Regional Architecture is linked to the planning process through the CMP. Coordinated signal/bus pre-emption systems, dedicated bus way considerations, and Bus on Shoulder (BOSS), freeway management, signal system updates, and ramp metering projects have been implemented. Parking coordination figures prominently in the CMP.

The Transportation Asset Management Plan (TAMP) was adopted in 2018 and included in the TIP in January 2019. Transit management and operations are routinely discussed with transit operators during TC meetings.

Transportation Safety and Security

Regulation: 23 CFR 450.306
23 CFR 450.324
23 CFR 450.322

Status

Safety is an important factor in NCDOT's project prioritization process, and in the MPO's TAP project selection and ranking methodology. Safety is interwoven into the modal chapters of the MTP, and is assigned an above average priority in project ranking criteria. The MPO and NCDOT work collaboratively to develop safety goals, objectives, performance measures, and strategies for the urban area. Partners in safety planning include local traffic engineers; transit operators; NCDOT Divisions 5, 7, and 8 traffic engineers; law enforcement; other departments within each local jurisdiction; and emergency management providers.

The MPO follows the Strategic Highway Safety Plan (SHSP) process as funding can be provided through the TIP. Goals and objectives are taken from the SHSP to reduce the number of fatalities, and to decrease the economic impact from highway-related accidents. SHSP elements are incorporated in project development. MPO and NCDOT coordination ensures consistency between the SHSP and MPO safety projects.

The MPO incorporates Performance Management (PM) PM1, PM2, and PM3, and complies with the new planning factors. The planning factors serve as a basis for identifying projects for inclusion in the MTP and TIP. Safety performance measures are incorporated in the planning process from traffic accident reports. Performance metrics include: 1) fatalities, 2) serious injuries, 3) crash rates, 4) crash hot spots, 5) collision inventories, and 6) pedestrian injuries. Roadway design plans consider accident patterns and how to reduce conflicts.

Safety is considered in determining which projects will be included in the MTP and TIP. NCDOT has funds specifically set aside for making safety improvements along roadways,

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including guardrails, rumble strips, enhanced lighting, turn lanes, better pavement marking, and signs. Highway Safety Improvement Program (HSIP) projects located within the MPO are included in the TIP. Most of these projects originate with NCDOT and are routinely included in the TIP when project requests are taken.

The MPO defines security as increasing the security of the transportation system for motorized and non-motorized users. The MPO accounts for natural emergencies including hurricanes and flooding. The MPO collaborates with local traffic engineers, emergency management providers, police, fire, sheriff's departments, NCDOT, the NC State Highway Patrol, Information Technology (IT), and GIS departments to secure its transportation infrastructure.

The MPO is developing a Transportation Safety/Security Plan and an Incident Management Plan protocol to improve transit, pedestrian, bicyclist, and highway safety. The plan will depict a snapshot of the accident types, severities, and locations using the National Transit Database (NTD), which is operated by FTA, and the Traffic Engineering Accident System (TEAAS) and Intelligent Traffic Systems (ITS) architecture maintained by NCDOT. The plan will identify safety and security deficiencies such as the need for placing cameras in buses and terminals to guide development of new strategies and campaigns for improving overall transportation safety. The MPO is also developing an Americans With Disabilities (ADA) Transition Plan, and access to its website for the hearing impaired.

Integrating Freight in the Transportation Planning Process

Regulation: 23 CFR 450.306
23 CFR 450.316
23 CFR 450.104

Status

The MPO considers and evaluates land use and freight-oriented developments. Freight is considered in MPO corridor plans and studies, including the US 15/501 and NC 98 corridor studies. Freight community involvement is an ongoing and collaborative process. The MPO developed a joint freight plan with NCDOT, is a member of a Freight Advisory Committee that meets twice a year, and is a Statewide Freight Advisory Committee member. Nearly all roadway projects identified in the freight plan are in the MTP.

The MPO collects and utilizes freight-related data from sources including truck count data, air cargo statistics, commodity flow data, land use data, the North Carolina Railroad (NCR), and a Freight Analysis Framework (FAF). The MPO coordinates freight interests with local chambers of commerce and the Regional Transportation Alliance (RTA).

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The RTA serves as the recognized regional business voice for transportation initiatives and policy across the greater Raleigh-Durham Triangle area. RTA was founded by the Cary, Chapel Hill - Carrboro, Durham, and Raleigh Chambers of Commerce in 1999 and chartered in 2001 as a regional program of the Greater Raleigh Chamber of Commerce with a separate, dues-paying membership. RTA membership includes over 100 leading businesses, 23 Chambers of Commerce, the DCHC and CAMPO MPOs, the Triangle Transit Authority (TTA), and the Raleigh Durham International Airport (RDU) Airport Authority. The RTA leverages the strength of its membership, which spans nine counties, to galvanize the broad-based regional support needed to accelerate critical mobility investments. The RTA business leadership focuses on relieving traffic congestion and enhancing mobility in the region. The Alliance identifies, promotes, and accelerates transportation policies and solutions to ensure economic vitality and preserve quality of life.

Visualization Techniques

Regulation: 23 CFR 450.316

Status

The MPO employs visualization techniques in its public involvement process to reinforce its transportation planning process using its website, public libraries, social media, brochures, and newsletters. Efforts to move beyond traditional tables and listings to visually display information include the use of its interactive website, visualization in both 3D and 2D, mapping, and GIS. The MPO uses Structured Query Language (SQL), postscripts, Microsoft ACCESS, and geo-databases to collect and store data. Input from travel demand models is converted into graphics, maps, and other visual displays through deficiency analyses demand flow diagrams, select links, travel time sheds, demand maps, and charts. The MPO's website contains projects, maps, reports, publications, interactive maps, and news items. Information and other visual material can be downloaded via portals. The public can access searchable data through public portals such as urban canvas and MS2.

Land Use and Livability

Regulation: 23 CFR 450.306
23 CFR 450.316
23 CFR 450.322
23 CFR 450.324

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Status

The MPO strives to integrate land use and transportation planning in a variety of ways and has developed a Smart Growth tool. The MTP includes an extensive Bicycle and Pedestrian section. The MPO designates a percentage of federal funding at the MPO level for bicycle and pedestrian projects. They submit bicycle/pedestrian projects through the SPOT process for inclusion in the STIP, and set aside a certain amount of federal funding at the MPO level for stand-alone bicycle/pedestrian projects. The MPO requests bicycle and pedestrian accommodations for all roadway projects where feasible. Non-motorized modes of travel such as bicycle, pedestrian, and transit are analyzed and addressed extensively in the MTP, and throughout the transportation planning process.

Projects already in the MTP and CTP are mapped and factored into land use recommendations. New transportation improvements are identified and incorporated into future transportation plan updates. The MPO compares the consistency of proposed transportation improvements with State and local planned growth and economic development through land use analysis, a Community VIZ tool, and demographic and socioeconomic projections.

To reduce congestion and Vehicle Miles Traveled (VMT) growth rates, the MPO funds portions of the Regional Travel Demand model. Transportation Demand Management (TDM) strategies are a factor in the MPO's project ranking methodology. The MPO adopted a Greenhouse Gas (GHG) reduction goal that is reflected in a GHG Plan and in the MTP. The MPO considers affordable housing plans and needs through coordination with its member jurisdictions, particularly the Durham City and County Planning Departments and the Town of Chapel Hill.

Performance Based Planning and Programming (PBPP)

Regulation: MAP-21
FAST Act

Status

The MPO chose to support NCDOT's PM1, PM2, and PM 3 targets and have incorporated them into its MTP. The MPO jointly developed a Travel Demand Model (TDM) that is housed in the Institute for Transportation Research and Education (ITRE). The model uses a sample set of household surveys from 2016.

The MPO uses Community VIZ for scenario planning. An updated version will be available within a year. Community VIZ analyzes socioeconomic data to generate alternative growth scenarios. Utilities also use Community VIZ for their planning purposes.

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Regional Models of Cooperation (RMOC)

Regulation: 23 CFR 450.104

Status

The MPO coordinates closely with CAMPO on a broad range of transportation issues. The degree to which the two MPOs cooperate and coordinate meets or exceeds that required by regulation.

Planning and Environmental Linkages (PEL)

Regulation: 23 CFR 450.212
23 CFR 450.318

Status

The MPO's MTP contains environmental maps that include conservation areas, public institutions, farm land, forest land, watersheds, and other environmental features that the State considers important. All available environmental layers are utilized when planning and programming proposed projects. The degree to which environmental mitigation is considered demonstrates a robust and focused practice to link planning and the environment.

Public Transit Planning

Regulation: 49 USC 5303

Status

The MPO contains four transit operators: 1) GoTriangle; Go Durham; 3) Chapel Hill Transit (CHT); and 4) Orange Public Transportation (OPT), which is new to the MPO. GoDurham is a division of Durham City Government, and is represented on the MPO Board by the elected representatives of the City of Durham. As required by the Moving Ahead for Progress in the 21st Century Act (MAP-21), GoTriangle has been a voting member of the MPO Board since 2014. GoDurham provides transit service throughout the City of Durham. Like GoTriangle, work trips are the largest trip purpose on the GoDurham system, although other purposes such as shopping, medical, and recreational are also heavily utilized. The markets served are diverse, ranging from

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major employers in urban environments to low-density retail and social services. Ridership is majority lower-income and African-American, though these demographics have become more diverse. GoTriangle provides regional transit connections between origins and destinations in Durham, Orange, and Wake Counties. Most bus routes provide peak-hour commuter connections to large employment destinations such as UNC-Chapel Hill, UNC Healthcare, Duke University and Medical Center, downtown Durham, Research Triangle Park (RTP), NC State University, and downtown Raleigh. All-day services are also provided seven days a week to connect the largest municipalities in the Triangle including Chapel Hill, Durham, Cary, and Raleigh. Most trips are for work or university-related purposes. Ridership is diverse in terms of income and ethnicity.

GoTriangle ridership is heaviest in the heavily-traveled corridors that connect to major employers. Routes between Chapel Hill (fare free), Durham, and Raleigh are the most popular routes in the system. There are also many routes between lower-density suburbs and major employers. Ridership varies widely on these routes depending on the strength of the destination(s), density of the origins, and distance to the destination(s). Ridership is heaviest during peak commute times, though off-peak ridership has also grown substantially as more options have been offered. Bus capital replacement under MAP-21 is a challenge for GoTriangle to maintain its level of service and plans for future service. MAP-21 reduced the formula funds dedicated to transit vehicle capital replacement. Despite the reduction in formula funds, the agency's needs are unchanged. Therefore, GoTriangle is faced with the potential need to use funds, including dedicated sales tax revenues intended to be spent on service expansions, and instead re-appropriate them to capital replacement.

GoDurham routes that serve several key destinations in a single corridor have the highest GoDurham ridership, including routes along Holloway Street, Fayetteville Street, and Chapel Hill Road/University Drive. Major destinations such as Duke University, North Carolina Central University, Durham Tech, Northgate Mall, The Village Shopping Center, and the Streets at Southpoint shopping mall also generate high ridership. Ridership tends to be lower as routes move farther from the urban core.

GoTriangle is governed by a Board of Trustees. Some members are appointed by the region's municipalities and counties while others are appointed by the NC Secretary of Transportation. GoTriangle employs full-time and part-time employees. GoTriangle directly operates many routes, while the remainder are operated by their local partner agencies – Chapel Hill Transit in Chapel Hill, GoDurham in Durham, GoRaleigh in Raleigh, and C-Tran in Cary. GoTriangle's administrative offices are in southeast Durham at 4600 Emperor Blvd, and the bus operations and maintenance facility is located several miles away at 5201 Nelson Road in Durham.

The MPO goal for the TIP notes the MPO's commitment to a "balanced transportation system" that "will provide opportunities for greater use of alternative modes of transportation, including public transit, bicycling, and pedestrian movement." This policy goal is reflected in the MPO's longstanding policy to direct STP-DA and TAP funds to non-highway projects, such as transit.

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CMAQ funding is also made available to transit on equal terms with other modes. The MPO has worked closely to develop performance metrics for the region's transportation system that emphasizes the importance of person-throughput, as opposed to vehicle level of service, and other measures that prioritize personal mobility over vehicular mobility. For example, the MPO's Mobility Report Card provides measures of the number of passengers carried by different modes on certain key roadways in the region.

The MPO also has a strong record of emphasizing EJ issues and prepares regular reports on EJ issues, including identifying areas where higher levels of transit service to serve transit-dependent populations may be appropriate. The MPO and GoTriangle planning staff have collaborated closely on major corridor projects as well as local and state funding for other transit projects. MPO staff have helped coordinate major transit initiatives such as the region-wide, multi-agency procurement of fare boxes.

The MPO incorporates the planning factors in all proposed projects, including GoTriangle's transit projects. The transit operators and the MPO maintain a positive relationship. Transit operators are involved in all planning phases, including the TIP, STIP, UPWP, and MTP. MPO coordination with NCDOT continues to improve.

Like GoDurham, Orange Public Transit is represented on the MPO Board by the elected representatives of Orange County. North Carolina State law limits the amount of state and federal transportation funds that can be used for purposes other than roadway construction and widening purposes, such as building bikeways, transit shelters, fixed-guideway transit systems, and park-and-ride facilities. The MPO is an excellent partner in funding transit projects, but these restrictions make funding transit projects challenging.

Action Plan

The FHWA North Carolina Division Office will work with the Durham – Chapel Hill - Carrboro (DCHC) Metropolitan Planning Organization (MPO) and the NCDOT to address the recommendations identified in this Report.

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Appendix A

Certification Review Agenda

DCHC Certification Review Agenda
Monday, May 20, 2019
Durham City Hall

Introduction and Purpose	1:00 – 1:10
Desk Top Review Findings and Discussion on MTP, TIP, CMP, ITS Architecture Air Quality/Conformity	1:10 – 2:00
Public Involvement	2:00 – 2:30
Environmental Justice	2:30 – 2:55
Break	2:55 – 3:05
Performance Management (PM1)/Travel Demand Model	3:05– 3:30
Finance (STP, DA, PL, SPR, TAP, CMAQ, Special Studies)	3:30 – 4:00
Public Transit	4:00– 5:00
Open Discussion	5:00 – 5:20
Schedule follow up meeting to discuss "Parking Lot" Issues	5:20 – 5:30
Public Meeting	5:30 – 7:00

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Appendix B

Certification Review Findings

Commendations:

- The MPO is commended for placing special emphasis on resiliency in its MTP.
- NCDOT is commended for their coordination with the MPO during the SPOT process, during TC meetings, and in helping the MPO solve its transportation issues.
- The MPO is commended for its website, which is public-facing, and contains readily accessible and current data.
- We commend the MPO for developing EJ metrics and for conducting detailed draft analyses.

Recommendations:

- It is recommended that the MPO seek best practices to improve public involvement efforts during MTP development.
- We recommend that the MPO update its demographic profile before finalizing its EJ analyses, due to the potential change in communities of concern.

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Appendix C

Public Notice

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DCHC
Metropolitan Planning Organization
Planning Tomorrow Today

Federal Review of Regional Transportation Planning

The Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) is responsible for regional transportation decisions in Durham County and parts of Orange and Chatham counties. The U.S. Department of Transportation (USDOT) will conduct a periodic review of the MPO's planning activities and procedures to determine whether public involvement, planning, financial and other requirements are being met.

The USDOT review team encourages citizens to provide comments at a public meeting on Monday, May 20, 2019, 5:30PM to 7:00PM, in the Transportation conference room on the 4th floor of Durham City Hall (101 City Hall Plaza, Durham, NC 27701). Participants can drop-in to meet with members of the review team. For further information, contact Andy Henry, 919-560-4366, extension 36419, andrew.henry@durhamnc.gov.

Persons with disabilities will be accommodated – please request assistance at least 48 hours in advance of the meeting.

Se puede provenir servicio de traducción – favor de pedir servicio 48 horas antes de la reunión.

H-S: May 5, 2019

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Appendix D

Glossary of Acronyms

AADT -	Average Annual Daily Traffic
ADA –	Americans with Disabilities Act
AQ -	Air Quality
BOSS -	Bus on Shoulder
3C –	Continuing, Cooperative, Comprehensive Planning Process
CAMPO -	Capital Area Metropolitan Planning Organization
CFR -	Code of Federal Regulations
CHT -	Chapel Hill Transit
CMAQ -	Congestion Mitigation and Air Quality
CMP -	Congestion Management Program
CO -	Carbon Monoxide
CTP -	Comprehensive Transportation Plan
DATA -	Durham Area Transit Authority
DCHC -	Durham – Chapel Hill - Carrboro
DOT -	Department of Transportation
EA -	Environmental Assessment
EJ -	Environmental Justice
EPA -	Environmental Protection Agency
FAF -	Freight Analysis Framework
FHWA -	Federal Highway Administration
FTA -	Federal Transit Administration

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GHG -	Greenhouse Gas
GIS -	Geographic Information System
HSIP -	Highway Safety Improvement Program
IC -	Interagency Consultation
IT -	Information Technology
ITRE -	Institute for Transportation Research and Education
ITS -	Intelligent Transportation Systems
LEP -	Limited English Proficiency
LOS -	Level of Service
LPA -	Lead Planning Agency
M&O -	Management and Operations
MAP-21 -	Moving Ahead for Progress in the 21st Century Act
MOA -	Memorandum of Agreement
MOU -	Memorandum of Understanding
MPA -	Metropolitan Planning Area
MPO -	Metropolitan Planning Organization
MTP -	Metropolitan Transportation Plan
NAAQS -	National Ambient Air Quality Standard
NCDENR -	North Carolina Department of Environment and Natural Resources
NCDOT -	North Carolina Department of Transportation
NCR -	North Carolina Railroad
NEPA -	National Environmental Policy Act
NTD -	National Transit Database
OPT -	Orange Public Transportation
PBPP -	Performance Based Planning and Programming

U.S. Department of Transportation
Federal Highway Administration

PEL -	Planning Environmental Linkages
PIP -	Public Involvement Plan
PL -	Planning Funds
PM -	Particulate Matter
PTD -	Public Transportation Division
RDU -	Raleigh-Durham International Airport
RMOC -	Regional Models of Cooperation
RTA -	Regional Transportation Alliance
RTP -	Research Triangle Park
SHSP -	Strategic Highway Safety Plan
SICM -	Statewide Interagency Consultation Meeting
SMSA -	Standard Metropolitan Statistical Area
SOV -	Single Occupancy Vehicle
SPOT -	Strategic Prioritization on Transportation
SPR -	State Planning and Research
SQL -	Structured Query Language
STI -	Strategic Transportation Investments
STIP -	Statewide Transportation Improvement Program
STP-DA -	Surface Transportation Program – Direct Allocation
TAC -	Transportation Advisory Committee
TAMP -	Transportation Asset Management Plan
TAP -	Transportation Alternatives Program
TC -	Technical Committee
TDM -	Transportation Demand Management
TEAAS -	Traffic Engineering Accident Analysis System

U.S. Department of Transportation
Federal Highway Administration

TIP -	Transportation Improvement Program
TJCOG -	Triangle J Council of Governments
TMA -	Transportation Management Area
TPD -	Transportation Planning Division
TPM -	Transportation Performance Management
TRM -	Triangle Regional Model
TTA -	Triangle Transit Authority
UPWP -	Unified Planning Work Program
USC -	United States Code
UZA -	Urbanized Area Boundary
V/C Ratio -	Volume to Capacity Ratio
VMT -	Vehicle Miles Traveled

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U.S. Department of Transportation

Federal Highway Administration

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2050 MTP – Goals & Engagement Plan

Compilation of Public Comments (August 13, 2020)

Introduction

The DCHC MPO and CAMPO released the proposed 2050 MTP Goals and Objectives, Public Engagement Plan and schedule for public comment in June 2020. The public comment period ends officially for DCHC MPO and CAMPO on August 5 and August 13, respectively.

Comments

The entries below are the full text of written comments that the MPOs received through email and Twitter. The comments are in the order of receipt, from first to last, and are separated by a dashed line.

Hi, DCHC solicited comments on NextDoor for the 2050 Metropolitan Transportation plan, so here are my thoughts.

I lived in Houston for 50 years and our roadbuilding was very aggressive. We have three ring roads, the farthest out is 30 miles from downtown Houston. We made Interstate-10 twenty-two lanes!

It was never enough … and way too much. Our flooding problems are directly tied for lack of absorptive capacity. One thing I've noticed is that the freeways are SO massive, they affect weather patterns. The rising heat from them can either cause or block thunderstorms.

However you plan to move people, consider the unintended consequences. Even if you have some sort of net zero plan, it will have unintended consequences. It is the unintended consequences that will trip you up.

On a lighter note, your Reduced Conflict Intersections appear to make NO sense. I've seen a couple that because of grade, vegetation, and curving roads, the U-turning cars are blind to the traffic into which they have to merge … from zero to 60 immediately. RCI's are not a national trend for a reason. I think they defy good design.

That's my two cents worth.

Thank you for the opportunity to offer comments on the 2050 Transportation Plan. I must admit that I am confused about what the goals actually are, since I have received two emails, each with a slightly different list of goals. With that in mind, I would offer the following:

In the section on Environmental Impacts add:

Preserve and promote wildlife habitat connectivity as provided for in the new Eno/New Hope habitat corridor study and the NC Natural Heritage program in section on Congestion and System Reliability, add:

Make provision for exclusive lanes for transit and high occupancy vehicles

In section on Infrastructure:

Give more prominence to and infrastructure flexibility for autonomous vehicles.

Autonomous vehicles are clearly a revolutionary technology that will almost certainly be available before 2050. They deserve special mention, rather than lumping them together (as in the goal statement below) with connected and electric vehicles, which are mere tweaks to existing vehicles and do not involve major impacts on infrastructure or highway design.

E. Support autonomous, connected, and electric vehicles.

Public Engagement Plan

The public engagement plan appears to include a menu of options for engagement but no actual plan. It includes some options that seem like good ways to ensure equitable communication and opportunity for participation, but I can't tell if those methods will be prioritized. This is a really important piece to be clarified I think. I wanted to highlight this because the TC meeting agenda states that no comments have been received on the engagement plan.

Goals

I'm concerned that goals to Improve Infrastructure Condition & Resilience and Manage Congestion & System Reliability will be prioritized over the remaining goals around protecting environment, connecting people and places, equity, multi model and affordable options, safety and health.

A few thoughts for specific revisions:

- The goal Stimulate Economic Vitality needs to include an equity statement.
- The goal Ensure Equity & Participation needs to talk about specific communities that have not participated in the past (including the need to remove barriers to participation) and this goal should also include a statement around trying to correct unjust transportation decisions in the past that have negatively impacted communities of color.

How about come clean about our money well over 168m. I don't trust go triangle to be good Stewart's of our tax dollars. Therefore how do we trust county commissioners

---

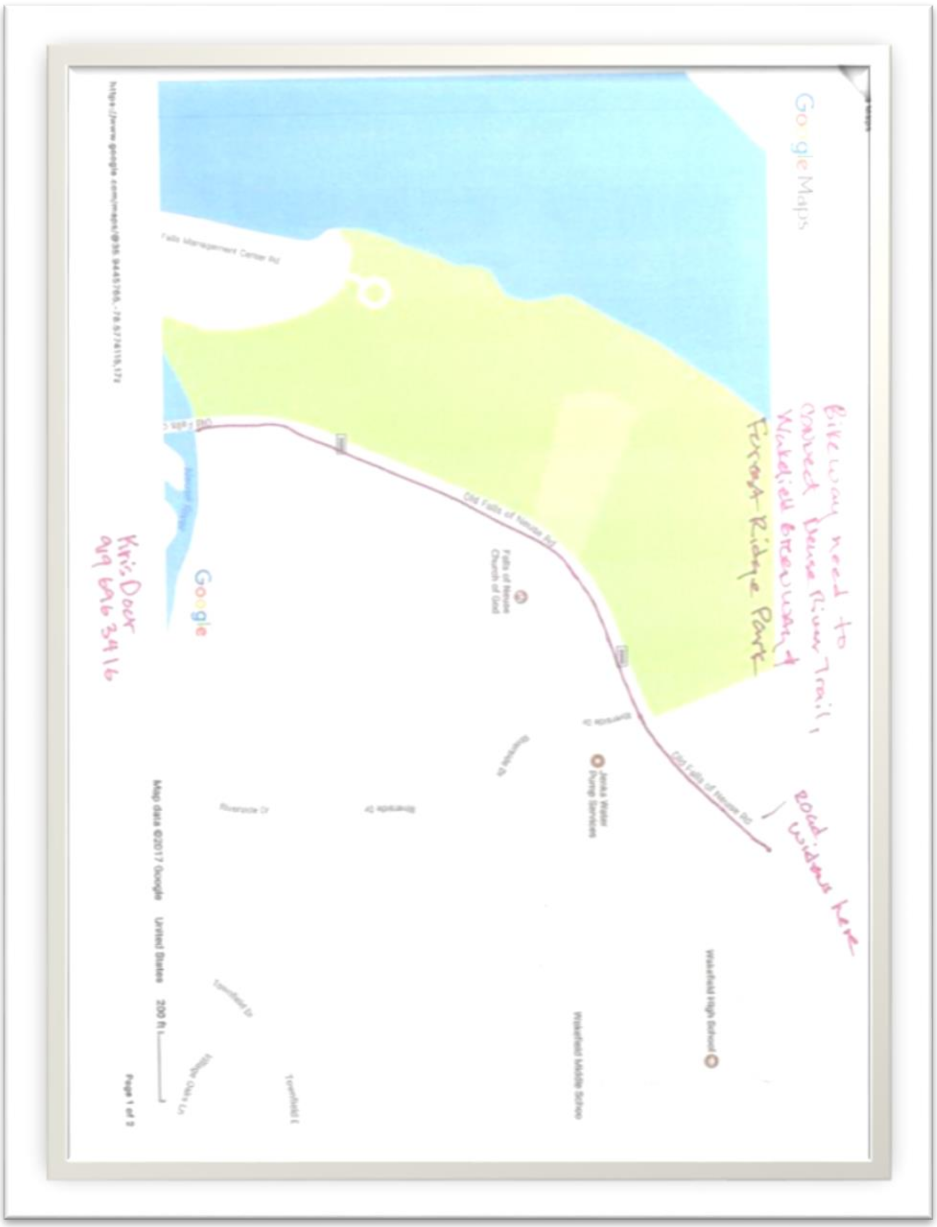
Respondent sent an edited page from the Goals and Objectives

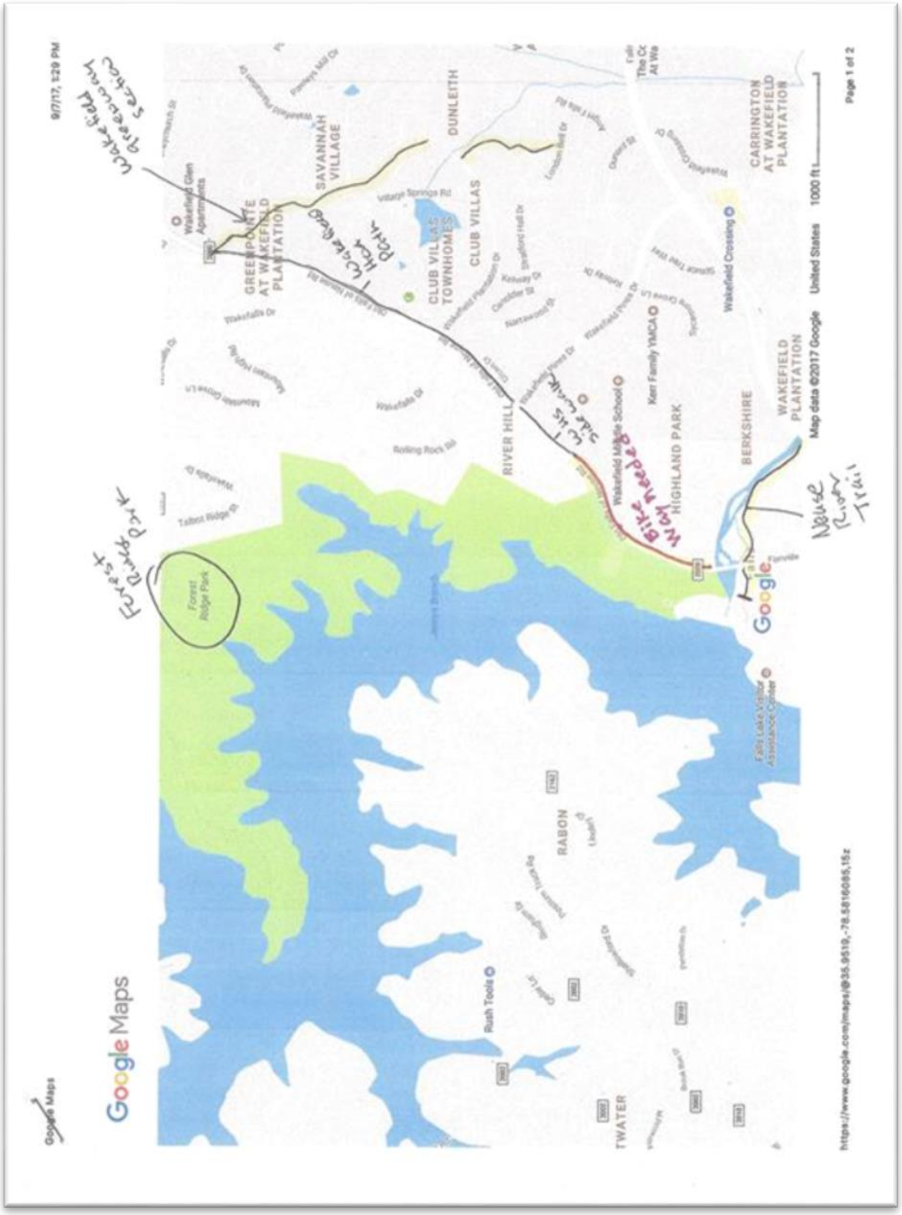
2050 MTP Goals and Objectives

(as released by DCHC MPO Board on June 10, 2020)

Goals	**Objectives**
Protect the Human and Natural Environment and Minimize Climate Change	A. Reduce mobile source emissions, GHG, and energy consumption
	B. Reduce negative impacts on natural and cultural environment
	C. Connect transportation and land use.
Connect People & Places	A. Connect people to jobs, education and other important destinations using all modes
	B. Ensure transportation needs are met for all populations (especially the aging and youth, economically disadvantaged, mobility impaired, and minorities)
Promote and Expand Multimodal & Affordable Choices	A. Enhance transit services, amenities and facilities
	INVEST IN BICYCLE, PEDESTRIAN AND GREENWAY FACILITIES. B. Improve bicycle and pedestrian facilities
REMOVE BARRIERS AND	C. Increase utilization of affordable, non-auto travel modes AND WALKING.
Manage Congestion & System Reliability	A. Allow people and goods to move with greater reliability.
	B. Promote Travel Demand Management (TDM, such as carpool, vanpool, telecommuting and park-and-ride)
	C. Enhance Intelligent Transportation Systems (ITS, such as ramp metering, dynamic signal phasing and vehicle detection systems)

We need a bike lane connection between the Neuse Trail at the Dam up Old Falls to the Wakefield Trail. See maps:

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Google Maps
Forest Ridge Park
RIVER HILL
HIGHLAND PARK
BERKSHIRE
WAKEFIELD PLANTATION
CLUB VILLAS
DUNLEITH
SAVANNAH VILLAGE
RABON
Rush Tools
Kerr Family YMCA
Wakefield Middle School
Falls Lake Visitor Assistance Center
Page 1 of 2

Thread

Heidi Perov
@HeidiPerov

I took this survey but found it to be poorly designed. Several goals lumped together in a way that of course you should support them. 1/4

CityofDurhamNC @CityofDurhamNC · 2h

Interested in the 30-year plan for future highway, bicycle, rail, pedestrian & transit projects for #Durham, @chapelhillgov & @CarrboroTownGov? Give your feedback by 8/5 to the @DCHCMPO.

- English survey: ...0triangletransportplan.metroquest.com
- Encuesta en español: plandetransporte2050.metroquest.com

Heidi Perov @HeidiPerov · 16m

Example: "1) Reduce emissions, Green House Gases and energy consumption; 2) Reduce negative impacts on the natural and cultural environment". Okay, but does this include "reduce Vehicle Miles Traveled" and shouldn't that be stated? 2/4

1

Heidi Perov @HeidiPerov · 16m

Ex. 2: "Objectives to reduce congestion: 1) People & goods move w/ minimal congestion, delay, greater reliability; 2) Enhance commuter programs; carpool, park&rides; 3) Enhance tech. like ramp metering, dynamic signals. "move w/ minimal congestion" screams road widening to me 3/4

1

Heidi Perov @HeidiPerov · 16m

And "How many vehicles are available for drivers in your household?" An important question, but should be followed by several others, incl. whether one has access to transit, how far one's job is from home, etc. (BTW, I consider my bikes vehicles, but didn't want to skew results)

North Carolina Wildlife Resources Commission

Gordon Myers, Executive Director

Andrew Henry
City of Durham
Transportation Department
101 City Hall Plaza
Durham, NC 27701

August 5, 2020

Subject: Update of the 2050 Metropolitan Transportation Plan: Proposed Goals and Objectives

Dear Mr. Henry,

Thank you for the opportunity to review and provide comments on the proposed goals and objectives for the update of the 2050 Metropolitan Transportation Plan (MTP). The NC Wildlife Resources Commission (NCWRC) reviews transportation plans and individual projects to provide recommendations on ways to reduce impacts of roads on fish and wildlife populations. Roads are barriers to many of our wildlife species, causing significant mortality and contributing to habitat fragmentation that can isolate wildlife populations across the landscape. NCWRC is supportive of the goal to "Protect the Human and Natural Environment and Minimize Climate Change" and is available to provide technical assistance on transportation planning efforts to avoid and minimize impacts of roads on wildlife, natural areas, and other natural resources. As the update of the plan seems to be in its beginning stages, I wanted to make you aware of recent efforts by the Eno New Hope Landscape Conservation Group to identify a network of priority wildlife habitat patches and corridors in the Eno and New Hope watersheds.

The Eno New Hope Landscape Conservation Group is composed of conservation professionals working for local and state governments, non-profits, and universities, many of which have conservation landholdings within the two watersheds that are becoming increasingly vulnerable to impacts from habitat fragmentation. The group's aim in coming together was to identify and map priority wildlife habitat and corridors connecting a network of natural communities and species populations, within and between the two watersheds, and to develop recommendations to drive land protection, land-use, and transportation decision-making within the watersheds. The results of this effort are detailed in *A Landscape Plan for Wildlife Habitat Connectivity: In The Eno River and New Hope Creek Watersheds, North Carolina* (https://ncbg.unc.edu/files/2019/12/EnoNewHopePlan_December_2019.pdf). GIS data are available for viewing on the NC Natural Heritage Program Data Explorer (http://ncnhde.natureserve.org/content/map) and for download from the NC Botanical Garden (https://ncbg.unc.edu/research/eno-new-hope-plan/).

In order to the address the proposed environmental protection goal of the MTP, NCWRC recommends that the MPO avoid planning new roads and road widening projects in areas that are identified as part of the priority habitat network, as well as, other important natural areas not explicitly addressed in the habitat network data analysis, such as Natural Heritage Natural Areas, streams, wetlands, and areas identified as high priority in the Biodiversity and Wildlife Habitat Assessment (all of this data is available via the NC Natural Heritage Program Data Explorer). When roads through these areas cannot be avoided, NCWRC recommends providing wildlife crossing structures to help protect habitat connectivity for wildlife. These actions will also result in a reduction of wildlife-vehicle collisions that can be so costly to human health and property. NCWRC works regularly with the NC Department of Transportation to provide site specific recommendations for crossing structures.

Thank you for the opportunity to share these conservation planning resources with the MPO. The Eno New Hope Conservation Group is open to all interested stakeholders; transportation planners interested in learning more about the conservation plan are welcome to attend meetings and trainings provided by the group. Please email me, Brooke Massa, brooke.massa@ncwildlife.org if you'd like to be added to the group's listserv. As the update of the MTP moves forward, please feel free to reach out for assistance with integrating the conservation data into the planning process.

Sincerely,

Brooke Massa, Land Conservation Biologist
North Carolina Wildlife Resources Commission
919-630-3086
brooke.massa@ncwildlife.org

Andy,

Thank you for this opportunity to comment on the draft goals and objectives for the 2050 MTP. I have attached Bike Durham's specific comments on each of the goals and objectives. I know that you, and the teams at DCHC and CAMPO spent a lot of time on the goals and objectives for the last update of the MTP, and it shows. It clearly recognizes the importance of going beyond thinking about mobility in terms of speed and congestion.

However, we believe that the MPOs need to take the next step to stake out what we must be achieving through our transportation system by 2050. Over the next 30 years, we should be setting far-reaching goals and objectives that achieve zero racial and economic disparities in transportation access, zero deaths and serious injuries on our streets and roadways, and zero carbon emissions from our transportation system. We believe that there is broad support for these specific objectives and it's time for us to plan to achieve them.

[The comments are displayed on the next three pages]

Comments on 2050 MTP Draft Goals and Objectives

Thank you for this opportunity to comment on the 2050 Metropolitan Transportation Plan Draft Goals and Objectives. In general we agree with the staff's effort to incorporate goals and objectives that go beyond the traditional measures of traffic speed and delay as guides to the Triangle region's transportation plans. However, the articulation of these proposed goals and objectives don't seem to follow generally accepted principles to make them specific, measurable, and time-bound goals and objectives. We request the DCHC MPO and CAMPO rewrite the goals to more clearly communicate the direction in which we want to go, and rewrite the objectives to establish measurable outcomes to achieve by 2050 and interim years.

Goal: Protect the Human and Natural Environment and Minimize Climate Change

Objectives: Reduce mobile source emissions, GHG, and energy consumption; Reduce negative impacts on natural and cultural environment; Connect transportation and land use

We agree that this is a very important goal and appreciate that the staff has included it. We believe that the first objective should be Achieve Net Zero Carbon Emissions from the Transportation Sector by 2050. The second and third objectives are directionally fine, but they do not indicate the condition we aim to achieve by 2050.

Goal: Connect People and Places

Objectives: Connect people to jobs, education and other important destinations using all modes; Ensure transportation needs are met for all populations (especially the aging and youth, economically disadvantaged, mobility impaired, and minorities)

We agree that this is an important goal, but we do not believe that goal language is adequate. We urge you to rewrite the goal as "Connect All People and Places without Disparity." We urge the objective for this Goal to be "Achieve Zero disparity of access to jobs, education, or other important destinations by race or income or other marginalized groups."

Goal: Promote and Expand Multi-modal & Affordable Choices

Objectives: Enhance transit services, amenities and facilities; Improve bicycle and pedestrian facilities; Increase utilization of affordable non-auto travel modes

While we support these strategies and tactics in achieving the goals of Zero Carbon Emissions, Zero Disparity of Access, and Zero Deaths on our streets and highways, the only goal as defined here is affordability. We urge you to rewrite the goal to be "Ensure that All Have

Affordable Access to the Transportation System." We ask that the objectives include: "No one pays more than 40% of their income for housing plus transportation by 2050." It could be valuable to establish objectives around the percentage of trips made using sustainable modes of transportation, but we would recommend that be established under the first goal, and supportive of an objective for zero carbon emissions. In that case, it should be paired with an objective regarding the percentage of the motorized fleets that are electric.

Goal: Manage Congestion & System Reliability

Objectives: Allow people and goods to move with greater reliability; Promote Travel Demand Management (TDM, such as carpool, vanpool, telecommuting and park-and-ride); Enhance Intelligent Transportation Systems (ITS, such as ramp metering, dynamic signal phasing and vehicle detection systems)

We agree that System Reliability is an important goal. By that, we mean both that connections are available when people need them, and that travel times are predictable. Measures of congestion are not as important as measures of travel time predictability, and the travel times should be comparable for all system users. "Objectives 2 and 3" are strategies, not objectives.

Goal: Improve Infrastructure Condition and Resilience

Objectives: Increase proportion of highways and highway assets in 'Good' condition; Maintain transit vehicles, facilities and amenities in the best operating condition; Improve the condition of bicycle and pedestrian facilities and amenities; Promote resilience planning and practices; Support autonomous, connected, and electric vehicles

This is a well-defined goal and set of objectives, except for the last one. "Improving condition" should not be equated with expanding capacity. There is a long tradition of using the term "improvement" to define any transportation project as an improvement (i.e., Transportation Improvement Program). The last objective seems to be a strategy, and doesn't have a clear connection to this goal.

Goal: Ensure Equity and Participation

Objectives: Ensure that transportation investments do not disrupt communities; Promote equitable public participation among all communities

We agree with the goal, however, the first objective does not acknowledge that the existing transportation system has already created disproportionate burdens for low-income communities, especially Black communities, and also other individuals without regular access to a car. One objective should be that the transportation system has zero disparities of access based upon race, wealth, income, gender-identity, age or ability. We urge rewriting the second objective to read, "Ensure equitable public participation among all communities - geographic, racial, age, income, gender, and ability.

Goal: Promote Safety and Health

Objectives: Increase safety of travelers and residents; Promote public health through transportation choices

This is an essential goal. Objective 1 should be stated as Zero Deaths or Serious Injuries on our streets and highways by 2050. Objective 2 should be measurable, such as all residents will have safe access to active transportation choices by 2050. Interim targets should also be established.

Goal: Stimulate Economic Vitality

Objectives: Improve freight movement; Coordinate land use and transportation; Target funding to the most cost-effective solutions; Improve project delivery for all modes

While the Goal seems laudable, it does not indicate for whom. When we don't indicate for whom we are stimulating economic vitality, there is usually a group left behind, and that group is usually those who are Black or Brown, and at the lowest end of our income and wealth scales. If our transportation system is going to become equitable, then we need to be clear that we are stimulating economic vitality for all socio-economic groups, setting objectives toward that, and measuring our progress. We recommend a replacement goal of "Enhance Inclusive Local and Regional Economic Opportunity."

Secondarily, "improve freight movement" is ambiguous. Does this mean shorter freight travel times? or greater predictability of travel times? If a goal suggests the direction that we're going, an objective should communicate where we want to end up. Improving freight movement doesn't do that. Neither does the fourth objective. The third objective is important, but it isn't specific to this goal. We want the most cost-effective solutions that achieve multiple goals.

We recommend the following objectives: Maximize local hire opportunities in construction, operation, and maintenance projects; prioritize foot and bicycle access to local businesses over automobile access and parking; ownership of transportation-related businesses reflects the regional population by race and gender; ensure projects benefit the local community without displacing residents.

Here are my comments for the MPO Board:

Dear DCHC MPO Board Members:

After the demise of the Durham-Orange Light Rail, the assault by Covid-19, the murder of George Floyd, and in the midst of ongoing displacement of low-income residents from in-town neighborhoods, we need to look at the goals and objectives this long range transportation plan update with fresh eyes. <u>The overarching theme should be that the needs of low wealth and health-challenged residents, especially those who are Black, Indigenous, and People of Color (BIPOC), are the number one priority in the MTP</u>. The draft goals should then be prioritized and adjusted to incorporate this theme. Though other values, such as environmental protection and general economic vitality are worthy goals, emphasis on mobility equity is justified at this point in history because low wealth residents and workers have been slammed by rising housing costs, as well as pandemic related job loss and sickness. In addition, the Black Lives Matter movement has reminded us that past transportation investments have increased wealth disparities and thus may warrant compensatory action.

My comments and suggestions on the goals as drafted are attached. Suggested edits are in read, Comments are in blue.

Thank you for the opportunity to provide input on this important plan.

[comments follow on the next two pages]

Goals	Objectives
Protect the Human and Natural Environment and Minimize Climate Change **This should not be the first goal. The first goal should be the highest priority. By not relying on Light Rail and compact, walkable development patterns, the new plan implies a lower priority for this goal than the previous plan** Protect the Environment & Minimize Climate Change	A. Reduce mobile source emissions, GHG, and energy consumption
	B. Reduce negative impacts on natural and cultural Environment, especially in areas where low wealth and BIPOC people live and travel.
Connect People & Places **This is a good first goal because it is the core purpose of transportation** Connect People	A. Connect people to jobs, education and other important destinations using all modes
	B. Ensure transportation needs are met equitably for all populations (especially the aging and youth, economically disadvantaged, mobility impaired, and minorities)
Promote and Expand Multimodal & Affordable Choices Promote Multimodal & Affordable Choices	A. Enhance transit services, amenities and facilities, especially in areas where market and legally restricted affordable housing is located.
	B. Improve bicycle and pedestrian facilities
	C. ~~Increase utilization of affordable non-auto travel Modes~~ Make routes and connections when people need them and expand paratransit services beyond established bus routes
Manage Congestion & System Reliability	**A. Allow people and goods to move with greater reliability.** Allow people and goods to move with minimal congestion and time delay, and greater predictability.
	B. Promote Travel Demand Management (TDM, such as carpool, vanpool, telecommuting and park-and-ride)
	C. Enhance Intelligent Transportation Systems (ITS, such as ramp metering, dynamic signal phasing and vehicle detection systems)
Improve Infrastructure Condition & Resilience	A. Increase proportion of highways and highway assets in 'Good' condition

Goals	Objectives
	C. Improve the condition of bicycle and pedestrian facilities and amenities
	Promote resilience planning and practices. ~~Improve response time to infrastructure repairs~~
	Support autonomous, connected, and electric vehicles.
Ensure Equity, Participation, and public accountability	A. Ensure that transportation investments do not ~~create a disproportionate burden for any~~ **disrupt** communit~~y~~ **ies**.
	B. Promote equitable public participation among all communities (consider using the Durham Equitable Community Engagement Blueprint) B. Enhance public participation among all communities
	C. Ensure that local disadvantaged workers and small businesses can compete for jobs and contracts generated through transportation projects
	D. Establish metrics for goals and objectives and develop an equitable reporting process.
Promote Safety, ~~and~~ Health **and Well-Being**	A. Increase safety of travelers and residents
	B. Promote public health through transportation choices
Stimulate Economic Vitality **and Opportunity**	A. Improve freight movement
	B. Coordinate land use and transportation. Ensure that excellent transit service is available to concentrations of market and legally restricted affordable housing. B. Link land use and transportation
	C. Target funding to the most cost-effective solutions
	D. Improve project delivery for all modes

Thank you so much for the work you are doing to improve representation of public input. It is by no means a small task. The enormity of doing public engagement well, taking into account your current resources, is obvious.

As one of those who HAS attended way too many public hearings and charrettes and DCHCMPO meetings, and one whose demographic is overly represented, I think I can speak to this with some amateur authority.

Those most dependent on bikes or buses or walking to get to their jobs at the hospitals or the universities or the restaurants will never see any of the ads, newpaper posts, or social media posts that are put out. They are not connected to the email blasts from the Town Halls. If they see the word charrette, they will have no idea what that is, but they will doubt it relates to them. They can best be reached through community partners and at their work locations, which are not always large corporations and businesses.

Input sessions I have gone to are rather overwhelming in the amount of information presented and the number of hard-to-decipher maps that had to be explained to me, and I consider myself well-engaged.

My first suggestion would be to seek out partners who are community organizers in the Black community, the Latinx community, the Burmese, Karen, and other refugee communities and other communities of concern. You may need to use those organizers as go-betweens. And meetings may need to happen at the bus stops, or at El Centro, or at the hospital or housekeeping departments of universities. These are the people who don't have time to go out of their way to become involved in input sessions.

Also, work really hard to present material in the most basic way possible, like you would explain it to a neighbor who has never shown interest in a transportation project before. Don't ask people if they are in favor of a project, ask them what obstacles they face with their mobility, what would make their commute or travel to services easier, etc.

I am happy to see this huge disparity being recognized, and I look forward to seeing the effort to address it move forward.

Thanks as always for your work to make our communities better,

DCHC MPO -- 2050 MTP -- Proposed Goals and Objectives

Goals	Original Objectives	Proposed Objectives
Protect the Human and Natural Environment and Minimize Climate Change	a) Reduce mobile source emissions, GHG, and energy consumption b) Reduce negative impacts on natural and cultural environment c) Connect transportation and land use.	**a) (revised) Reduce transportation sector emissions** **a) (revised) Achieve net zero carbon emissions** b) (no change) Reduce negative impacts on natural and cultural environment **c) (deleted - This objective is already included under the Goal: Stimululate Inclusive Economic Vitality)**
Ensure Equity and Participation	a) Ensure that transportation investments do not create disproportionate negative impacts for any community, especially communities of concern b) Promote equitable public participation among all communities, especially among communities of concern.	**a) (revised) Ensure that transportation investments do not create disproportinate negative impacts for communities of concern** **b) (revised) Ensure equitable public participation among communities of concern**
Connect People and Places	a) Connect people to jobs, education and other important destinations using all modes b) Ensure transportation needs are met for all populations (especially the aging and youth, economically disadvantaged, mobility impaired, and minorities)	**a) & b) (revised) Increase mobility options for all communities -- particularly communities of concern.** **x) (new) Achieve zero disparity of access to jobs, education, and other important destinations by race, income, or other marginalized groups.**
~~Promote and Expand Multi-modal & Affordable Choices~~ Ensure That All People Have Access to Multimodal and Affordable Transportation Choices	a) Enhance transit services, amenities and facilities b) Improve bicycle and pedestrian facilities c) Increase utilization of affordable non-auto travel modes	a) (no change) Enhance transit services, amenities and facilities b) (no change) Improve bicycle and pedestrian facilities c) (no change) Increase utilization of affordable non-auto travel modes
Promote Safety, Health and Well-Being	a) Increase safety of travelers and residents b) Promote public health through transportation choices	**a) (revised) Achieve zero deaths or serious injuries on our transportation system** **b) (revised) Provide all residents with active transportation choices**

Goals: Revisions are indicated in the Goals column; **Bold** = addition; ~~strikethrough~~ = delete.

Proposed Objectives: B**old** indicates revised or new.

Goals	Original Objectives	Proposed Objectives
Improve Infrastructure Condition and Resilience	a) Increase proportion of highways and highway assets in 'Good' condition b) Maintain transit vehicles, facilities, and amenities in the best operating condition c) Improve the condition of bicycle and pedestrian facilities and amenities d) Promote resilience planning and practices e) Support autonomous, connected, and electric vehicles	a) (no change) Increase proportion of highways and highway assets in 'Good' condition b) (no change) Maintain transit vehicles, facilities, and amenities in the best operating condition c) (no change) Improve the condition of bicycle and pedestrian facilities and amenities d) (no change) Promote resilience planning and practices e) (no change) Support autonomous, connected, and electric vehicles
Manage Congestion & System Reliability	a) Allow people and goods to move with greater reliability b) Promote Travel Demand Management (TDM, such as carpool, vanpool, telecommuting and park-and-ride) c) Enhance Intelligent Transportation Systems (ITS, such as ramp metering, dynamic signal phasing and vehicle detection systems)	a) (no change) Allow people and goods to move with greater reliability **b) & c) (revised) Increase efficiency of existing transportation system through strategies such as Transportaiton Demand Management (TDM) and Intelligent Transportation Systems (ITS)**
Stimulate **Inclusive** Economic Vitality	a) Improve freight movement b) Coordinate land use and transportation c) Target funding to the most cost-effective solutions d) Improve project delivery for all modes	**x) (new) Ensure equitable distribution of transportation investments especially to communities of concern** a) (no change) Improve freight movement b) (no change) Coordinate land use and transportation **c) (revised) Invest in cost-effective solutions to improve travel reliability and safety** d) (no change) Improve project delivery for all modes

Goals: Revisions are indicated in the Goals column; **Bold** = addition; ~~strikethrough~~ = delete.

Proposed Objectives: B**old** indicates revised or new.

2050 MTP Development
Public Engagement Plan

Capital Area MPO
Durham-Chapel Hill-Carrboro MPO

June 2, 2020

Contents

Introduction

The Metropolitan Transportation Plan (MTP) is the long-range regional transportation plan for the greater Research Triangle region. The Capital Area and the Durham Chapel-Hill Carrboro MPOs coordinate to develop the MTP for the region. The 2050 MTP will provide a framework for the investment of anticipated federal, state and local funds, based on anticipated needs and regional goals and objectives over a 30-year timeframe. It will include transportation projects, programs, and policies across modes (roadway, transit, rail, bicycle, and pedestrian).

Public engagement is a significant component of the MTP development process. Decisions cannot be based solely on numbers and the interpretation of goals and objectives by the MPOs' staff and Policy Boards. Public engagement provides an opportunity to build trust and credibility for the MTP by engaging with a variety of stakeholders and residents to provide information and elicit input. The development of the 2050 MTP will include a comprehensive public engagement process that uses input from residents, municipal and agency partners, key community stakeholders and interest groups to provide a critical evaluation of the products for each stage of developing the plan.

The purpose of the following Public Engagement Plan ("PE Plan") is to outline the goals and methods to be deployed to promote meaningful participation and ensure that the public is not only informed, but also involved in the creation of ideas, identification of problems and issues, and the development of solutions. The intent is to provide the overarching engagement goals and the range of tools that will be used to engage members of the public, when they will be used during the overall development of the 2050 MTP, and a schedule of independent and overlapping activities. This PE Plan focuses on inclusive and authentic public outreach tools and tactics that will reach the region's numerous and diverse stakeholders and residents early and consistently. Engagement methods will focus on educating the general public on the MTP development to build awareness while obtaining the necessary input for the technical team to progress.

In addition to this PE Plan, which is customized for public engagement related to the 2050 MTP, both MPOs have a Public Participation Plan available on their respective websites (www.campo-nc.us or www.dchcmpo.org). Those plans detail the requirements for public comment periods, notifications of public hearings, and more especially related to MPO Policy Board actions.

Key 2050 MTP Development Milestones

There are five milestones in the development of the 2050 MTP that will involve public engagement:

I. Vision – Goals & Objectives
II. Travel Model and SE Data
    a. Socio-Economic Data (SE Data) to be used for 2050 MTP
    b. Triangle Regional Model (TRM) to be used for 2050 MTP
III. Alternatives Selection and Analysis
IV. Preferred Option Review
V. 2050 MTP Adoption

Public Engagement Goals

The strategies and methods outlined in this PE Plan reflect one or more of the following goals:

Meaningful: Multiple engagement efforts will take place during the 2050 MTP development process (18+ months). They will be customized to each development milestone.

Ensure Access (1): “Go to them where they are approach.” Deploy a range of methods to reach all populations, including targeted efforts toward traditionally underengaged populations

- Involve minority, low-income, limited English proficiency, and disabled populations in the transportation decision-making.
- Coordinate with ongoing planning and outreach efforts of MPOs and partners (i.e. local municipalities and NCDOT) for opportunities to engage broader public and avoid "engagement fatigue".
- Utilize community ambassadors and traditionally underengaged population representatives to gain input from targeted communities of concern

Ensure Access (2): All materials will be crafted in a manner that is easily understood by the general population and ensure that participation is both welcomed and encouraged.

•**Ensure Access (3):** Increase access to participation by utilizing both in-person and online methods.

•**Increase Participation:** Leverage recent engagement efforts by MPOs as well as municipal partners for outreach mechanisms (eg. contacts lists) to broaden reach to both general public and targeted groups

○**Documentation:** Target and measure engagement gaps and successes. Document public engagement activities and inputs for review by the public, administrators and decision makers.

○**Build Trust:** Close the loop; ensure all participants receive follow-up information about outcomes.

Public Engagement Activities

The following table depicts the intended public engagement activities for the development of the 2050 MTP. These activities are also described further below. Through these methods, staff from both MPOs will strive to create opportunities to engage with diverse stakeholder groups and residents early and consistently. Other tools and materials may be developed if circumstances suggest they will enhance effectiveness.[1]

Activity	2050 MTP Development Milestone				
	I. Goals & Objectives	II. SE Data and TRM	III. Alterna-tives	IV. Preferred Option	V. Adopt Plan
Written Materials					
Reports	✓	✓	✓	✓	✓
Maps	--	✓	✓	✓	✓
In-Person Engagement					
In-person events	--	--	✓	✓	--
Public hearing	✓	✓	✓	✓	✓
Presentations	--	--	✓	✓	--
Virtual Engagement					
Website	✓	✓	✓	✓	✓
Social media	✓	✓	✓	✓	✓
Videos	--	✓	✓	✓	✓
Online survey & map	✓	✓	✓	✓	--
Mailing list	✓	✓	✓	✓	✓
Newsletters/Brochures	✓	--	✓	✓	--
Media and Ads					
Press releases	✓	✓	✓	✓	✓
Ads	✓	--	✓	✓	✓
Diverse Engagement	✓	✓	✓	✓	✓
Respond to Comments	✓	✓	✓	✓	✓

[1] *It should be noted that in-person events will take place as permitted by Covid-19 social distancing restrictions.*

Activity Descriptions

1. Written Materials

Reports – The MPOs will produce easy-to-read plan reports that make extensive use of visuals such as charts, tables and graphs to present the materials. Long reports will have a summary.
Maps – The MPOs will produce easy-to-read printed and electronic maps (e.g., PDFs), and interactive, online maps that allows the user to zoom-in and zoom-out.
Mailing List – The MPOs will create an electronic and postal mailing list of people and agencies and send engagement opportunity notices to that list.

2. In-Person Engagement

In-person engagement will be held at various locations throughout the region to ensure the MPOs receive feedback from a variety of locales and socioeconomic groups. To the extent possible, the MPOs will coordinate with the public engagement activities of other planning efforts in the area. The MPOs' activities will be held at locations that are accessible to persons with disabilities and which are located on a transit route, to the extent feasible (some parts of the planning areas do not have fixed-route transit service). If notified within 48 hours of an event, special provisions will be made, e.g., sign language, translator, etc.

In-person events – These events can have a variety of formats, including, but not limited to:

- Workshops in which community members are able to talk one-on-one with staff;
- Focus groups in which a facilitator helps to produce feedback;
- Charrettes that allow citizens to make hands-on contributions to design elements; and,
- Pop-up events conducted at popular locations for targeted groups.

Public hearings – People can directly address the MPO Board.
Presentations – As appropriate, the MPOs will make presentations and solicit feedback from the elected officials and advisory commissions and committees of partner agencies and municipalities, and those identified among the target groups.

3. Virtual Engagement

Website – The MPOs will develop Web sites that provide the public: easy ways to provide feedback; background on the MTP federal requirements; MPO public engagement plan and schedule; public opportunities to participate and sign-up for notices; all MTP documents, maps, presentations and surveys; and staff contact information. Currently, the MPOs are investigating the possibility of creating a single 2050 MTP Web site for both MPOs.
Social Media – The MPOs will publish public engagement opportunities through social media such as Twitter, Facebook and Instagram.
Videos & Audio Files – The MPO will develop and publish explanatory videos to present products from the development of the 2050 MTP. The MPOs will also explore the utility of a monthly podcast, or presentations with audio for distribution.
Online Survey and Maps – As appropriate, the MPO will administer written and online surveys, and crowdsource maps.
E-Newsletters and Brochures – The MPO will publish newsletters or brochures for major milestones.

Call in meetings and/or Virtual Town Halls – The MPOs will host virtual meetings and endeavor to replicate in-person activities online at key milestones, as appropriate. Such meetings would be interactive to engage participants via meeting polling, and similar tactics. Online meetings (at a minimum the staff presentations) will be recorded and posted on the website

4. Media and Ads

Press Releases – The MPOs will provide press releases to the local governments in their planning area for release to the public.
Ads - The MPOs will publish a notice in major newspapers, and other local, minority, or alternative language newspapers, as appropriate, to notify the public of engagement opportunities.

5. Diverse Engagement

The MPOs will endeavor to engage people from all member jurisdictions, multi-modal transportation groups, neighborhood and community groups, and local and State agencies responsible for environmental protection, conservation, land use management, natural resources and historic preservation. The MPOs will realize more equitable engagement by including people from the environmental justice communities including minority, low-income, limited English proficient, and elderly persons.

6. Respond to Comments

The MPOs will document both oral and written public comments received during the course of public engagement and make those comments available to the MPO Executive Board and the public. As needed, staff will summarize comments, and in some cases directly responded to significant or popular comments.

2050 MTP Schedule

Task ID#	Plan Tasks	2020 Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2021 Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2022 Jan	Feb	Mar
2050 MTP																										
1	**Goals and Objectives** -- draft, use for scenario evaluation, adopt with final 2050 MTP						public hearing																			
2	**Socio-economic Data** (SE Data) -- <u>Base Year</u> - CO and/or ACS for for populatin and complete Employment Analyst	collect employment	collect employment	collect employment	clean employment	clean employment	clean employment																public hearing			
3	**Socio-economic Data** (SE Data) -- <u>2050</u> horizon year -- develop guide totals																						public hearing			
4	**Land Use Model** (CommViz) -- update land use model, create scenarios, approve for use in 2050 MTP, adopt with final 2050 MTP										public hearing												public hearing			
5	**Triangle Regional Model** (TRM) -- update model, verify network, and approve for use in 2050 MTP										public hearing												public hearing			
6	**Deficiency Analysis and Needs Assessment** -- generate deficiency analysis, develop needs assessment, and Board review and comment																									
7	**Financial Plan** -- cost and revenue estimates for Preferred Option based on cost models																				public hearing					
8	**Alternatives Analysis** -- generate and evaluate alternatives, extensive public engagement and public hearing, select Preferred Option																		public hearing							
9	**Adoption of 2050 MTP** -- release fiscally-constrained Preferred Option for comment, conduct hearing, receive local and agency review, and approve Plan for AQ analysis																				public hearing					
10	**Air Quality Conformity** -- release Air Quality Conformity Determination Report (AQ CDR) for comment, conduct hearing, receive local and agency review, and adopt 2050 MTP and AQ CDR																								public hearing	public hearing

MPO Board and Staff Actions	
	(bold/blue block) = Board action
	(light/blue crosshatch) =1st Bd review/action
	(light grey block) = staff work

Note: MPO executive boards do not meet in **July**

This schedule was last updated on : 6/2/2020


US 15-501
CORRIDOR STUDY
BETWEEN DURHAM AND CHAPEL HILL
DURHAM AND CHATHAM COUNTY
A CONNECTION BETWEEN THE EASTOWNE AND NEW HOPE COMMONS QUADRANTS THAT SERVES TRANSIT, BICYCLE, PEDESTRIAN, AND AUTOMOBILE TRIPS WILL BE DEVELOPED OUTSIDE OF THE US 15-501 CORRIDOR STUDY. THIS CONNECTION WILL SEEK TO MINIMIZE ENVIRONMENTAL IMPACTS TO THE NATURAL HERITAGE AREA.
NEW HOPE COMMONS DR.
I-40
IF THERE IS NO MULTIMODAL BRIDGE AND ROADWAY THAT CONNECTS THE EASTOWNE AND NEW HOPE COMMONS QUADRANTS, A BICYCLE/PEDESTRIAN BRIDGE WILL BE CONSTRUCTED AS PART OF THE I-40/US 15-501
MATCH LINE SEE SHEET 2 OF 2
LEGEND
EDGE OF TRAVEL
PAVED SHOULDER
CURB AND GUTTER
RIGHT OF WAY
BRIDGE
FUTURE ACCESS
PROPOSED MUP TRAIL
DDI MUP TRAIL
BUS TRANSIT PATH
RETAINING WALL
LANE LINES
CONCRETE ISLAND
MULTI-USE PATH
BIKE LANE
SIDEWALK
PAVEMENT REMOVAL
PAINT STRIPE
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
US 15-501
CORRIDOR STUDY
TIP PROJECT No. 188886A
DURHAM AND CHATHAM COUNTY
NOTE: THESE ARE DRAFT CONCEPTS AND ARE LIKELY TO UNDERGO REVISIONS.
SHEET 1 OF 2
200
400
GRAPHIC SCALE
PLANS PREPARED BY:
PRELIMINARY PLANS
SUBJECT TO CHANGE WITHOUT NOTICE
DATE PRINTED X/XX/2019
TRANSMITTED BY DYLAN J. O'NEAL

US 15-501
CORRIDOR STUDY
BETWEEN DURHAM AND CHAPEL HILL
DURHAM AND CHATHAM COUNTY
MATCH LINE SEE SHEET 2 OF 2
NAD 83/2011
LEGEND
EDGE OF TRAVEL
PAVED SHOULDER
CURB AND GUTTER
RIGHT OF WAY
BRIDGE
FUTURE ACCESS
PROPOSED TRAIL
CREEK
BUS TRANSIT PATH
RETAINING WALL
LANE LINES
CONCRETE ISLAND
MULTI-USE PATH
BIKE LANE
SIDEWALK
PAVEMENT REMOVAL
PAINT STRIPE
ON STREET PARKING
NOTE: THESE ARE DRAFT CONCEPTS AND ARE LIKELY TO UNDERGO REVISIONS
SHEET 2 OF 2
0
200
400
GRAPHIC SCALE
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
US 15-501
CORRIDOR STUDY
TIP PROJECT No. 188886A
DURHAM AND CHATHAM COUNTY
PLANS PREPARED BY:
PRELIMINARY PLANS
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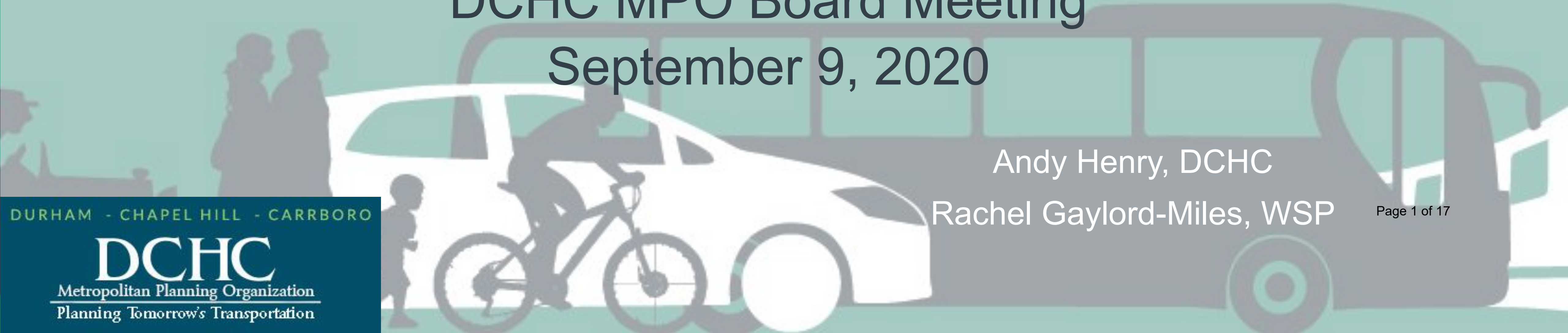
TRANSMITTED BY DYLAN J. O'NEAL

US 15-501 Corridor Study

DCHC MPO Board Meeting
September 9, 2020



Andy Henry, DCHC
Rachel Gaylord-Miles, WSP

DURHAM - CHAPEL HILL - CARRBORO
DCHC
Metropolitan Planning Organization
Planning Tomorrow's Transportation

Today's Presentation

- Purpose
- Process
- Products
- Recommendations
- Next steps

Purpose

- Key travel corridor, growing demand and travel delay, and changing land use.
- Purpose – coordinate land use and transportation; and, identify multimodal transportation projects for MPO's long-range plans and TIP (Transportation Improvement Program)

US 15-501 CORRIDOR STUDY
Reimagining 15-501

Process

- Project began in 2018
- Project Steering Committee – staff from local governments, NCDOT, transit agencies.
- Extensive public input – corridor tour; three public workshops; pop-up events in Durham and Chapel Hill; online public input map; local boards and commissions; interim reports to MPO Board; and, meetings with staff and elected officials.

Products

US 15-501 CORRIDOR STUDY
Reimagining 15-501

Final Report

Final study for release today…

- 1- Full report: highlights from interim report, recommendations with proposed cross-section, and implementation plan
- 2- Conceptual design: high-level drawing on map; demonstrates feasibility
- 3- Summary report: easy to read and reference; graphic based

US 15-501 CORRIDOR STUDY
Reimagining 15-501

Recommendations

Segment 1

- Ephesus Church Road to I-40
- Vision:
  - *Balance between the conflicting priorities of accessibility and mobility with a design that improves the flow of through traffic, but also provides tools for creating a more urban environment through reduced travel speeds, increasing the number and safety of crossing locations for bicyclists and pedestrians, and streetscaping to provide a more urban feel. High capacity transit service is prioritized with the inclusion of a bus only lane.*

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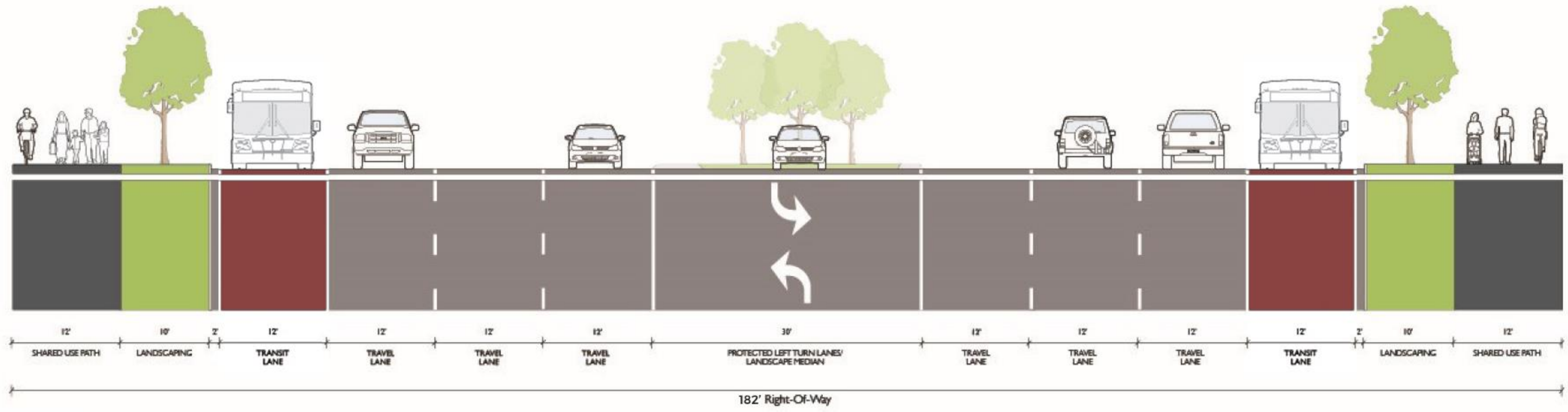
Segment 1

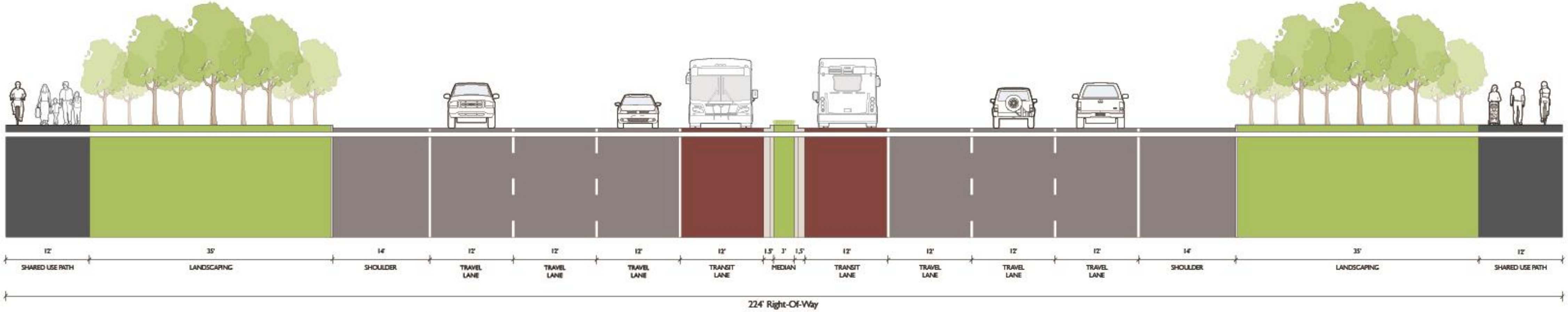


US 15-501 CORRIDOR STUDY
Reimagining 15-501

Segment 2

- I-40 to US 15-501 Bypass
- Vision:
  - *Focus is on mobility with a design that focuses on multimodal grade separations, while recommending local street networks within developments adjacent to the corridor for local traffic and bicycle and pedestrian movements along the corridor. High capacity transit service is prioritized with the inclusion of a bus only lane.*

Segment 2



US 15-501 CORRIDOR STUDY
Reimagining 15-501

Segment 3

- US 15-501 Bypass to Chapel Hill Road
- Vision:
  - *Aims to provide a more urban cross section that reduces the speed of vehicles and provides a more pedestrian friendly environment with bicycle and pedestrian facilities and land use closer to the corridor. For the entire corridor, capitalize on opportunities to create land use patterns that promote multimodal travel, and incorporate urban design and human-scale design.*

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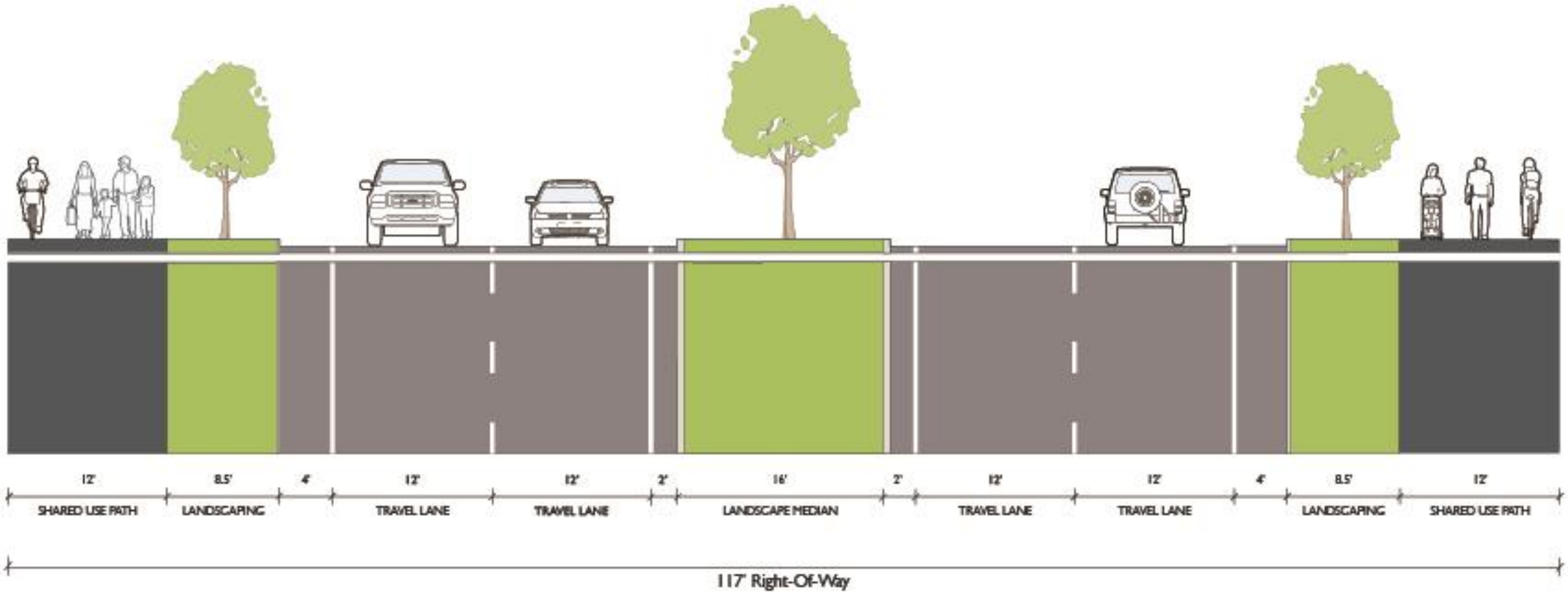
Segment 3



US 15-501 CORRIDOR STUDY
Reimagining 15-501

Segment 4

- Chapel Hill Road to University Drive
- Vision:
  - *Aims to provide a more urban cross section that reduces the speed of vehicles and provides a more pedestrian friendly environment with bicycle and pedestrian facilities and land use closer to the corridor. For the entire corridor, capitalize on opportunities to create land use patterns that promote multimodal travel, and incorporate urban design and human-scale design.*

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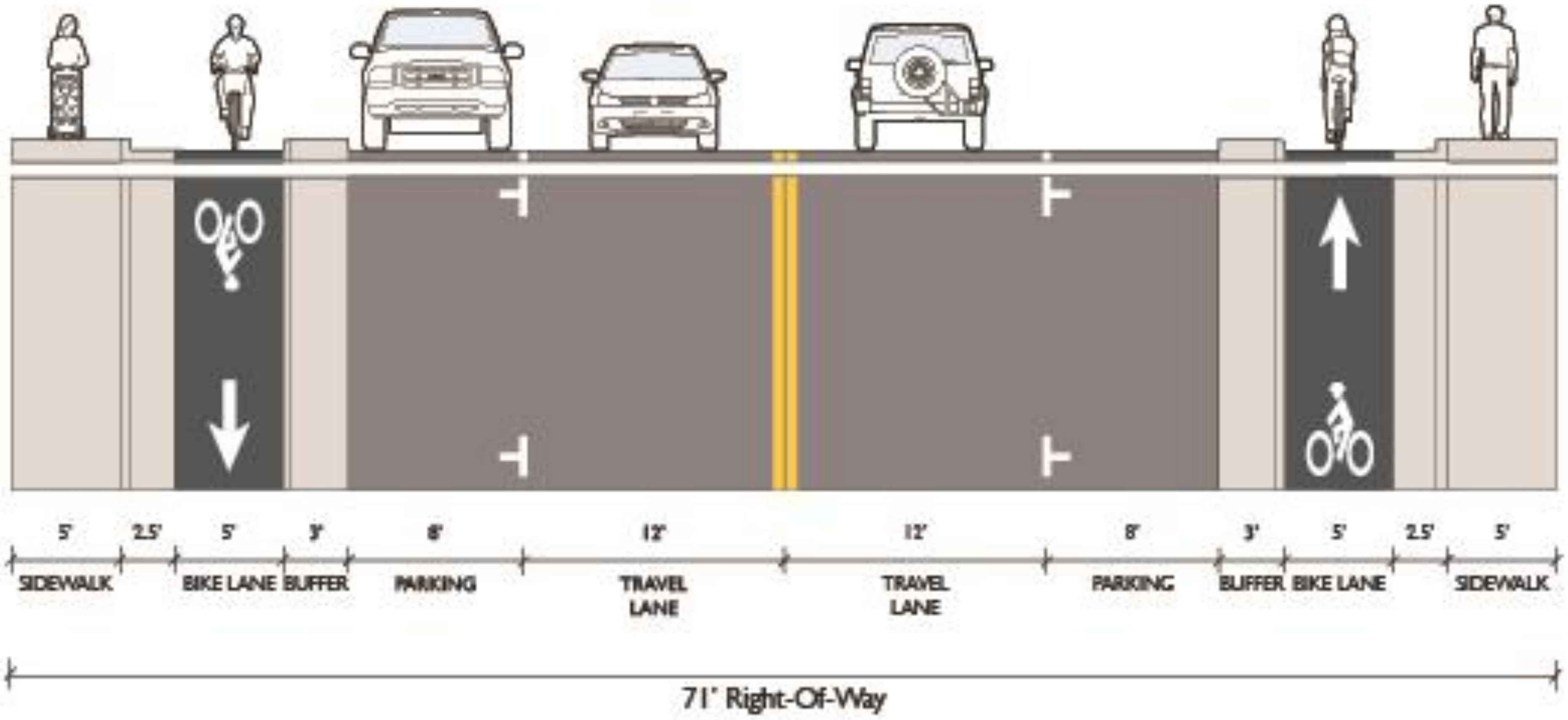
Segment 4



US 15-501 CORRIDOR STUDY
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Implementation

US 15-501 CORRIDOR STUDY
Reimagining 15-501

Next Steps

- September 9 – MPO Board release final report for public comment (9/8 through 10/15 = 37 days)
- October 14 – Public hearing
- November 11 – Approve final report
- Include US 15-501 projects in updated and amended long-range plans (MTP and CTP)

1 Corridor Vision, Goals, and Evaluation Criteria

A critical early step in the US 15-501 Corridor Study was the development of an overarching vision to guide the study process and the recommendations that will be put forth for adoption and implementation. The vision statement generalizes the public's view on how the corridor should function, look, and interact with the surrounding community. It helps clarify the governing principles for the study. The goals for the corridor describe how the vision will be achieved.

1.1 Visioning Process

Stakeholders play a key role in identifying the vision and goals for the study. The stakeholders represent agency staff, elected officials, advocacy groups, key constituent groups, and the public. These groups were engaged in the visioning process in a variety of ways, including:

- Mobile Tour and Visioning Exercise
- Public Workshop
- Public Comment Map

1.1.1 Mobile Tour and Visioning Exercise

To lay the ground work for the visioning process and to facilitate discussion between various stakeholders about the existing conditions along US 15-501, a bus tour was conducted with agency staff, key stakeholders, and elected officials on April 18, 2018. The purpose of the tour was to lay the foundation for the development of the corridor vision and goals, and to provide an opportunity for the project team to listen to the people who live, work and play along the corridor.

Figure 1: Mobile Tour

The corridor tour had five stops along US 15-501, in which participants got off the bus and discussed various elements of that section of the corridor. The five stops were:

- Rams Plaza
- Patterson Place
- South Square
- US 15-501 Business at Foster's Market
- Bus Stop Along US 15-501 at Garrett Road

At each stop, participants alighted the bus to discuss existing conditions surrounding each stop and any plans for ongoing work by the local municipalities, GoTriangle, or NCDOT for those locations. This discussion and accompanying material laid the foundation of the corridor vision.

Following the tour, there was a short meeting to talk about what participants learned on the tour and what they felt was an important takeaway to inform the corridor study process. Participants completed a short questionnaire focused on the identification of key values, priorities, and concerns. One of the questions asked participants to write a news headline about the corridor for the year 2040. The responses were both creative and informative. A sample of the responses is provided in the Figure 3.

Figure 2: Post-tour discussion

Figure 3: Creative 'Headlines from the Future' about the 15-501 Corridor

1.1.2 Public Workshop

The first public workshop was designed as a two-part workshop, with the first part of the workshop conducted as an informal drop-in session where citizens could review graphical display boards summarizing the findings from the community and travel profile, converse with the team members, and provide comments related to issues and opportunities on printed maps of the corridor. The second part of the workshop included a formal presentation of the community and travel profiles along with a summary of existing

Figure 4: Project team engaging with citizens at the workshop

conditions. The presentation also provided clarity on the purpose of the study, and the intended outcome once the plan is finalized and implemented. Following the formal presentation, citizens were engaged in a visioning exercise. The purpose of the visioning exercise was to generate a common vision for the corridor that reflects the thinking of the diverse groups in the community, offers the possibility for fundamental change, and gives the study team a direction to work towards. Electronic polling was used to engage participants in a series of questions framed to assess their values, priorities, and concerns. Following each question, the group was engaged in a discussion to try and probe deeper into the question responses. Data from the polling questions was processed and analyzed to identify key themes that would inform the final vision for the corridor, in addition to providing insight into possible improvement strategies.

1.1.3 Public Comment Map

To engage the broader community and to capture feedback from citizens who are unable to attend the public workshop, an online public comment map was created and provided via the project website. The map encouraged people to identify:

- Areas that are challenging for you to navigate;
- Where you have major issues;
- Where you see opportunities;
- Your major destinations;
- Your environmental and safety concerns; and
- What frustrates you and/or what you think is working well.

Over 300 public comments were received through the public comment map. These responses were processed and analyzed and used both to inform the vision for the corridor, and possible improvement strategies.

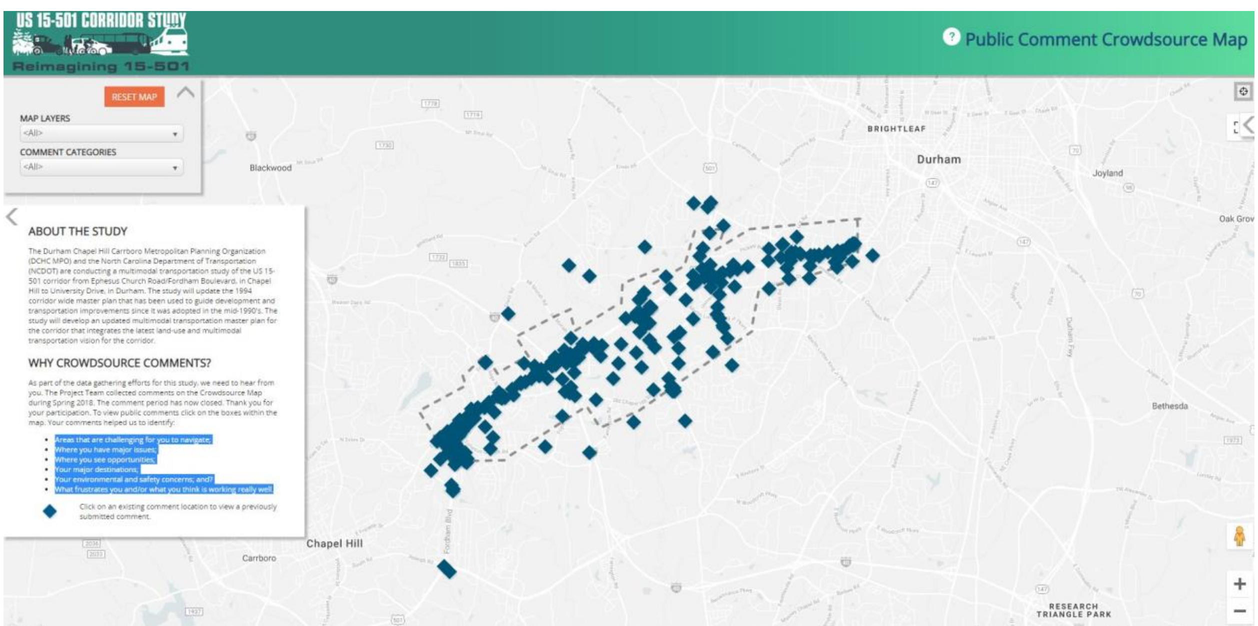


Figure 5: Public Comment Crowdsource Map

1.2 Final Vision

The data received from the visioning and outreach exercises was processed and analyzed to identify key themes that would be used to define the vision for the corridor. The key themes that emerged from this process are:

- Multimodal
- Connectivity
- Mobility

These key themes paired with the detailed responses, conversations with the Project Steering committee (PSC), and with the Durham-Chapel Hill-Carrboro (DCHC) Metropolitan Planning Organization (MPO) Board resulted in the following vision statement for the corridor:

By 2045, US 15-501 between Durham and Chapel Hill will be a key multimodal transportation corridor, that will complement and support [high capacity transit] and the adjacent, mixed use, and multimodal supportive development. The corridor will provide for the safety, mobility, and accessibility of all users, including motorists, pedestrians, bicyclists, and public transportation users; including connections across and through the corridor.[1]

1.3 Corridor Goals

With the corridor vision defined, goals and objectives for achieving the corridor vision were developed. The goals were developed using feedback from the visioning exercises and comments received from the public workshop and online crowdsourcing map. The objectives provide a framework for how a specific goal can be achieved.

The comments received during the public workshop and online crowdsourcing map were categorized into five major themes:

- Mobility/Traffic Flow
- Accessibility/Connectivity
- Land Use/Development
- Environmental Sensitivity
- Health/Safety

These themes led directly to the development of the US 15-501 Corridor Study goals and objectives summarized in Table 1. The goals for the US 15-501 Corridor Study were compared with the DCHC MPO's 2045 Metropolitan Transportation Plan (MTP) to confirm adequate linkages between the two plans. The MTP documents highway, public transportation, bicycle, pedestrian, and other transportation projects to be implemented over the next 25 years to address future travel demand and economic development. The multi-year process to arrive at an adopted MTP involved developing goals and objectives, alternatives, and a preferred set of options, all with numerous public involvement efforts. Any project that is to be submitted for potential state or federal funding, must be included in the MTP. The US 15-501 corridor study used the MTP to guide and inform the study process.

[1] Vision statement revised to reflect the recommended direction of the MPO Board following the discontinuation of the Durham-Orange Light Rail

Table 1: Goals and Objectives for the US 15-501 Corridor Study

Goals and Objectives	MTP Goal Linkage
Goal: Improve accessibility and connectivity for all modes ▪ Seek opportunities to improve and connect existing public transportation services ▪ Improve bicycle and pedestrian directness of routing ▪ Implement interconnected bicycle and pedestrian facilities ▪ Increase transit, bicycle, and pedestrian access to jobs and essential goods and services, particularly for disadvantaged populations ▪ Increase automobile connectivity ▪ Improve accessibility to bus stops, particularly for patrons with ADA needs	▪ Connect people ▪ Promote multimodal and affordable travel choices ▪ Protect environment and minimize climate change
Goal: Improve mobility for all users ▪ Manage peak-period congestion ▪ Increase system reliability ▪ Provide facilities that expand mobility options and that are user friendly ▪ Minimize physical and psychological barriers to non-motorized travel ▪ Identify and implement first/last mile connections for bicycle and pedestrian access to transit ▪ Create an intuitive multimodal network through design and wayfinding ▪ Reduce intermodal conflicts at intersections and driveways	▪ Manage congestion and system reliability
Goal: Enhance safety/health ▪ Identify and eliminate or mitigate locations and operations that pose hazards ▪ Develop transportation infrastructure that prioritizes people ▪ Design intersections for users of all ages and abilities ▪ Improve user comfort on bicycle and pedestrian facilities by increasing separation along corridors with high speed and volume ▪ Increase opportunities for exercise/recreation on non-motorized network ▪ Implement roadway cross-sections that balance modes and greenspace ▪ Improve connectivity, for all modes, to parks and open space ▪ Clear and consistent signing and pavement markings that enhance safety and awareness for all modes	▪ Promote safety and health
Goal: Stimulate Land use, community, and market performance vitality ▪ Create nodal land use patterns that promote multimodal travel ▪ Incorporate urban design and complete streets principles that create human-scale development. ▪ Provide focal points of community activity within designated areas, as appropriate. ▪ Foster a diverse mix of land uses and job types. ▪ Provide suitable housing options for a variety of household types and income levels, including affordable and workforce housing. ▪ Leverage increases in tax base to support community goals. ▪ Preserve essential goods and services and locally distinctive destinations. ▪ Add goods and services that are currently lacking in the corridor in appropriate locations.	▪ Stimulate economic vitality
Goal: Protect sensitive environmental lands within the study area ▪ Mitigate impacts of development on New Hope Creek and other environmentally sensitive areas ▪ Implement transportation infrastructure that is compatible with, and complementary of, the surrounding natural environment ▪ Reduce mobile emissions ▪ Mitigate storm water runoff ▪ Encourage replacement of short distance auto trips with walking or biking trips	▪ Protect environment and minimize climate change

1.4 EVALUATION CRITERIA

Following the visioning and goal setting process the study team worked with the PSC to identify specific measures that both track progress towards goals, and help screen potential strategies and alternatives for the corridor.

Table 2: Evaluation Criteria for US 15-501 Corridor Study

US 15-501 Evaluation Criteria				
Safety	**Multimodal**	**Network**	**Accessibility**	**Equity**
Reduce fatal, injury, and total crash rates	Improve quality of transportation options	Improve access by connecting disjointed portions of a network?	Improve access to and from residential / commercial areas?	Benefit socio-economically disadvantaged populations
Minimize friction between different modes	Reduce barriers to access alternative options	Strengthen existing network	Improve access to recreational / educational facilities	Improve access to lower income jobs / affordable housing
Reduce congestion	Make alternative modes more competitive	Maintain consistency with regional and local plans	Increase catchment area	Preserve community affordability (housing and transportation costs)
	Reduce Vehicle Miles Traveled (VMT)			
Environment	**Health**	**Community**	**Economy**	
Improve air quality	Improve health by providing active transport	Optimize total additional Right-of-Way (ROW) required	Explore potential to attract development	
Preserve Forest / wetlands / creek	Improve access to stores / parks / greenways	Mitigate temporary construction impacts	Improve access to jobs	
Improve Water / runoff quality		Balance community and stakeholder sentiment		
Conserve of existing built environment		Foster community cohesion		

2 Improvement Strategies

The screening of the multimodal alternatives was a multi-step process, as depicted in Figure 6. Feedback from the PSC, comments from the public workshop and crowdsourcing map, along with the initial corridor analysis were used to develop a comprehensive list of ideas and strategies by mode, including land use. All these strategies were compiled and mapped by segment for the entire corridor.

A qualitative screening process was applied using the evaluation criteria summarized in Table 2 to determine which strategies performed best. This was done with the understanding that these strategies would better support the overall goals for the corridor. The screening process resulted in a reduced number of multimodal strategies that were then combined into complementary packages of multimodal alternatives. The multimodal alternatives were further evaluated by the Project Team, PSC, and vetted by the public and MPO Policy Board, resulting in two final alternatives. These final alternatives, discussed in detail in the next section, were taken through a detailed evaluation and conceptual designs were developed. The final strategies and conceptual designs were shared with the public and the PSC to solicit feedback on the community's preference for the final recommendation[2].

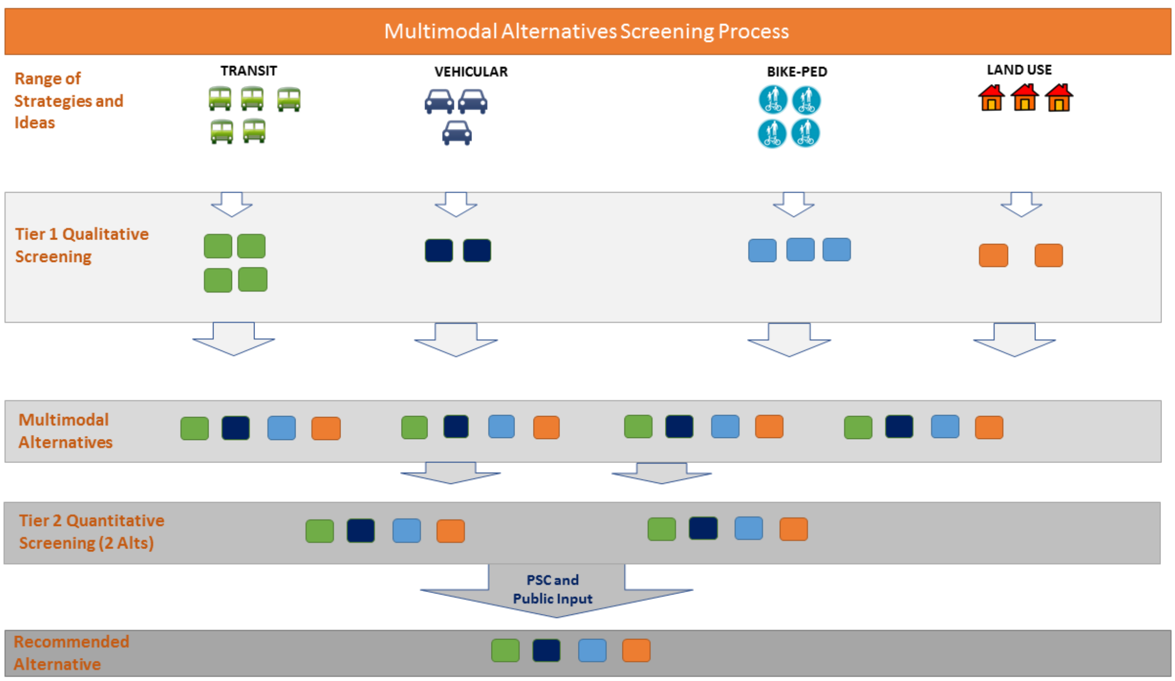


Figure 6: Multimodal Alternatives Screening Process

[2] The final designs presented to the public included a third alternative identified following the decision to discontinue work on the Durham-Orange Light Rail as discussed in Section 4.

3 EVALUATION OF ALTERNATIVES

For the purpose of this study, this corridor is divided into five segments. The segments are defined as:

- **Segment 1**: Ephesus Church Road to I-40 Interchange
- **I-40 Quadrant**: Includes I-40 Interchange and surrounding quadrants
- **Segment 2**: I-40 to US 15-501 Bypass
- **Segment 3**: US 15-501 Bypass to Chapel Hill Road
- **Segment 4**: Chapel Hill Road to University Drive

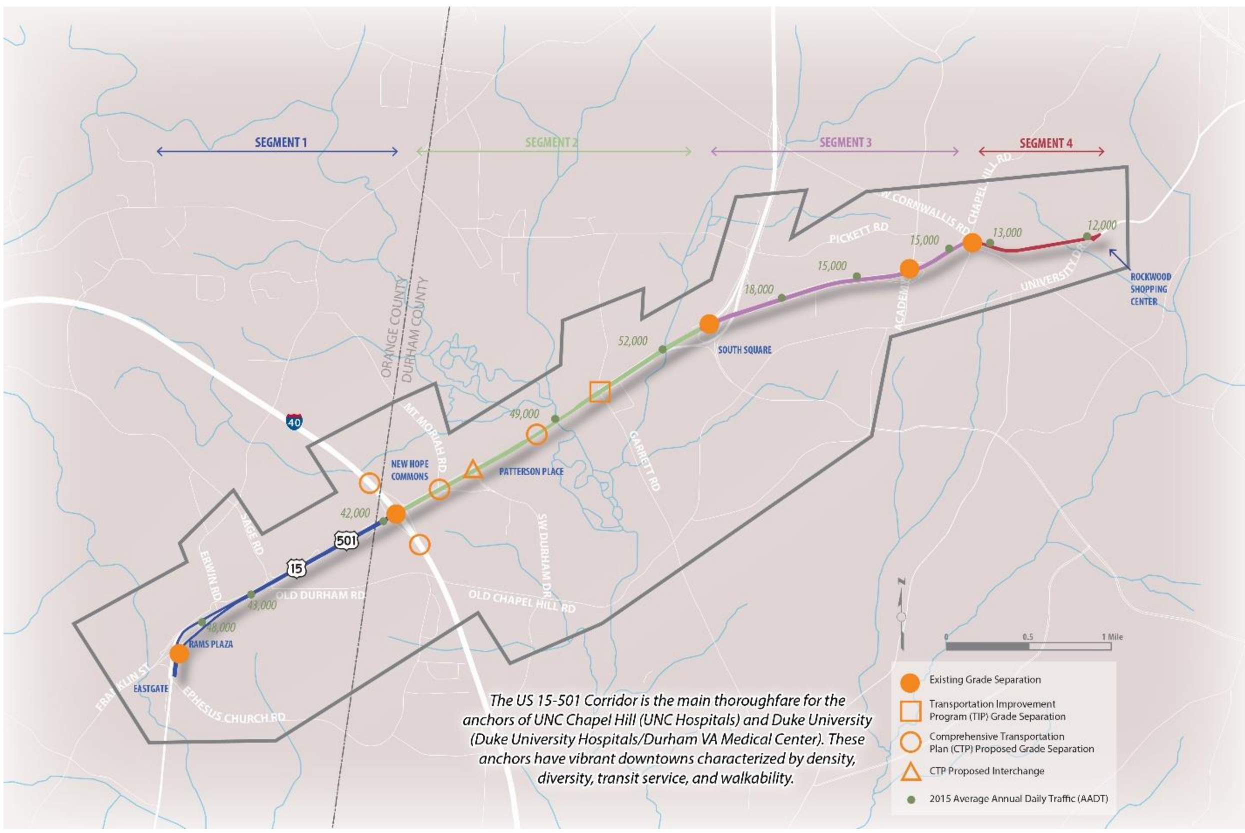


Figure 7: Segment Map

3.1 LAND USE

3.1.1 Introduction and Purpose

Capitalize on opportunities to create land use patterns that promote multimodal travel, and incorporate urban design and human-scale design

This document presents alternative local development and land use scenarios for the US 15-501 corridor in Durham and Orange Counties, relating alternative urban design and land use policy approaches to travel outcomes and facility design needs. This document is a part of the US 15-501 Master Plan update process and builds on the US 15-501 Market Analysis document developed at an earlier phase of the study. The Market Analysis examined growth potential in traffic analysis zones (TAZs) based on the Triangle Regional Model's (TRM) socio-economic and demographic forecasts for 2045, integrating transit station area forecasts based on findings of the GoTriangle Market Study (GTMS) completed in 2018. This accounted for potential displacement of existing uses and resulted in updated TAZ-level forecasts of residents and jobs by type for the study corridor. This Alternative Land Use Strategies document retains those TAZ-level forecasts, posing two potential frameworks for organizing new land uses within each TAZ.

- Alternative A follows the GTMS, using that study's "sketch development" building footprints and typologies to allocate jobs and residents to 100-foot grid cell areas within each TAZ. Excess TAZ growth not accounted for by the GTMS was allocated based on a land suitability analysis and generalized local zoning categories. Because of the heavy influence of the GTMS sketch development data, this alternative tends to focus growth around proposed transit stations, typically orienting buildings toward future transit infrastructure and away from the US 15-501 corridor.
- Alternative B relies on the land suitability analysis and an even coarser generalization of local zoning categories to allocate new jobs and residents within each TAZ, ignoring the GTMS sketch development building footprints. This alternative reflects a potential growth scenario oriented toward existing streets, including US 15-501, with less focus on development around potential transit stations.

The Alternative Land Use Strategies analysis presented below is organized into 3 sections. First, a summary of the allocation process is provided, identifying the key components of the analysis and comparing the steps in developing the alternatives described above. Then, a summary of the outcomes of the allocation process for each alternative is given. Finally, the implications of each scenario are described, focusing primarily on the appropriateness of each development alternative for different sections of the US 15-501 corridor in light of proposed highway design enhancements.

3.1.2 Growth Allocation Process

The allocation process begins with forecasts of housing and jobs by type at the TAZ level based on the US 15-501 Market Analysis document. The TAZ-level totals are distributed to specific locations within each TAZ (represented by 100-foot grid cells). This distribution accounted for forecasted declines in given activity types and/or potential displacement of activities within a TAZ due to redevelopment (based on the overlap of existing uses with GTMS sketch development polygons, e.g.). The activities to be allocated reflect those in the TRM forecasts: housing units and employment. Employment was subdivided into industry, office, service low, service high, and retail categories.

The distribution of growth by activity type is influenced by GTMS sketch development data for Alternative A. The sketch development building footprints and primary use categories are shown in Figure 8. These are focused at the Gateway station area (study segment 1), Patterson Place (segment 2), and South Square (segment 3). Many of the buildings are multi-family residential or mixed-use buildings, although the bulk of the square footage is for office and service employment. It is important to note that the building footprints only represent a hypothetical sketch of potential development based on market indicators. They are not based on approved or proposed developments. Their use in this analysis is to reflect growth potential around proposed station areas and assess how growth could be organized relative to the US 15-501 corridor.

For several TAZs, the total growth forecasted for one or more activity types exceeds the amount anticipated by the sketch development data. Additionally, for many TAZs, there is no sketch development from the GTMS. This remaining TAZ-level growth is allocated based on a land suitability analysis, whereby the most suitable areas within a TAZ are prioritized for growth. The suitability analysis was developed by overlaying several key factors affecting site development, as follows:

- Vacant parcels are generally most suitable for development;
- Underutilized parcels (based on the ratio of building value to land value) may be suitable for redevelopment;
- Parcels in wetlands and areas prone to flooding are not suitable for development; and
- Larger parcels are more suitable for development than smaller parcels, all else being equal.

Figure 9 shows the results of the land suitability analysis. It is important to note that the suitability scores are applied on a relative basis within each respective TAZ. For example, there are some high-growth TAZ's with limited vacant land available, but all of the TAZ's growth is still allocated. This effectively assumes intensification of activity within those TAZs. On the other hand, some of the most suitable areas are located in low-growth TAZs. Even though there are large vacant lots in these areas, only the growth expected for their respective TAZs will be allocated there.

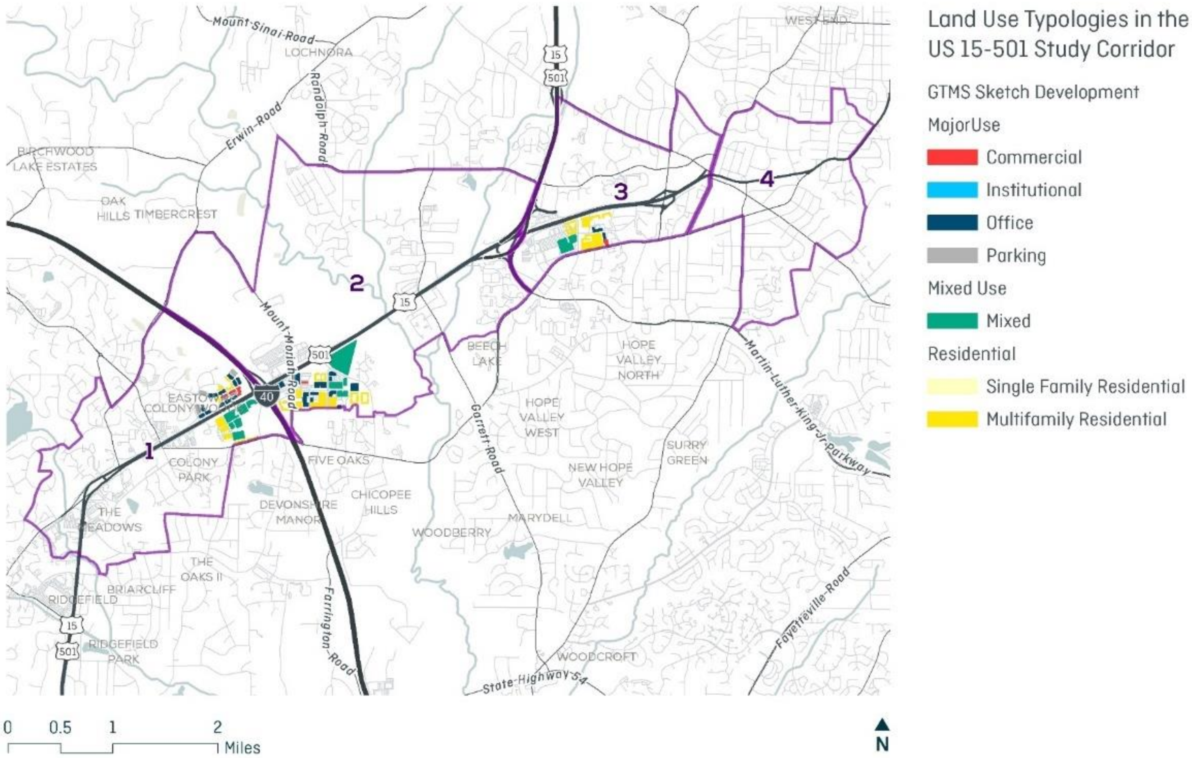


Figure 8: GTMS Sketch Development in the US 15-501 Corridor Study Area

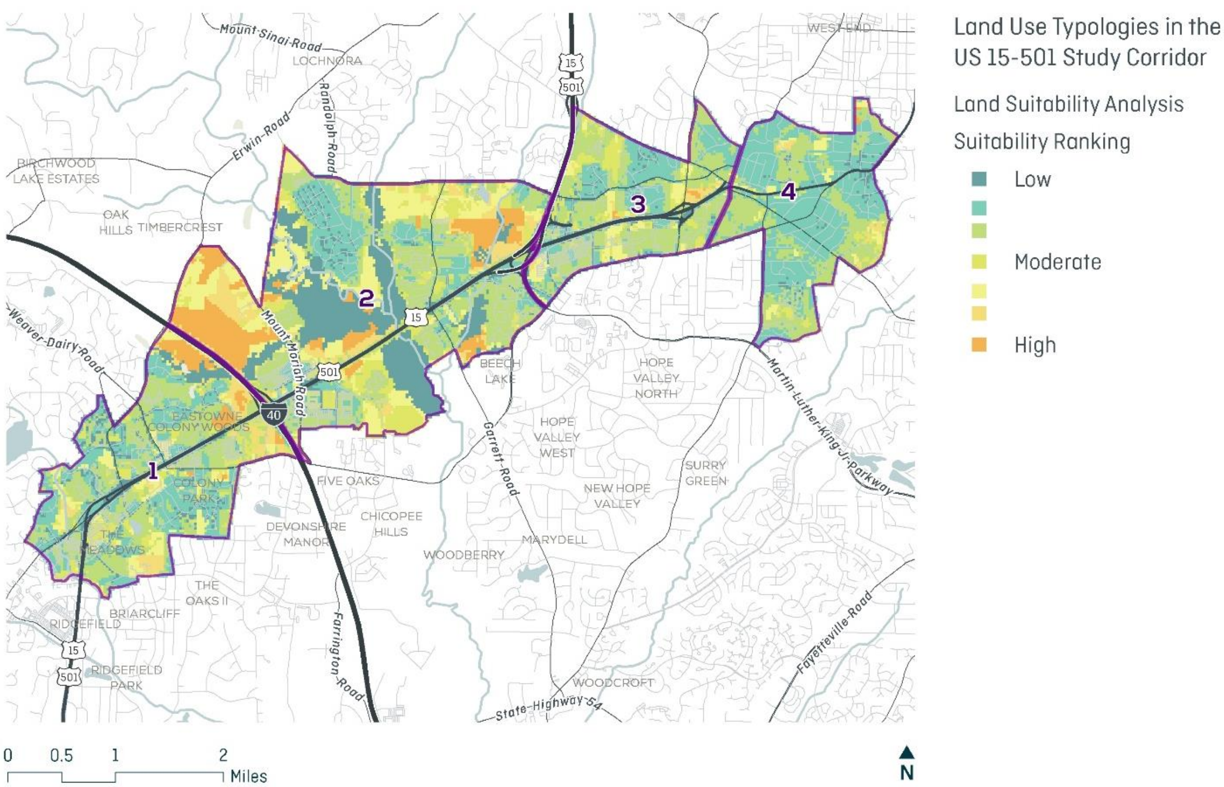


Figure 9: Land Development Suitability in the US 15-501 Corridor Study Area

The suitability analysis reflects the general suitability of a sub-TAZ location (grid cell) to accommodate future growth. It does not reflect different site location preferences or limitations for different land uses. As such, the allocation process is constrained by generalized zoning categories, where housing activity is guided into areas with residential zoning and commercial activities are guided into areas with non-residential zoning. The residential zoning group is stratified into low, medium, and high density areas, while the non-residential zoning group is further classified into commercial, office, and mixed use categories. The resulting classification of grid-cells is shown in Figure 10. The generalized zoning categories represented are distilled from detailed zoning classifications based on zoning data obtained from the City of Durham and the Town of Chapel Hill. They do not reflect the nuances of each jurisdiction's land development policies but are intended to ensure that the allocation of growth within each TAZ broadly reflects appropriate use types and development intensities. Additionally, for Alternative B, each non-residential zoning category was considered as a general "mixed use" category allowing residential development and all job types. This means that for Alternative B, existing zoning categories have less influence on the organization of existing growth compared to Alternative A. Residential zoning categories were retained to limit the potential for jobs clusters to be inappropriately allocated to residential neighborhoods.

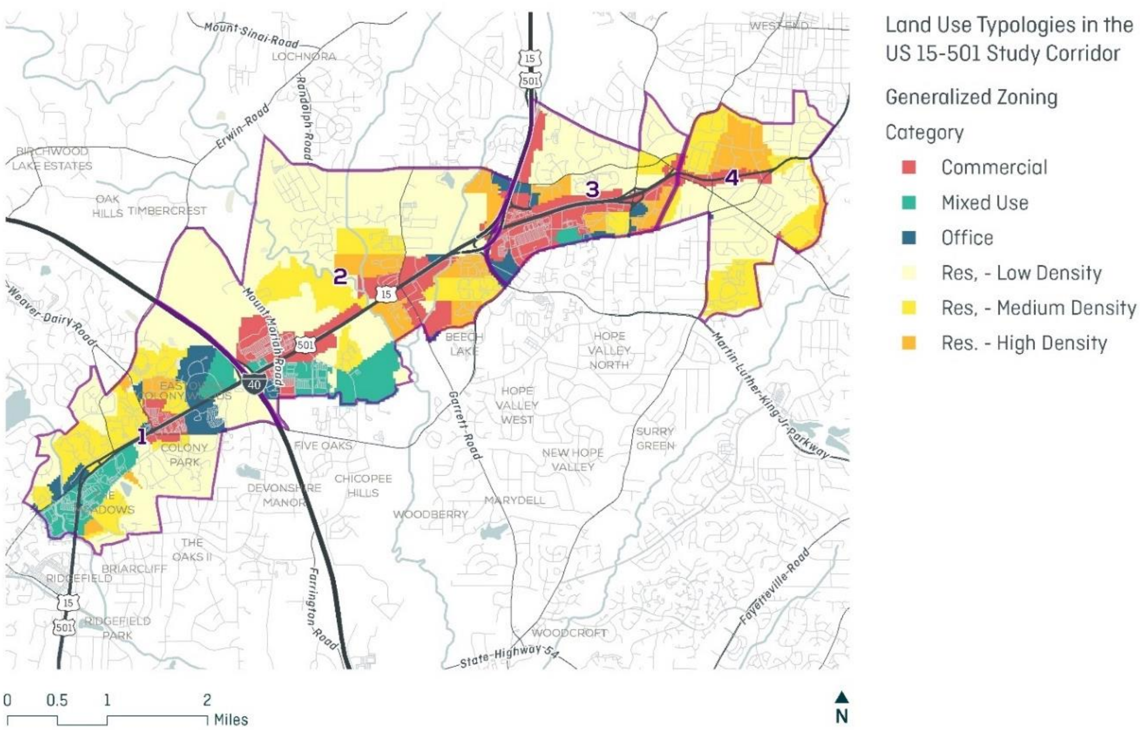


Figure 10: Generalized Zoning Categories in the US 15-501 Corridor Study Area

Having the three major components of the allocation process in place – sketch development, land suitability, and generalized zoning – the process uses development probabilities and zoning-based constraints to distribute changes in activities by type to each grid cell within a TAZ. The specific steps vary slightly for Alternative A versus Alternative B, based on the different assumptions about GTMS sketch development in each. It is helpful to organize the allocation steps into phases as shown in Table 3 below.

Table 3: Allocation Process Steps (Alterative A vs. Alternative B)

Steps of Allocation Process	Alternative A – Station-Area Development and Current Zoning	Alternative B – Corridor Development and Relaxed Non-Residential Zoning.
Existing activity	Allocate existing growth based on current building locations and existing land use data	
GTMS sketch development	Allocate sketch development growth based on GTMS sketch development building footprint and attribute data	NA
	Identify grid cells where existing activity is displaced by GTMS sketch development. Displaced activities may need to be allocated to other locations within the TAZ.	NA
Prepare final allocation	Summarize (non-GTMS) change to allocate by TAZ, incorporating displaced activities into the allocation totals as appropriate.	Summarize change to allocate by TAZ
Allocate decline	If any activity is expected to decline within a TAZ, allocate decline by proportionally reducing activities of that type at existing locations within the TAZ.	
Allocate growth	For all activities expected to grow within a TAZ, allocate growth based on land suitability and applicable zoning designations.	
Summarize total activity	Summarize existing activity and changes to determine total activity in 2045 at all grid cell locations.	

3.1.3 Results of the Allocation Process

The process described above results in the assignment of housing units and jobs (by type) to 100-foot grid cell areas throughout the corridor, accounting for displacement due to re-use and forecasted declines in specific activity types based on the TAZ-level forecasts. The changes allocated are applied to existing activity to develop a picture of what 2045 growth could look like at a fine-grained scale. The goal of this process is not to forecast where growth will occur on a site-by-site basis but rather to assess the potential mix, intensity, and orientation of land uses below the TAZ level. As such, the 100-foot grid cell areas were used to conduct a point density analysis (based on each grid cell's centroid location), summarizing each activity type within a 500-foot radius. This provided a means of classifying allocation results to aid in interpreting the differences between the two alternative land use approaches. The classification approach uses total activity (housing units + jobs) density and land use mix variables to define descriptive place types throughout the corridor as follows:

- Areas having fewer than 5 activities per acre are classified as "low-density development neighborhood" areas.
- Areas having more than 5 activities per acre and 80 percent or greater mix of residential units (as a total of all activities in the vicinity) are classified as "medium-to-high-density residential."
- Areas having fewer than 20 activities per acre and a mix of residential and employment activity are classified as "low-density development transitional" areas.
- The remaining areas were classified into non-residential groups based on dominant land use types, as follows:

    - Areas where retail jobs made up 40 percent or more of all activity in the 500-foot vicinity were classified as "retail/commercial" areas.
    - Areas where office jobs made up 40 percent or more of all activity in the 500-foot vicinity were classified as "office" areas.
    - All others were classified as "mixed use" areas.
- Each grid cell in non-residential groups was then assigned to a "light", "moderate", or "heavy" tier based on density thresholds:
    - Areas having fewer than 50 activities per acre were classified as "light" intensity.
    - Areas having fewer than 100 activities per acre were classified as "moderate" intensity.
    - Areas having more than 100 activities per acres were classified as "heavy" intensity.

The existing place typology was created following the same parameters described above to provide reference for how land uses are expected to change in the corridor. This is displayed in Figure 11. Additionally, the results of the classification process are presented in Figure 12 (Alternative A) and Figure 13 (Alternative B).

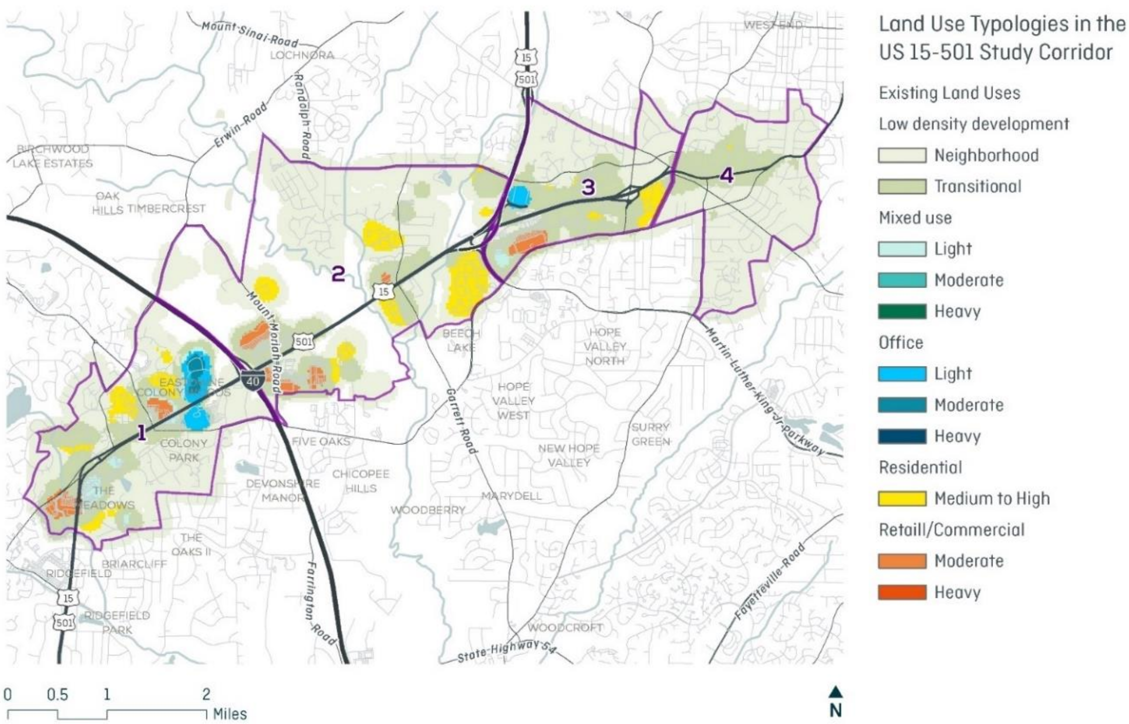


Figure 11: Existing Place Typology (2017)

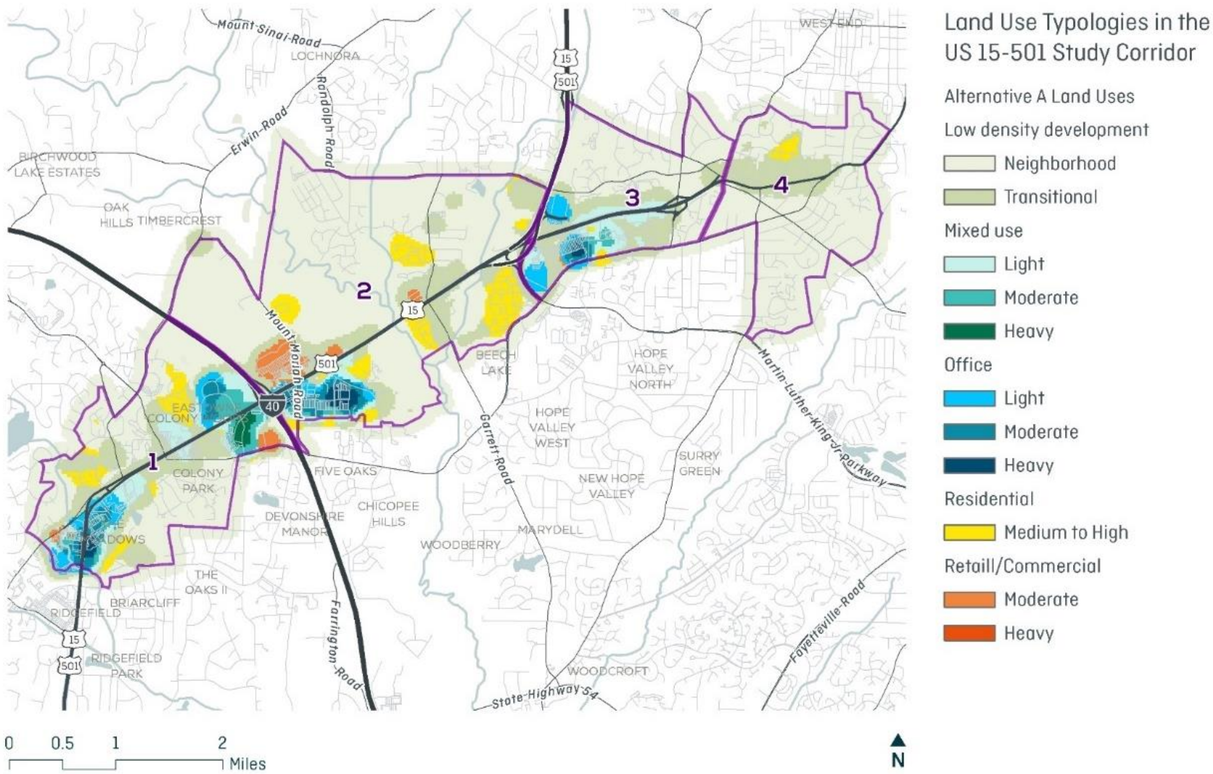


Figure 12: Future Place Typology (Alternative A, 2045)

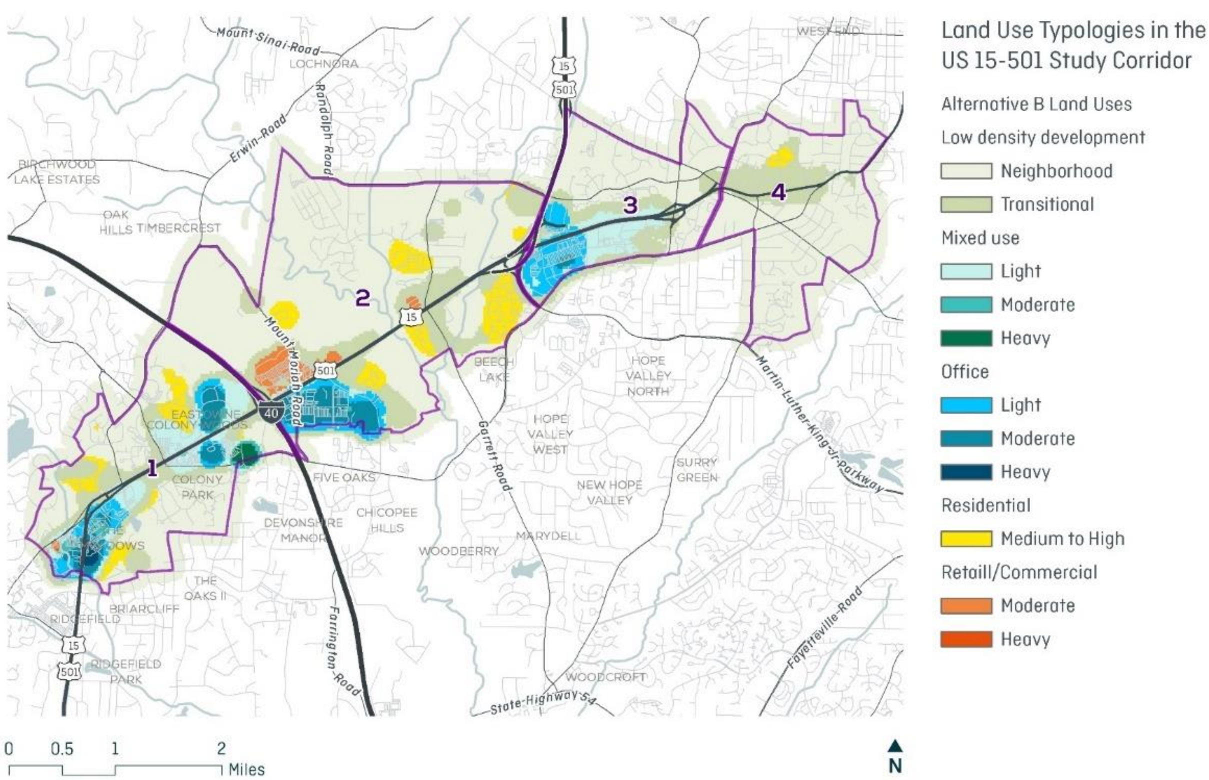


Figure 13: Future Place Typology (Alternative B, 2045)

In both alternative future place typology maps, the growth from the base condition (2017) to 2045 is notable. There is a substantial increase in activity density throughout the corridor, especially at established activity nodes, such as South Square, Patterson Place, and the Blue Hill District. Alternative A shows a nodal pattern of development focused around potential transit station locations. It suggests that many of the highest intensity future uses will be in clusters offset from the US 15-501 corridor. This pattern reflects the station area development modeled in the GTMS sketch development. Alternative B presents a more evenly-distributed growth pattern within the major growth zones. In this alternative, there is a greater number of uses straddling the corridor in high-intensity areas, such as the Blue Hill District and South Square. A rundown of the land use alternatives by each study area segment is provided below.

Segment 1 – Ephesus Church Road to I-40

In Segment 1 there are two prominent growth nodes: Blue Hill District in the south and Gateway/Eastowne in the north. In both alternatives, the Blue Hill district is expected to evolve from a retail and residential area in 2017 into a high intensity office and mixed use area by 2045. The organization of new activities within the district is similar in Alternatives A and B, with the most intense growth straddling the corridor and tapering down towards Franklin Street and Booker Creek.

In the northern portions of the segment, Eastowne is an existing moderate density office area in the southwest quadrant of the US 15-501/I-40 interchange. In both alternatives presented above, office and residential growth create a horizontally mixed use district in Eastowne. Alternative A forecasts higher intensity development than alternative B, with office growth along Eastowne Drive supported by residential and retail development. In Alternative B, growth is more focused within the existing developed portions of Eastowne, with modest residential and office growth in the currently vacant portions of the area. In Gateway – the southeast quadrant of the US 15-501/I-40 interchange – Alternative A envisions a high intensity mixed use district along Lakeview Drive with a cluster of retail uses off Old Chapel Hill Road. Alternative B shows a mixed use development focused along Lakeview and Old Chapel Hill Road, with office jobs expected at the former Blue Cross and Blue Shield of North Carolina headquarters building.

Segment 2 – I-40 to Martin Luther King Jr Pkwy

In Segment 2, there is a modest increase in overall activity near Garrett Road, but most growth is concentrated in Patterson Place with some additional retail coming to New Hope Commons in both alternatives. The growth of these areas complements the growth in the Gateway/Eastowne area, as the interchange I-40 evolves into a regional center.

In Alternative A, office growth is clustered around a proposed transit station and surrounded by medium to high residential. Some of the residential activity forecasted is located near 15-501 corridor, but units will likely be oriented to the interior of the district rather than toward the corridor. In Alternative B, Patterson Place evolves as a moderate intensity office district with activities focused on Mount Moriah Road, SW Durham Drive, and Old Chapel Hill Road. In both alternatives, the growth is offset from the corridor and oriented toward other transportation facilities.

Segment 3 – Martin Luther King Jr Pkwy to Chapel Hill Road

The differences between the two alternatives are most pronounced in Segment 3. In both alternatives, growth in the South Square area is predominantly in housing and the office jobs sector, and in both alternatives housing units are expected to be incorporated into light-to-moderate mixed use areas. However, in Alternative A, the majority of this growth is clustered around a proposed transit station, resulting in a node of activity set back from US 15-501. Uses would likely be oriented toward new streets in a TOD and/or toward Shannon Road and University Drive. Additionally, Alternative A shows a mixed use cluster of activity along Mayfair Street with light-intensity portions abutting US 15-501. Meanwhile, Alternative B forecasts a more even distribution of office growth throughout South Square with a greater concentration of uses (office, housing, and retail) abutting the 15-501 corridor.

Segment 4 – Chapel Hill Road to University Drive
Segment 4 is built out as a low-to-moderate density residential area set back from the 15-501 corridor and storefront businesses along the corridor. Both Alternatives A and B resemble existing conditions, suggesting that incremental change may occur, but the character of the segment is unlikely to change significantly.

3.1.4 Implications of the Allocation Results

The fine-grained land use forecasts presented above represent two potential configurations of activities within the US 15-501 corridor and adjacent TAZs. Since the analysis assumes that TAZ totals of activity by type will remain constant across both scenarios, there is little to differentiate the two alternatives in terms of regional travel impacts. In other words, regardless of how the activities are organized at a site level, they are not re-arranging the organization of uses/activities at a regional level. Common transportation metrics, such as VMT generation, are most sensitive to changes at the regional scale. Therefore, no attempt is made here to quantify and compare the impacts of these alternative growth patterns. However, qualitative distinctions can readily be summarized, pointing to implications for facility design, intersection operations, and multimodal activity. These implications are reported on a segment-by-segment basis below.

Segment 1 – Ephesus Church Road to I-40
In Segment 1, both alternatives forecast the emergence of a mixed use/office district in the Gateway/Eastowne district. This is likely to increase activity at the US 15-501/I-40 interchange as workers throughout the region converge on the district. It also heightens the need for additional street connectivity connecting these areas to Patterson Place and New Hope Commons on the opposite side of I-40. It will also likely generate substantial demand for trips crossing US 15-501 at Eastowne Drive. Depending on the intensity and orientation of uses, pedestrian and bicycle crossing of US 15-501 may become more common. As such ensuring safe and efficient crossings of/access across US 15-501 for all users will be essential.

Given the current configuration of uses and the need to accommodate through traffic/commuters on US 15-501, it may be preferable to orient future uses away from the corridor and toward local streets such as Eastowne Drive, Lakeview Drive, and Old Chapel Hill Road. New connections across I-40 could be developed as “Market Streets” with light-to-moderate office and commercial use and nearby residential. This organization would have the benefit of funneling local travel by all modes away from US 15-501, though it would result in lower overall interaction among uses in all quadrants of the I-40 interchange and make it harder to efficiently serve the area with transit.

In the southern portion of the segment, both alternatives show the Blue Hill District stretching from Franklin Street east and across US 15-501, straddling the corridor with moderate-to-heavy intensity office and mixed use development. This will create a built environment that is very different from today's contexts. Multimodal improvements will be needed to facilitate safe and efficient crossings of the corridor especially for cyclists and pedestrians. This may include operational and/or design improvements at Ephesus Church Road. Since most development will be between Franklin Street and US 15-501 (Fordham Boulevard), new uses should be oriented toward and internal network of cross streets, setting an effective edge at US 15-501.

Segment 2 – I-40 to Martin Luther King Jr Pkwy

In Segment 2, most changes are expected around Patterson Place, and in both alternatives, it appears that land uses will be offset from the corridor and oriented toward a future transit station or local streets, such as Southwest Durham Drive or Old Chapel Hill Road. As such, a corridor design focused on vehicle throughput seems appropriate for US 15-501 with high capacity access to and from Patterson Place via a new interchange or enhanced intersection(s). Land use policy should allow for a mixing uses and orient buildings away from the corridor. Consideration should be given to diversifying uses in the area around New Hope Commons, keeping in mind the potential for new connectivity across I-40 to Eastowne Drive.

A strategic plan for the entire US 15-501/I-40 interchange subarea may be appropriate to analyze detailed scenarios and better understand market demand, policy needs, and multimodal travel demand. The aim of such a study would be to establish a master planning framework to guide development appropriately in each quadrant, accounting for existing and future facilities and uses.

Segment 3 – Martin Luther King Jr Pkwy to Chapel Hill Road

In Segment 3, there is some potential for reuse and intensification along the US 15-501 corridor. This is especially noticeable in Alternative B, which has a more distributed pattern of growth than Alternative A. The Alternative B results suggest that if a variety of uses were permissible along the US 15-501 corridor, it could see substantial (re)development. However, the appropriate quantity and design of new development depends, in part, on the design of this portion of US 15-501.

- If the US 15-501 corridor is redesigned to a more urban cross-section, new developments fronting the corridor may be appropriate. In this scenario, consideration should also be given to redesigning Westgate Drive and encouraging uses to front it. This would help create a complete district bounded by Martin Luther King Jr Parkway, US 15-501 Business, Weymouth Street, and University Drive.
- In the absence of a corridor redesign, growth in the South Square are should be oriented toward University Drive, Mayfair Street, Shannon Road, and new local streets. Office uses should be emphasized in existing parking lots, with greater residential, retail, and services along Mayfair Street.

Segment 4 – Chapel Hill Road to University Drive

In Segment 4, minimal land use change is expected. Assuming facility design focuses on travel operations and multimodal enhancements, this corridor could support modest increases in residential density along the corridor as well as incremental additional retail and services. New uses should be oriented toward the corridor with activated street fronts. A study of parking needs may provide important insight into the segment's development capacity and design.

3.2 Roadway

The roadway strategies by segment and alternative are summarized in Table 4.

Table 4: Roadway Strategies by Segment and Alternative

Segment 1	
Alternative 1 • Widen US 15-501 to a 6-lane median divided synchronized street (including elimination of service roads and channelization • Synchronized street intersection at Ephesus Church Road • Connect Legion Road and Old Durham Road • Small footprint urban interchange at Eastowne Drive • Connector roads connecting all 4 quadrants of I-40 interchange • Implement local street network as proposed by Blue Hill District TIA	**Alternative 2** Same as Alternative 1, except: • Traditional intersection widening at Eastowne Drive
I-40 Quadrant	
Alternative 1 • Redesign I-40 interchange to improve safety and operations (diverging diamond) • Grade separated 2-lane roadway across I-40 connecting New Hope Commons to Eastowne Drive • Grade separated 2-lane roadway across I-40 connecting New Patterson Place to Gateway	**Alternative 2** • No change
Segment 2	
Alternative 1 • Implement Grade separation at Mt Moriah Road • Implement small footprint urban interchange at SW Durham Drive • Create grade separated access point east of SW Durham Drive to connect Patterson Place and New Hope Commons, footprint to follow road network recommended for Patterson Place • Extend SW Durham Drive to connect behind shopping center • Implement Patterson Place and New Hope Commons local street network • Build urban interchange at Garrett Road • Provide vehicle connectivity between Sandy Creek Drive, Chapel Hill Blvd Service Road, and Garrett Road	**Alternative 2** Same as Alternative 1, except: • Additional access points along US 15-501 east of SW Durham Drive, providing access to New Hope Commons and Patterson Place, but both restricted to right in/right out

Table 4 (continued): Roadway Strategies by Segment and Alternative

Segment 3	
Alternative 1 • Implement 2-lane roundabout to transition into a more urban street cross section • Reduce the footprint of the current cross-section to implement a fully multimodal 4-lane urban cross-section with landscaped median and roundabouts at key locations. Add additional intersections to improve connectivity and to further slow traffic and urbanize Segment 3. Full intersections at Mayfair, Weymouth, Shannon, Tower • Roundabouts at Tower, Shannon, and Weymouth • Other locations will be traditional intersections • Retain service roads, initially, to provide full access to adjacent land parcels. Long term removal of the service roads. Connect service road to Academy. • Implement better street connectivity (future focus on an urban grid system) to the north and south of US 15-501 Business • Redesign Academy Road interchange to better reflect urban design • Redesign Chapel Hill Road interchange to better reflect urban design	**Alternative 2** Same as Alternative 1, except: • Implement traffic calming measures to transition to a more urban street cross-section • Traditional intersections in place of roundabouts
Segment 4	
Alternative 1 • Implement 2-lane urban cross-section with roundabouts at key intersections, landscaped median, and consolidated driveways fronting US 15-501 Business. • Provide parking on both sides of the roadway • Redesign University Drive intersection as a roundabout	**Alternative 2** Same as Alternative 1, except: • Traditional intersections in place of roundabouts (except University Drive which remains a roundabout)

The roadway alternatives were evaluated considering systems level metrics, intersection operations, and corridor operations. The system level metrics include vehicle miles traveled (VMT), vehicle hours traveled (VHT), average daily speed, and delay. The Triangle Regional Model was used to evaluate these metrics, with results summarized in Table 5. Comparisons were made against the adopted 2045 MTP and Alternative 1 and 2.

Table 5: System Level Metrics

Performance Measure	Base	2045 MTP	2045 Alt 1	2045 Alt 2	% Change from Base		% Change from MTP	
					Alt 1	Alt 2	Alt 1	Alt 2
Total Daily VMT	249,111	359,595	365,525	365,725	47%	47%	2%	2%
Total Daily VHT	9,334	15,388	15,504	15,480	66%	66%	1%	1%
Average Daily Speed (mph)	26.69	23.37	23.58	23.63	-28%	-28%	1%	1%
Total Delay (mins)	130,648	339,989	330,590	330,813	153%	153%	-3%	-3%
Delay per Mile Traveled (min)	0.52	0.95	0.90	0.90	72%	72%	-4%	-4%

Looking at the system level metrics for the two alternatives, they appear very similar across the various metrics. The differences between the two alternatives are noticed more at the detailed operational level and are often focused on other modes of travel, like bicycles, pedestrians and transit. In Segment 4 for example, the differences are roundabouts in Alternative 1 versus traditional intersections in Alternative 2. Both treatments work for traffic at a system level, but the differences are often focused on the local land use treatments and how the roadway operates for bicycles and pedestrians.

Looking at the percent change from the bases, increases are seen in all categories, except average daily speed. This makes sense because with anticipated growth in the corridor and region, it is anticipated that more traffic volumes will increase, leading to increased VMT and VHT. Without major changes to the infrastructure within and adjacent to the study area, this increased traffic will contribute to increased delay. The decrease in average daily speed aligns with the increased traffic volumes and ties to the increased delay. Overall, the changes seen in Alternative 1 and 2 are similar to improvements documented in the MTP as these improvements were taken as project givens for this study.

Intersection operations were evaluated using Synchro, a specialty software for evaluating intersection operations. Intersection metrics include delay and Level of Service (LOS) as measured on a scale of A-very good to F-failing. The analysis was conducted on key intersections for the no-build condition which assumes the intersection looks the same as it does today, and for the build condition reflected by the specific alternative. The traffic volumes reflect 2025 conditions. The no-build analysis is summarized in Table 6, and the build analyses are summarized in Tables 7 to 14.

The No Build alternative for 2025 forecast traffic, Table 6, shows that overall intersections many intersections are operating at LOS D or better. However, a closer look at individual movements are failing with LOS E or worse. With the new land development patterns forecast for this corridor, traffic is expected to increase and operating conditions will further decline. Tables 7 to 14 document improvement alternatives that were considered for the intersections along the corridor. The LOS goal for the DCHC MPO is LOS D.

Table 6: No Build Analysis

Intersection		AM Peak		PM Peak	
		Delay (sec)	LOS	Delay (sec)	LOS
US 15-501 and Sage Road/Scarlett Drive	EB	31.7	C	99.4	F
	WB	136.6	F	31.9	C
	NB	162.5	F	105.9	F
	SB	73.9	E	71.3	E
	Overall	**96.2**	**F**	**75.4**	**E**
US 15-501 and Eastowne Drive/E Lakeview Drive	EB	26.4	C	28.7	C
	WB	51.0	D	27.6	C
	NB	73.5	E	45.6	D
	SB	87.7	F	81.9	F
	Overall	**44.3**	**D**	**32.3**	**C**
US 15-501 and I-40 EB Ramps	EB	47.2	D	37.1	D
	WB	14.7	B	15.4	B
	NB	--	--	--	--
	SB	62.7	E	66.8	E
	Overall	**30.5**	**C**	**31.6**	**C**
US 15-501 and I-40 WB Ramps	EB	7.2	A	22.7	C
	WB	41.9	D	45.5	D
	NB	76.2	E	45.0	D
	SB	--	--	--	--
	Overall	**39.7**	**D**	**36.3**	**D**
US 15-501 and SW Durham Drive	EB	33.9	C	38.9	D
	WB	13.3	B	15.6	B
	NB	71.2	E	92.5	F
	SB	61.8	E	65.7	E
	Overall	**28.2**	**C**	**33.9**	**C**
US 15-501 and Westgate Drive	EB	19.3	B	22.6	C
	WB	20.4	C	20.8	C
	NB	28.5	C	26.6	C
	SB	38.0	D	37.8	D
	Overall	**21.4**	**C**	**23.0**	**C**
US 15-501 and University Drive	EB	34.8	C	37.0	D
	WB	--	--	--	--
	NB	30.0	C	22.0	C
	SB	18.5	B	29.0	C
	Overall	**29.7**	**C**	**30.7**	**C**

3.2.1 Build Analysis

The sections and tables below highlight the build scenarios at key intersections along the corridor.

3.2.1.1 US 15-501 and Sage Road - Scarlett Drive

Table 7 below summarizes the operations analysis of the Reduced Conflict Intersection (RCI) design, also known as a Superstreet design, along Segment 1. Overall this strategy results in notable operational improvements at the key intersections. In addition to the operational benefits of the RCI, the greatest benefit of this strategy is the safety benefits for all modes of transportation. The RCI is named as such because it reduces the number of conflict points from 32 at a traditional intersection to 14 at the RCI intersection. Studies have shown a 15 to 46 percent reduction in total crashes, and 22 to 63 percent reduction in injury and fatal crashes from implementing this design. Another benefit of this design is the ability to using signal timing to moderate travel speeds, creating a safer and more efficient environment for all users.

Table 7: 2025 Build Alternative 1 - Synchronized Street

2025 Build Alternative 1 – Reduced Conflict Intersection Design					
Intersection		AM Peak		PM Peak	
		Delay (sec)	LOS	Delay (sec)	LOS
US 15-501 and Sage Road	**EB (Left-over)**	34.8	C	21.9	C
	WB	6.6	A	6.3	A
	SB	38.9	D	19.1	B
	Overall	12.7	B	10.0	A
US 15-501 and Scarlett Drive	**EB**	6.5	A	6.2	A
	WB (Left-over)	16.1	B	30.6	C
	NB	21.3	C	38.8	D
	Overall	9.2	A	10.1	B
U-Turn West of Sage Road/ Scarlett Drive	**EB**	6.7	A	7.5	A
	WB (U-Turn)	22.1	C	37.2	D
	Overall	8.7	A	10.1	B
U-Turn East of Sage Road/ Scarlett Drive	**EB (U-Turn)**	36.9	D	22.1	C
	WB	10.7	B	7.7	A
	Overall	13.7	B	9.6	A

3.2.1.2 US 15-501 and Eastowne Drive - Lakeview Drive

The two alternatives evaluated for the Eastowne Drive and Lakeview Drive intersection included traditional widening and the construction of a partial cloverleaf interchange. As shown in the tables below, the partial cloverleaf is clearly the winner considering only operations and LOS. However, this design requires significant right-of-way and is much more impactful to adjacent development. Modest improvements can be made to the intersection with traditional widening to include the addition of dedicated right turn lanes.

Table 8: 2025 Build Alternative 1 - Partial Clover

2025 Build Alternative 1 - Partial Clover					
Intersection		**AM Peak**		**PM Peak**	
		Delay (sec)	**LOS**	**Delay (sec)**	**LOS**
Eastowne Drive and US 15-501 WB Ramps	**EBL**	12.0	B	11.8	B
	EBR	10.6	B	10.2	B
	NBL	7.7	A	7.9	A
E Lakeview Drive and US 15-501 EB Ramps	**EBL**	15.6	C	21.7	C
	EBR	10.0	A	9.3	A
	NBL	8.3	A	8.5	A

Table 9: 2025 Build Alternative 2 - Traditional Intersection

2025 Build Alternative 2 - Traditional Intersection					
Intersection		**AM Peak**		**PM Peak**	
		Delay (sec)	**LOS**	**Delay (sec)**	**LOS**
US 15-501 and Eastowne Drive/E Lakeview Drive	**EB**	23.0	C	28.2	C
	WB	27.2	C	19.4	B
	NB	38.7	D	45.6	D
	SB	40.4	D	81.9	F
	Overall	26.5	C	29.0	C

3.2.1.3 I-40 - US 15-501 Interchange

The I-40 interchange is clearly a bottleneck within the US 15-501 corridor, creating a barrier for both motorized and non-motorized modes of transportation. The goal of the alternative proposed for this location was to maintain a small design footprint, reduce delay, and improve safety by minimizing the number of conflict points. The recommended design is the replacement of the conventional diamond interchange with a diverging diamond interchange (DDI). The DDI reduces the number of conflict points from 26 to 14, greatly improving the safety of the interchange. Several other designs were screened but ruled out from further consideration due to the larger footprint, lesser ability to process left turning vehicles, and greater impacts on non-motorized movements through the interchange. Operations analysis summarized in Table 10 below show reduced delays and improved LOS with the implementation of a DDI.

Table 10: 2025 Build Alternative 1 - Diverging Diamond Interchange

2025 Build Alternative 1 - Diverging Diamond Interchange					
Intersection		AM Peak		PM Peak	
		Delay (sec)	LOS	Delay (sec)	LOS
US 15-501 and I-40 EB Ramp Right-Turn	**WB**	--	--	--	--
	SB	25.0	C	11.5	B
	Overall	2.8	A	1.4	A
US 15-501 and I-40 EB Ramps Crossover	**EB**	33.4	C	23.9	C
	WB	13.4	B	35.7	D
	Overall	20.0	B	29.2	C
US 15-501 and I-40 EB Ramp Left-Turn	**EB**	--	--	--	--
	SB	9.9	A	18.8	B
	Overall	2.9	A	3.9	A
US 15-501 and I-40 WB Ramp Left-Turn	**WB**	--	--	--	--
	NB	28.3	C	14.1	B
	Overall	7.3	A	4.2	A
US 15-501 and I-40 WB Ramps Crossover	**EB**	48.6	D	23.4	C
	WB	53.8	D	31.5	C
	Overall	52.0	D	26.8	C
US 15-501 and I-40 WB Ramp Right-Turn	**EB**	--	--	--	--
	NB	12.9	B	52.3	D
	Overall	4.3	A	16.7	B

3.2.1.4 US 15-501 and SW Durham Drive

An interchange at SW Durham Drive was considered per project givens for the study. A tight diamond interchange was the only design evaluated due to a desire to minimize the impacts on adjacent land parcels and to provide a design that could more safely accommodate pedestrian movements than other designs that provide free-flowing ramp junctions. The grade separation of Mt Moriah Road results in higher volumes of traffic using this interchange to access adjacent developments, impacting the overall LOS, though the design does provide acceptable LOS for both the AM and PM peak hour.

While this design can accommodate sidewalks, no bike lanes are provided due the proximately of the grade separated Mt Moriah Road with full bicycle and pedestrian accommodations and no vehicle weaving movements to contend with. An extensive bicycle and pedestrian network is recommended both north and south of US 15-501 to encourage non-motorized travel along the corridor. In addition to a grade separated crossing at Mt Moriah Road, an additional grade separated roadway is recommended east of SW Durham Drive and will provide bicycle and pedestrian facilities.

Table 11: 2025 Build Alternative 1 - Tight Diamond Interchange

2025 Build Alternative 1 - Tight Diamond Interchange					
Intersection		**AM Peak**		**PM Peak**	
		Delay (sec)	**LOS**	**Delay (sec)**	**LOS**
SW Durham Drive and US 15-501 WB Ramps	**EB**	--	--	--	--
	WB	34.6	C	51.5	D
	NB	18.0	B	30.6	C
	SB	22.7	C	36.6	D
	Overall	25.1	C	39.6	D
SW Durham Drive and US 15-501 EB Ramps	**EB**	39.1	D	62.6	E
	WB	--	--	--	--
	NB	20.0	B	53.9	D
	SB	13.5	B	33.9	C
	Overall	23.6	C	49.9	D

3.2.1.5 US 15-501 Business (Durham – Chapel Hill Blvd) and Westgate Drive

Traffic volumes on US 15-501 Business drop off significantly after the US 15-501 Bypass. This reduction in traffic volumes and an existing cross-section that is not needed based on existing and forecast traffic volumes provides the opportunity to transition this segment of study corridor to a narrower urban cross section with lower speeds, appropriate landscaping and multimodal infrastructure. Transitioning from a higher speed section that prioritizes mobility to a lower speed section that prioritizes access requires appropriate infrastructure to physically slow traffic and visually indicate to drivers that they are entering a new environment. To accomplish this, two strategies were selected for Westgate Drive: 1) a 2-lane roundabout, and 2) channelization and lane reductions. Both alternatives provide acceptable LOS during the peak periods, but the roundabout design offers improved operations in addition to a more physical indication of change along this segment. Results are summarized in Tables 12 and 13.

Table 12: 2025 Build Alternative 1 - Roundabout

2025 Build Alternative 1 - Roundabout						
Intersection		**AM Peak**		**PM Peak**		
		Delay (sec)	**LOS**	**Delay (sec)**	**LOS**	
US 15-501 and Westgate Drive	**EB**	8.2	A	10.3	B	
	WB	5.4	A	8.8	A	
	NB	8.7	A	14.1	B	
	SB	5.9	A	8.8	A	
	Overall	7.3	A	10.5	B	

Table 13: 2025 Build Alternative - Lane Reduction

2025 Build Alternative 2 - Lane Reduction					
Intersection		**AM Peak**		**PM Peak**	
		Delay (sec)	**LOS**	**Delay (sec)**	**LOS**
US 15-501 and Westgate Drive	**EB**	21.9	C	26.9	C
	WB	20.5	C	20.9	C
	NB	28.5	C	26.6	C
	SB	38.0	D	37.8	D
	Overall	22.8	C	25.0	C

3.2.1.6 US 15-501 Business (Durham – Chapel Hill Blvd) and University Drive

Given the unique configuration at University Drive along with the desire to better integrate bicycle and pedestrian, and to improve safety at this location, a roundabout is recommended. To improve multimodal operations and safety, a roundabout is considered at University Drive. In addition to improving multimodal access and safety, the roundabout also reduces peak delay at this location.

Table 14: 2025 Build Alternative 1 - Roundabout

2025 Build Alternative 1 - Roundabout					
Intersection		**AM Peak**		**PM Peak**	
		Delay (sec)	**LOS**	**Delay (sec)**	**LOS**
US 15-501 and University Drive	**EB**	11.4	B	24.7	C
	WB	8.7	A	7.7	A
	NB	20.1	C	13.6	B
	SB	8.3	A	16.8	C
	Overall	12.6	B	18.7	C

3.2.2 Intelligent Transportation Systems and Connected and Autonomous Vehicles (C/AV)

To further improve operations within the corridor, Intelligent Transportation System (ITS) strategies were considered and recommended. The ITS technologies considered are the same for both alternatives, and are summarized by segment in Table 15.

Table 15: ITS Strategies

ITS Strategies
Segment 1 • Connected Vehicle (CV) based Virtual DMS, and Transit Signal Priority (TSP), Traveler Information System like 511 could be an effective ITS solution to the study corridor • Emergency Vehicle Pre-Emption (EVP) system and vehicle detection along the corridor can improve safety and mobility during an emergency event. • Four Closed Circuit Television (CCTV) cameras are proposed to monitor the activities at the intersections and along the study corridor.
Segment 2 • CV based technology like mobile accessible pedestrian signal system could help achieve the goal of a multimodal corridor. • Transit signal priority could help improve transit access and connectivity. • Emergency Vehicle Pre-Emption (EVP) system and vehicle detection along the corridor can improve safety and mobility during an emergency event. • Four Closed Circuit Television (CCTV) cameras are proposed to monitor the activities at the intersections and along the study corridor.
Segment 3 • CV based technology like mobile accessible pedestrian signal system could help achieve the goal of a multimodal corridor. • Emergency Vehicle Pre-Emption (EVP) system and vehicle detection along the corridor can improve safety and mobility during an emergency event. • One Closed Circuit Television (CCTV) camera is proposed to monitor the activities at the intersections and along the study corridor.
Segment 4 • Emergency Vehicle Pre-Emption (EVP) system and vehicle detection along the corridor can improve safety and mobility during an emergency event. • Four Closed Circuit Television (CCTV) cameras are proposed to monitor the activities at the intersections and along the study corridor. • A fiber communication system to connect the signals could help effectively mobilize travelers along the corridor. • With parking is provided on both sides of the roadway along with improving transit amenities, parking and transit information is recommended along with Transit Signal Priority.

More efficient network mobility is possible by taking advantage of the Connected Vehicle/Automated Vehicle (CV/AV) technology and communicating with infrastructure. Feeding vehicle information back to dynamic control systems can potentially mitigate both congestion and its environmental impacts. Technologies (like DSRC, Wireless 5G, etc.,) evolve and mature with time and the cost of implementing them reduces with time.

3.3 Transit

A key assumption for the US 15-501 Corridor Study was the implementation of the Durham-Orange Light Rail Transit (D-O LRT). As a part of the development of the D-O LRT, GoTriangle and its partners conducted extensive travel market and transit ridership analysis for the US 15-501 Corridor. This effort confirms the role of the US 15-501 corridor as a key transit route that connects jobs, residents and students to major destinations including downtown Chapel Hill (including UNC Hospitals), the Duke University and Durham Veterans' Administration medical centers, and downtown Durham. Data from GoTriangle indicates that Route 400 provides all-day service with 30-minute frequencies and carries more than 900 passengers on an average weekday. Route 405 provides peak service on Weekdays at 30-minute frequencies, with an average of nearly 550 passengers per weekday. Finally, the GoTriangle Robertson Scholars Express (RSX), which has stops at Duke University's West Campus and UNC's Morehead Planetarium, carries more than 200 passengers each weekday. GoDurham also serves the corridor. Data from GoTriangle shows that Routes 10A and 10B provide weekday daytime service, and Route 10 provides weekday evening service, to destinations within the corridor including South Square area the New Hope Commons and Patterson Place shopping centers on Mt. Moriah Road. Together, these routes carry more than 2,250 passengers on an average weekday. GoDurham Route 20, which is a peak-time-only service that connects south Durham to the Duke and VA Medical Centers, via the South Square area, carries about 150 passengers each weekday.

Multiple studies have identified the US 15-501 corridor as a key priority for fixed-guideway transit service and extensive planning efforts have gone into the development of a comprehensive transit system to serve this corridor, anchored by D-O LRT. Due to the extensive nature of transit planning studies previously conducted, the US 15-501 Corridor Study did not attempt to replicate any of that technical analysis, but rather focused on the identification of areas where local bus connectivity, access and amenities could be provided to better enhance and support transit service in the corridor.

The transit strategies by segment and alternative are summarized in Table 16.

Table 16: Transit Strategies by Segment and Alternative

Segment 1	
Alternative 1 • Bus improvements as recommended by Blue Hill District TIA • Bus stop enhancements	**Alternative 2** • No change
I-40 Quad	
Alternative 1 • Extend GoDurham across I-40 to connect with a transfer point in Chapel Hill • Extend Chapel Hill transit across I-40 to connect with a transfer point in Durham • Implement connecting bus service to Eastowne Drive and New Hope Commons	**Alternative 2** • No change
Segment 2	
Alternative 1 • Improve transit access and connectivity to and through Segment 2	**Alternative 2** • No change

Table 16 (continued): Transit Strategies by Segment and Alternative

Segment 3	
Alternative 1 • Roadway improvements to provide better transit service and access.	**Alternative 2** • No change
Segment 4	
Alternative 1 • Improve transit amenities	**Alternative 2** • No change

3.4 Bicycle and Pedestrian

The following strategies for active transportation considered the existing conditions for each segment (illustrated in Figure 14) as well as evaluation criteria. Although there are a variety of facilities that can provide designated space to bicycle users and pedestrians, vehicular traffic volume and speed primarily informed decisions about proposed facility types. Separating non-motorized users was considered throughout the corridor while also ensuring that access to destinations, safety through intersections, and overall connectivity were not sacrificed. The following recommendations utilize previous planning recommendations, like those made by the Durham Bike + Walk Implementation Plan and focus on the use of the US 15-501 corridor as the premier multimodal connection between Durham and Chapel Hill. The active transportation strategies by segment and alternatives are summarized in Table 17 and further explained with additional details in the subsequent sections.

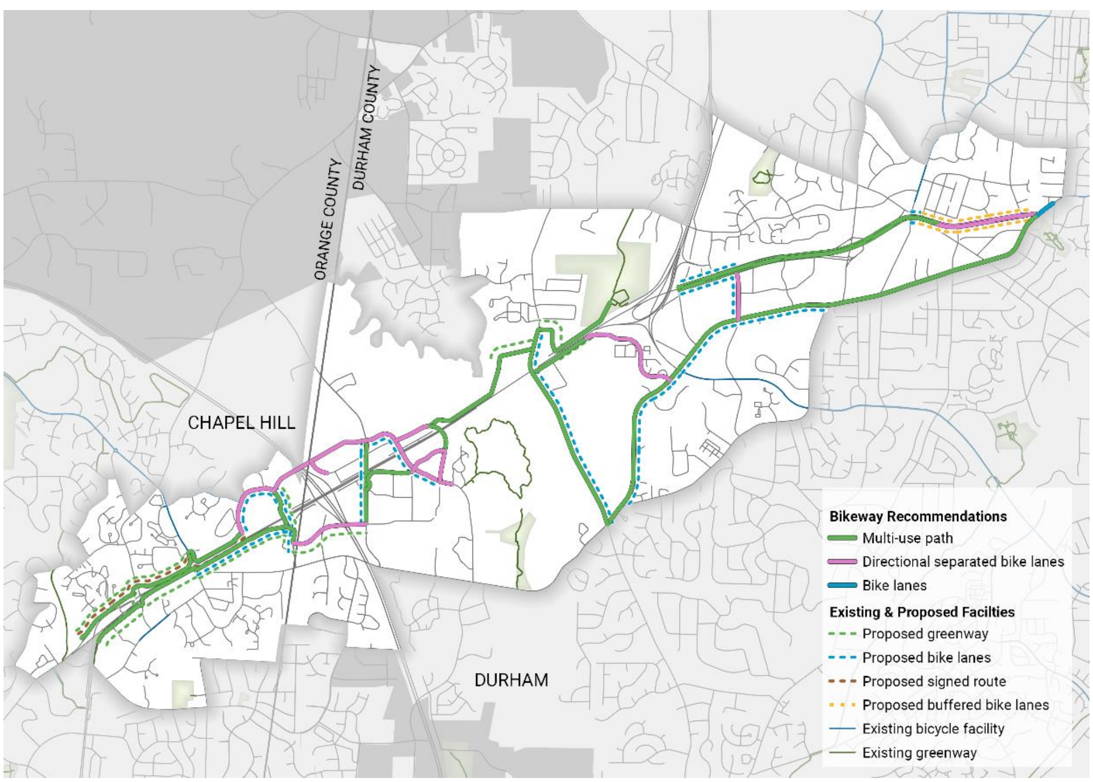


Figure 14: Bikeways and Multi-Use Path recommendations for US 15-501 Corridor Segments

Table 17: Active Transportation strategies by segment and alternative

Alternative 1	Alternative 2
Segment 1	
Alternative 1 • Provide painted pedestrian crosswalks at all intersections. • Provide bike and pedestrian facilities across proposed urban interchange. • Implement bike/pedestrian facilities for Segment 1 as shown in Chapel Hill Mobility Plan • Small footprint urban interchange with bicycle and pedestrian facilities.	**Alternative 2** • Traditional intersection widening with crosswalks and pedestrian signals. • Bicycle and pedestrian bridge over US 15-501.
I-40 Quad	
Alternative 1 • Provide bike and pedestrian facilities along proposed grade separated 2-lane roadway connecting New Hope Commons to Eastowne Drive • Provide bike and pedestrian facilities along proposed grade separated 2-lane roadway connecting New Patterson Place to Gateway • Provide bike and pedestrian facilities along connector roads connecting all 4 quadrants of the I-40 interchange.	**Alternative 2** • No change
Segment 2	
Alternative 1 • Provide bike and pedestrian facilities on grade separated Mt Moriah Road • Provide bike and pedestrian facilities on grade separated facility east of SW Durham Drive. • Provide off-road bike and pedestrian facilities connecting into New Hope Commons and Patterson Place • Provide bike and pedestrian connectivity between Patterson Place and Garrett Road utilizing Larchmont Drive versus off-road greenway due to wet and low-lying area. • Provide bike and pedestrian connections from Garrett Road to University Drive • Provide bike and pedestrian connectivity between Sandy Creek Drive, Chapel Hill Blvd Service Road, and Garrett Road • Provide bike and pedestrian facilities along University Drive	**Alternative 2** • Same as Alternative 1, except: • Grade separated bike and pedestrian only bridge within the vicinity of new right in/right out access point east of SW Durham Drive.
Segment 3	
Alternative 1 • Provide 4-lane urban cross-section, with better bike and pedestrian facilities. • Provide a shared use path for bikes and pedestrians protected by wide swath of landscaping using recaptured space from narrowing of the roadway. • Redesign Academy Road interchange to provide for safe bike and pedestrian movements • Redesign Chapel Hill Road interchange to provide for safe bike and pedestrian movements • Continue bike and pedestrian facilities along University Drive	**Alternative 2** • No change
Segment 4	
Alternative 1 • Provide parking on both sides of the roadway with a bike lane protected by the parking and sidewalks on both sides • Provide bike and pedestrian facilities at the proposed University Drive roundabout • Improve connectivity between adjoining neighborhoods and US 15-501 Businesses using sidewalks for greenways • Provide a pedestrian connection between Chapel Hill Road and US 15-501 Business	**Alternative 2** • No change

3.4.1 Segment 1 and I-40 Quad: Ephesus Church Road through I-40 interchange

3.4.1.1 Active Transportation Strategy:

A 12-foot-wide shared used path is recommended on both sides of US 15-501 to accommodate both bicycle and pedestrian traffic from Ephesus Church Road to the eastern intersection of Eastowne Drive/US 15-501. A new design for this intersection should include elements of a protected intersection to reduce turning speeds and transition shared use paths along Eastowne Drive before crossing I-40 on parallel routes. The Eastowne Drive intersection design changes should prioritize shared use path crossings and push button actuated pedestrian/ bicycle signals to increase crossing safety for a high-volume intersection.

Figure 15: Segment 1 - US 15-501 East of Sage Road

Two alternatives were considered for providing safe bicycle and pedestrian access across US 15-501 at Eastowne Drive. The first alternative recommends a small footprint urban interchange with bicycle and pedestrian facilities. The second alternative considers traditional intersection improvements to Eastowne Drive, and therefore a separate bridge for bicyclists and pedestrians to increase comfort and minimize conflicts near Eastowne Drive.

Evaluation Criteria Considered

- Safety
- Multimodal
- Network
- Health
- Accessibility

Shared use paths on both sides of the corridor align with the planned trails for the Town of Chapel Hill, and the paths improve connectivity to planned and existing bicycle facilities along Eastowne Drive, Sage Road, Erwin Road, and Ephesus Church Road. The shared use path on the north side of US 15-501 near the intersection of Sage Road should follow the parallel route along Dobbins Drive to E. Franklin Street and Eastgate Shopping Center Drive to connect with the Lower Booker Creek Trail and access to the shopping center and Ephesus Church Road.

To provide bicycle and pedestrian access between the land parcels to the east and west of I-40 along US 15-501, two new connector roads with bicycle and pedestrian facilities are recommended to connect the Eastowne Drive development to New Hope Commons, and the proposed Gateway development to Patterson Place. For more direct access across I-40, sidewalks are recommended for the proposed DDI interchange.

3.4.2 Segment 2: I-40 interchange to US 15-501 bypass

3.4.2.1 Active Transportation Strategy

The proposed 12-foot shared use path along the south side of US 15-501 is proposed to split at the western intersection of Eastowne Drive and US 15-501, following Eastowne Drive to the north and south. These shared use paths perpendicular to US 15-501 will transition to directional separated bike lanes with sidewalks and travel east towards Mt. Moriah Road, along Old Chapel Hill Road to the south and a proposed new roadway to the north. The Mt. Moriah Road intersection, which currently presents long crossings of US 15-501 and minimal protection for non-motorized users, is listed as a priority in the *Durham Bike + Walk Implementation* Plan. To safely facilitate multimodal access to businesses in Patterson Place and New Hope Commons, this intersection should be grade separated from US 15-501 and should include bicycle and pedestrian accommodations in the form of a shared use path. Connecting between Mt. Moriah and SW Durham Drive, separated bike lanes are proposed along the new proposed roadway to the north and a shared use path through the Patterson Place development south of US 15-501. In a first alternative, a similar grade separated crossing is recommended just east of SW Durham Drive to provide further access to New Hope Commons and Patterson Place for vehicles, transit, bicycles, and pedestrians.

Figure 16: Segment 2 - East of Garrett Road

Evaluation Criteria Considered

- Safety
- Multimodal
- Network
- Health
- Accessibility
- Environment
- Equity

A second alternative was considered that included additional access points along US 15-501 east of SW Durham Drive with the aim of providing access to New Hope Commons and Patterson Place. However, these access points would be restricted to right turns in or out. In this scenario, a separate bridge for bicycle and pedestrian access would be provided near the existing intersection.

Continuing the shared use path along the north side of the corridor may require specific attention at the bridge crossing New Hope Creek. A separate bicycle and pedestrian bridge would ensure separation for the shared use path but may be cost prohibitive in the short term. A short section of buffered on-street path may be provided within the existing conditions through a design exemption to reduce the width of shoulders on the bridge. Vertical and horizontal separation is recommended along this section of the path to ensure the continued comfort and safety for users who want to connect to nearby commercial uses or make longer trips between Durham and Chapel Hill. A better alternative would be to design the path on the south side of US 15-501 with access to the north side of US 15-501 under the current New Hope Creek bridge. The path could extend behind the current Oak Creek Village shopping center to connect with proposed side paths along Garrett Road.

The existing conditions of the US 15-501 Business interchange pose considerable challenges for safety and connectivity for active transportation/recreation infrastructure. Rather than continuing through the interchange, an alternative route should be considered that aligns with the planned bicycle and trail facilities for the City of Durham. The proposed shared use path would intersect Garrett Road to allow users to travel north and south. While the proposed shared use path continues along Garrett Road to University, an alternative route along Larchmont with separated bike lanes is also recommended. Both the connection along Garrett Road and Larchmont provide bicycle and pedestrian facilities that circumvent the US 15-501 Business interchange. While a direct route through the bypass could be accomplished, a variety of treatments to prioritize the most vulnerable users would be necessary. Therefore, the proposed alignments were preferred to the direct route through the US 15-501 Business interchange.

Pedestrian crossing improvements should also be considered at the Garrett Road intersection due to long crossing distances and a lack of refuge presently. Residents near this intersection should have both bicycle and pedestrian infrastructure that provides short trip connections across the street or to transit stops with sidewalks and ADA compliant curb ramps, and they should also have longer trip connections through the proposed shared use path to University along Garrett Road or Larchmont and a connection to Chapel Hill to the West.

3.4.3 Segment 3: Durham-Chapel Hill Boulevard (US 15-501 Business) to Chapel Hill Road

3.4.3.1 Active Transportation Strategy

Traveling east from the intersection of US 15-501 with Westgate Drive, shared use paths protected by wide swaths of landscaping are recommended to support walking and bicycling along corridor. Separated bike lanes should be placed on Shannon Road to connect the shared use paths along Durham-Chapel Hill Boulevard (US 15-501 Business) with proposed bicycle facilities along University Drive. Additionally, redesign of the Academy Road and Chapel Hill Road interchanges as a single roundabout provide a safer environment for bicyclists and pedestrians and can reduce the number of conflict points and risk of severe or fatal crashes.

Figure 17: Segment 3 - US 15-501 near Tower Road

Building off the recommendations in the Durham Bike + Walk Implementation Plan, a connection from Garrett Road near Sandy Creek is recommended to link a proposed shared use path along the south side of University Drive. While sidewalks currently exist along University Drive, adding a shared use path would allow people to travel by bicycle along the corridor without mixing with vehicular traffic. A connected and safe path facility will attract users of all ages and abilities for both active transportation and recreation.

Evaluation Criteria Considered

- Safety
- Multimodal
- Network
- Accessibility

A key connection from University Drive to Tower Road along Shannon Road and Durham-Chapel Hill Boulevard provides access to a variety of businesses and nearby multifamily residential properties. This connection is proposed through separated bike lanes along Shannon Road south Durham-

Chapel Hill Boulevard and a shared use path that parallels the corridor that intersects with Tower Road. Additionally, intersection changes to increase safety and shorten crossing distances for non-motorized users are recommended at the following intersections:

- Tower Road and Durham-Chapel Hill Boulevard (listed as a priority in the *Durham Bike + Walk Implementation Plan*)
- Shannon Road and Durham-Chapel Hill Boulevard
- University Drive and Martin Luther King Jr Parkway
- University Drive and Westgate Drive

Chapel Hill Road is a narrow, two-lane road that is fronted by residential properties. Additional paving could be considered to add designated bike lanes along this half mile section between University Drive and W Cornwallis Road; however, lowering the speed limit from the current 35 MPH should be considered to encourage speeds that are more appropriate for a residential context. Additional traffic calming measures could accompany a lower speed limit to provide a bike boulevard rather than designated bike lanes to connect University Drive to Durham-Chapel Hill Boulevard via Chapel Hill Road.

3.4.4 Segment 4: Chapel Hill Road to University Drive

3.4.4.1 Active Transportation Strategy

Figure 18: Segment 4 – Chapel Hill Road to University Drive

Due to limited sidewalk along this segment, pedestrian activity is likely discouraged from adjoining local commercial uses and nearby residential neighborhoods. Adding sidewalks on both sides of the corridor would provide connectivity throughout this segment with less volume and speed than segments to the west. Although there is an existing buffered bike lane, on-street parking could be placed adjacent to the travel lanes to provide a parking protected bike lane with a painted door buffer zone. This would encourage even slower speeds than the existing road design, which is more appropriate for this context. Turning conflicts may be an issue along this segment, as many intersections have large radii and some properties have full frontage access. Managing access to individual properties with landscaping or curb and gutter may benefit all users and create a safer and more predictable environment. The current right-of-way of 100 feet is substantial and can accommodate the following improvements:

- 5-foot sidewalks (both sides)
- 2-foot grass buffer (both sides)
- 5-foot bike lane (both sides)
- 3-foot painted door buffer (both sides)
- 8-foot on-street parallel parking stalls (both sides)
- Two 11-foot travel lanes (one in each direction)
- One 11-foot center turn lane or landscaped median

Evaluation Criteria Considered

- Safety
- Multimodal
- Network
- Health
- Accessibility

The proposed cross section elements above total 79-feet in width. Designers should pay special attention to sight distances at intersections as well as business access to ensure that on-street parking is located appropriately. Bulb outs, either raised curb or painted, may be another effective treatment to protect sight distance triangles.

Bicycle and pedestrian facilities should be incorporated to the proposed roundabout at University Drive. The roundabout intersection design can reduce conflict points between travel modes and provide short crossing distances for bicyclists and pedestrians. A transition from the directional separated bike lanes (parking protected) in Segment 4 to the proposed shared use path on the south side of University Drive moving west is recommended. An additional transition from the shared use path to the conventional bike lanes that continue to the east along University Drive should be provided.

To further increase connectivity between neighborhoods and businesses adjoining US 15-501, sidewalks should be implemented. While providing sidewalk on both sides of the street would increase walkability, this type of infrastructure can be cost prohibitive. Additionally, neighborhood bikeways may be provided through traffic calming treatments that deter cut-through traffic and reduce vehicle speeds. Shared use paths should be considered as an alternative treatment to connect the surrounding neighborhoods to US 15-501 Business for both bicyclists and pedestrians.

4 Durham-Orange Light Rail Transit

In April 2019, just a month before the third and final public workshop on the US 15-501 Corridor Study, a decision was made by the responsible governing bodies to discontinue work on the D-O LRT. At that time, work was also temporarily halted on the US 15-501 Corridor Study while the PSC worked to determine the best path forward. The ultimate decision of the PSC, supported by the MPO Board, was to develop a third alternative for the US 15-501 Corridor that could achieve the goal of linking Chapel Hill and Durham with fast, frequent, and reliable transit service.

The third alternative mirrors Alternative 2 in every way except for the addition of dedicated bus lanes within the study area between Ephesus Church Road, at the western edge of the study area, and the US 15-501 Bypass at the eastern portion of the study area. The dedicated bus lanes are accessed from the general-purpose lane allowing access from both US 15-501 Bypass and US 15-501 Business from the east, and the US 15-501 mainline from the west.

Eastwards from Ephesus Church Road to Eastowne Drive, the bus lane would be a Business Access and Transit (BAT) lane, which would allow right-turning vehicles to access the BAT lane to make right turns. This would mean that there would be no physical barrier between general purpose traffic and the BAT lane. Through the I-40 interchange, the buses would be in mixed traffic but could utilize Transit Signal Priority (TSP). TSP allows the buses to have priority at traffic signals and jump ahead of general purpose traffic. East of the I-40 interchange, the bus lanes would be center running, likely with some physical separation between general traffic and the bus only lane. This center running bus lane would continue to the US 15-501 Bypass. Future investigation, analysis and design will be needed to determine how the bus lane merges onto the US 15-501 Bypass for continued service to Duke University and beyond.

Table 18: Recommendations in Alternative 3

Segment 1
Alternative 3 • Same as Alternative 2, with addition of an outside running bus only lane
I-40 Quad
Alternative 3 • Same as Alternative 1 and 2, except with transit signal prioritization to merge buses into mixed traffic through the I-40 interchange
Segment 2
Alternative 3 • Same as Alternative 2, with addition of an inside running bus only lane
Segment 3
Alternative 3 • Same as Alternative 2
Segment 4
Alternative 3 • Same as Alternative 2

While not an ideal replacement for the D-O LRT, this dedicated bus lane will serve a mix of express service linking downtown Chapel Hill with Duke University and/or downtown Durham; local services that service destinations outside the corridor and use a portion of the dedicated busway; and perhaps an "LRT replacement" service that serves some of the same key destinations as the D-O LRT within and outside the US 15-501 corridor. The provision of dedicated bus lanes as a third alternative was deemed important to ensure that transit travel times remain reliable even as traffic congestion increases in the future, thereby supporting the goals for the corridor.

5 Recommended Alternative and Implementation Plan

5.1 Recommended Alternative

The recommended alternative aims to provide a comprehensive multimodal alternative for the entire corridor while also balancing the often-competing need for accessibility and mobility. In **Segment 1** the focus is on trying to find a balance between the conflicting priorities of accessibility and mobility with a design that improves the flow of through traffic, but also provides tools for creating a more urban environment including reduced travel speeds, increasing the number and safety of crossing locations for bicyclists and pedestrians, and streetscaping to provide a more urban context. In **Segment 2**, the focus is on mobility with a design that focuses on multimodal grade separations, while recommending local street networks within developments adjacent to the corridor for local traffic and bicycle and pedestrian movements along the corridor. High capacity transit service along **Segments 1 and 2** is prioritized with the inclusion of a bus only lane. In **Segments 3 and 4**, the recommended alternative aims to provide a more urban cross section that reduces the speed of vehicles and provides more pedestrian friendly environment with bicycle and pedestrian facilities and land use closer to the corridor. For the entire corridor, the focus is to capitalize on opportunities for creating land use patterns that promote multimodal travel, and incorporate urban design and human-scale design.

The sections below highlight the details of the recommended alternative for each segment along the corridor.

5.1.1 Segment 1

The primary challenge with Segment 1 is the competing interests between local and through traffic, and a desire to create a more urban multimodal environment in a corridor that has historically prioritized vehicle movements. The recommended 8-lane median divided Reduced Conflict Intersection (RCI), commonly referred to as a superstreet design, attempts to strike a balance between these competing needs without creating a larger footprint intersection or numerous interchanges. The RCI design is recommended between Erwin Road and Sage Road. The RCI design improves safety and balances accessibility and mobility. To accommodate the expected increase in bicycle and pedestrian trips, the recommendation includes timing the signals in the corridor to slow the progression of traffic, development of pedestrian crossing at main intersections and at midblock U-turns, and streetscaping both within the median and along the sides of the corridor. Given recent design changes to the intersection at Ephesus Church Road, the PSC elected not to recommend additional design modifications to that location for this study. The RCI design is not recommended for the Eastowne Drive (east) intersection given the proximity to the I-40 interchange. Traditional intersection widening is recommended for this location.

> To accommodate the urban design vision for Segment 1, the recommended RCI must be designed as **an urban cross section with signal progression set to slow traffic** and pedestrian crossings at all main intersections and midblock U-turns.

Other improvements along this segment include support of the local street network proposed for the Blue District, and a recommendation to connect Legion Road to Old Durham to improve multimodal connectivity within the corridor as well as a safer alternative to travel along US 15-501 for local traffic. The Blue Hill District bus recommendations are also endorsed by this study. Regional transit improvements for this segment include the provision of an outside running bus only lane.

To create a more multimodal corridor, the recommended alternative includes the provision of bicycle and pedestrian connections throughout Segment 1, both along and across US 15-501, including a grade separated pedestrian crossing near Eastowne Drive. Bicycle and pedestrian facilities are recommended on both sides of the corridor with connections to key development efforts. This study also endorses the bicycle and pedestrian facilities recommended in the Chapel Hill Mobility Plan.

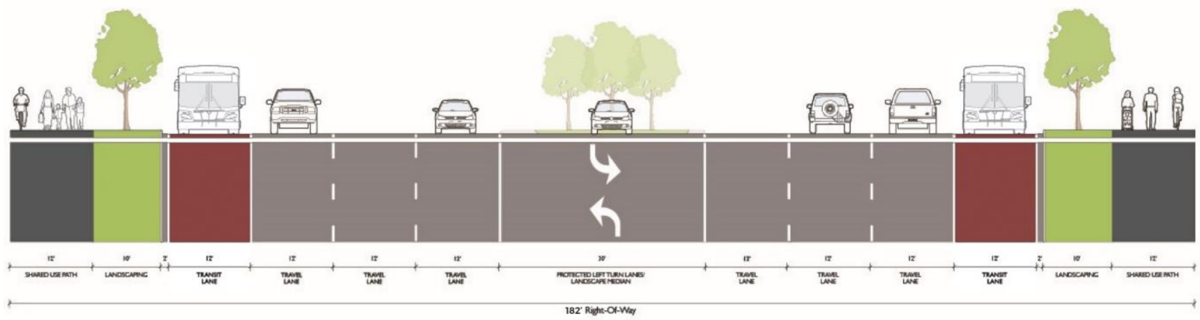


Figure 19: Recommended cross-section for Segment 1

5.1.2 I-40 Quadrant

> **Good bicycle and pedestrian connectivity** between Durham and Chapel Hill is critical. If the northern and southern connector roads cannot be built, then a separate bicycle and pedestrian bridge across I-40 will be necessary.

The I-40 interchange is a regional access point, serving as a gateway to Chapel Hill and Durham from points east and west along I-40. It bisects the study area, providing many benefits related to economic development and regional connectivity for motorized travel, while at the same time being a barrier for non-motorized travel through the corridor. The goal for the I-40 Quadrant portion of the corridor is to allow high volumes of traffic to move efficiently through the interchange, while creating new, lower volume connections across I-40 to better serve pedestrians, bicyclists, transit and local traffic. The recommended design calls for replacing the existing diamond design interchange with a diverging diamond design. It is critical that the new design accommodate bicycle and pedestrian travel, and that signalization be provided at ramp junctures where pedestrian crossings are provided. To provide better multimodal accessibility between the quadrants of I-40 without the need to travel along US 15-501, or through the interchange, a grade separated 2-lane roadway with bicycle and pedestrian facilities is recommended to the south of the I-40 interchange connecting Patterson Place to Gateway. An additional bicycle and pedestrian bridge is recommended north of the I-40 interchange.

To provide better multimodal connectivity across I-40, improved local bus service should be provided across I-40 connecting with local bus service for both Chapel Hill and Durham. The dense, mixed-use development envisioned for the I-40 quadrants will also greatly benefit from local bus service that not only provides transit connectivity between the four quadrants, but also provides service connectivity to the broader region. As technology in automated transit service advances, consideration should be given to providing transit access between the quadrants with automated transit vehicles.

The outside running bus only lane recommended for Segment 1 will need to use the I-40 interchange area to transition to a median running bus only lane for Segment 2. This transition will be accommodated with transit signal prioritization for merging buses to or from the bus only lanes into mixed traffic, and then back to the bus only lanes.

5.1.3 Segment 2

> While this segment more than any other prioritizes the efficient movement of traffic through the corridor, the goals of providing **multimodal connectivity along and across the corridor** must not be overlooked.

Like Segment 1, Segment 2 has competing interests between local and through traffic, but local access is more focused at key locations along the corridor, and the primary goal of this segment is the efficient movement of traffic between I-40 and the US 15-501 Bypass. While the primary goal is the efficient movement of traffic along the corridor, multimodal connectivity and accessibility along and across the corridor is also important for the long term economic vitality of this segment. The recommended alternative attempts to accomplish this by providing connections to the key destinations on either side of US 15-501, while allowing higher volumes of traffic to efficiently move along the corridor. To create a development environment that supports shorter trips and multimodal travel, dense development patterns supported by the Patterson Place and New Hope Commons street network is recommended as redevelopment occurs. Bicycles and pedestrians were also an important consideration in this corridor, with the preferred alternative providing bicycle and pedestrian connections throughout Segment 2, both along and across US 15-501.

The efficient movement of traffic will be accomplished through the separation of cross traffic via grade separation or small footprint urban interchanges. To improve safety and operations, Mt Moriah Road is recommended as a grade separated crossing of US 15-501 with bicycle and pedestrian facilities along Mt Moriah Road, including the bridge over US 15-501. Small footprint urban interchanges are recommended for SW Durham Drive and Garrett Road. These interchanges should be designed to safely accommodate bicycles and pedestrians. Access from the bus only lane will be provided to adjacent parcels via access to SW Durham Drive. To further enhance multimodal connectivity across US 15-501, a grade separated 2-lane roadway with bicycle and pedestrian facilities is recommended east of SW Durham Drive, and should follow the road network recommended for Patterson Place and any proposed development to the north of US 15-501. High capacity transit service will be accommodated with a

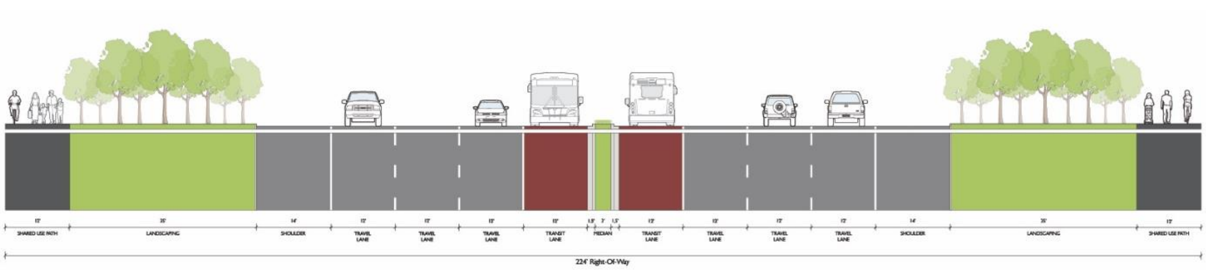


Figure 20: Recommended cross-section for Segment 2

recommended median running bus only lane between I-40 and the US 15-501 Bypass. Future studies should determine how this bus only lane transitions between US 15-501 and US 15-501 Bypass.

While not directly within the study area for this project, this study supports the provision of bicycle and pedestrian facilities along University Drive and Garrett Road to provide a more comprehensive network for non-motorized travel parallel to Segment 2. Other recommendations include the provision of multimodal connectivity between Sandy Creek Drive, Chapel Hill Boulevard Service Road, and Garrett Road; and bicycle and pedestrian facilities along Larchmont Drive.

5.1.4 Segment 3

Transitioning this segment to **a more urban cross-section with no service roads** will need to be accomplished as the land use pattern becomes more urban in nature.

Traffic volumes decrease considerably along Segment 3, moving east from the US 15-501 Bypass towards Chapel Hill Road, but the current roadway cross-section is configured to handle traffic volumes of a much higher magnitude, owing primarily to the days prior to the construction of US 15-501 Bypass when this segment served as US 15-501. With lower traffic volumes and a vision for a higher density, mixed-use, urban environment for this segment, the focus of Segment 3 was on creating a more fully multimodal 4-lane urban roadway with landscaped median, roundabouts at key locations, and bicycle and pedestrian facilities throughout. To create a physical transition from the more suburban, higher speed Segment 2 to a slower speed urban environment, a 2-lane roundabout is recommended at the intersection of Westgate Drive on the western edge of Segment 3. The conversion of traditional intersections to roundabouts at Tower Boulevard, Shannon Road and Weymouth Street will serve to further reduce traffic speeds and create a more urban feel. As the area redevelops, an urban grid system should be encouraged to the north and south of US 15-501 Business as recommended in the City of Durham's Street Plan for transit oriented developments, and per rezoning adopted for this area. Existing t-intersections should be converted to full intersections. As this segment transitions, the services roads will need to initially be maintained to provide access to adjacent land parcels. However, long term should include a more urban and dense development pattern that allows for the removal of the service roads

The higher speed ramp junctions from the Academy Road and Chapel Hill Road interchanges contrast with the multimodal urban environment envisioned for this segment. For this reason, recommendations include a redesign of the Academy Road interchange to remove the western most ramp junction, and to convert the eastern most ramp junction to a roundabout design. The slip ramp that provides access between Chapel Hill Road and US 15-501 business should be removed, and access to Chapel Hill Road provided via Cornwallis Road and a roundabout at Legion Avenue and US 15-501 Business. A side path for bicycles and pedestrians is recommended. This side path should be protected by a wide swath of landscaping using the recaptured space from narrowing the existing roadway cross-section.

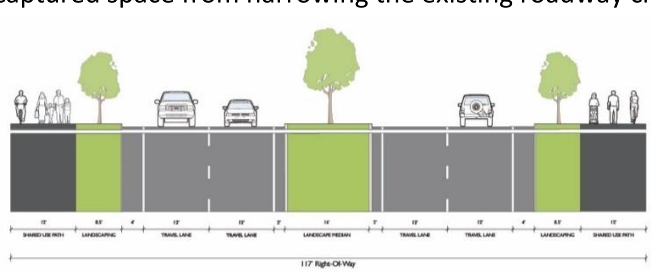


Figure 21: Recommended cross-section for Segment 3

5.1.5 Segment 4

Providing a landscaped median along this section will help **reduce neighborhood cut through traffic**.

At present, Segment 4 is a more urban street cross section, with on-street parking and bicycle facilities, and supports lower traffic volumes. The goal for Segment 4, was to provide improvements that would make the segment more pedestrian friendly and provide for safe movements across US 15-501 for all modes of travel, which can be accomplished using roundabouts. Recommendations include a 2-lane urban cross-section with landscaped median, consolidated driveways, and roundabouts at key intersections. Sidewalks, bike lanes, and parking are recommended for both sides of the roadway. The bike lanes are recommended between the parking and the sidewalk. To slow down travel speeds and help create a more urban feel, roundabouts are recommended at Legion Avenue, Hope Valley Road, and James Street. Recommendations also include redesigning the University Drive intersection as a roundabout with bicycle and pedestrian facilities, including a multiuse path that connects with the recommended multiuse path on University Drive. As this area continues to become more urban, and more bicycle and pedestrian friendly, it will be important to improve non-motorized connectivity to the adjoining neighborhoods, including Chapel Hill Road. Improved transit service and transit amenities, including bus pullouts at key locations, will be key to providing multimodal connections to other locations across the region.

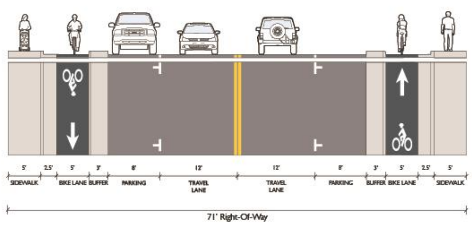


Figure 22: Recommended cross-section for Segment 4

5.2 Implementation Plan

The implementation of the recommendations along US 15-501 was divided into three time periods for implementation, along with a corresponding time frame for implementation:

- Short term – within 10 years
- Midterm – within 20 years
- Long-term – beyond 20 years

A brief description of all recommendations – grouped by mode - is provided in tables 19 to 22, along with their locations, phasing and tentative cost.

Table 19: Implementation Plan of Roadway Project Recommendations

Description	Location	Jurisdiction	Phase	Cost
Implement a 8-lane median divided Reduced Conflict Intersection (RCI) urban design with pedestrian crossings at intersections and midblock U-turn locations.	From Erwin Road to Eastowne Dr (west)	Chapel Hill	Mid	$20,000,000
Intersection widening to include an additional through lane on US 15-501 WB, and exclusive right turn lane on US 15-501 EB, and exclusive right turn lanes on both the NB and SB approaches of Eastowne Dr.	Eastowne Dr and US 15-501 (east)	Chapel Hill	Short	$400,000
Construct a new 2-lane connector road by extending Legion Rd.	Legion Rd from Scarlett Dr. to Old Durham Rd.	Chapel Hill	Long	$800,000
Construct a 2-lane connector road with sidewalks and bike lanes across I-40 north of the US 15-501 interchange.	From Eastowne Dr to Mt Moriah Rd.	Chapel Hill & Durham	Mid	$4,588,000
Construct a 2-lane connector road with sidewalks and bike lanes across I-40 south of the US 15-501 interchange.	From Lakeview Dr to Mt Moriah Rd.	Chapel Hill & Durham	Mid	$5,127,000
Construct diverging diamond redesign of US 15-501 interchange to include sidewalks from Eastowne Dr to Mt Moriah Rd. (Requires Bridge Replacement)	US 15-501 at I-40	Chapel Hill & Durham	Mid	$13,300,000
Implement transit signal prioritization to prioritize bus movements through the US 15-501 and I-40 interchange.	US 15-501 at I-40	Chapel Hill & Durham	Mid	$600,000
Upgrade US 15-501 by converting Mt Moriah Rd to an overpass over US 15-501 with bicycle and pedestrian facilities; and constructing a tight diamond interchange at US 15-501 and SW Durham Dr, with an extension of SW Durham Dr to New Hope Commons Dr. Provide sidewalks and bike lanes.	From existing intersection to SW Durham Dr	Durham	Mid	$135,800,000
Construct a 2-lane connector road with sidewalks and bike lanes across US 15-501 east of SW Durham Dr with a roundabout intersection at New Hope Commons Dr.	From Witherspoon Blvd to New Hope Commons Dr.	Durham	Long	$9,800,000
Construct tight diamond interchange at Garrett Rd with bicycle and pedestrian facilities.	US 15-501 at Garrett Rd.	Durham	Short	$32,000,000
Upgrade US 15-501 Business to a 4-lane divided urban cross section with landscaped median and sidewalks. Construct roundabouts at Westgate Dr, Tower Blvd, Shannon Rd and Weymouth St.	From Westgate Dr to Academy Rd	Durham	Long	$6,200,000
Connect Chapel Hill Blvd Service Rd (north side) to Academy Rd.	From 3308 Durham Chapel Hill Blvd to Academy Rd	Durham	Long	$1,700,000

Table 19 (continued): Implementation Plan of Roadway Project Recommendations

Description	Location	Jurisdiction	Phase	Cost
Redesign the US 15-501 Business and Academy Rd Interchange from the current diamond design to a single "bowtie" design with the roundabout at the western ramp termini for Academy Rd. Eastern ramps from Academy to US 15-501 Business will be removed.	Interchange between US 15-501 and Academy Rd.	Durham	Long	$800,000
Reduce the footprint of US 15-501 Business from 4-lane divided to 2-lane divided with 12-foot wide multiuse side paths on both sides of the road.	Academy Rd roundabout to Nation Ave	Durham	Long	$300,000
Modifications to US 15-501 Business and Chapel Hill Rd "interchange" to remove the ramp from W Cornwallis Rd to US 15-501 Business, construct roundabout at Legion Ave and provide signage to encourage all interchange movements to occur via the US 15-501 Business and Legion Ave roundabout.		Durham	Long	$800,000
Convert US 15-501 Business to 2-lane urban cross-section with landscaped median, consolidated driveways, and roundabouts at Hope Valley and James Street (in addition to the previously proposed roundabout at Legion Ave). Provide sidewalks and parking on both sides of the roadway with a bike lane protected by the parking.	From Nation Ave to University Dr	Durham	Long	$4,300,000
Construct a roundabout at University Dr and US 15-501 with Multi Use Paths connecting to the proposed multiuse path on the south side of University Dr.	University Dr at US 15-501	Durham	Long	$1,100,000

Table 20: Implementation Plan of Transit Project Recommendations

Description	Location	Jurisdiction	Phase	Cost
Construct an outside running bus lane along US 15-501 in both the eastbound and westbound directions, including reconfiguration of travel lanes between the US 15-501 and E Franklin St split. Construction of a new 4-lane bridge to accommodate the reconfiguration of travel lanes for E Franklin St.	US 15-501 from western study boundary to US 15-501 interchange.	Chapel Hill	Mid	$10,000,000
Construct an inside running bus lane along US 15-501 in both the eastbound and westbound directions with access to Southwest Durham Dr. via a bridged crossing.	US 15-501 interchange to US 15-501 Bypass.	Durham	Mid	$1,300,000

Table 20 (continued): Implementation Plan of Transit Project Recommendations

Description	Location	Jurisdiction	Phase	Cost
Expanded local bus service between Durham and Chapel Hill serving I-40/US 15-501 quadrant development and providing access to points beyond.	Various locations.	Chapel Hill and Durham.	Short	$4,000,000
Provide bus pullouts at designated locations along US 15-501 business.	Various locations.	Durham	Short	$250,000 per location

Table 21: Implementation Plan of Bicycle and Pedestrian Project Recommendations

Description	Location	Jurisdiction	Phase	Cost
Provide a minimum 12-foot wide multiuse side path on the north side of US 15-501.	From western study boundary to Eastowne Dr. (east)	Chapel Hill	Mid	$850,000
Provide a minimum 12-foot wide multiuse side path on the south side of US 15-501.	From western study boundary to Lakeview Dr multiuse side path.	Chapel Hill	Mid	$920,000
Construct a minimum 12-foot wide multiuse side path with a bridge over US 15-501 to provide a grade separated pedestrian and bicycle crossing.	From Old Chapel Hill Rd, across US 15-501 just west of Eastowne /Lakeview intersection, to northern connector road.	Chapel Hill	Mid	$1,090,000
Construct a multiuse Path from Eastowne Dr, over I-40 to Mt. Moriah Dr.	Eastowne Dr to Mt. Moriah Dr	Chapel Hill	Mid	$4,000,000
Provide a minimum 12-foot wide multiuse side path on Mt Moriah Rd.	From southern connector road to SW Durham Dr extension	Durham	Mid	$300,000
Provide a minimum 12-foot wide multiuse side path on the north side of US 15-501.	From new 2-lane connector road to Garrett Rd with access to southern multiuse path under New Hope Creek bridge.	Durham	Short	$1,920,000
Provide a minimum 12-foot wide multiuse side path on the south side of US 15-501.	From new 2-lane connector road to New Hope Creek bridge multiuse path.	Durham	Mid	$1,210,000
Provide a minimum 12-foot wide multiuse side path on both sides of Garrett Rd.	From Falls Mountain Way to Millennium Dr.	Durham	Short	$430,000

Provide a minimum 12-foot wide multiuse side path on the north side of US 15-501.	From Falls Mountain Way to Sandy Creek Trail.	Durham	Short	$280,000
Provide a minimum 12-foot wide multiuse side path on the south side of US 15-501.	From Garrett Rd to Lyckan Pkwy.	Durham	Mid	$280,000

Table 21 (continued): Implementation Plan of Bicycle and Pedestrian Project Recommendations

Description	Location	Jurisdiction	Phase	Cost
Provide sidewalks and separated bike lanes on Larchmont Rd.	From Lyckan Pkwy to University Drive.	Durham	Mid	$1,160,000
Provide a minimum 12-foot wide multiuse side path along University Drive.	From Garrett Rd to US 15-501 Business.	Durham	Short	$2,380,000
Provide a minimum 12-foot wide multiuse side path on the north side of US 15-501 Business, separated from roadway by landscaped buffer.	From Westgate Dr to Academy Rd	Durham	Long	$690,000
Provide a minimum 12-foot wide multiuse side path on the south side of US 15-501 Business, separated from roadway by landscaped buffer.	From Academy Rd to Westgate Dr.	Durham	Long	$700,000
Provide a pedestrian path between Nation Ave and Chapel Hill Rd between existing Hardee's and US 15-501 Business.	Nation Ave to Chapel Hill Rd.	Durham	Short	$20,000
Provide a minimum 12-foot wide multiuse side path on the south side of University Dr.	Hope Valley Rd to US 15-501 Business.	Durham	Short	$1,140,000

Table 22: Implementation Plan of Land Use Recommendations

Description	Location	Jurisdiction	Phase
Accommodate future growth along the corridor by following the framework strategies and recommendations established in the appropriate Comprehensive Plans.	General	Chapel Hill + Durham	n/a
Align land use and transportation planning by encouraging innovative design and architecture in the Design Districts, which are intended to provide high density infill, redevelopment and new development that integrates a mix of uses within an urban fabric supportive of multimodal transportation, with an enhanced street-level experience that promotes transit and pedestrian oriented activities.	As noted below	Durham	n/a
Recognize the Blue Hill District Design Guidelines, which identifies this area as a redevelopment priority with both residential and commercial uses, including a mixed-use core area with a new gridded street network, small blocks, public spaces, greenway connections and complete streets amenities. The related small area plan realigns Ephesus Church Road to meet S. Elliott Road at US 15-501.	US 15-501/Ephesus church Road area, generally from S. Elliott Road to just west of Europa Drive	Chapel Hill	short/ mid
Emphasize this part of the corridor as a transitional area between more intense catalyst development nodes by incorporating horizontal mixed uses, utilizing offices as a transition between commercial and residential areas.	West of Europa Drive to west of Eastowne Drive	Chapel Hill	short

Table 22 (continued): Implementation Plan of Land Use Recommendations

Utilize the flexibility offered by the **Design District** to redevelop the Patterson Place area, providing a mix of uses within gridded streets and small blocks that activate the street level and emphasize mobility choices. Take advantage of proposed bridges over I-40 to increase connectivity in this catalyst development node and provide opportunities for larger projects and a variety of commercial uses on vacant parcels or by the redevelopment of parcels such as the Blue Cross Blue Shield site.	west of Eastowne Drive to east of SW Durham Drive	Chapel Hill + Durham	mid/ long
Within the Patterson Place area, take development emphasis away from US 15-501 by fronting buildings on local roads such as Old Chapel Hill Road, Danziger Drive, SW Durham Drive, Eastowne Drive and other potential local roads. Prioritize an enhanced public realm and connections both internal and external.	west of Eastowne Drive to east of SW Durham Drive	Chapel Hill + Durham	mid/ long
Recognizing that this area is constrained by environmental boundaries, emphasize this part of the corridor as a transitional area between more intense catalyst development nodes by incorporating horizontal mixed uses, utilizing offices as a transition between commercial and residential areas. There may be opportunities for redevelopment and intensification of existing uses, including higher density residential development.	US 15-501/Garrett Road intersection area	Durham	short/ mid
Utilize the flexibility offered by the **Design District** to redevelop the South Square area, providing a mix of uses within gridded streets and small blocks that activate the street level and emphasize mobility choices.	east of Garrett Road to east of Weymouth Street	Durham	mid/ long
Within the South Square area, focus development towards the street, including local roads such as University Drive, Mayfair Street, Shannon Road, Westgate Drive and other potential local roads. Prioritize an enhanced public realm and connections both internal and external.	east of Garrett Road to east of Weymouth Street	Durham	mid/ long
As commercial parcels on the north side of US 15-501 (across from South Square) redevelop, encourage design that changes the form of the site, fronting buildings to the street with parking behind or to the side and sidewalk connections both along the parcel frontage and connecting to building entrances.	east of Garrett Road to east of Weymouth Street	Durham	short/ mid
A single row of commercial parcels is located on both sides of US 15-501 through this part of the corridor, with residential uses directly behind. As these commercial parcels redevelop, encourage design that changes the form of the site, fronting buildings to the street with parking behind or to the side and sidewalk connections both along the parcel frontage and connecting to building entrances.	east of Weymouth Street to the US 15-501/University Drive intersection	Durham	short/ mid
The character in this area is unlikely to change significantly due to the existing residential areas, but there will be opportunities for incremental redevelopment and intensification of commercial parcels, provided that adequate transitions and buffers are created to residential areas.	east of Weymouth Street to the US 15-501/University Drive intersection	Durham	short/ mid

US 15-501 CORRIDOR STUDY REPORT SUMMARY

The US 15-501 Corridor Study is a long term plan, with the goal to Reimagine US 15-501 as a integrated, multimodal corridor.

January 2020

reimagining15501.com

US 15-501 CORRIDOR STUDY

Reimagining 15-501

STUDY OVERVIEW

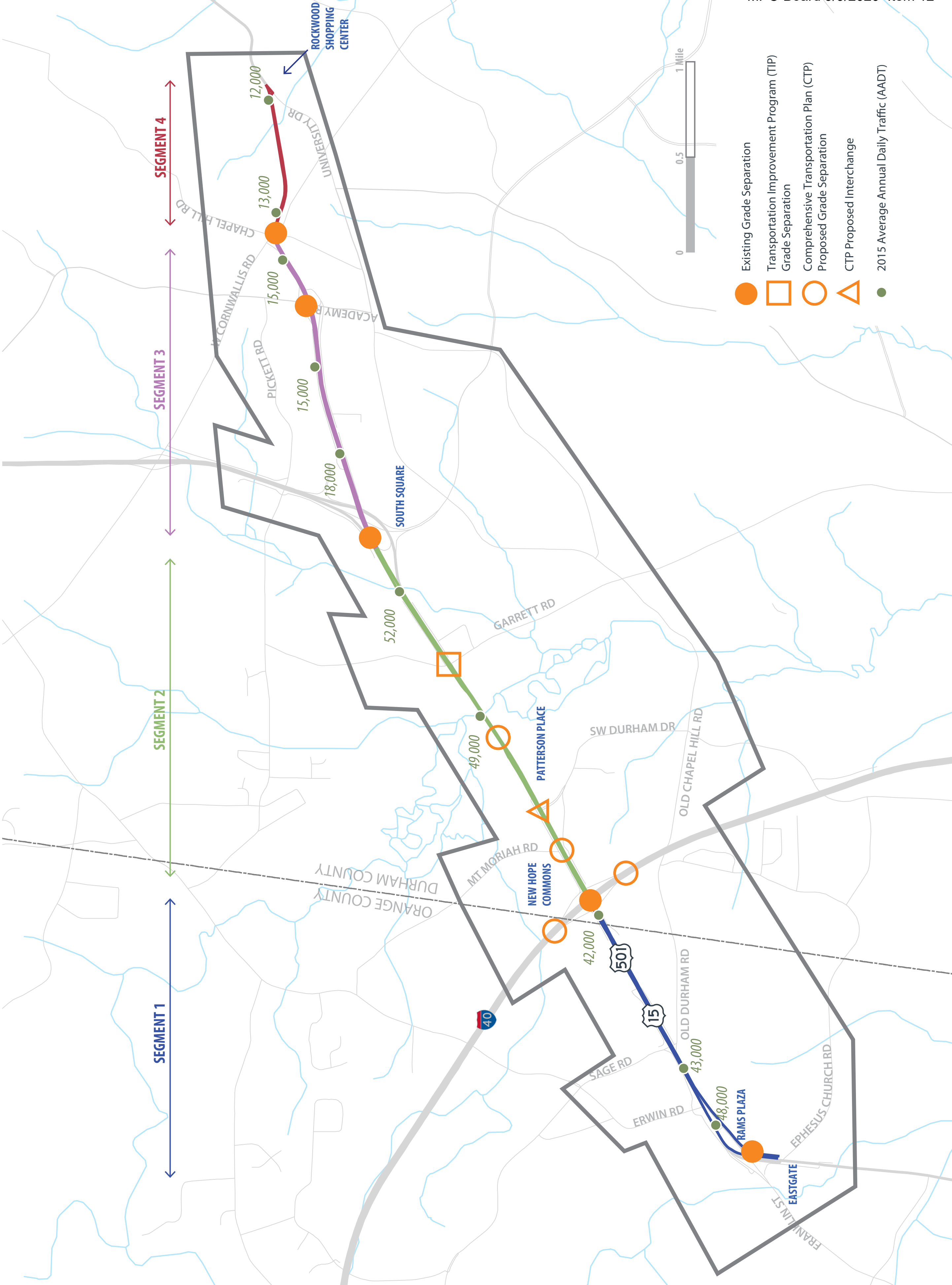
US 15-501 between the City of Durham and the Town of Chapel Hill is an auto-centric arterial highway that is in stark contrast to the vibrant multimodal downtowns that anchor the facility on either end.

The goal of this study is to Reimagine US 15-501 as an integrated, multimodal corridor informed by a community vision and goals, and supported by strategies that lead to the implementation of that vision.

The Study Corridor

For analysis purpose and due to the differing nature of the corridor, the study broke the corridor into segments:

- **Segment 1:** Ephesus Church Road to I-40 Interchange
- **I-40 Quadrant:** I-40 Interchange and surrounding quadrants
- **Segment 2:** I-40 to US 15-501 Bypass
- **Segment 3:** US 15-501 Bypass to Chapel Hill Road
- **Segment 4:** Chapel Hill Road to University Drive


ROCKWOOD SHOPPING CENTER
SOUTH SQUARE
PATTERSON PLACE
NEW HOPE COMMONS
RAMS PLAZA
EASTGATE
SEGMENT 4
SEGMENT 3
SEGMENT 2
SEGMENT 1
12,000
13,000
15,000
15,000
18,000
52,000
49,000
42,000
43,000
48,000
UNIVERSITY DR
CHAPEL HILL RD
W CORNWALLIS RD
ACADEMY RD
PICKETT RD
GARRETT RD
SW DURHAM DR
OLD CHAPEL HILL RD
MT MORIAH RD
DURHAM COUNTY
ORANGE COUNTY
OLD DURHAM RD
SAGE RD
ERWIN RD
EPHESUS CHURCH RD
FRANKLIN ST
501
15
40
0
0.5
1 Mile
Existing Grade Separation
Transportation Improvement Program (TIP) Grade Separation
Comprehensive Transportation Plan (CTP) Proposed Grade Separation
CTP Proposed Interchange
2015 Average Annual Daily Traffic (AADT)

COMMUNITY AND TRAVEL PROFILE (KEY THEMES)

Biking and Walking

- Lack of connectivity between activity centers
- Few facilities along the corridor
- Areas of concentrated demand
- Several areas with high concentrations of captive users

Transit

- Gaps in the existing system
- Corridor served by multiple transit agencies
- Difficult to efficiently serve existing development from US 15-501
- Challenging to provide local service along the corridor
- Bus operations impacted by congestion and delay

Highway

- US 15-501 is a gateway to the region
- High conflict between "to" and "through" travelers
- New development pattern should increase local trips within developments
- Attractive destination for travelers outside the study area
- Traffic crash patterns reflect high congestion levels

Environmentally Sensitive Areas

- New Hope Creek corridor
- Natural Heritage Area in the NW quadrant of I-40 and US 15-501

Jobs and Housing

- Study area will experience substantial growth in jobs and housing over the 30-year planning horizon
- Growth is primarily focused around the I-40 interchange, Blue Hill District, Gateway, and South Square area
- Proposed new development will be mixed-use high density which has several benefits, including:
  - A greater number of trips are made internal to the development
  - More transit supportive
  - Encourages active transportation

VISIONING

The purpose of the first public meeting was to create a corridor vision and corridor goals for US 15-501. The meeting aimed to present existing conditions to clarify why the study is being conducted, verify what will be achieved when the plan is implemented, and reflect the thinking of diverse groups in the community.

Visioning Process

- Conducted a mobile tour
- Visioning exercise with tour participants
- Visioning exercise with citizens and at public workshops
- Received comments from online comment map

Key Themes Emerging from the Visioning Process

- Multimodal
- Connectivity
- Mobility

Corridor Vision

- By 2045, US 15-501 between Durham and Chapel Hill will be a key multimodal transportation corridor, that will complement and support high capacity transit and the adjacent, mixed use, and multimodal supportive development. The corridor will provide for the safety, mobility, and accessibility of all users, including motorists, pedestrians, bicyclists, and public transportation users; including connections across and through the corridor.

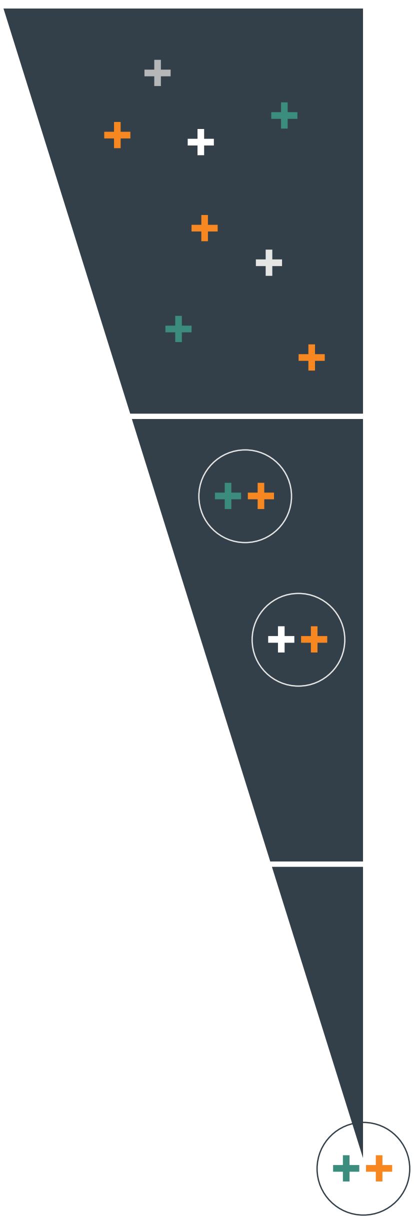
Corridor Goals

- Improve accessibility and connectivity for all modes
- Improve mobility for all users
- Enhance safety and health
- Stimulate land use, community, and market performance vitality
- Protect sensitive environmental lands within the study area

IMPROVEMENT STRATEGIES

A range of improvement strategies and ideas were captured from the following:

- Online comment map
- Public workshop
- Project Steering Committee
- Corridor analysis



Tier 1 Qualitative Screening

This screening evaluated strategies against a rubric designed to evaluate and score each strategy against the study goals and objectives.

- Safety, multimodal network connections, accessibility, equity, environment, health, community, and economy.

Multimodal Alternatives

Tier 1 screening resulted in a reduced number of multimodal strategies that were combined into complimentary packages of multimodal alternatives that were further evaluated by the Project Team, Project Steering Committee and vetted by the public and MPO Policy Board, resulting in two final alternatives.

Tier 2 Quantitative Screening

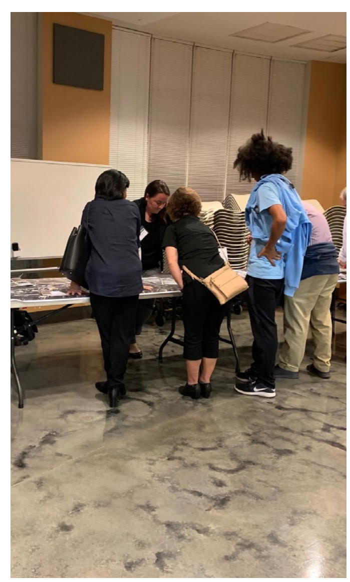
This screening involved a detailed evaluation of the alternatives and the development of conceptual designs. Input was received from the public and Project Steering Committee on the conceptual designs.

Durham-Orange Light Rail Transit (D-O LRT)

- Prior to the completion of this study, a decision was made by the governing bodies to discontinue work on D-O LRT.
- The Project Steering Committee and MPO Board directed the Project Team to develop a third alternative that could help achieve the goal of linking Chapel Hill and Durham with fast, frequent, and reliable transit service.
- Alternative 3 mirrors Alternative 2 in every way except for the addition of dedicated bus lanes within the study area between Ephesus Church Road and the US 15-501 Bypass.

The purpose of the **second public meeting** was to allow the public to review and comment on proposed concepts for addressing future transportation challenges. This meeting helped guide the project team in selecting concepts to be studied in detail.

The purpose of the **third public meeting** was to allow the public to review the final three proposed recommendations for addressing future transportation challenges. This meeting helped guide the project team in selecting the final preferred alternative for the study.

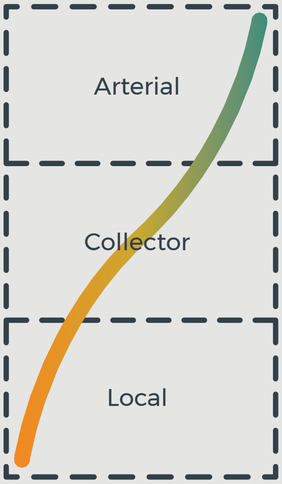


RECOMMENDED ALTERNATIVE

The recommended alternative aims to provide a comprehensive multimodal alternative for the entire corridor.

In Segment 1 the focus is on trying to find a balance between the conflicting priorities of accessibility and mobility with a design that improves the flow of through traffic, but also provides tools for creating a more urban environment through reduced travel speeds, increasing the number and safety of crossing locations for bicyclists and pedestrians, and streetscaping to provide a more urban feel. **In Segment 2**, the focus is on mobility with a design that focuses on multimodal grade separations, while recommending local street networks within developments adjacent to the corridor for local traffic and bicycle and pedestrian movements along the corridor. High capacity transit service along Segments 1 and 2 is prioritized with the inclusion of a bus only lane. **In Segments 3 and 4**, the recommended alternative aims to provide a more urban cross section that reduces the speed of vehicles and provides a more pedestrian friendly environment with bicycle and pedestrian facilities and land use closer to the corridor. For the entire corridor, capitalize on opportunities to create land use patterns that promote multimodal travel, and incorporate urban design and human-scale design.

Mobility vs. Accessibility



The ideal use of a corridor designed for mobility is to move people and goods from place to place.

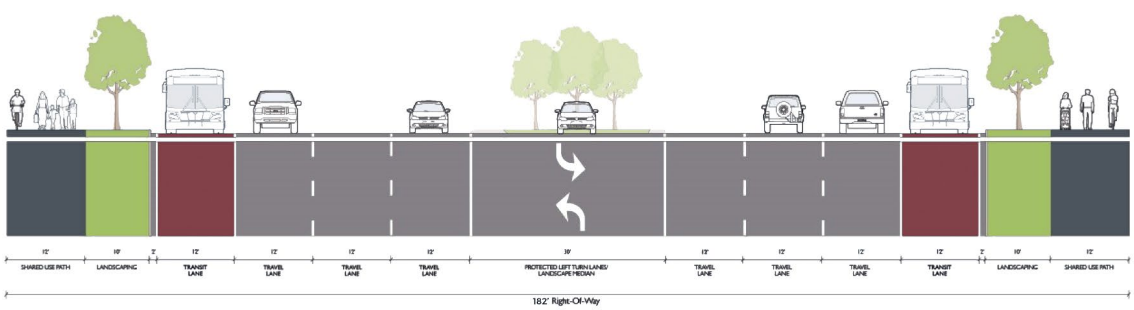
The ideal use of a corridor designed for accessibility is the ease with which people can reach an activity.

Focusing solely on one will come at the expense of the other, so a key challenge of this corridor is trying to create a balance between mobility and accessibility.

Key features of the recommended alternative for each segment include the following:

Segment 1

- Convert US 15-501 to a Reduced Conflict Intersection design (aka Superstreet) to improve safety and to better balance accessibility and mobility. To encourage a more urban design, signals will be timed to slow the progression of traffic, pedestrian crossings will be provided at intersections and at midblock U-turns, and streetscaping is encouraged
- Provide bicycle and pedestrian connections throughout Segment 1, both along and across US 15-501, including a grade separated pedestrian crossing at Eastowne Drive
- Connect Legion Road to Old Durham Road
- Implement local street network as proposed by Blue Hill District TIA
- Provide outside running bus only lane



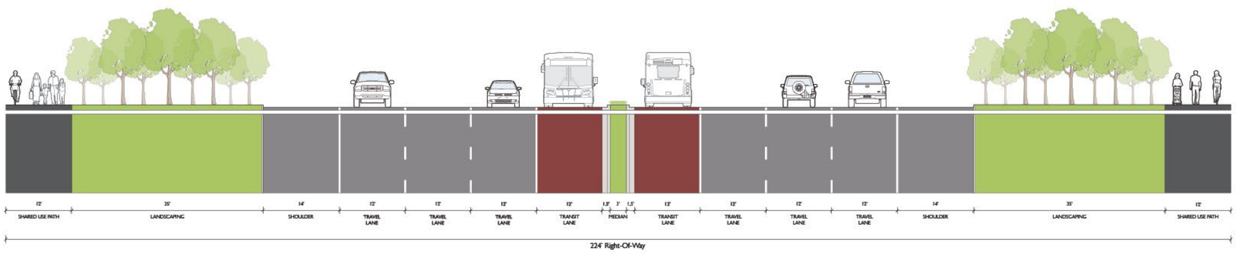
Segment 1 conceptual cross section

I-40 Quadrant

- Redesign I-40 interchange to improve safety and operations (diverging diamond), with addition of pedestrian facilities on the bridge across I-40
- Grade separated bicycle and pedestrian facility across I-40 connecting New Hope Commons to Eastowne Drive
- Grade separated 2-lane roadway with bicycle and pedestrian facilities across I-40 connecting Patterson Place to Gateway

Segment 2

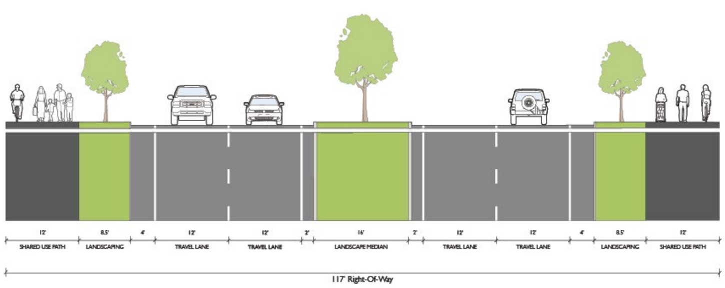
- Grade separate Mt Moriah Road and provide bicycle and pedestrian facilities on bridge
- Urban interchanges at SW Durham Drive and Garrett Road
- Implement Patterson Place and New Hope Commons local street network
- Provide bicycle and pedestrian connections throughout Segment 2, both along and across US 15-501
- Provide multimodal connectivity between Sandy Creek Drive, Chapel Hill Blvd Service Road, and Garrett Road



Segment 2 conceptual cross section

Segment 3

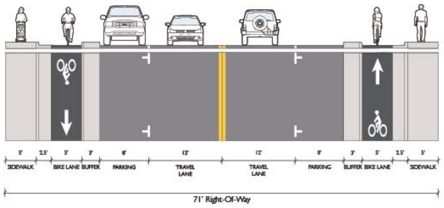
- Reduce the footprint of the current cross-section to implement a fully multimodal 4-lane urban cross-section with landscaped median
- Add roundabouts at key locations to improve connectivity and to further slow traffic and create a more urban environment
- Implement better street connectivity (future focus on an urban grid system) to the north and south of US 15-501 Business
- Redesign Academy Road and Chapel Hill Road interchange to better reflect urban design



Segment 3 conceptual cross section

Segment 4

- Implement 2-lane urban cross-section with landscaped median, consolidated driveways, and roundabouts at key intersections
- Provide sidewalks, bike lanes, and parking on both sides of the roadway
- Redesign University Drive intersection as a Roundabout with bicycle and pedestrian facilities



Segment 4 conceptual cross section

Land Use Strategies for the Corridor

- Follow framework strategies established in the appropriate Comprehensive Plans, Ephesus Church Road-Fordham Boulevard Small Area Plan, and Patterson Place Design District.
- Utilize the flexibility offered by the various Design Districts to encourage innovative design and architecture, and create a mix of uses with an urban fabric supportive of multimodal travel.
- Where appropriate, encourage designs that change the form of the corridor with buildings fronting the street and parking behind or to the side, and sidewalks to provide connectivity.
- Create areas of transition between more intense development nodes and commercial and residential areas.
- Respect environmentally sensitive areas.

IMPLEMENTATION

The US 15-501 Corridor Study is a long term plan, with the goal to Reimagine US 15-501 as a integrated, multimodal corridor. Due to the long term nature of this plan, the implementation of recommendations documented in this plan have been broken into three phases:

Along with differing timeframes for the recommendations, implementation will be overseen by different entities. Major roadway projects, like new interchanges, will be funded and built by the North Carolina Department of Transportation (NCDOT) and will include bicycle and pedestrian facilities. Standalone bicycle and pedestrian improvements or smaller roadway projects, could be funded by local municipalities like the Town of Chapel Hill or City of Durham. Developers may also be responsible for constructing new streets or bicycle and pedestrian facilities on parcels as they redevelop.

With all the stages of implementation, there is a recognition that more detailed level analysis and design will be completed. At this time, more context sensitive details, like final placement of crosswalks or streetscaping will be determined. See for example the aerial photo below that shows an illustration of how a Reduced Conflict Intersection design can be implemented within an urban corridor with high pedestrian activity. (photo is East Grand River Avenue, East Lansing, Michigan)

Example Reduced Conflict Intersection Urban Design

PROJECT DETAILS

This US 15-501 Corridor Study Report Summary, is meant to provide an overview of the corridor study. For more detailed information on the study process, recommendations, and implementation plan please visit the project website: **https://reimagining15501.com/**

For more information on the study, please visit:

Durham-Chapel Hill-Carrboro MPO

http://www.dchcmpo.org/

Or visit the project website

https://reimagining15501.com/

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Moving towards a more balanced
and multimodal future

reimagining15501.com

US 15-501 CORRIDOR STUDY

Reimagining 15-501

ENVIRONMENTAL JUSTICE REPORT

FOR THE DURHAM-CHAPEL HILL- CARRBORO
METROPOLITAN PLANNING ORGANIZATION

2020

DURHAM - CHAPEL HILL - CARRBORO
DCHC
Metropolitan Planning Organization
Planning Tomorrow's Transportation

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

The Durham- Chapel Hill - Carrboro Metropolitan Planning Organization (DCHC MPO) is the regional organization responsible for transportation planning and project selection for the western part of the Research Triangle area in North Carolina. In response to federal statutes, the DCHC MPO incorporates Environmental Justice (EJ) into all relevant aspects of the transportation planning process. The scope of this document covers EJ threshold evaluation of 2045 Metropolitan Transportation Plan (MTP) of DCHC MPO and 2018-27 Transportation Improvement Program (TIP) and overview of Unified Planning Work Program (UPWP) for FY 2019-20.

EJ “communities of concern” (CoC) are defined as any geographic area where the percentage of any EJ population is greater than the regional threshold for that particular EJ population. Total population numbers for each EJ population in the Census Block Groups within the DCHC MPO were found and then compared to the total population of the MPO to determine the percent of total population for each EJ population. Each regional threshold was then used during the analysis and identification of EJ communities of concern.

The next step in evaluating EJ in the DCHC MPO area was to compile the percent of the total Block Groups for each of the five EJ populations. These five percentages were then averaged to determine the overall average percent of total Block Groups, the resultant average was 37%. This means that 37% of all Block Groups in the DCHC MPO area were considered an EJ CoC and that was used as a threshold for the evaluation of long-range transportation projects.

The final step in the evaluation was to identify which Block Groups had overlapping EJ CoCs. There were 128 Block Groups with overlapping CoCs. Since 37% was the threshold established in the study, it was determined that for each mode in the aforementioned long range transportation plans, more than 37% of the projects' location and projects' combined funding be within or adjacent to Block Groups with overlapping EJ CoCs for the plan (and the mode) to be considered above the established threshold.

Ideally, an equitable distribution of funding and projects will allow all populations to equally enjoy the benefits and burdens related to transportation projects. Detailed GIS analysis was carried out for projects in the MTP and TIP across all major modes to determine whether or not they cross the 37% threshold. For MTP, all measures of interchange, highway and transit investments in communities of concern exceeded the 37% threshold. All measures of the different modes of TIP projects show that investments in communities of concern exceeded the 37% threshold except for interstate project funding which is 27%.

At the analysis of this report, it cannot be determined whether communities of concern experience an overall benefit or burden from this imbalance of transportation investments. Therefore, the DCHC MPO should continue to assess and consider potential benefits and burdens related to the projects that are proposed for inclusion in long-range planning efforts such as MTP and TIP. The MPO should also make exceptional efforts to include populations from the communities of concern in the public involvement activities of the MTP and TIP to ensure that the MPO has a clear understanding of the project benefits and burdens to those communities.

1

BACKGROUND AND OVERVIEW

CHAPTER CONTENTS

INTRODUCTION

Environmental Justice (EJ) refers to the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.[1] EJ is a federal requirement of all federal, state, and local agencies and has legal basis in Title VI of the Civil Rights Act of 1964, Executive Order 12898 of 1994, and the National Environmental Policy Act (NEPA). These regulations require that all agencies receiving federal assistance demonstrate compliance with related laws so that all the populations in the agency's study area enjoy the same benefits of the federal investments, bear the same burdens resulted from the federal projects, and have equal participation in local and state issues.

In response to these federal statutes, the Durham-Chapel Hill - Carrboro Metropolitan Planning Organization (DCHC MPO) incorporates EJ into all relevant aspects of the transportation planning process. The DCHC MPO's policy is based on the three core principles of EJ set forth by the Federal Highway Administration and Federal Transit Administration:

- Avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

After taking into consideration the federal definition of Environmental Justice, the DCHC MPO determined that there may be other variables that should be reviewed. This is because the United States Department of Transportation's (US DOT) planning regulations

require MPOs to "seek out and consider the needs of those traditionally under-served by existing transportation systems, including, but not limited to, low-income and minority households."
It is for that reason that the discussion has been broadened in this EJ report to consider the Limited English Proficiency (LEP) population, low access to vehicle populations, and senior populations.

This document details the DCHC MPO's approach to EJ in the DCHC MPO planning area.

DCHC MPO

The DCHC MPO is the regional organization responsible for transportation planning and project selection for the western part of the Research Triangle area in North Carolina.

The DCHC MPO region, first designated by the 1980 Census, covers all of Durham County, a portion of Orange County including the towns of Chapel Hill, Carrboro, and Hillsborough, and the northeastern section of Chatham County. The DCHC MPO area is one of the ten urban areas in North Carolina designated as a Transportation Management Area (TMA). TMA's are urban areas with a population of over 200,000 people.

Map 1 on page 1-7 presents the DCHC MPO planning area boundary.[2] The DCHC MPO is an umbrella organization led by the MPO Board and the Technical Committee (TC), local governments, transit agencies, and the State of North Carolina. The MPO Board is a policy body comprised of elected officials from the member jurisdictions that coordinates and makes decisions on transportation planning issues.

The TC is composed of staff members from the units of local and county governments, NCDOT, GoTriangle, Research Triangle Foundation, Triangle J Council of Governments, Raleigh-Durham Airport Authority, North Carolina Central University, the University of North Carolina at Chapel Hill, and Duke University. The TC reviews data, information, reports, and other transportation-related materials and provides technical recommendations to the MPO Board.

DCHC MPO DUTIES AND RESPONSIBILITIES

The primary responsibility of the DCHC MPO is to fulfill the requirements of the Federal Highway Act of 1962. These regulations require those urban areas with a population of 50,000 or more to conduct a Continuing, Comprehensive, and Cooperative (3-C) transportation planning process. An integral element of this 3-C process is the development of long-range transportation related plans and programs.

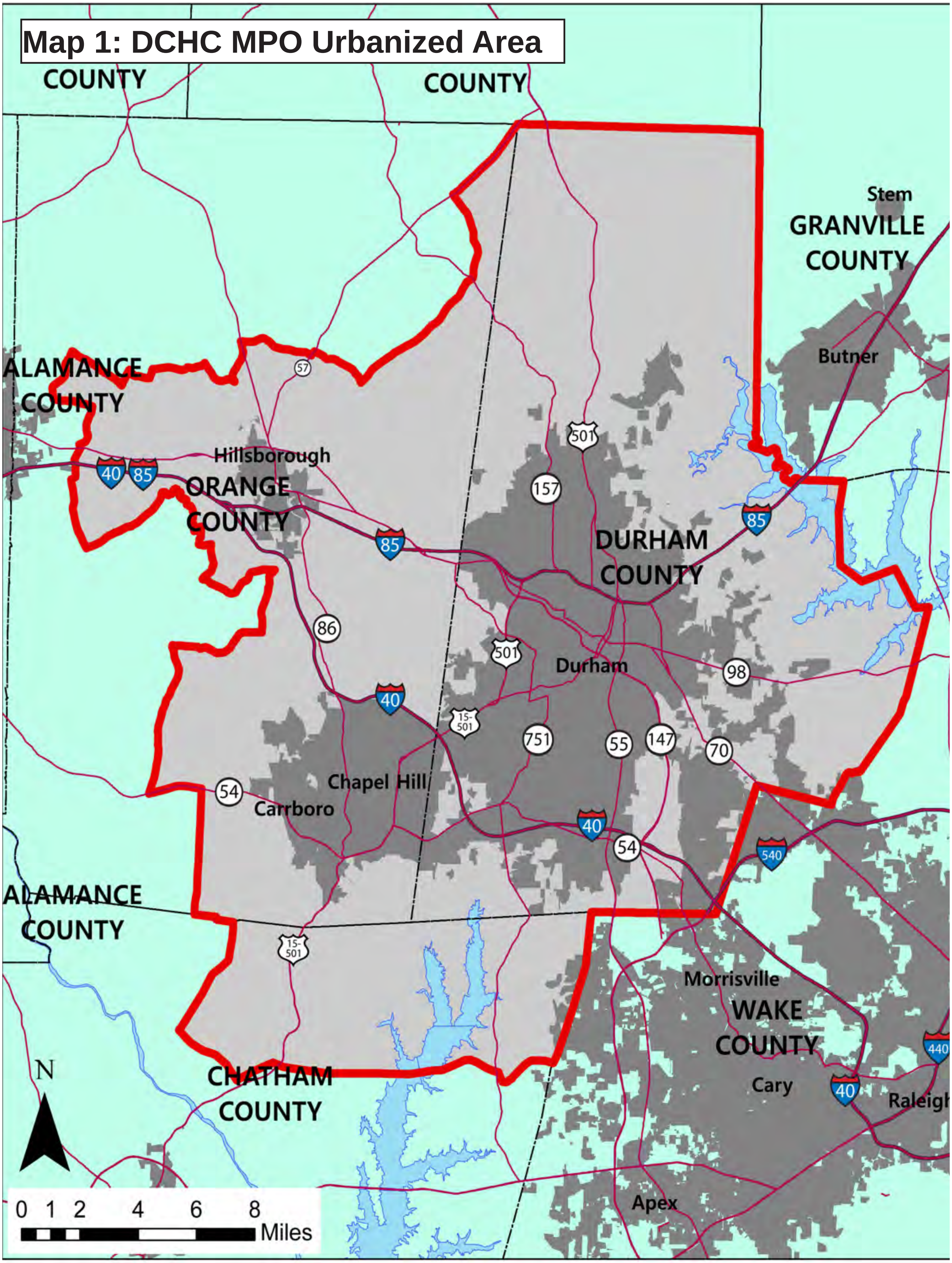
The DCHC MPO develops and maintains the area's long-range Metropolitan Transportation Plan (MTP), which addresses the region's projects, programs and policies for at least a 25-year period. The DCHC MPO also produces and maintains the metropolitan Transportation Improvement Program (TIP), which is a ten-year state and federal funding program for transportation projects to be implemented within the MPO planning area for at least a 20-year period.

Annually, the DCHC MPO is required by federal regulations to prepare a Unified Planning Work Program (UPWP) that describes and guides the urban area transportation planning activities and programs for the year.

In addition to the MTP, TIP, and UPWP, the DCHC MPO prepares special planning documents such as the Comprehensive Transportation Plan (CTP), transit plans, safety plans, bicycle, pedestrian, and trails plans, and congestion management plans.[3]

Chapter 2 of this EJ report presents a summary of the federal laws, regulations, statutes, and orders that establish the requirements for non- discrimination during all DCHC MPO transportation-related planning and programming initiatives. An analysis of EJ populations is included in Chapter 3, followed by an assessment of the DCHC MPO's major planning activities in Chapter 4.

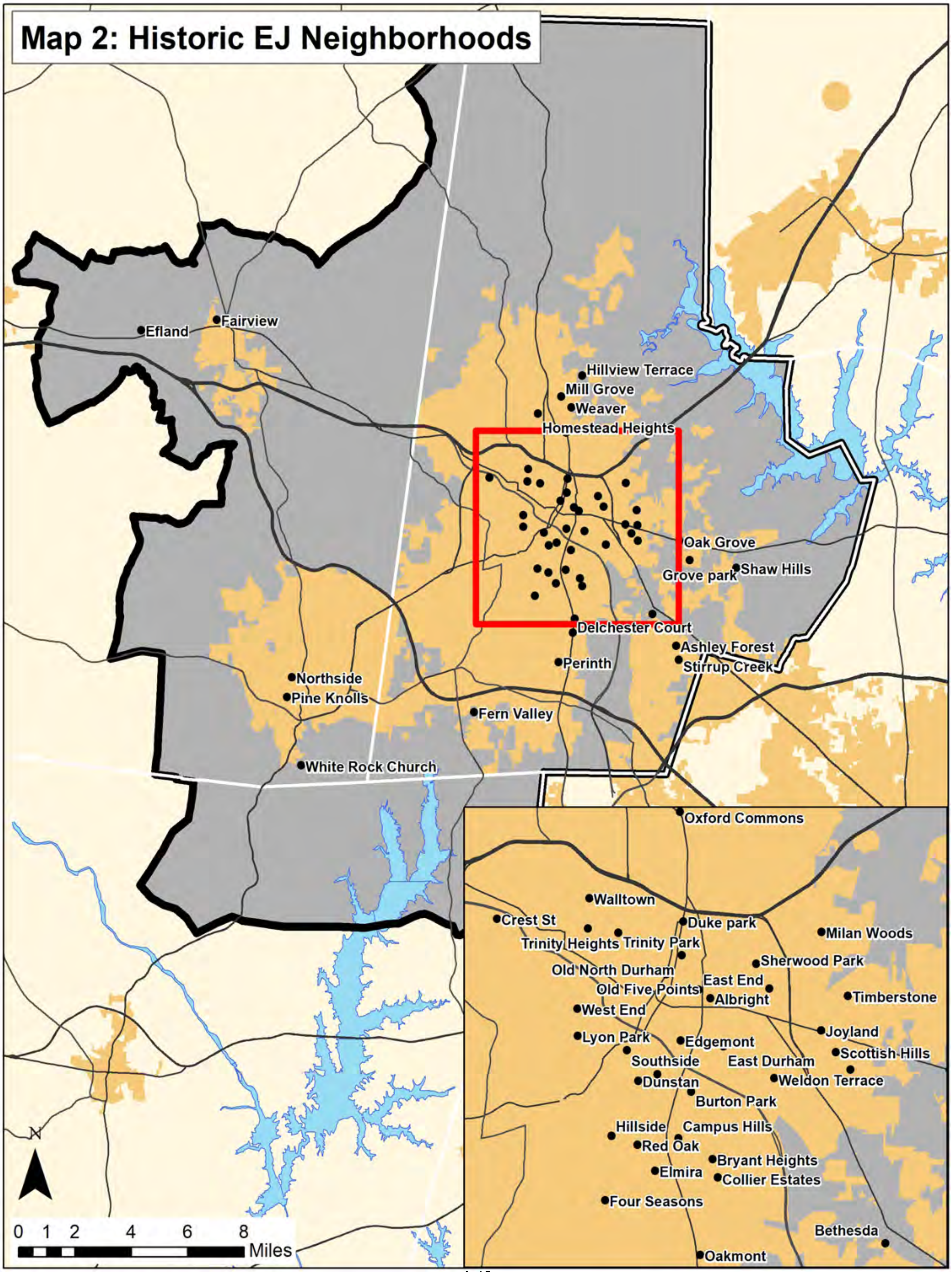
Map 1: DCHC MPO Urbanized Area



NEIGHBORHOODS WITHIN DCHC MPO

Generally, EJ Analysis is carried out using Census Block Groups. The MPO realized that a key drawback of this means of representation is that people identify themselves as residents of a neighborhood, rather than a Census Block Group. Providing names and locations of neighborhoods in this report creates an opportunity for the residents of these neighborhoods to identify whether or not a project will impact their community.

There are certain neighborhoods in the DCHC MPO which have historically been home to certain disadvantaged communities. Identifying these neighborhoods at the beginning of this document will make it easier to locate them during the EJ analysis carried out in subsequent chapters. The neighborhoods were identified based on prior knowledge of the region and by consulting with MPO and local jurisdiction staff. These neighborhoods are shown in Map 2 on page 1-5.


Map 2: Historic EJ Neighborhoods
Efland
Fairview
Hillview Terrace
Mill Grove
Weaver
Homestead Heights
Oak Grove
Grove park
Shaw Hills
Delchester Court
Ashley Forest
Stirrup Creek
Perinth
Northside
Pine Knolls
Fern Valley
White Rock Church
Oxford Commons
Walltown
Crest St
Duke park
Milan Woods
Trinity Heights
Trinity Park
Sherwood Park
Old North Durham
East End
Old Five Points
Albright
Timberstone
West End
Joyland
Lyon Park
Edgemont
Scottish Hills
Southside
East Durham
Dunstan
Weldon Terrace
Burton Park
Hillside
Campus Hills
Red Oak
Bryant Heights
Elmira
Collier Estates
Four Seasons
Bethesda
Oakmont
N
0 1 2 4 6 8
Miles

Endnotes

1. "Environmental Justice." *EPA*, Environmental Protection Agency, 20 Nov. 2019, https://www.epa.gov/environmentaljustice.

2. "Overview." *DCHC MPO - Overview*, http://www.dchcmpo.org/about/overview.asp.

3. "Programs & Plans." *DCHC MPO - Programs & Plans*, http://www.dchcmpo.org/programs/default.asp.

2

LAWS AND REGULATIONS PERTAINING TO ENVIRONMENTAL JUSTICE

CHAPTER CONTENTS

TITLE VI OF THE CIVIL RIGHTS ACT AND ENVIRONMENTAL JUSTICE

Two key federal actions provide the basis for the civil protections addressed in this EJ report:

1. The 1964 Civil Rights Act and Title VI of the Act (nondiscrimination)
2. Executive Order No. 12898 signed by President Clinton in 1994 (Environmental Justice)

The Civil Rights Act, and specifically Title VI of the Act, establishes the prohibition of discrimination "on the basis of race, color or national origin" in any "program or activity receiving federal financial assistance." Subsequent legislation has extended the protection to include gender, disability, age, and income, and has broadened the application of the protection to all activities of federal aid recipients, sub-recipients, and contractors regardless of whether a particular activity is receiving federal funding.

The 1994 Executive Order 12898 focused attention on Title VI of the Civil Rights Act by providing that "each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

See Appendix 1 for more details about the executive order.

FEDERAL STATUTES AND REGULATIONS

This section contains the regulations, statutes, and orders that establish the requirements for non-discrimination for the DCHC MPO. United States Code (USC) and Code of Federal Regulations (CFR) citations are provided.[1]

Title VI of the Civil Rights Act of 1964 mandates "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance." (23 CFR 2009 and 49 CFR Part 21)

As the designated Metropolitan Planning Organization for the urbanized areas of Durham, Orange, and Chatham Counties, the DCHC MPO is responsible for planning and implementing transportation projects, and is thus required to comply with this law. Appendix 2 expands on the authority, requirements, and standards of the 1964 Act:

USDOT Planning Assistance and Standards for Metropolitan Planning require MPOs to seek out and consider "the needs of those traditionally underserved by existing transportation systems, such as low income and minority households, who may face challenges accessing employment and other services" (23 CFR 450.316). Additional staff guidance from FHWA and FTA provides direction for assessing an MPO's level of compliance with Title VI, and establishes a corrective process that can affect federal funding.

DCHC MPO'S COMMITMENT TO ENVIRONMENTAL JUSTICE

The DCHC MPO carries out a comprehensive and thorough set of activities to ensure that disadvantaged persons, as characterized in the federal statutes and regulations listed in this chapter, do not suffer discrimination in the transportation planning and implementation processes. These activities have been in the areas of public participation and outreach, equitable distribution of programming and project funding, and plan analysis. Each long range planning initiative and special study prepared by the DCHC MPO includes a presentation of EJ analyses and activities performed during the planning process.[2]

3

DEMOGRAPHIC PROFILES

CHAPTER CONTENTS

OVERVIEW

The DCHC MPO considers the impact its programs may have on communities protected by Title VI/ environmental justice, also referred to as “environmental justice communities". Federal statutes and regulations require that all EJ analyses consider the needs of minority and low income communities, however, neither Title VI of the Civil Rights Act nor Executive Order 12898 provide specific instructions for a preferred methodology or approach to EJ analyses. Therefore, MPOs are granted the latitude to devise their own methods for ensuring that EJ and non-EJ population groups and their needs are appropriately represented in transportation decision-making processes.

The ability to effectively communicate and share ideas with all communities within the DCHC MPO area strengthens regional and local planning efforts. Innovative ideas exist within EJ communities, as they exist within non-EJ communities. Too often, however, avenues for communicating and sharing local knowledge are poorly established. For immigrants, language can be a barrier. Other social and cultural barriers limiting knowledge in the planning process or comfort levels in the ability to engage local leaders may exist, resulting in a consistent lack of participation and engagement.

Why does this matter to long-range planning?

The best community and long-range planning efforts are able to fully tap into their most important resource: people. People know the strengths and weaknesses of their community and the improvements that can catalyze resilient prosperity. Not unlike the scientific method, human daily routines are the product of much trial and error; developing presumptions, exploring options, and uncovering successful strategies in daily routines serves to inform longer-term planning efforts. By more thoroughly and effectively connecting to all groups – hence including a more diverse pool of citizens and ideas – innovative community solutions can be revealed and encouraged to flourish. This makes planning outputs more valuable, more meaningful, and ultimately more successful.

As previously mentioned, federal requirements for EJ mandate that an MPO identify and analyze the needs of minority and low-income communities. The DCHC MPO broadened the scope of the traditional EJ approach to include a review and consideration of additional EJ communities that exist in the DCHC MPO area. The five EJ communities considered in this EJ report are:

1. Minority race populations
    a. All Minority race populations
    b. Hispanic/Latino Ethnicity Origin populations
    c. Black populations
2. Elderly populations
3. Low-income households
4. Limited English Proficiency (LEP)
5. Zero-car households

Appendix 3 contains detailed definitions of EJ communities. This chapter describes the DCHC MPO's methodology for evaluating EJ communities and serves as a resource for local and regional transportation planning by providing recent and statistically reliable information about areas of identified communities and population demographics using US Census Bureau American Community Survey (ACS) data sets.

The demographic analyses presented in the remainder of this chapter assist in assessing the needs of, and analyzing the potential impacts on and benefits to, the five identified EJ communities.

ANALYSIS OF EJ COMMUNITIES OF CONCERN

EJ "communities of concern" (CoC) are defined as any geographic area where the percentage of any EJ population (defined on pages 3-2 and 3-3) is greater than the regional threshold for that particular EJ population. US Census Block Group level data were used as the geographic area of comparison for each EJ population.

Determining Regional Thresholds

Regional thresholds for each EJ population group were developed and used as benchmarks for comparison. Total population numbers for each EJ population in the Census Block Groups within the DCHC MPO were found and then compared to the total population of the MPO to determine the percent of total population for each EJ population. Each regional threshold was then used during the analysis and identification of EJ communities of concern. Regional thresholds are presented in Table 3.1.

Table 3.1: Regional Thresholds for EJ Population Groups

EJ Communities of Concern	Count	%
Total Population	455,813	
Total Households	182,810	
Racial Minority Population	218,877	48%
Hispanic/Latino Population	53,434	12%
Black Population	126,910	28%
Elderly Population	59,095	13%
Limited English Proficiency Households	7,687	4.2%
Low Income Limit for Households	$38,920	
Zero-Car Households	12,722	7%

COMPARING US CENSUS BLOCK GROUPS TO REGIONAL THRESHOLDS

Each EJ population in the DCHC MPO area was mapped by US Census Block Group (Block Group). Any Block Group with a concentration of an EJ population that exceeded the regional threshold for that population was identified as an EJ community of concern. This comparative analysis was performed for each EJ population group to determine the locations of concentrated EJ communities of concern.

For example, Table 3.1 indicates that 48 percent of the total population of the DCHC area, is an EJ racial minority population. Thus, 48 percent is used as the regional threshold for racial minority population. Any Block Group with a racial minority population representing greater than 48 percent of the total population in that Block Group is considered an EJ community of concern for racial minority population.

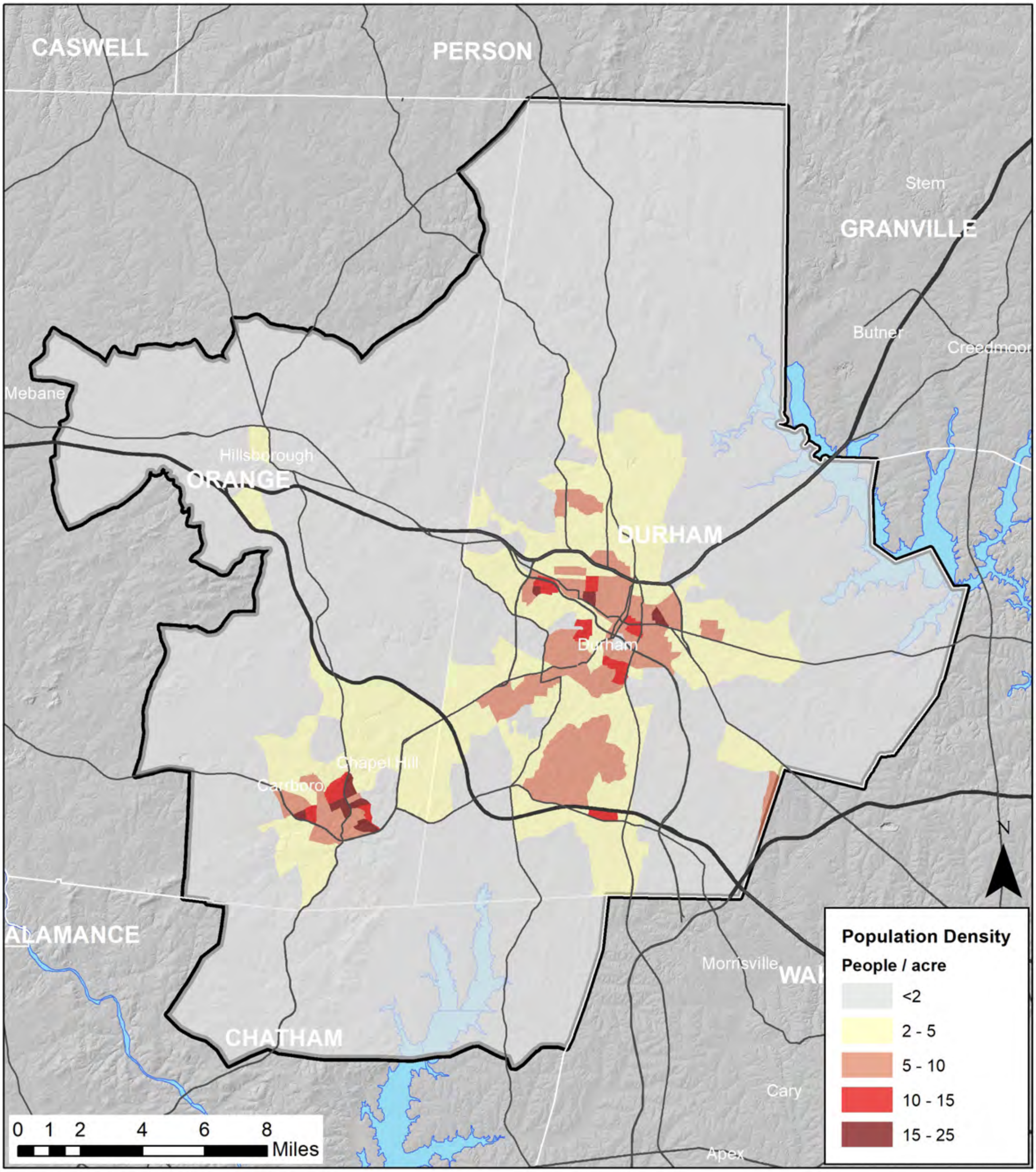
The determination of what is “disproportionately high and adverse human health or environmental effect” as discussed by E.O. 12898 is context dependent. The approach used in the development of this EJ report to identify communities of concern is only based on available Block Group data and the proportion of protected populations that they contain. All future project development processes should include additional efforts to utilize local knowledge of individual neighborhoods to identify potential populations that might have been missed during this Census-based analysis.

Population Density (Map 3.1)

Map 3.1 on page 3-4 depicts population density by Block Group in the DCHC MPO area. The most densely populated areas with density ranging from 15 to 25 persons per acre are mostly concentrated in Chapel Hill near University of North Carolina Chapel Hill Campus and the historic districts of Franklin-Rosemary and Cameron-McCauley; Duke East Campus, Albright and Crest Street neighborhoods in Durham; and the neighborhood between Jones Ferry Road and NC-54 west of Barnes Street in Carrboro.

Another set of high density areas with 10 to 15 persons per acre are scattered in different parts of Durham, like Walltown, Trinity Heights, North Carolina Central University, West End and Lyon Park. Northside neighborhood in Chapel Hill also falls within this density category.

Providing safe access between highly populated areas and destinations such as commercial centers and downtown areas should be considered a high priority for the DCHC MPO.



Map 3.1: Population Density

People within each Census Block Group / Area of the Census Block Group in Acres

Total population = 455,813
Total area = 482,010 acres

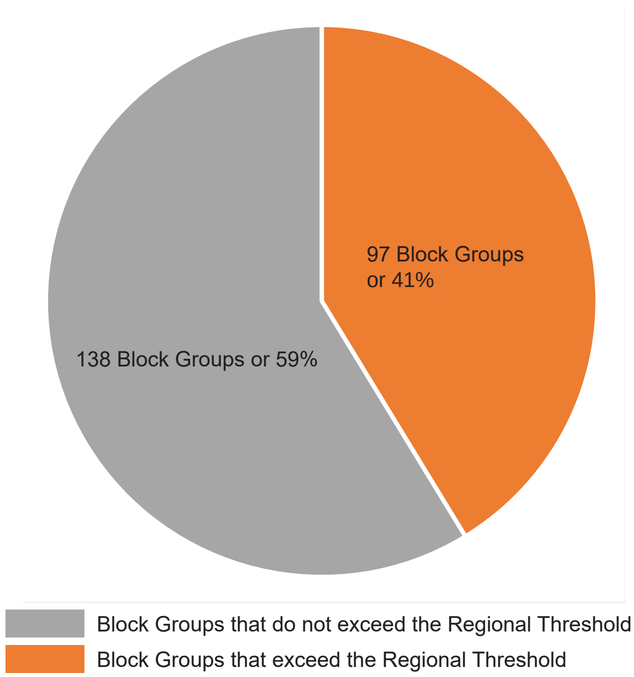
Source: 2013-2017 NCDOT 2019 Demographic Snapshot Tool

Racial Minority (Map 3.2)

Racial minority population consists of people from all racial groups except non-Hispanic White. The regional threshold for racial minority populations is 48 percent. Detailed analysis of Block Groups in the DCHC MPO area identified 97 of the total 235 Block Groups with racial minority populations representing greater than 48 percent of the total population, thus these Block Groups were considered communities of concern. The most highly concentrated areas of racial minority communities of concern were located in the City of Durham.

Of the 97 Census Block Groups, 25 block groups had racial minority populations that exceeded 75 percent of the total population. They were mostly located in Durham between Angier Ave to the north, MLK Jr Parkway to the south, Briggs and Alston Avenues to the east and Roxboro street to the west. Other areas include Albright, East Durham, LaSalle Street, West End and areas north of Colonial Village.

Chart 1: Block Groups that Exceed the Regional Threshold for Racial Minority Populations



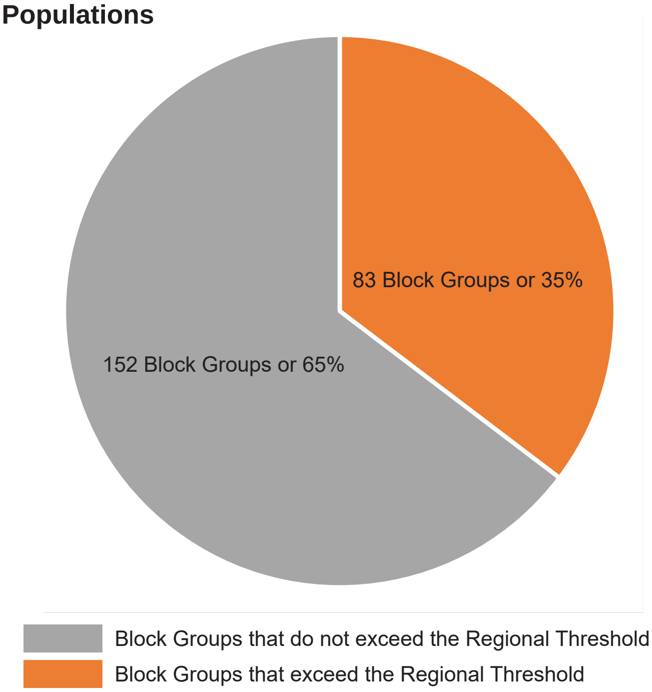
Hispanic (Map 3.3)

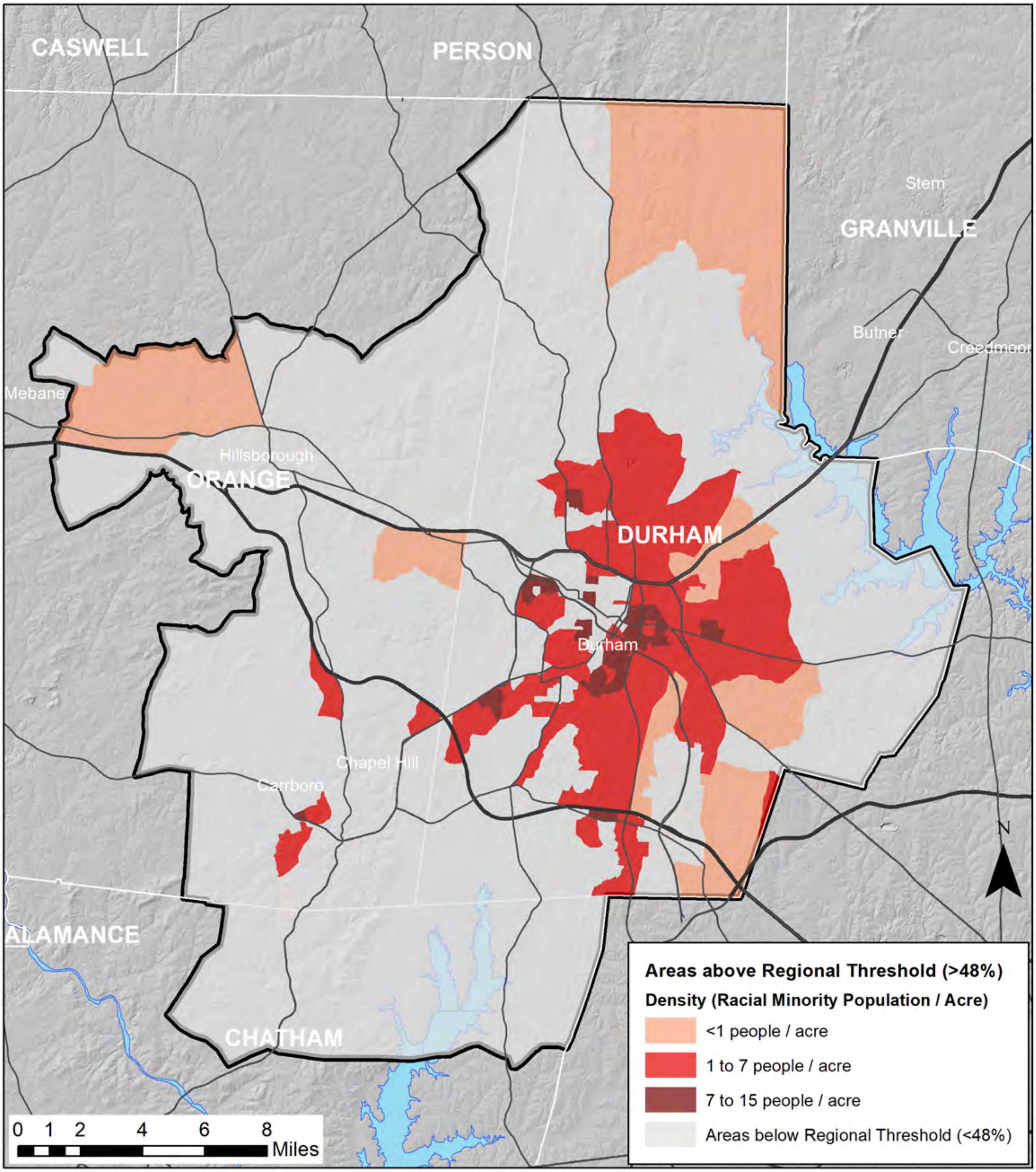
The regional threshold for Hispanic/Latino Ethnicity Origin populations is 12 percent. Eighty-three out of the total 235 Census Block Groups in the DCHC MPO area have Hispanic/ Latino Ethnicity Origin populations that represent greater than 12 percent of the total population and are considered communities of concern.

Of the 83 Census Block Groups five block groups had Hispanic/Latino Ethnicity Origin Populations that exceeded 40 percent of the total population. These Census Block Groups are located in Orange County between Eno and Mt Sinai Road and in East Durham near CR Woods Park and Wellons Village.

To help identify the most dense minority areas, a 3 people per acre threshold was set. Ten out of 83 Census Block Groups had 3 or more people per acre from Hispanic/Latino Ethnicity Origin Populations. In Durham, these Census Block Groups are concentrated around East Durham, Timberstone, Sherwood Park, Wellons Village, Albright, Crest St, Lyon Park, and few locations along US15 Business.

Chart 2: Block Groups that Exceed the Regional Threshold for Hispanic/Latino Ethnicity Origin Populations



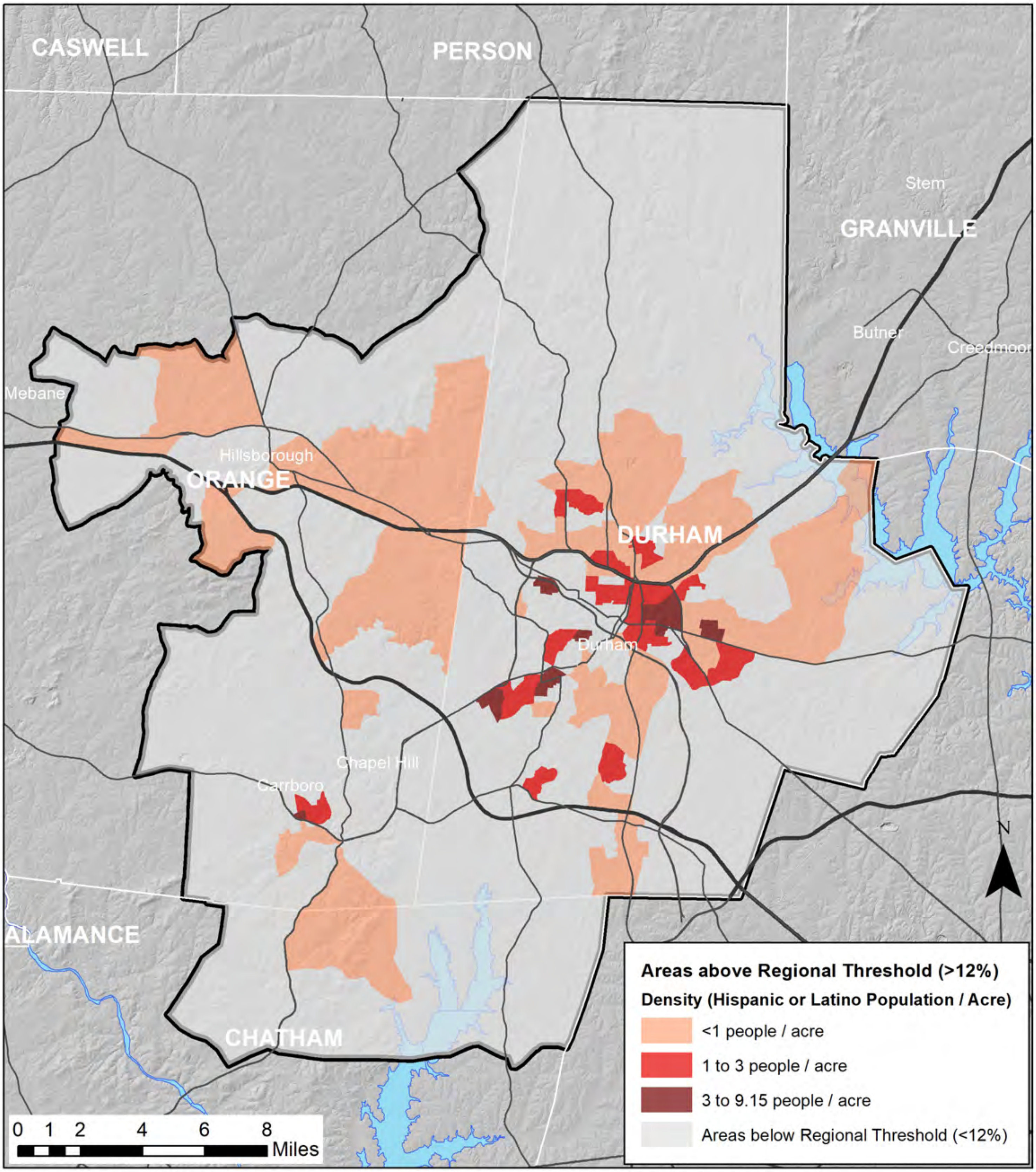


Map 3.2: Percent of Population: Racial Minority

Census Block Groups where percentage of racial minority population is higher than the regional threshold of 48%.

Map gradient is based on the density of racial minority population.
Regional Threshold for DCHC MPO = Racial Minority population (218,877) / Total population (455,813) = 48%

Source: 2013-2017 NCDOT 2019 Demographic Snapshot Tool



Map 3.3: Percent of Population: Hispanic or Latino Ethnicity Origin

Census Block Groups where percentage of Hispanic or Latino population is higher than the regional threshold of 12%.

Map gradient is based on the density of Hispanic or Latino population.
Regional Threshold for DCHC MPO = Hispanic or Latino population (53,434) / Total population (455,813) = 12%

Source: 2013-2017 NCDOT 2019 Demographic Snapshot Tool

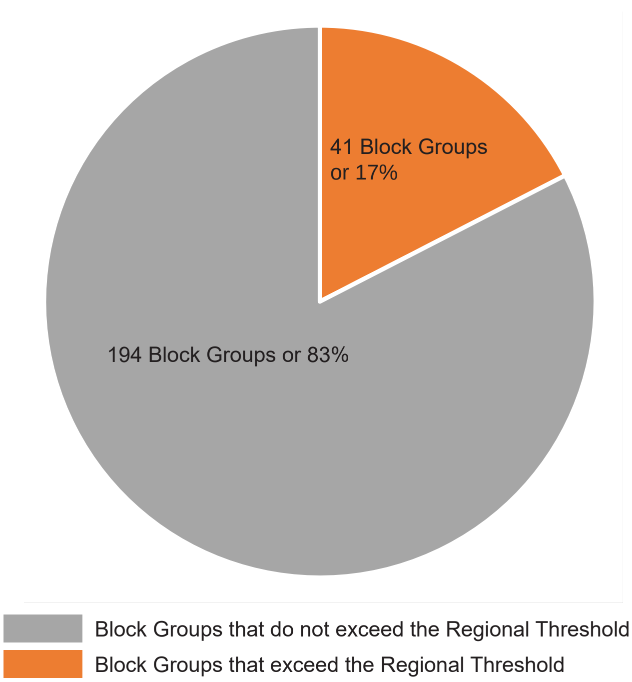
Black (Map 3.4)

The regional threshold for Black populations is 28 percent. Eighty-one out of the total 235 Census Block Groups in the DCHC MPO area have Black populations that represent greater than 28 percent of the total population and are considered communities of concern.

Of the 81 Census Block Groups, 41 block groups had Black populations that exceeded 50 percent of the total population. These 41 block groups encompass major parts of eastern and southern Durham City and a few neighborhoods in north and east Durham.

Fourteen out of 81 Census Block Groups had 5 or more people per acre from Black populations. These Census Block Groups are located in Durham County concentrated around eastern and southern sections of Durham City. The neighborhoods encompassed by these Census Block Groups are Hillside, Red Oak, Dunstan and Lincoln Hospital in south Durham; East End, East Durham, Timberstone in east Durham; Walltown in north Durham and West End and Lyon Park in west Durham.

Chart 3: Block Groups that Exceed the Regional Threshold for Black Populations



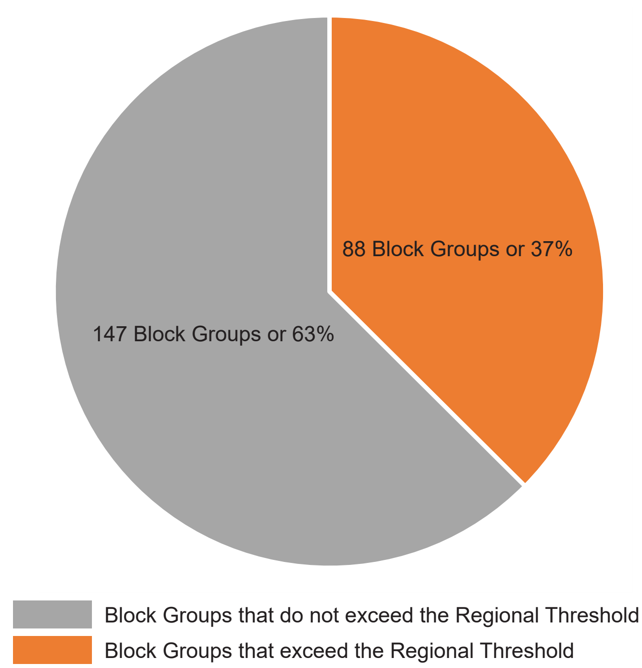
Elderly (Map 3.5)

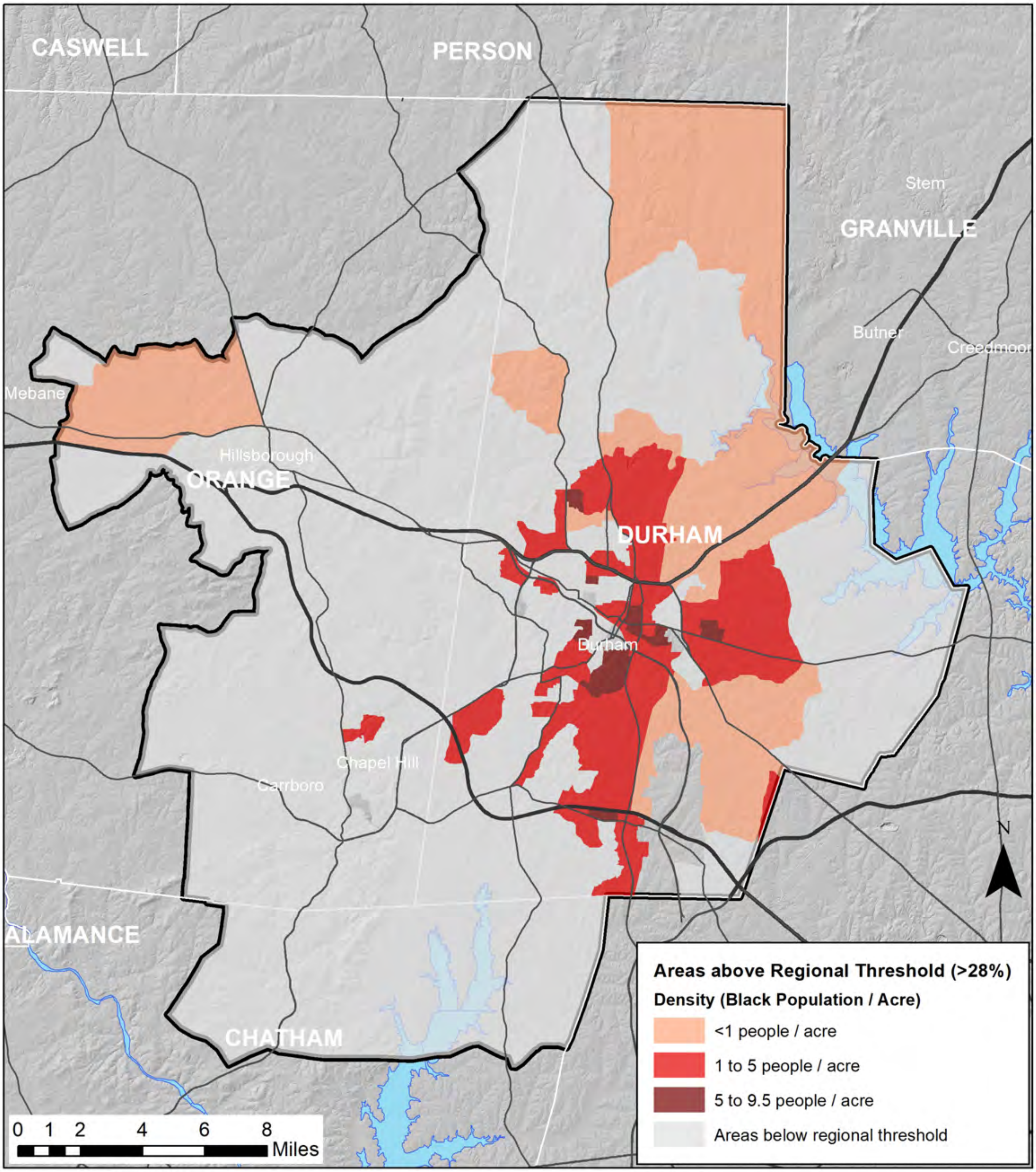
The regional threshold for elderly populations is 13 percent. Eighty-eight out of the total 235 Census Block Groups in the DCHC MPO area have elderly populations that represent greater than 13 percent of the total population and are considered communities of concern.

Elderly population communities of concern were dispersed throughout the DCHC MPO area, mostly outside the urban centers. Almost all Census Block Groups in Chatham county that are within DCHC MPO region are elderly communities of concern. Similarly, large parts of rural Orange county and northern Durham county are also elderly communities of concern.

Of the 88 Census Block Groups, 7 block groups had elderly populations that exceeded 40 percent of the total population. Five out of seven Census Block Groups are located in Chatham county, and the remaining two are located in Durham county. The ones in Durham county are located in the area between South Square Mall and Academy Road, and the area north of Crossdaile Country Club.

Chart 4: Block Groups that Exceed the Regional Threshold for Elderly Populations



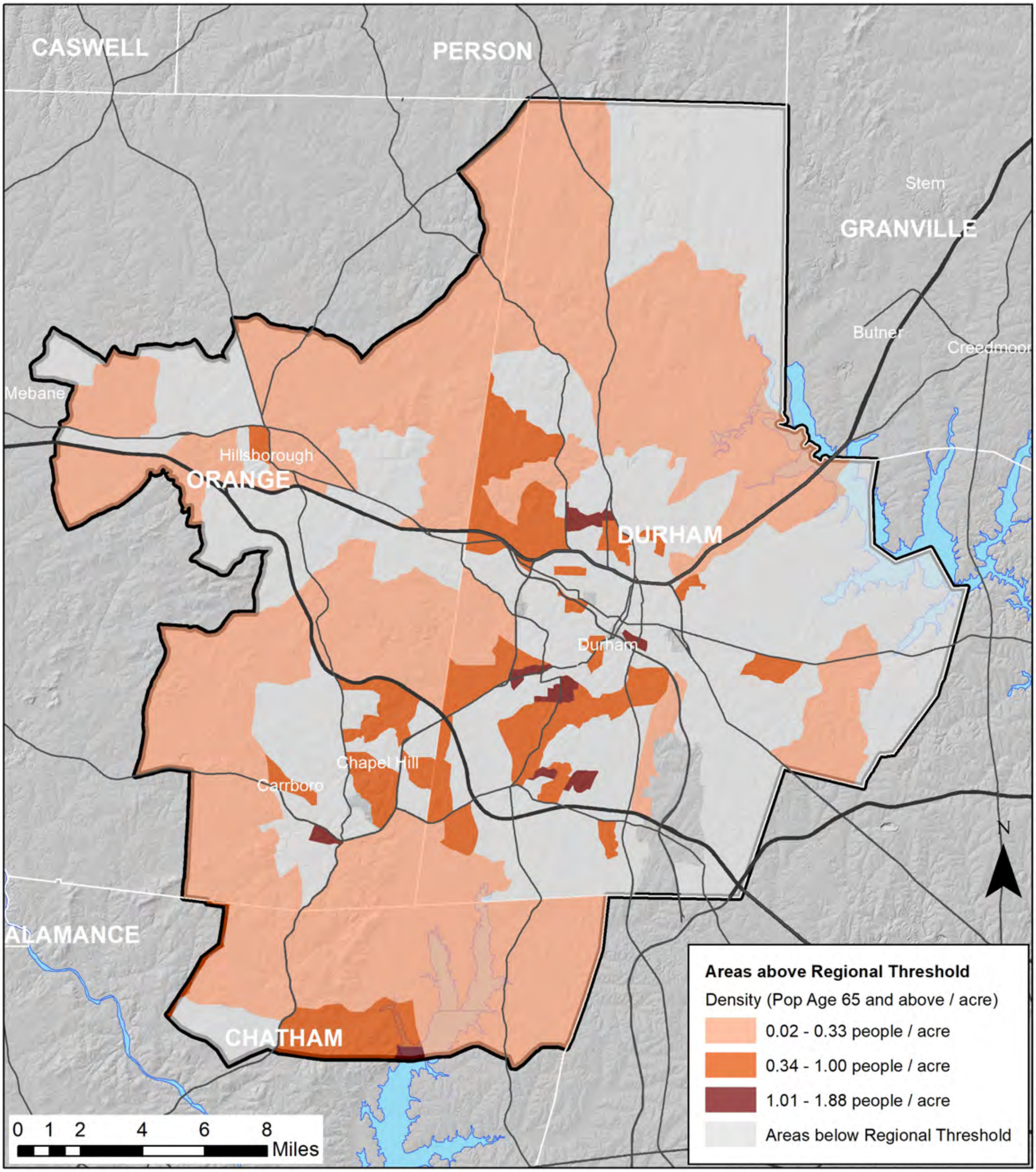


Map 3.4: Percent of Population: Black or African American

Census Block Groups where Percentage of Black population is higher than the regional threshold of 28%.

Map gradient is based on the density of Black population.
Regional Threshold for DCHC MPO = Black population (126,910) / Total population (455,813) = 28%

Source: 2013-2017 NCDOT 2019 Demographic Snapshot Tool



Map 3.5: Percent of Population: Elderly (65 Years of Age or Older)

Census Block Groups where percentage of population of age 65 years and above is greater than 13.3%.

Map gradient is based on the density of population of age 65 years and above.
Regional Threshold for DCHC MPO = Population over 65 years of age (67,939) / Total Population (511,041) = 13.3%

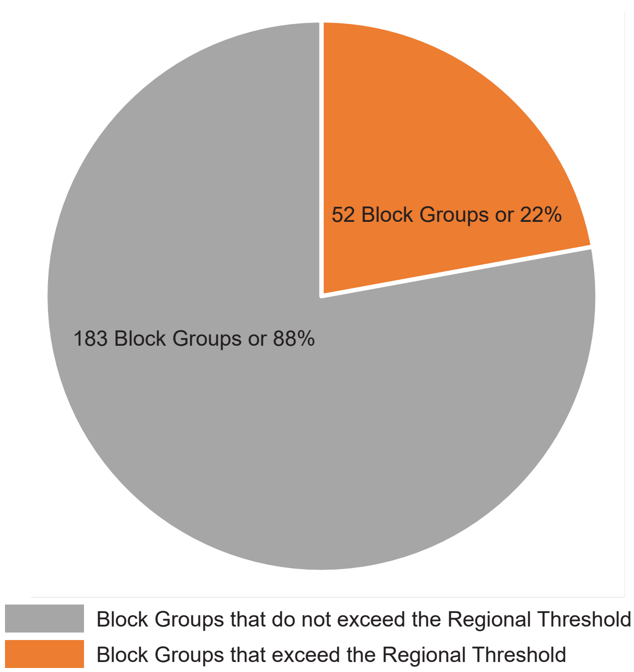
Source: 2013-2017 American Community Survey 5-Year Estimates Table: B01001

Low Income (Map 3.6)

A Census Block Group whose annual median household income is less than the low-income limit is considered a low-income household community of concern. The low-income limit for DCHC MPO region is $38,920 and is established as the regional threshold. For DCHC MPO, any Block Group with a median household income less than $38,920 was considered a low-income community of concern.

Fifty two of the total 235 Census Block Groups in the DCHC MPO area were considered low-income communities of concern. These communities were clustered primarily in Durham City and parts of Chapel Hill and Carrboro in Orange County. The neighborhoods of Crest St, West End, Lyon Park, Hillside Park, Forestview Heights, Campus Hills, Bryant Heights, Burton Park, parts of University Dr, eastern Durham, and neighborhoods along I-85 between Jeffries Road to Broad Street largely encompass communities of concern in Durham. Areas with high student population in Chapel Hill and Carrboro are also included as communities of concern.

Chart 5: Block Groups that are Low-Income Communities of Concern



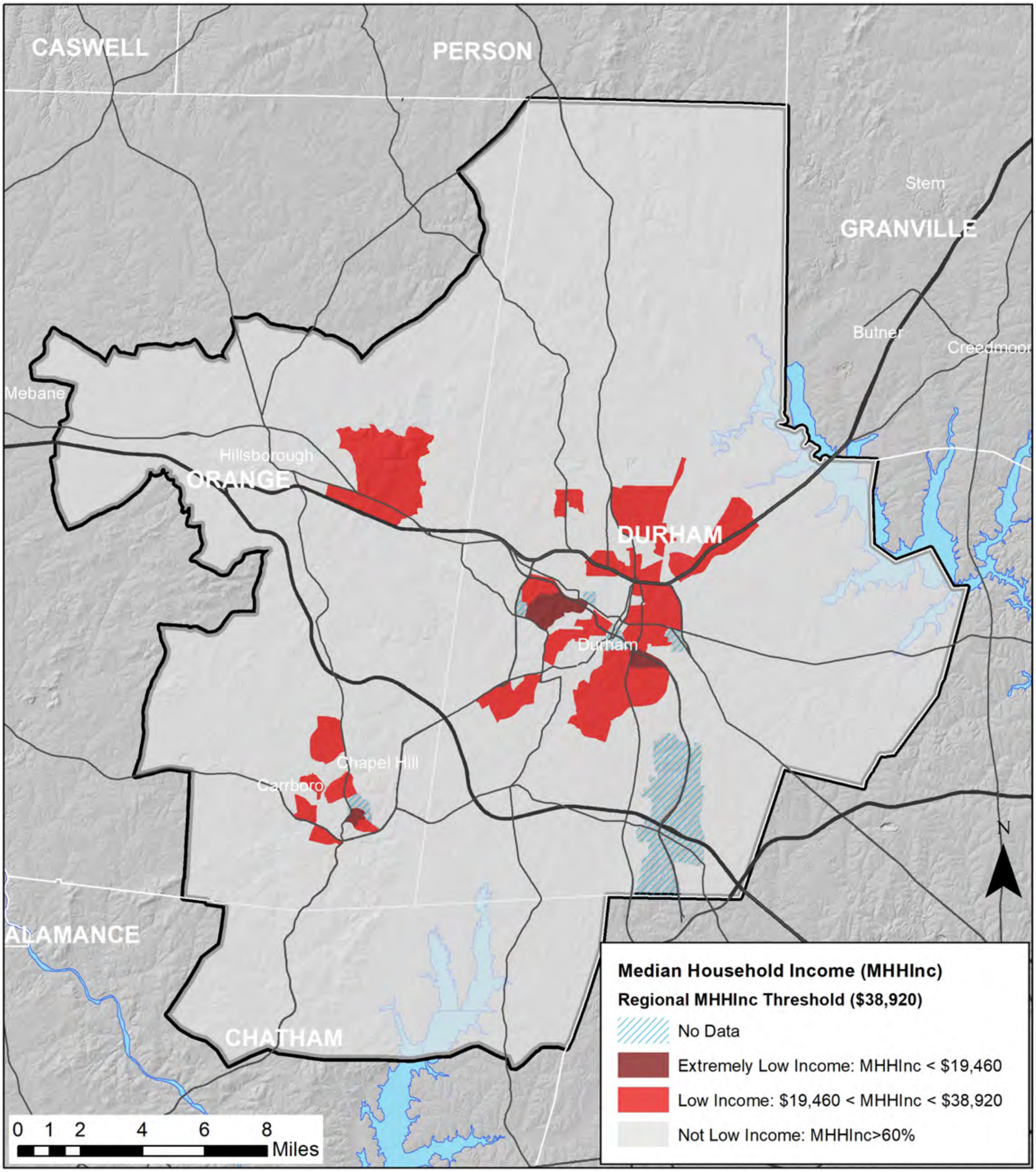
Extremely Low-Income Households (also Map 3.6)

To fully consider the needs of lower-income populations and recognizing that HUD uses more than one low-income limit to analyze lower income populations, the DCHC MPO reviewed a second low-income limit called extremely low income. The term extremely low–income refers to households whose incomes do not exceed 30 percent of the median household income for the area. **Thirty percent of median household income in DCHC MPO ($64,865) is $19,460.**

Any Block Group with a median household income less than $19,460 is illustrated on Map 3.6 on page 3-12 by dark red color. Four of the total 235 Block Groups in the DCHC MPO area were considered extremely low-income.

One of the four extremely low income Block Groups with the median income of $9,205 is located in Chapel Hill within UNC Chapel Hill campus. This area contains many student housing facilities which may have resulted in the low median income of this Census Block Group.

Two of the 4 extremely low income Block Groups with median household incomes of $11,250 and $16,000 are located at the sites of Duke University Campus, again owing to the high concentration of student population in that area. The last extremely low income Block Group with median household income of $13,688 is located at Burton Park and Durham Tech.



Map 3.6: Low Income and Extremely Low Income Households

Census Block Groups where Median Annual Household Income is lower than the regional threshold of $38,920.

Regional Threshold for DCHC MPO = 60% of Average Median Household Income of all Census Block Groups within DCHC = $64,865 x 60% = $38,920

Source: 2013-2017 American Community Survey 5-Year Estimates Table: B19013

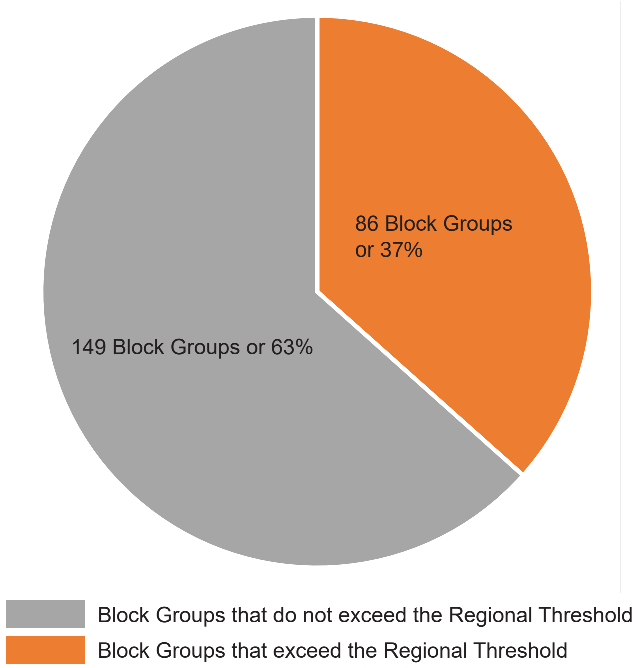
LEP (Map 3.7)

The regional threshold for LEP populations by household is 4.2 percent. 86 out of the total 235 Census Block Groups in the DCHC MPO area exceeded the regional threshold for LEP populations and were considered LEP communities of concern.

As depicted on Map 3.7, the LEP communities of concern (CoC) were dispersed throughout the DCHC MPO area. There were 64 LEP CoC Block Groups located in Durham county, mostly concentrated in east and southwest Durham; and 21 in Orange county, spread throughout the county with minor concentrations in parts of Chapel Hill. The remaining LEP CoC Block Group is located in Chatham County.

Nine of the 86 Census Block Groups had Limited English Proficiency households that exceeded 20 percent of the total number of households. These Census Block Groups are concentrated primarily in east Durham, between Eno River State Park and I-85, between Garrett Road and University Dr, and on UNC-Chapel Hill campus.

Chart 6: Block Groups that are Limited English Proficiency Communities of Concern

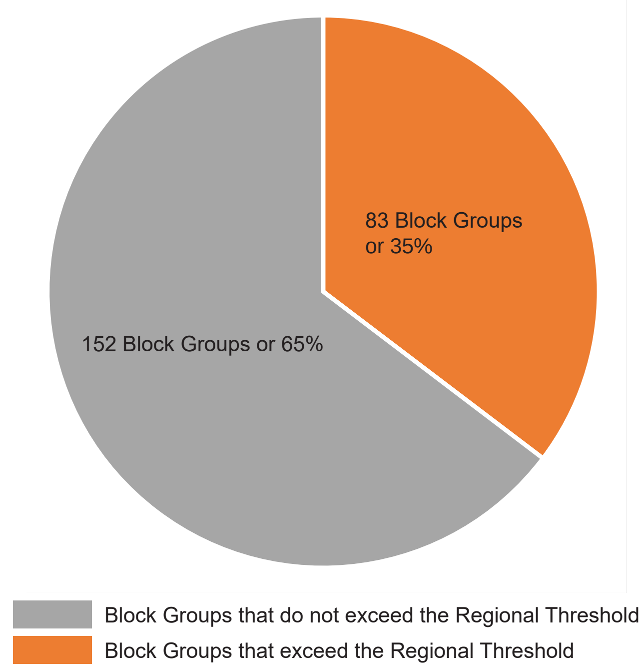


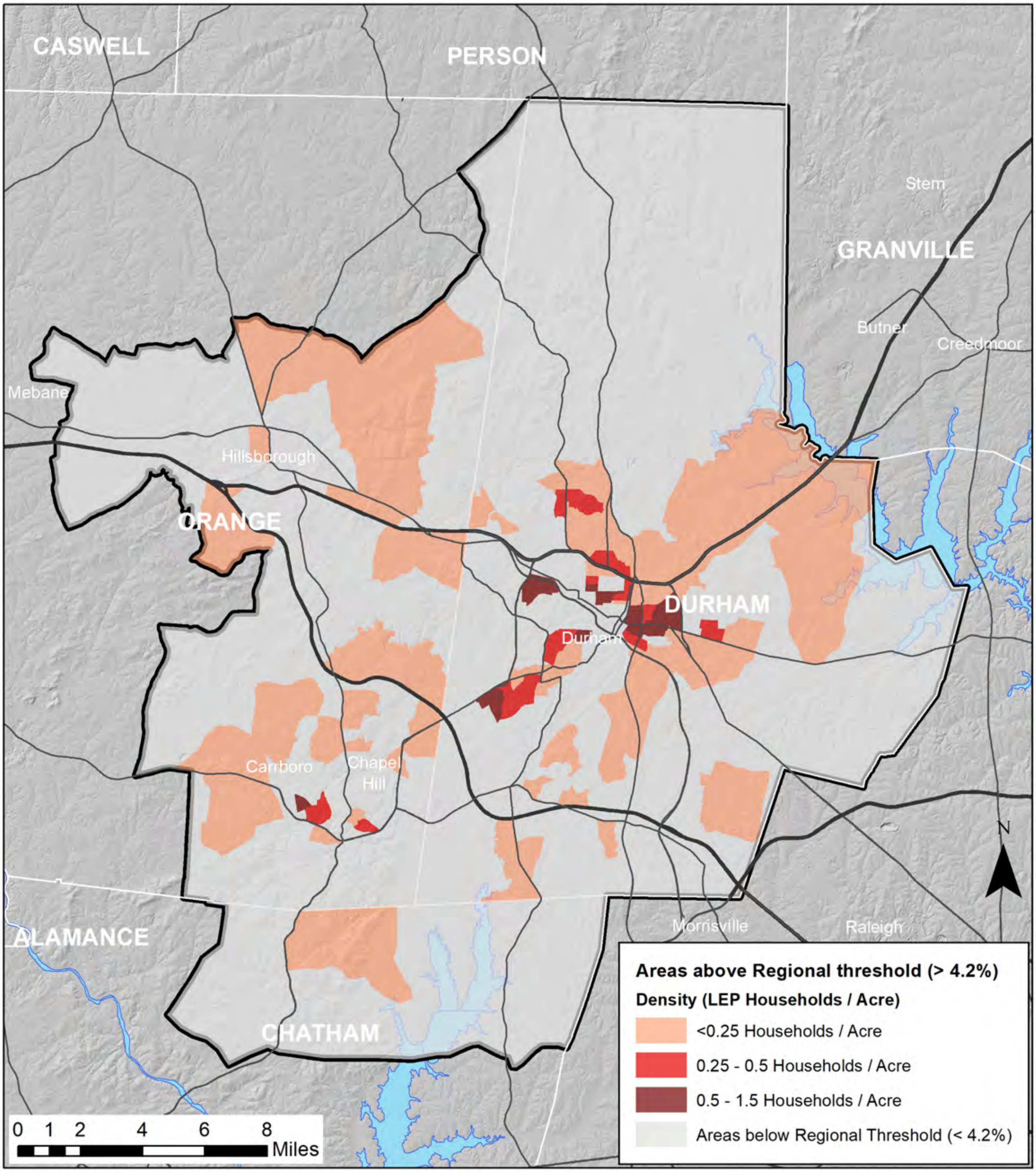
Zero Car Households (Map 3.8)

Households that do not have access to a vehicle are often referred to as “zero-car households”. These residents primarily rely on walking, another form of non-motorized transportation, or public transit. The regional threshold for zero-car households is seven percent. Eighty-three out of the total 235 Census Block Groups in the DCHC MPO area had zero-car household populations that represented greater than seven percent and are considered zero-car household CoC Block Groups. These 83 Block Groups were located throughout downtown Durham, downtown Chapel Hill, and northwest of Hillsborough.

Out of 83 Census Block Groups above regional threshold of zero-car households, there were 18 Census Block Groups where more than 25 percent of the total households were zero-car households. These were mostly concentrated in Durham City encompassing neighborhoods like Timberstone, Sherwood Park, Wellons Village, East End, Edgemont, East Durham, Burton Park, Red Oak, Elmira, Hillside, West End and Morehead Hill.

Chart 7: Block Groups that Exceed the Regional Threshold for Zero-Car Households



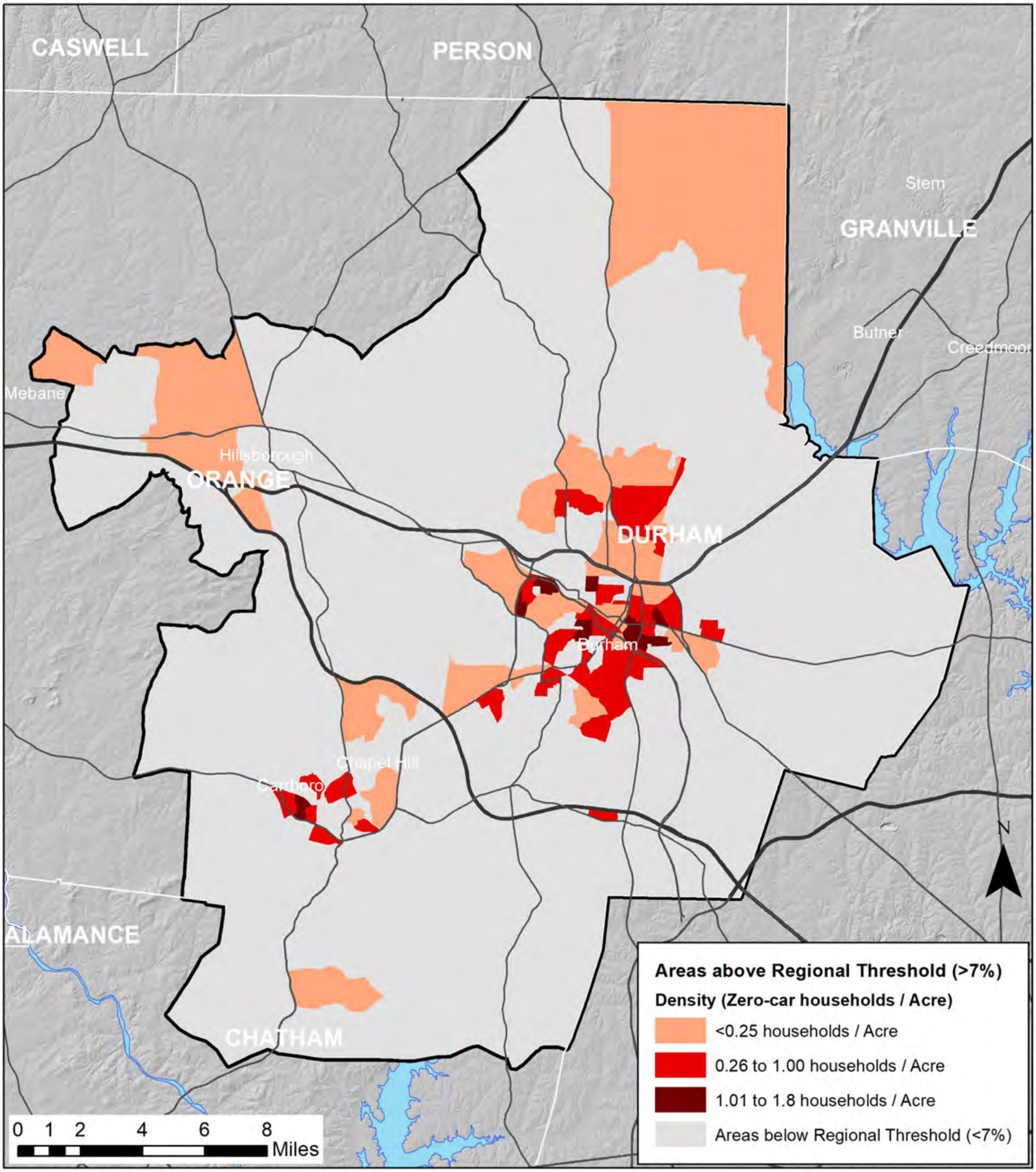


Map 3.7: Limited English Proficiency (LEP) Households

Census Block Groups where percentage of LEP households is greater than 4.2%.

Map gradient is based on the density of LEP households
Regional Threshold for DCHC MPO =Number of LEP households (7,687) / Total households (182,810) = 4.2%

Source: 2013-2017 American Community Survey 5-Year Estimates Table: C16002



Map 3.8: Zero-Car Households

Census Block Groups where percentage of zero-car households is greater than 7%.

Map gradient is based on the density of zero-car households
Regional Threshold for DCHC MPO =Number of zero-car households (12,722) / Total households (182,810) = 7%

Source: 2013-2017 NCDOT 2019 Demographic Snapshot Tool

Summary of all Communities of Concern Block Groups

The next step in evaluating EJ in the DCHC MPO area was to compile the percent of the total Block Groups for each of the five EJ populations previously presented as the pie charts in this chapter. The five percentages are shown in column D of table 3.2 below. The five main percentages were then averaged to determine the overall average percent of total Block Groups (see bottom row). The overall averaged percent of total Block Groups was 37 percent. This means that 37 percent of all Block Groups in the DCHC MPO area were considered an EJ community of concern. 37 percent was used as a threshold for the evaluation of long-range transportation projects included in Chapter 4.

Table 3.2: Summary of CoC Block Groups

Row #	EJ Populations	Total number of CoC Block Groups	Percent of total Block Groups
1	Any of the three Racial Minority characteristic (a, b or c)	125	53%
1a	Racial Minority Populations (total only)	97	41%
1b	Hispanic/Latino Ethnicity Origins Populations Only	83	35%
1c	Black Populations Only	41	17%
2	Elderly Populations	88	37%
3	Limited English Proficiency Households	86	37%
4	Low-Income Households	52	22%
5	Zero Car Households	83	35%
Averaged Percent of Total Block Groups (sum of Col D (1,2,3,4 and 5) / 5)			37%

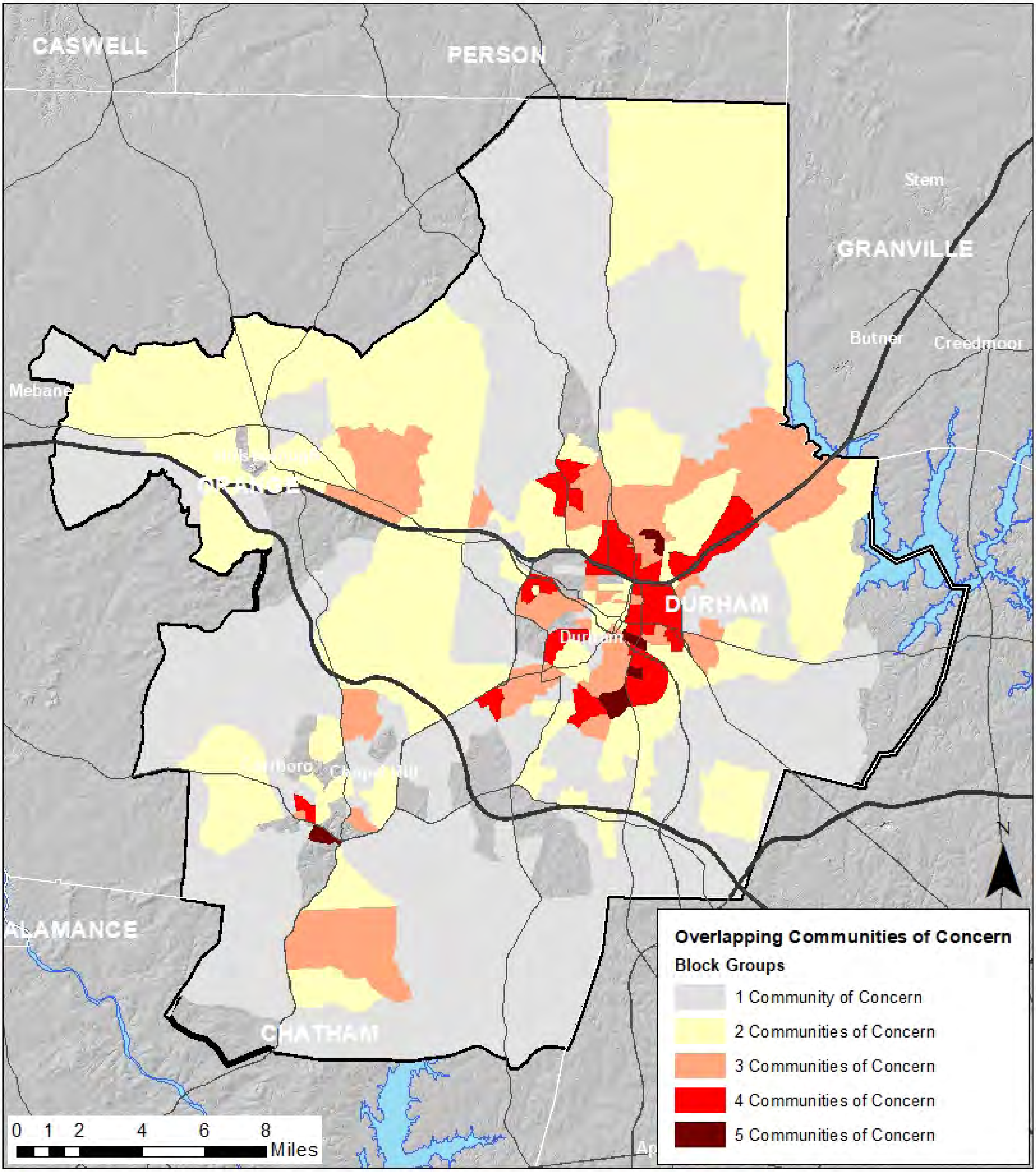
Overlapping Communities of Concern Block Groups (Map 3.9)

The final step in the evaluation was to identify which Block Groups had overlapping communities of concern. This evaluation, often referred to as density mapping or heat mapping, makes it possible to quickly and easily identify where higher concentrations of EJ communities of concern exist. The existence of higher concentrations of EJ communities of concern within the same Block Group indicates that additional attention should be given to this area during the DCHC MPO's planning processes.

Table 3.3 presents a summary of the overlapping communities of concern and Map 3.9 on page 3-17 depicts the locations where two or more EJ communities of concern overlap. There were five Block Groups that exhibited all five EJ communities of concern. This is depicted using the darkest red in Map 3.9. The communities of Edgemont, Plum Street, Elmira and Dearborn Drive in Durham, and the area between Culbreth Road and NC-54 in Chapel Hill exhibited all five EJ communities of concern characteristics.

Table 3.3: Summary of Overlapping CoC Block Groups

Number of Overlapping Communities of Concern (CoC)	Number of Block groups that contain the number of overlaps in Column A
0 overlap (1 CoC)	81
1 overlap (2 CoCs)	58
2 overlaps (3 CoCs)	39
3 overlaps (4 CoCs)	26
4 overlaps (5 CoCs)	5
Total	**209**



Map 3.9: Overlapping Communities of Concern in the DCHC MPO Area

Census Block Groups with one or more Communties of Concern.

Map gradient is based on the number of overlaps between different Communities of Concern.
Overlap between any combination of Minority, Black or Hispanic (or Latino) populations above regional thresholds are considered as 1 community of concern (0 overlap) for the purpose of this map.

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4

ENVIRONMENTAL JUSTICE IN DCHC MPO'S MAJOR PLANNING ACTIVITIES

CHAPTER CONTENTS

INTRODUCTION

The DCHC MPO is responsible for all major transportation planning projects, plans, and services for the DCHC MPO area. This chapter provides a review of environmental justice considerations and activities undertaken during each of the DCHC MPO's major planning activities.

DCHC MPO PUBLIC INVOLVEMENT POLICY (PIP)

The Public Involvement Policy for the DCHC MPO covers the development and approval process for all the principal MPO plans and programs. The policy guides how citizens are notified about programs and plans, what opportunities are available for citizens to provide input into the process, and how long the input period will be. The policy states that the decision making body, the MPO Board (formerly known as the Transportation Advisory Committee, or TAC) will have a standing public input opportunity as part of its monthly meetings.

The policy will be consistent with the requirements of the Fixing America's Surface Transportation Act (FAST ACT), or subsequent updates of this comprehensive federal transportation legislation, and contains a review component to assess the value of the MPO programs on a triennial basis.

The purpose of the DCHC MPO Public Involvement Policy is to create an open decision making process whereby citizens have the opportunity to be involved in all stages of the transportation planning process. This Policy is designed to ensure that transportation decisions will reflect public priorities.

PIP OBJECTIVES

1. Bring a broad cross-section of the public into the public policy and transportation planning decision-making process.

2. Undertake a special emphasis on Environmental Justice (EJ), Limited English Proficiency (LEP) and Title VI populations, and any community that might be directly affected by a particular plan or project.

3. Maintain public involvement from the early stages of the planning process through detailed project development.

4. Provide complete information to citizens and elected officials in order to increase their understanding of transportation issues.

5. Determine citizens' and elected officials' values and attitudes concerning transportation and establish a channel for an effective feedback loop.

6. Use different combinations of public involvement techniques to meet the diverse needs of the public (examples include: social media, web pages, Facebook, Twitter, YouTube, workshops, community events, and mailing lists).

7. Employ visualization techniques to MPO metropolitan transportation plans, TIPs and other project planning activities.

8. Make adopted plans and policies, and technical information easily available to the public using the MPO web site and other electronic means.

9. Consult with federal and State agencies responsible for land management, natural resources, environmental protection, conservation, historic preservation and economic development in the development of transportation plans, TIPs and project planning.

10. Consult with officials and agencies responsible for other planning activities, such as private providers of intercity operators and employer based commuting, vanpool/carpool, parking cash-out shuttle or telework programs, as appropriate.

11. Evaluate the public involvement process and procedures to assess their success at meeting requirements specified in the FAST ACT (or, subsequent updates to this comprehensive federal transportation legislation), NEPA and other applicable federal regulations and Rules on Public Participation.

The PIP framework includes details on the plans and programs that will require public involvement activities. It lays out ways to engage the general public and specific stakeholders depending on the project. Through the PIP framework, the MPO board identifies appropriate methods to notify the public of upcoming and ongoing opportunities for public involvement and designates reasonable time period for public review and comments for key program and plan decision points. PIP mandates documentation of public comments and summary of responses and means of communicating the outcomes of the public involvement.

Projects with a significant regional impact such as Metropolitan Transportation Plan (MTP), Transportation Improvement Program (TIP), Unified Planning Work Program (UPWP), etc. have their specified outreach methodology detailed in the MPO's Public Involvement Policy document.

2045 METROPOLITAN TRANSPORTATION PLAN

The MTP serves as the official long-range transportation plan for the DCHC MPO region and guides the transportation decision-making for at least a projected 20- year planning horizon. It is updated periodically and was recently updated to plan for the years through 2045. The primary goals and objectives of the updated MTP are identified in Table 4.0.

The 2045 MTP contains an overview of environmental justice issues and identifies the location of particular communities of concern (low-income, minority, and LEP populations).

Public involvement was an essential component in developing the 2045 MTP. The MTP's public involvement process, as directed by the DCHC MPO's PIP, was instituted to ensure early and timely input from a wide range of participants, particularly at critical milestones in the plan development process. For future updates and

Table 4.0: 2045 MTP Goals and Objectives

GOALS	OBJECTIVES
Protect Environment and Minimize Climate Change	Enhance transit services, amenities and facilities Improve bicycle and pedestrian facilities Increase utilization of affordable non-auto travel modes
Connect People	Allow people and goods to move with minimal congestion and time delay, and greater predictability. Promote Travel Demand Management (TDM) such as carpool, vanpool and park-and-ride. Enhance Intelligent Transportation Systems (ITS) such as ramp metering, dynamic signal phasing and vehicle detection systems.
Promote Multimodal and Affordable Travel Choices	Enhance transit services, amenities and facilities Improve bicycle and pedestrian facilities Increase utilization of affordable non-auto travel modes
Manage Congestion & System Reliability	Allow people and goods to move with minimal congestion and time delay, and greater predictability. Promote Travel Demand Management (TDM) such as carpool, vanpool and park-and-ride. Enhance Intelligent Transportation Systems (ITS) such as ramp metering, dynamic signal phasing and vehicle detection systems.
Improve Infrastructure Condition	Increase proportion of highways and highway assets in 'Good' condition Maintain transit vehicles, facilities and amenities in the best operating condition. Improve the condition of bicycle and pedestrian facilities and amenities Improve response time to infrastructure repairs
Ensure Equity and Participation	Ensure that transportation investments do not create a disproportionate burden for any community Enhance public participation among all communities
Promote Safety and Health	Increase safety of travelers and residents Promote public health through transportation choices
Stimulate Economic Vitality	Improve freight movement Link land use and transportation Target funding to the most cost-effective solutions Improve project delivery for all modes

MTP development, the DCHC MPO will refer to this EJ report for information on the locations and potential impacts on EJ populations. It is important to ensure that all groups in the DCHC MPO region understand and have access to the MTP process, including representatives from low income, LEP, elderly, and minority communities.

2045 MTP PROJECT EVALUATION

By analyzing the geographic and funding distribution of projects included in the 2045 MTP, it can be determined if the MTP complies with Title VI, Executive Orders 12898 and 13166, and USDOT Orders related to EJ. Project cost estimates included in the 2045 MTP are estimates of perceived costs for future transportation projects. This analysis is based on the adopted 2045 MTP and does not account for any amendments that have been approved since its adoption in February 2018. This analysis will be updated based on the updated 2050 MTP.

DETERMINING THE THRESHOLD

There are 235 total Block Groups in the DCHC MPO region. The evaluation of EJ communities of concern in Chapter 3 identified a total of 434 instances in which a Block Group exceeded at least one of the regional thresholds for EJ populations. In many cases, two or more communities of concern existed in the same Block Group and were considered overlapping communities of concern. These overlaps represented more highly concentrated areas of EJ communities of concern. There were 128 instances where two or more communities of concern overlapped and existed in the same Block Group.

The evaluation of communities of concern in Chapter 3 determined that 37 percent of all Block Groups in the DCHC MPO area were considered an EJ community of concern (see table 3.2). 37 percent was set as the threshold for measuring the distribution of MTP projects. It is reasonable to assume that 37 percent of all MTP projects and MTP project funding fall within, adjacent to, or impact an EJ community of concern Block Group.

MEASURING 2045 MTP PROJECTS AGAINST THE THRESHOLD

Maps 4.1 and 4.2 on pages 4-6 and 4-7 respectively display the relationship between locations of MTP projects and overlapping community of concern Block Groups. There were approximately 100 highway and fixed guideway projects in the adopted 2045 MTP. These 100 projects were mapped by segments to more concisely determine the portion or portions of a project that impact an overlapping community of concern Block Group. If a project segment was located partially or completely within a community of concern Block Group, it was assumed to impact those populations living there.

The MTP included seven interchange projects totaling $299 million in project funding. Of the seven projects, five projects (71 percent) were located within, partially within, or connected directly to an overlapping community of concern Block Group. Of the $299 million in total interchange funding,$158 million, or 53 percent was within, partially within, or connected directly to an overlapping community of concern Block Group.

The MTP included 211 miles of highway project segments totaling $3.05 billion in project funding. Of the 211 miles of project segments, 118 miles of project segments (56 percent) were located within, partially within, or connected directly to, an area of overlapping CoC Block Groups. Of the $3.05 billion in total funding, $1.28 billion, or 42 percent was within, partially within, or connected directly to an overlapping community of concern Block Group. This was calculated under the assumption that the cost of each project is consistent for every part that project.

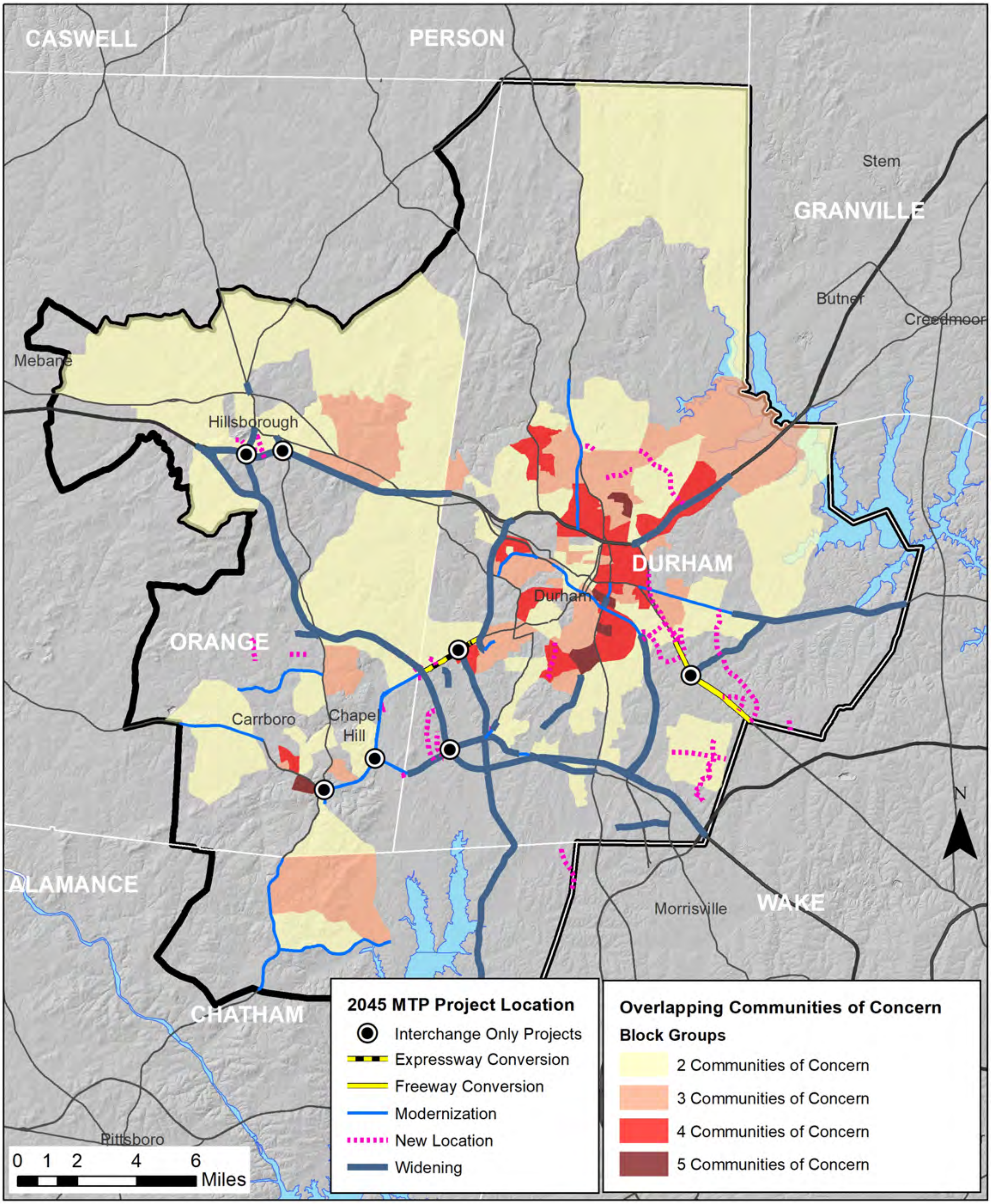
The MTP included 49 miles of fixed guideway transit route projects segments. Of the 49 project miles, 28 miles or 58 percent were located within, partially within, or connected directly to an area of overlapping CoC Block Groups. Projected costs for transit route projects and service in 2045 were calculated as part of the 2045 MTP, Table 4.1 on page 4-5 presents the percentage of MTP projects (or miles) and MTP project funding relative to overlapping EJ CoC Block Groups. The percentages of MTP projects and MTP project funding for interchange projects and transit route projects were above the 37 percent threshold. The percentage of highway project miles located within or near overlapping EJ CoC Block Groups segments was 56 percent, and funding for the same highway project miles accounted for 42 percent of total funding for highway projects, which is higher than the 37 percent threshold.

Table 4.1: 2045 MTP Project Distribution

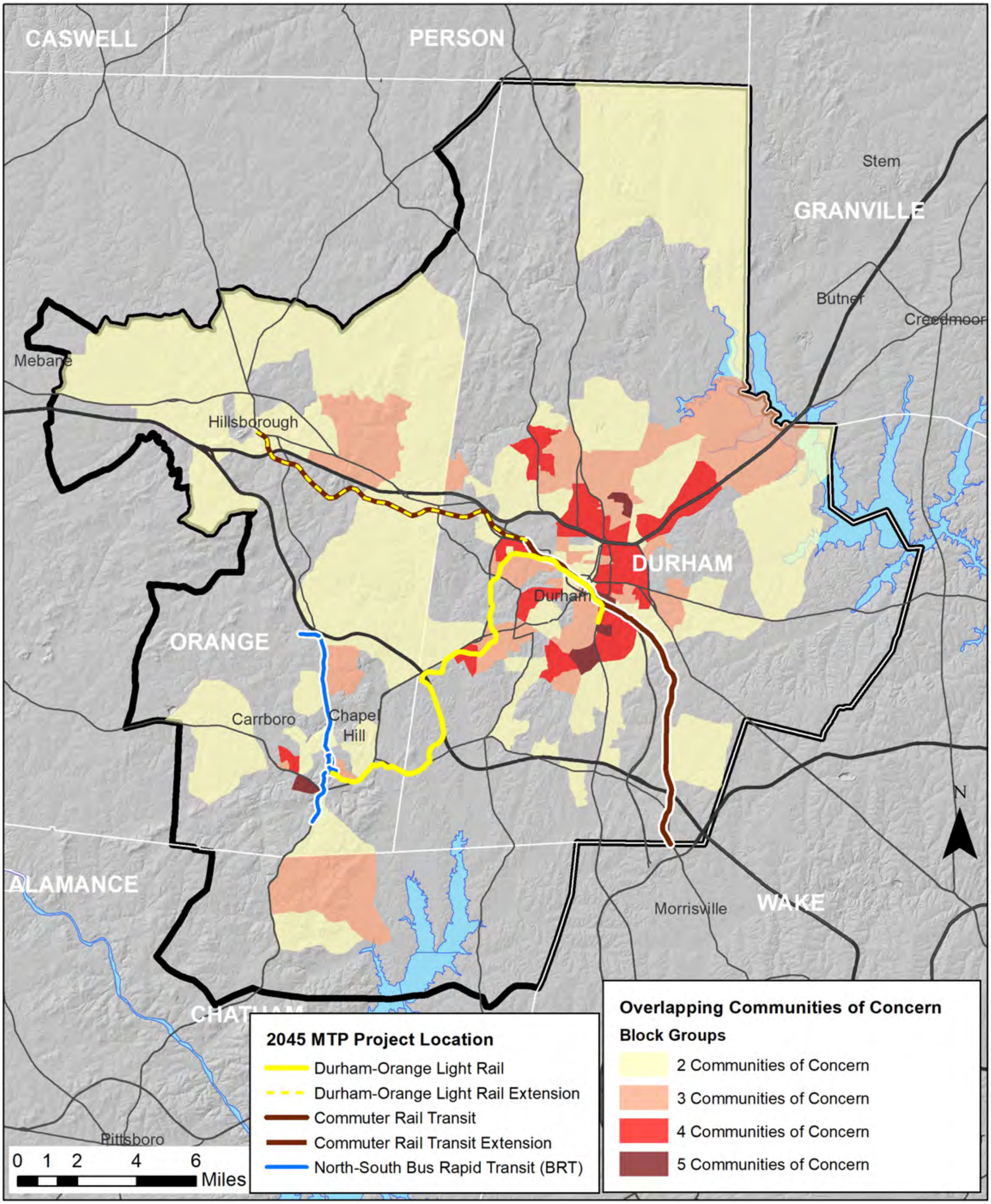
Type of MTP Project	Located within Overlapping CoC Block Groups	Total number of project segments or total Project Funding in DCHC MPO Area	Percent of Total (Threshold for measuring projects is 37%)
Interchange Projects	5	7	71%
Interchange Project Funding	$158 million	$299 million	53%
Highway Project Miles	118	211	56%
Highway Project Funding	$1.28 billion	$3.05 billion	42%
Transit Project Miles*	28	49	58%

*A methodology for geographic distribution of transit route project costs was not included as part of the 2045 MTP. Thus, the geographic distribution of funding for transit route service projects could not be compared to locations of EJ communities of concern as part of this EJ report.

All measures of interchange, highway and transit investments in communities of concern exceeded the 37% threshold.



Map 4.1: Location of MTP Highway Projects Relative to Overlapping Communities of Concern Block Groups



Map 4.2: Location of MTP Fixed Guideway Transit Projects Relative to Overlapping Communities of Concern Block Groups

TRANSPORTATION IMPROVEMENT PROGRAM

The TIP reflects the transportation capital improvement priorities of the DCHC MPO region and serves as the link between the transportation planning process implementation. It includes a list of transportation projects and programs, scheduled for implementation over a ten-year period, which must be consistent with the goals and the policies in the MTP. While inclusion in the TIP does not guarantee funding, it is an essential step in the authorization of funding for a project, and it is critical to the successful implementation of the project. It is important to ensure that all groups in the DCHC MPO region understand and have access to the TIP process, including representatives from low income, LEP, elderly, and minority communities.

FY2018-2027 TIP PROJECT EVALUATION

By analyzing the geographic and funding distribution of projects included in the TIP, it can be determined if the TIP complies with Title VI, Executive Orders 12898 and 13166, and USDOT Orders related to EJ. Project cost estimates included in the TIP were estimates of perceived costs for future transportation projects. Updated cost estimates for projects will be developed when the design/preliminarily engineering for the project has been completed.

DETERMINING THE THRESHOLD

There are 235 total Block Groups in the DCHC MPO region. The evaluation of EJ CoCs in Chapter 3 identified a total of 434 instances in which a Block Group exceeded at least one of the regional thresholds for EJ populations. In many cases, two or more CoCs existed in the same Block Group and were considered overlapping communities of concern. These overlaps represented more highly concentrated areas of EJ CoCs. There were 128 instances where two or more CoCs overlapped and existed in the same Block Group.

The evaluation of CoCs in Chapter 3 determined that 37 percent of all Block Groups in the DCHC MPO area were considered an EJ community of concern. 37 percent was set as the threshold for measuring the distribution of TIP projects. It is reasonable to assume that 37 percent of all TIP projects and TIP project funding fall within, adjacent to, or impact an overlapping EJ community of concern Block Group.

MEASURING TIP PROJECTS AGAINST THE THRESHOLD

The FY2018-2027 TIP was reviewed for projects that were considered to improve local safety, preserve the existing roadways, or enhance the local transportation system, and the projects that could possibly be mapped, were mapped. Projects were categorized as either a highway, bridge, rail intersection improvement, or a bicycle/pedestrian project. Maps 4.3 and 4.4 on pages 4-10 and 4-11 respectively, display the relationship between locations of TIP projects and overlapping CoC Block Groups.

Highway projects in the TIP were mapped by segments to more concisely determine the portion or portions of a project that impact an overlapping CoC Block Group. If a project segment was located partially or completely within a CoC Block Group, it was assumed to impact those populations living there.

The FY2018-2027 TIP included 16 bicycle and pedestrian projects of a combined length of 19 miles totaling approximately $80 million in project funding. Of the 19 miles, 14 miles (77 percent) were located within, partially within, or connected directly to an area of overlapping EJ CoC Block Groups. Of the $80 million in total project funding, $67.5 million, or 84 percent was within, partially within, or connected directly to an overlapping EJ CoC Block Group.

The FY2018-2027 TIP included 10 interstate segment projects of a combined length of 37 miles, totaling about $402 million dollars in project funding. Of the 37 miles of project segments, 29 miles of project segments (or 77 percent) were located within, partially within, or connected directly to an area of overlapping EJ CoC Block Groups. Of the $402 million dollars in total project funding, only about $110 million, or 27 percent was within, partially within, or connected directly to an overlapping

EJ community of concern Block Group. This is below the 37 percent threshold established for measuring the distribution of TIP projects. This is because I-40 managed lanes project which is the most capital intensive at $274 million is not located within, partially within, or connected directly to an overlapping EJ community of concern Block Group.

The FY2018-2027 TIP included 24 roadway projects of a combined length of 36 miles totaling $1.06 billion in project funding. Of those projects, 23 miles of projects were located within, partially within, or connected directly to an area of overlapping EJ CoC Block Groups. Of the $1.06 billion in total project funding, $697 million, or 65 percent was within, partially within, or connected directly to an overlapping EJ CoC Block Group.

The FY 2018-2027 TIP also included, within EJ CoC block group, 4 out of 5 passenger rail projects ($78 million out of $84 million in funding), 1 out of 2 bridge project ($2 million out of $4.46 million in funding), and 4 out of 6 highway intersection projects ($79.5 million out of $122 million in funding). The geographic and funding distribution for these modes is higher than the 37 percent threshold established for measuring the distribution of TIP projects.

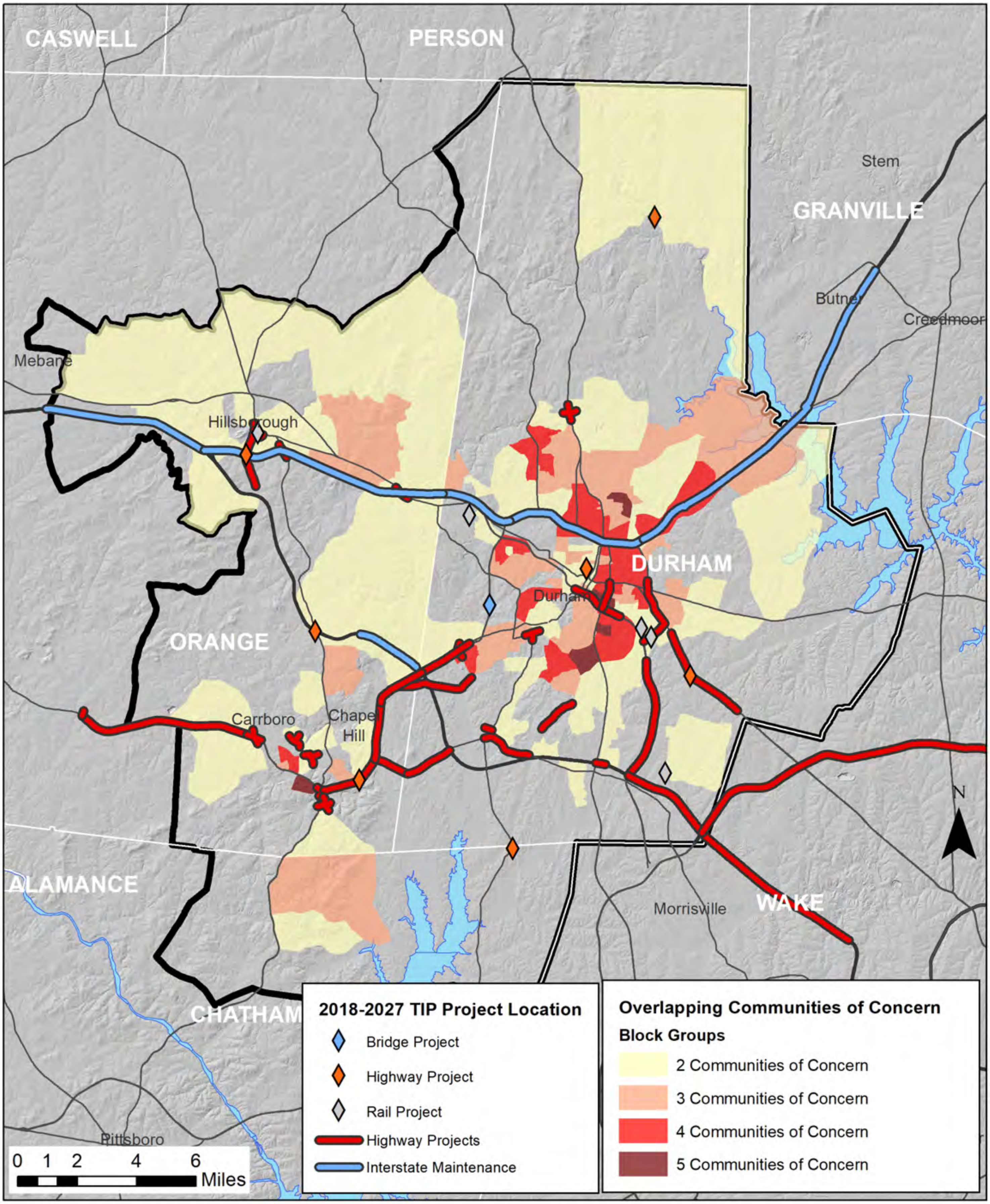
Out of 7 transit projects in the FY2018-2027, 5 projects are geographically based and 2 projects include purchasing new vehicles for express bus routes to Raleigh, which pass through several overlapping EJ CoC Block Groups. Hence it can be said that 5 out of 7 projects are located within overlapping EJ CoC Block Group and these projects represent $8 million out of a total of $19.6 million in funding, which is approximately 41 percent of total funding.

Table 4.2 on page 4-9 presents the percentage of TIP projects, project segments, and TIP project funding relative to overlapping EJ CoC Block Groups. The percentages of TIP project segments and the percentages of TIP project funding were above the 37 percent threshold for each project type except for the funding in interstate segment projects.

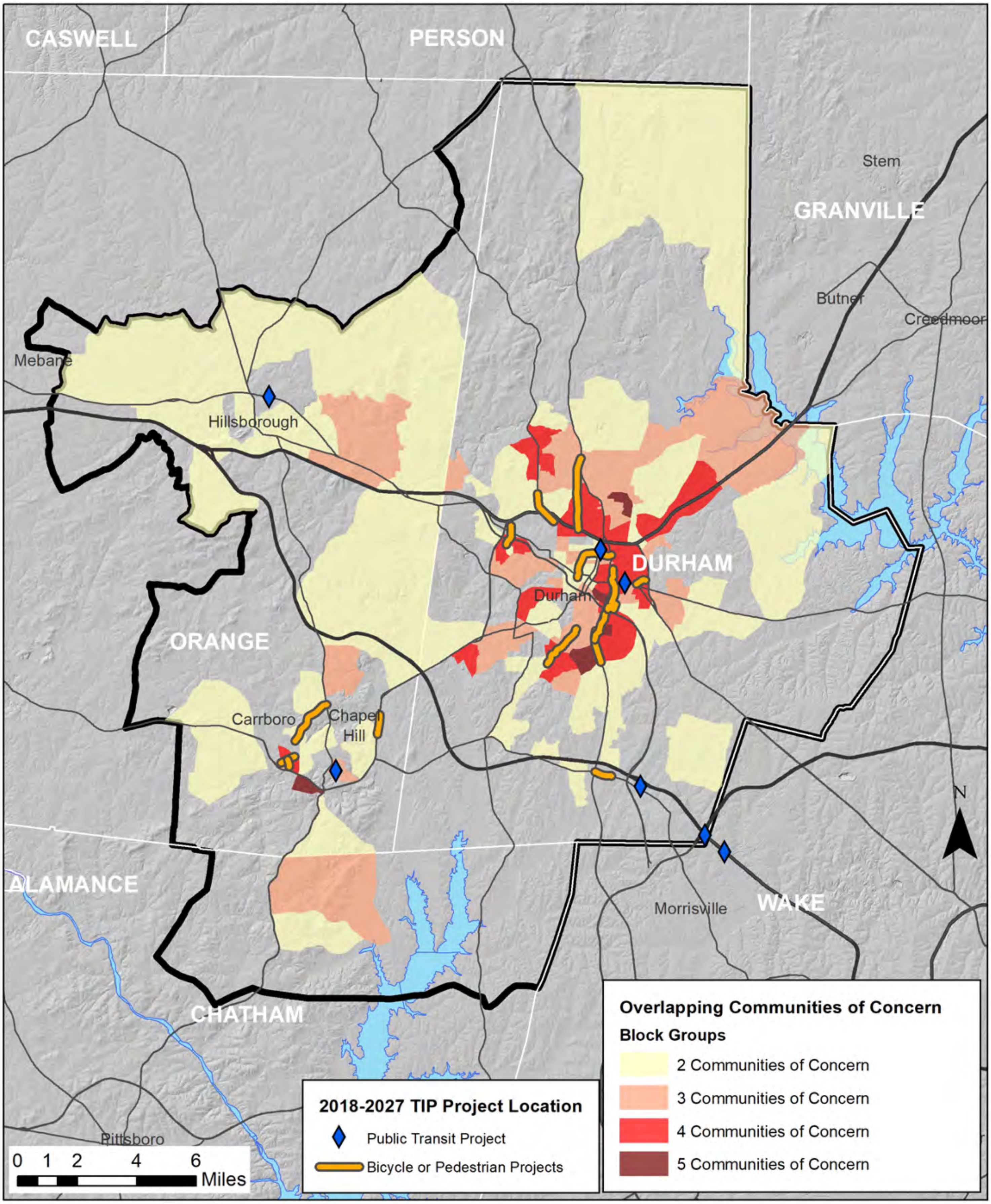
Table 4.2: 2018-2027 TIP Project Distribution

Type of TIP Project	**Located within Overlapping CoC Block Groups**	**Total number of project segments or total Project Funding in DCHC MPO Area**	**Percent of Total** (Threshold for measuring projects is 37%)
Bicycle-Pedestrian Project Miles	15	19	77%
Bicycle-Pedestrian Project Funding	$67.5 million	$80 million	84%
Interstate Project Miles	29	37	77%
Interstate Project Funding	$110 million	$402 million	**27%**
Roadway Project Miles	23	36	63%
Roadway Project Funding	$697 million	$1.06 billion	66%
Passenger Rail Project Numbers	4	5	80%
Passenger Rail Project Funding	$78 million	$84 million	93%
Bridge Project Numbers	1	2	50%
Bridge Project Funding	$2 million	$4.46 million	45%
Intersection Project Numbers	4	6	67%
Intersection Project Funding	$79.5 million	$122 million	65%
Transit Project Numbers	5	7	71%
Transit Project Funding	$8 million	$19.6 million	41%

All measures of the different modes show that investments in communities of concern exceeded the 37% threshold except for interstate project funding which is 27%.



Map 4.3: Location of TIP Highway, Bridge, and Rail Projects Relative to Overlapping Communities of Concern Block Groups



Map 4.4: Location of TIP Bicycle, Pedestrian and Transit Projects Relative to Overlapping Communities of Concern Block Groups

UNIFIED PLANNING WORK PROGRAM (UPWP)

Each year, the DCHC MPO, in cooperation with member agencies, prepares a Unified Planning Work Program (UPWP). The UPWP includes documentation of planning activities to be performed with funds provided to the DCHC MPO by the FHWA and FTA. All transportation planning activities of member agencies and consultants, as well as the work done directly by the DCHC MPO staff are included in the UPWP.

PUBLIC INVOLVEMENT

Public involvement is important to the development of the UPWP. From the outset, citizens are given an opportunity to suggest projects and other activities for consideration. Moreover, the DCHC MPO staff solicits comments from the public, stakeholders, members of the DCHC MPO Technical Committee (TC) and Executive Board.

The draft UPWP is made available for a 21-day public review and comment period. Once comments have been received and addressed, the final UPWP document is presented to the DCHC MPO TC and the Board. The MPO Board holds a public hearing prior to voting on adoption of the final UPWP document. Once adopted, the UPWP is made available on the DCHC MPO website with hard copies available by request.

FY2019-2020 UPWP PROGRAM OF FUNDING

$3.85 million in federal state and local funding was programmed for use in the FY2019-2020 UPWP. Of these funds, approximately $2.63 million was programmed to support activities of the DCHC MPO lead planning agency staff. Over $1 million was programmed for other municipal and county transportation planning activities and about $80,000 was programmed for Triangle J Council of Governments.

While a majority of this funding is needed for mandatory regional planning activities (such as the MTP and this EJ report), and staff support to carry them out, a notable amount of money is available to conduct other studies and fund planning projects. Table 4.3 on page 4-13 presents a summary of the FY2019-2020 UPWP funding program.

UPWP FUNDING RELATIVE TO EJ POPULATIONS

As there continues to be funding available through the UPWP to fund local studies and projects, it is critical for the DCHC MPO to carefully review this EJ report to ensure EJ populations in the DCHC MPO benefits from federal investments, bear the same burdens resulting from the project impacts, and have equal participation in the public involvement activities.

Public outreach efforts must be strategic and diverse, as the different populations that live within the DCHC MPO area have diverse interests, needs, and abilities. Each agency that receives this federal funding must ensure public access to, and public engagement during the development of federally funded programs and planning activities. These agencies should continue to work strategically to connect with, and engage traditionally underrepresented populations in the DCHC MPO area.

Table 4.3: FY 2019-2020 UPWP Funding Distribution

Receiving Agency / Funding Source	STBGP		Section 104(f)		Section 5303		
	Sec. 133(b)(3)(7)		PL		Highway/Transit		
	Local	FHWA	Local	FHWA	Local	NCDOT	FTA
	20%	80%	20%	80%	10%	10%	80%
LPA	$350,000	$1,400,000	$176,573	$706,293	$0	$0	$0
Carrboro	$6,420	$25,680	$0	$0	$0	$0	$0
Chapel Hill/CHT	$23,983	$95,929	$0	$0	$17,150	$17,150	$137,200
Chatham County	$0	$0	$0	$0	$0	$0	$0
Durham/DATA	$53,964	$215,856	$0	$0	$17,850	$17,850	$142,800
Durham County	$11,658	$46,630	$0	$0	$0	$0	$0
Hillsborough	$0	$0	$0	$0	$0	$0	$0
Orange County	$0	$0	$0	$0	$0	$0	$0
TJCOG	$16,250	$65.000	$0	$0	$0	$0	$0
GoTriangle	$0	$0	$0	$0	$0	$0	$0
NCDOT	$0	$0	$0	$0	$0	$0	$0
Total	**$462,275**	**$1,849,095**	**$176,573**	**$706,293**	**$35,000**	**$35,000**	**$280,000**

Receiving Agency / Funding Source	Section 5307			Funding Summary			
	Transit						
	Local	NCDOT	FTA	Local	NCDOT	Federal	Total
	20%	0%	80%				
LPA	$0	$0	$0	$526,573	$0	$2,106,293	**$2,632,866**
Carrboro	$0	$0	$0	$6,420	$0	$25,680	**$32,100**
Chapel Hill/CHT	$0	$0	$0	$41,133	$17,150	$233,129	**$291,411**
Chatham County	$0	$0	$0	$0	$0	$0	**$0**
Durham/DATA	$61,964	$0	$247,856	$133,778	$17,850	$606,512	**$758,140**
Durham County	$0	$0	$0	$11,658	$0	$46,630	**$58,288**
Hillsborough	$0	$0	$0	$0	$0	$0	**$0**
Orange County	$0	$0	$0	$0	$0	$0	**$0**
TJCOG	$0	$0	$0	$16,250	$0	$65,000	**$81,250**
GoTriangle	$0	$0	$0	$0	$0	$0	**$0**
NCDOT	$0	$0	$0	$0	$0	$0	**$0**
Total	**$61,964**	**$0**	**$247,856**	**$735,812**	**$35,000**	**$3,083,244**	**$3,854,055**

FINDINGS FOR DCHC MPO'S LONG RANGE PLANNING ACTIVITIES

A comparison of the ratio of total 2045 MTP and FY2018-2027 TIP projects with those projects located in CoC Block Groups, indicates that the DCHC MPO has unevenly distributed projects and funding across the region.

2045 MTP FINDINGS

The evaluation of 2045 MTP projects and project segments indicates that 71% of interchange projects, 56% of highway project miles, 58% of transit project miles 53% of funding for interchange projects and 42% of funding for highway project segments were located within or adjacent to CoC Block Groups. These percentages exceed the regional threshold of 37% for measuring distribution of MTP projects.

FY2018-2027 TIP FINDINGS

The evaluation of FY2018-2027 TIP projects indicates that 77% of miles and 84% of funding for bicycle and pedestrian projects, 77% of miles and 27% of funding of interstate projects, 63% of miles and 66% of funding for roadway projects, 80% of projects and 93% of funding for passenger rail, 50% of projects and 45% of funding for bridges, 67% of projects and 65% of funding for intersections, 71% of projects and 41% of funding for transit were located within or adjacent to CoC Block Groups. With the exception of interstate project funding, these percentages exceed the regional threshold of 37 percent for measuring the distribution of TIP projects.

SUMMARY

Ideally, an equitable distribution of funding and projects will allow all populations to equally enjoy the benefits and burdens related to transportation projects. However, in the case of the DCHC MPO, that distribution is not equitable. Project funding and the number of projects in the 2045 MTP and FY2019-2027 TIP that were located within or adjacent to EJ communities of concern Block Groups exceeded regional thresholds identified in this EJ report, with the exception of TIP interstate project funding.

At the analysis of this report, it cannot be determined whether communities of concern experience an overall benefit or burden from this imbalance of transportation investments. Therefore, the DCHC MPO should continue to assess and consider potential benefits and burdens related to the projects that are proposed for inclusion in long-range planning efforts such as MTP and TIP. The MPO should also make exceptional efforts to include populations from the communities of concern in the public involvement activities of the MTP and TIP to ensure that the MPO has a clear understanding of the project benefits and burdens to those communities.

CONCLUSIONS AND NEXT STEPS

CONSIDERING THE PLANNING PROCESS AND IMPACTS

EJ analysis is a type of equity analysis that is performed as part of the DCHC MPO's long range planning process and also as a component of the planning phase for a specific project. For specific projects, the emphasis is not just to consider potential impacts of project alternatives on the affected community, but also whether the community participated in project inputs and project meetings.[1] An appropriate public outreach and engagement strategy must be developed early in the planning process or in the project development phase and must include opportunities for community input and feedback at all key milestones or decision-making points.

PUBLIC INVOLVEMENT STRATEGIES

The DCHC MPO Public Involvement Policy (PIP) provides effective guidance on public outreach and engagement methods, techniques, strategies, and time lines. However, as the demographic population profiles of the DCHC MPO area evolve over time, so should the PIP. Each time the *Environmental Justice Report for the DCHC MPO* is updated based on more recent US Census Bureau American Community Survey data sets, the DCHC MPO should revisit the PIP to verify that the methods, techniques, strategies, and timelines for public involvement are still relevant and successful. If recent public outreach and engagement efforts have not been successful, the DCHC MPO should re-evaluate the PIP and update it as appropriate.

UPDATING THE PUBLIC INVOLVEMENT POLICY

During any update to the PIP, a specific EJ-related outreach policy statement should be incorporated. It is also important to identify and consider the unique communities that live in the DCHC MPO area. The DCHC MPO should refer to the MPO's EJ report to identify any highly concentrated areas of EJ populations. It is critical that updates to the PIP do not exclude the consideration of non-EJ populations that live in the DCHC MPO area. The DCHC MPO should learn and understand the values, traditions, and histories of all communities and populations that exist in the DCHC MPO area and tailor outreach strategies appropriately. A few key questions that the DCHC MPO should ask during an update to the PIP are:

- Historically, what populations or communities have been underrepresented during transportation planning activities?
- Is there a local community leader that would be willing to serve as a liaison?
- Where do members of these communities work?
- Where do members of these communities recreate or congregate?
- Where do members of these communities access basic needs, in particular, food and retail goods?
- What languages do members of these communities speak at home?
- How do members of these communities seek out and share information within their communities?
- What obstacles such as physical ability, transportation, employment, or family responsibilities would prevent members of these communities from participating in public meetings or workshops?

For public outreach in the DCHC MPO area to be successful, an update to the PIP should reflect answers or solutions to the questions listed above.

BENEFITS AND BURDENS

Not every project can be beneficial to the communities that it directly impacts. There are benefits and burdens related to every transportation-related project and both must be considered for each specific project during the project identification and prioritization phases of long-range planning activities such as the MTP and the TIP.

POTENTIAL BURDENS

When considering potential burdens of transportation-related projects, all reasonably foreseeable adverse social, economic, and environmental effects on minority, LEP, elderly, and low-income populations must be identified and addressed. For the purposes of this EJ report, burdens are impacts related to the transportation process that have an adverse impact or effect on the surrounding communities.

The USDOT update to the Final Environmental Justice Order 56102 states that adverse effects include, but are not limited to:

- Bodily impairment, infirmity, illness, or death;
- Air, noise, and water pollution and soil contamination;
- Destruction or disruption of man-made or natural resources;
- Destruction or diminution of aesthetic values;
- Destruction or disruption of community cohesion or a community's economic vitality;
- Destruction or disruption of the availability of public and private facilities and services;
- Vibration;
- Adverse employment effects;
- Displacement of persons, businesses, farms, or nonprofit organizations;
- Increased traffic congestion, isolation, exclusion, or separation of minority or low income individuals within a given community or from the broader community; and
- Denial of, reduction in, or significant delay in the receipt of benefits of USDOT programs, policies, or activities.[2]

As stated on page 4-14, the DCHC MPO should carefully assess potential burdens related to projects that are proposed for inclusion in long range planning efforts such as the MTP and TIP.

POTENTIAL BENEFITS

Benefits of a transportation investment are the direct, positive effects of that project; that is to say, the desirable things we obtain by directly investing in the project.[3] Example benefits include but are not limited to:

- Reduction of travel time;
- Reduced vehicle-related costs (costs of owning and operating a vehicle);
- Reduction in the number or severity of crashes;
- Increase in economic development;
- Reduction in circuitry of travel (provide a shorter route); and
- Reduction of costs related to emission reductions.

The DCHC MPO should consider anticipated benefits related to projects that are proposed for inclusion in long-range planning efforts such as the MTP and TIP. Not all proposed projects will be beneficial to all populations that exist in close proximity to the projects

BENEFITS AND BURDENS COMPARISON TABLE

The Environmental Justice Report of the Coastal Region Metropolitan Planning Organization (Savannah, GA; 2012) provides an excellent comparison of benefits and burdens. Chapter 2 of the report presents a summary table of benefits and burdens related to transportation projects and includes potential mitigation strategies that were identified by the CORE MPO.[4]

The summary table (below) has been included in this EJ report because it provides a wealth of excellent information in an easy to read and condensed format. The DCHC MPO will refer to Table 4.4 during future planning process and will also update the table as needed to reflect EJ goals of the DCHC MPO area.

Table 4.4: Example Table of Potential Benefits and Burdens of Transportation Projects

Proposed Project Type	Possible Benefits	Possible Burdens	Possible Mitigation Strategies
HIGHWAY SYSTEM			
New Road	Enhance accessibility and mobility; Promote economic development; Improve safety; Improve operational effciency.	Benefits limited to populations with motor vehicles; Increase in noise and air pollution; Might impact existing neighborhoods.	Signal synchronization, pedestrian crosswalks, bike lanes, bus route addition, etc; Select ROW for minimum impacts; Try to incorporate context- sensitive design to maintain the neighborhoods.
Resurface/ Upgrade of existing roadways/ Operational improvements	Promote system preservation; Improve safety; Improve operational efficiency.	Expansion of shoulder width impinges on residential property; Diverted traffic during project construction causes heavy traffic and dangerous conditions on city streets; Noise and air pollution during construction.	Build curbing and sidewalks rather than shoulders; Close large section of roadways on weekends to increase resurfacing productivity; Reroute traffic to major streets if possible.
PUBLIC TRANSIT			
Fixed Route Bus Service	Enhance accessibility by transit to EJ populations; Reduce reliance on motor vehicles and improve air quality; Increase mobility to EJ populations.	Buses are sometimes smelly and noisy; Bus headways in certain routes might be too long; Possible capacity problems with ferry boat; Some bus shelters are not wheelchair accessible.	Try to create a comfortable environment for the bus and ferry boat riders; Improve transit frequency if possible; Bus routes should be within walking distance of EJ populations; Install bus shelters accessible by wheelchairs.
BICYCLE AND PEDESTRIAN FEATURES			
Addition of Pedestrian Amenities and / or Safety Provisions	Improve quality of life, health and environment by encouraging people to use the bike/pedestrian facilities.	“Bump-outs” and traffic calming measures make commercial deliveries difficult.	Need to come up with some original improvement plans to accommodate both motor vehicle traffic and bike/ pedestrian usage.
Addition of Bike Routes/Lanes to Existing Roads	Improve safety to pedestrians and bike riders; Provide an alternative to motor vehicles.	Bike routes takes space for passing turning cars at intersections and reduce on-street parking.	Develop standardized design guidelines that accommodate both motor vehicle traffic and bike/ pedestrian usage.
OTHER TRANSPORTATION PROJECTS			
Multi-modal connections	Enhance mobility and accessibility.	Some ITS projects might be expensive to implement.	Multi-modal incorporates transit stations and other modes.
ITS improvements	Improve safety.		Have a comprehensive design before any ITS projects are implemented.
CMP strategies	Enhance system preservation and operational efficiency.		

NEXT STEPS: USING & UPDATING THIS EJ REPORT

This EJ report can help local, regional, and state agencies or organizations identify the locations and concentrations of EJ populations. Additionally, it can be of assistance during long-range planning processes to avoid disproportionately high and adverse impacts of plans and policies on EJ populations and ensure that EJ populations benefit from transportation investments. This report should be used in conjunction with a more detailed EJ analysis conducted during long-range planning activities such as the MTP and TIP, and again during individual project planning phases, such as the NEPA phase. As the DCHC MPO region continues to grow and change demographically, the methodology developed for this EJ report to evaluate EJ communities of concern should be reassessed for consistency with current best practices.

As was done in this document with the inclusion of the LEP, elderly, and zero-car household analyses, future analyses may include the evaluation of additional EJ populations. The DCHC MPO may consider the creation of a project-specific EJ Advisory Committee, coordination with other MPOs involved in similar processes, receipt of input from stakeholders, individual citizens or community groups, and research and updating of data sources that may prove useful to the analysis. The DCHC MPO should also consider including a review and evaluation of past projects or recently completed projects in a future update to this EJ report. The inclusion of such an evaluation would ensure there are no systematic or cumulative impacts to any one EJ or non-EJ population in the DCHC MPO area.

Additionally, the DCHC MPO will continue to implement EJ activities as part of its annual UPWP, fulfillment of federal certification requirements, and completion of regional goals related to EJ. The EJ program at DCHC MPO is constantly evolving, becoming more effective and inclusive over time. To ensure EJ compliance and considerations are implemented in all major planning activities, the MPO will:

- Remain informed of legal developments related to Title VI and other nondiscrimination statutes;
- Continue to update the Table 4.4 of potential benefits and burdens related to transportation projects in the DCHC MPO area and include evaluation of additional EJ measures such as accessibility, mobility, safety, displacement, equity, environmental, social, and aesthetics;
- Evaluate the potential impacts of DCHC MPO transportation projects on EJ communities of concern and strive to mitigate or reduce the level of burden associated with a project;
- Assess DCHC MPO studies and programs to identify the regional benefits and burdens of different populations groups;
- Determine strategic outreach efforts to LEP populations and strengthen efforts to include all population groups in the DCHC MPO area in the regional planning process;
- Provide EJ education and training for DCHC MPO staff to heighten the awareness of EJ in the planning process;
- Maintain and update the Title VI Compliance, Public Involvement Policy, LEP Plan, and Environmental Justice Report as necessary;
- Refer to this EJ report often during planning processes for guidance on the locations and concentrations of EJ communities of concern in the DCHC MPO area; and
- Update this EJ report following, or in conjunction with the adoption of future MTPs.

Endnotes

1. Federal Highway Administration. "FHWA Guidebook for State, Regional, and Local Governments on Addressing Potential Equity Impacts of Road Pricing." *US Department of Transportation*. April 2013. https://ops.fhwa.dot.gov/publications/fhwahop13033/fhwahop13033.pdf.

2. Federal Highway Administration. "Update to the Final Environmental Justice Order 56102." *US Department of Transportation.* May 2012. http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/.

3. Minnesota Department of Transportation, "Benefit-Cost Analysis for Transportation Projects". *Planning & Programming.* http://www.dot.state.mn.us/planning/program/benefitcost.html.

4. Coastal Region Metropolitan Planning Organization, The Chatham County-Savannah Metropolitan Planning Commission. "Environmental Justice Report of the Coastal Region Metropolitan Planning Organization." 2015. https://www.thempc.org/docs/lit/corempo/draft/titlevi/environmentaljustice.pdf.

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APPENDICES

CONTENTS

1994 EXECUTIVE ORDER 12898

The three fundamental principals of environmental justice set forth by Title VI and Executive Order 12898 are:

1. To avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority and low-income populations;

2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process; and

3. To prevent the denial of, reduction in, or significant delay of these protections for minority and low-income populations.

Environmental justice must be considered in all phases of planning. Areas of focus and particular concern are public participation – to ensure that protected populations have real and equitable opportunity to influence decisions – and analysis – to assess the distribution of benefits and impacts on protected populations.

AUTHORITY, REQUIREMENTS, AND STANDARDS OF THE 1964 ACT

The following notations expand on the authority, requirements, and standards of the 1964 Act:

- The Federal Aid Highway Act of 1973 (23 USC 324) established the prohibition of discrimination based on gender.
- The Civil Rights Act of 1987 broadened the scope of Title VI coverage by expanding the definitions of “programs or activities” to include all programs or activities of Federal Aid recipients, sub-recipients and contractors, regardless of whether the programs and

activities are federally assisted (Public Law 100259 {S. 557}, March 22, 1988).

• The Americans with Disabilities Act of 1990 (42 USC 12101 et seq. and 49 CFR Parts 27, 37 and 38) and The Rehabilitation Act of 1973, Section 504, (29 USC 794) extended the protections under Title VI of the Civil Rights Act of 1964 to prohibit discrimination of persons with disabilities; and in Title II requires that public transit be accessible to persons with disabilities. The Act states that all new transit vehicles must be made accessible to persons with disabilities, and that para-transit can be used to complement existing fixed-route service.

• The Age Discrimination Act of 1975 prohibits discrimination based on age (42 USC 6101).

• Executive Order 12250 (28 CFR Part 41) requires consistent and effective implementation of various laws prohibiting discriminatory practices in programs receiving federal funding assistance, including Title VI of the Civil Rights Act of 1964.

• Executive Order 12898 (28 CFR 50) from 1994 directs federal agencies to evaluate impacts on low-income and minority populations and ensure that there are not disproportionate adverse environmental, social, and economic impacts on communities, specifically low income and minority populations. This order also directs federal agencies to provide enhanced public participation where programs may affect such populations.

• USDOT Order on Environmental Justice (DOT Order 5610.2) from 1997 describes how the principles in the Executive Order are to be incorporated into programs and activities. The Order states that the USDOT will not carry out any program, policy or activity that will have a disproportionately high and adverse effect on minority or low-income populations unless mitigation measures or alternatives that would avoid the adverse impacts are not practicable.

• FHWA Order 6640.23 from 1998 contains policies and procedures for the FHWA to use in complying with Executive Order 12898.

• Executive Order 13166 intends to improve access to federally conducted and assisted programs and activities for those who because of national origin have limited English language proficiency (LEP). The Order requires federal agencies to review services, identify any needed services and develop and implement a program so that LEP populations have meaningful access. LEP guidance from the US Department of Justice sets compliance standards that federal fund recipients must follow to ensure that programs and services provided in English are accessible to LEP individuals, and thereby do not discriminate on the basis of national origin (protection afforded under the 1964 Civil Rights Act, Title VI). US Department of Transportation Policy Guidance: Federal Register, Vol. 70, No. 239, pages 74087-74100, Dec. 14, 2005.

• FHWA and FTA Memorandum on Title VI Requirements (October 7, 1999) clarifies Title VI requirements in metropolitan and statewide planning. The memorandum provides division FHWA and FTA staff a list of proposed review questions to assess Title VI capability and provides guidance in assessing Title VI capability. Failure to comply can lead to a corrective action being issued by FTA and/or FHWA, and failure to address the corrective action can affect continued federal funding.

• Administrative Regulations, 23 CFR 200 and 49 CFR 21 from Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) set requirements for state transportation departments to implement Title VI policies and procedures at the state and local levels.

EJ POPULATION DEFINITIONS

The approach to environmental justice developed by the DCHC MPO in this EJ report strives to be a people- and place-based approach that locates selected EJ population groups in the region and determines how the regional transportation system and the DCHC MPO's programs, policies, and investments impact these groups.

ACS five-year estimates from the US Census Bureau were used to conduct the demographic analyses. The ACS is conducted every year to provide current information about the social and economic needs of the country. ACS data is organized in one-year, three-year, and five-year estimates. The five-year data estimates were chosen because they include data for all areas and provide information at the block group level. The five EJ communities evaluated in the development of this EJ report are defined in this section.

Racial Minority Populations:

Racial minority population includes any non-white individual, inclusive of the populations designated in the Department of Transportation's Order on Environmental Justice in Minority Populations and Low-Income Households, as described on this page.

Black: a person having origins in any of the black racial groups of Africa;

Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;

Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;

American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or

Native Hawaiian and Other Pacific Islander: people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Elderly Populations:

Elderly population includes any individual age 65 and over. This metric was determined based on a reading of An Aging Nation: The Older Population in the United States, published by the US Census Bureau.[1]

Limited English Proficiency Households:

As per the US Census Bureau definition A "limited English speaking household" is one in which no member 14 years old and over (1) speaks only English or (2) speaks a non-English language and speaks English "very well." In other words, all members 14 years old and over have at least some difficulty with English.

Low-Income Households:

A household whose annual median household income was less than 60% of the average median household income level of all the Census Block Groups within the DCHC MPO area. The average median household income of the DCHC MPO area as reported in US Census' 2013-2017 Five Year Estimates was $64,865. Applying the 60% income limit factor to $64,865 results in a low-income limit of $38,920 for households in the DCHC MPO area.

The Town of Chapel Hill uses 80% of Median Income as the low-income limit, as defined by the US Department of Housing and Urban Development (HUD), for the Town's inclusionary zoning/affordable housing policy.

The Town of Carrboro uses 80% of Median Income as the low-income limit, as defined by HUD, for the Town's affordable housing density bonus program.

The County and City of Durham each passed a resolution in 2014 that set their low-income limit as 60% of Median Income.

Based on the review of each local jurisdiction's policy for setting low-income limits, 60% of Median Household Income was used as the low-income limit for households.

Additional analysis of lower income populations was also performed to consider the location and concentrations of extremely low-income populations. The extremely low-income limit was determined by applying HUD's standard for extremely low-income limit, which is 30 percent of Median Household Income.[2]

Zero-Car Households:

The data on vehicles available were obtained from the housing questions in the ACS. These data show the number of passenger cars, vans, and pickup or panel trucks of one-ton capacity or less kept at home and available for the use of household members. Vehicles rented or leased for one month or more, company vehicles, and police and government vehicles are included if kept at home and used for non-business purposes. Dismantled or immobile vehicles are excluded. Vehicles kept at home but used only for business purposes are also excluded.

Endnotes

1. "Title VI & Environmental Justice Plan." *Rogue Valley Metropolitan Planning Organization*, RVMPO, Oct. 2014, http://www.rvmpo.org/images/EJ_Plan_FINAL_Oct_2014.pdf.

2. "Public Involvement Policy." *Durham-Chapel Hill-Carrboro Metropolitan Planning Organization*, DCHC MPO, 14 Nov. 2012, http://www.dchcmpo.org/civicax/filebank/blobdload.aspx?BlobID=28369.

County Thresholds

This appendix includes demographic summary data for Chatham, Durham, and Orange counties; thresholds for each county that were developed using the methodology in this report; and mapped communities of concern for each county. These thresholds and mapped communities of concern by county will allow counties to use this report's methodology for county-specific projects, such as Transit Plans.

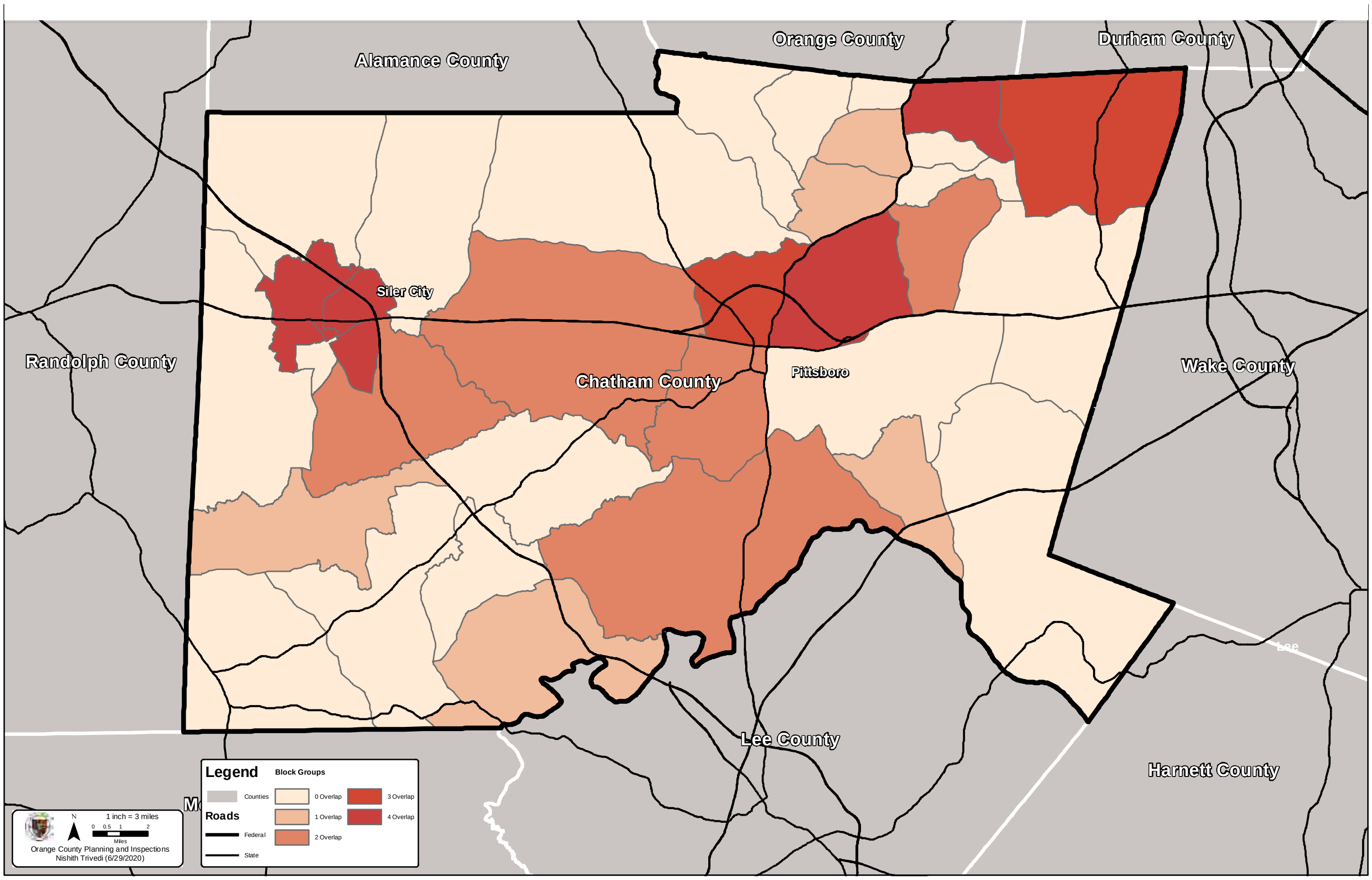
Table A.1: County Summary Data

County	Total Pop	Total HH	Med HH Income	Black	Minority	Hispanic/ Latino	Below Poverty	Elderly	Zero Car Households	LEP
Chatham	69,791	31,555	$ 63,531	8,073	13,601	8,626	8,241	16,306	1,283	2,105
Durham	306,457	133,429	$ 58,190	113,511	149,091	41,189	46,805	37,056	9,936	15,650
Orange	142,938	57,502	$ 68,211	16,557	36,403	12,014	17,633	18,364	2,644	3,508

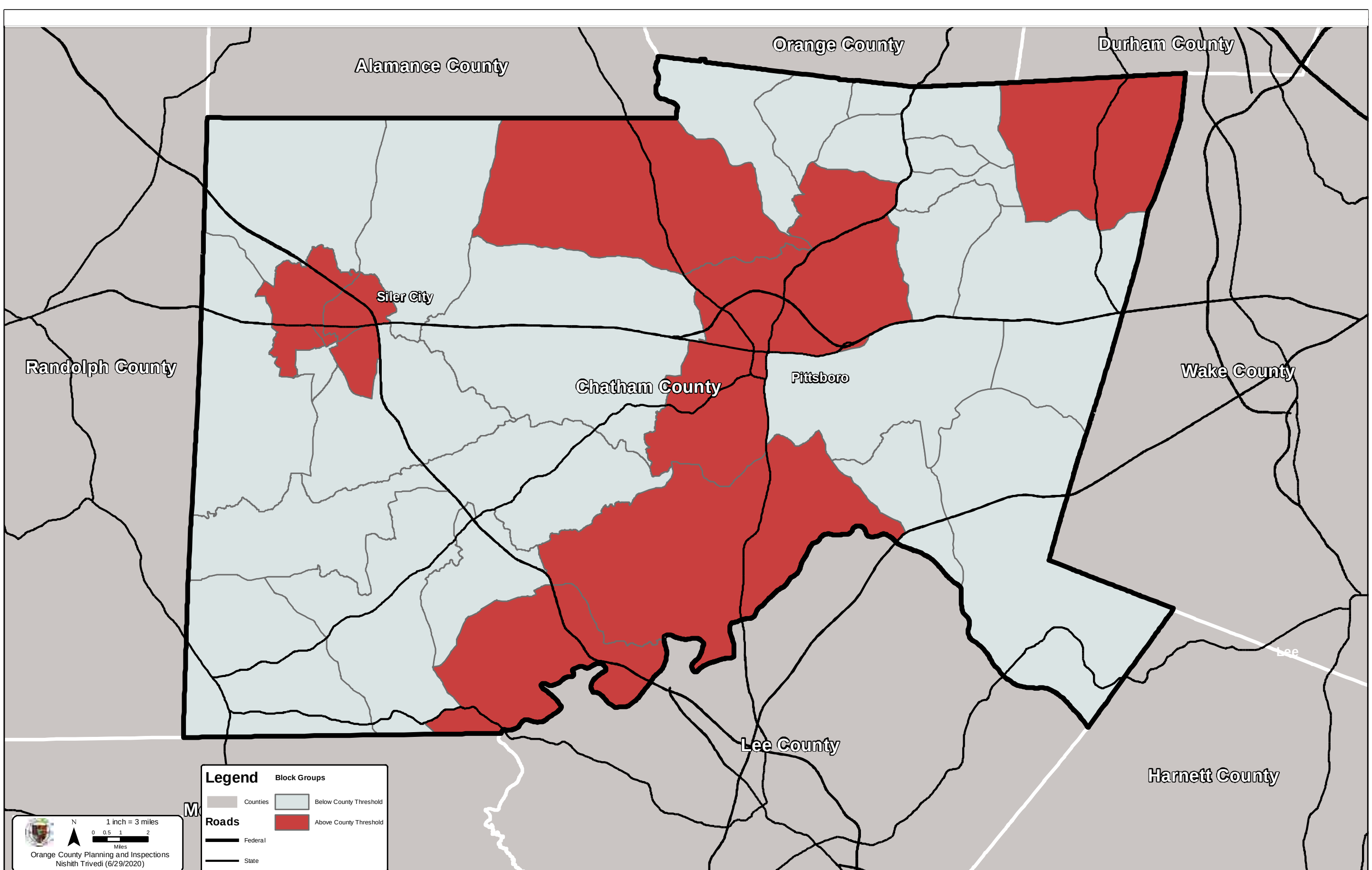
Table A.2: County Thresholds

County	Black	Minority	Hispanic/ Latino	Below Poverty	Elderly	Zero Car Households	LEP
Chatham	12%	19%	12%	12%	23%	4%	3%
Durham	37%	49%	13%	15%	12%	7%	5%
Orange	12%	25%	8%	12%	13%	5%	2%

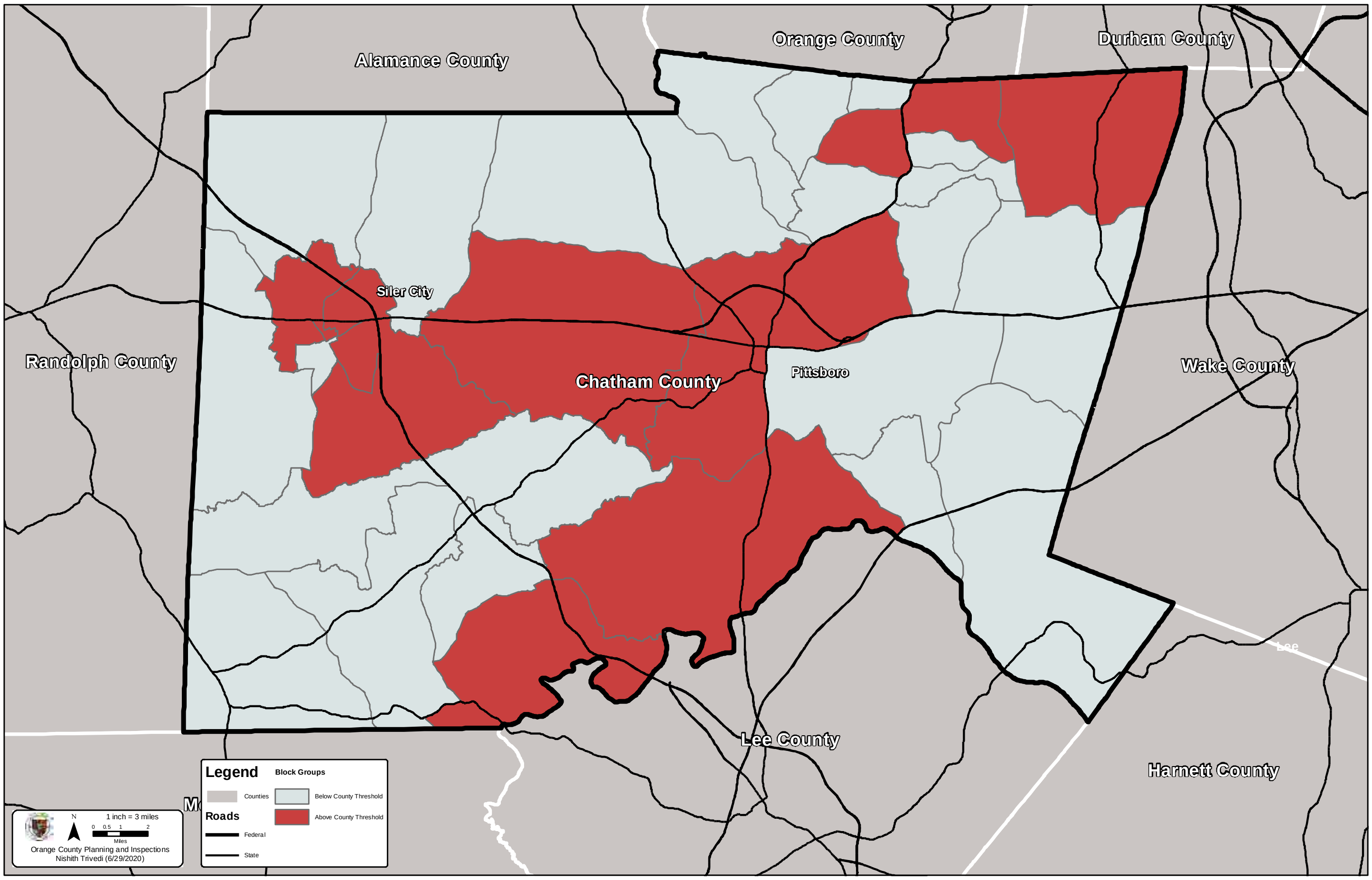
Environmental Justice - County Level Analysis - Communities of Concern



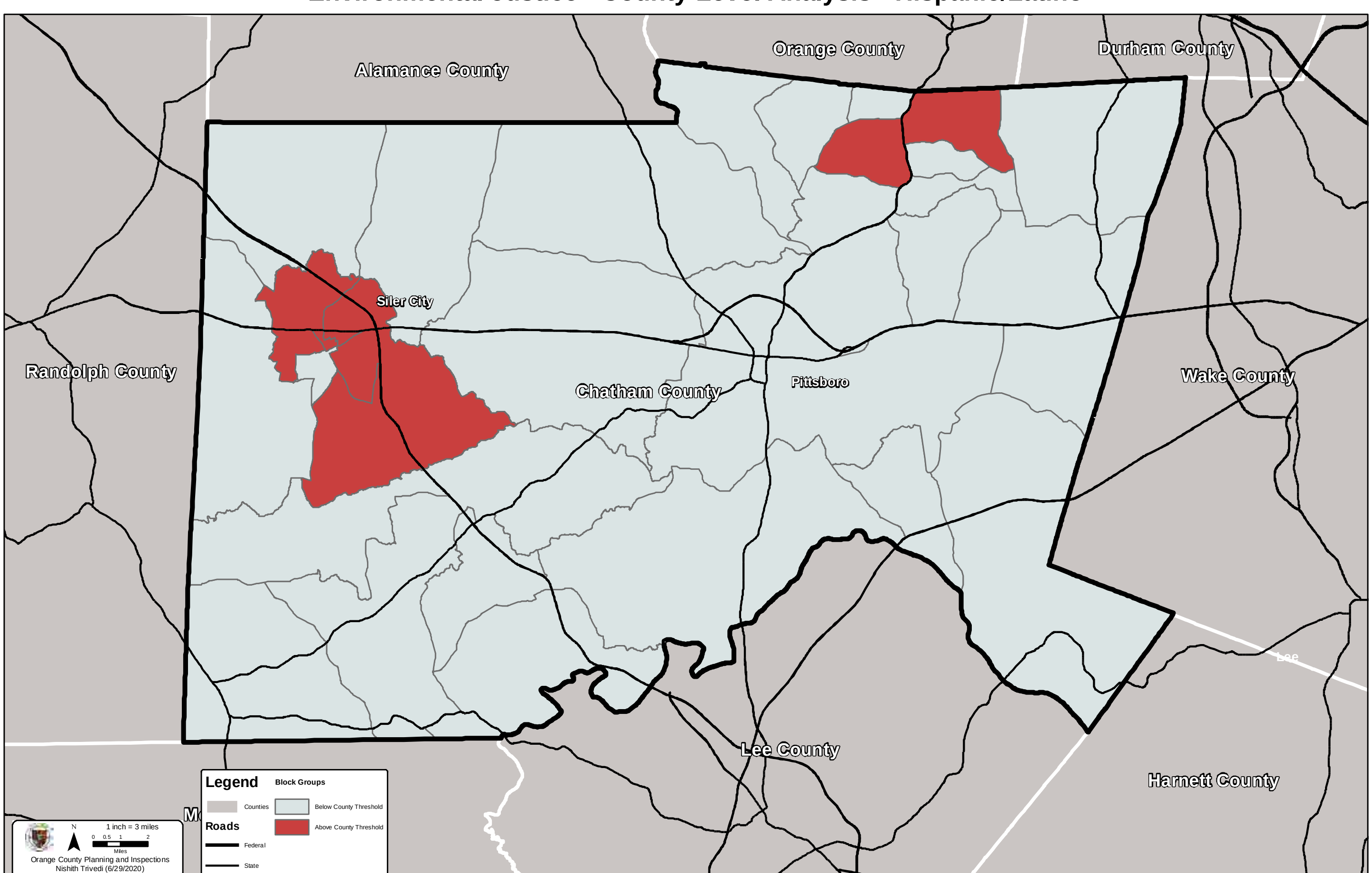
Environmental Justice - County Level Analysis - Black



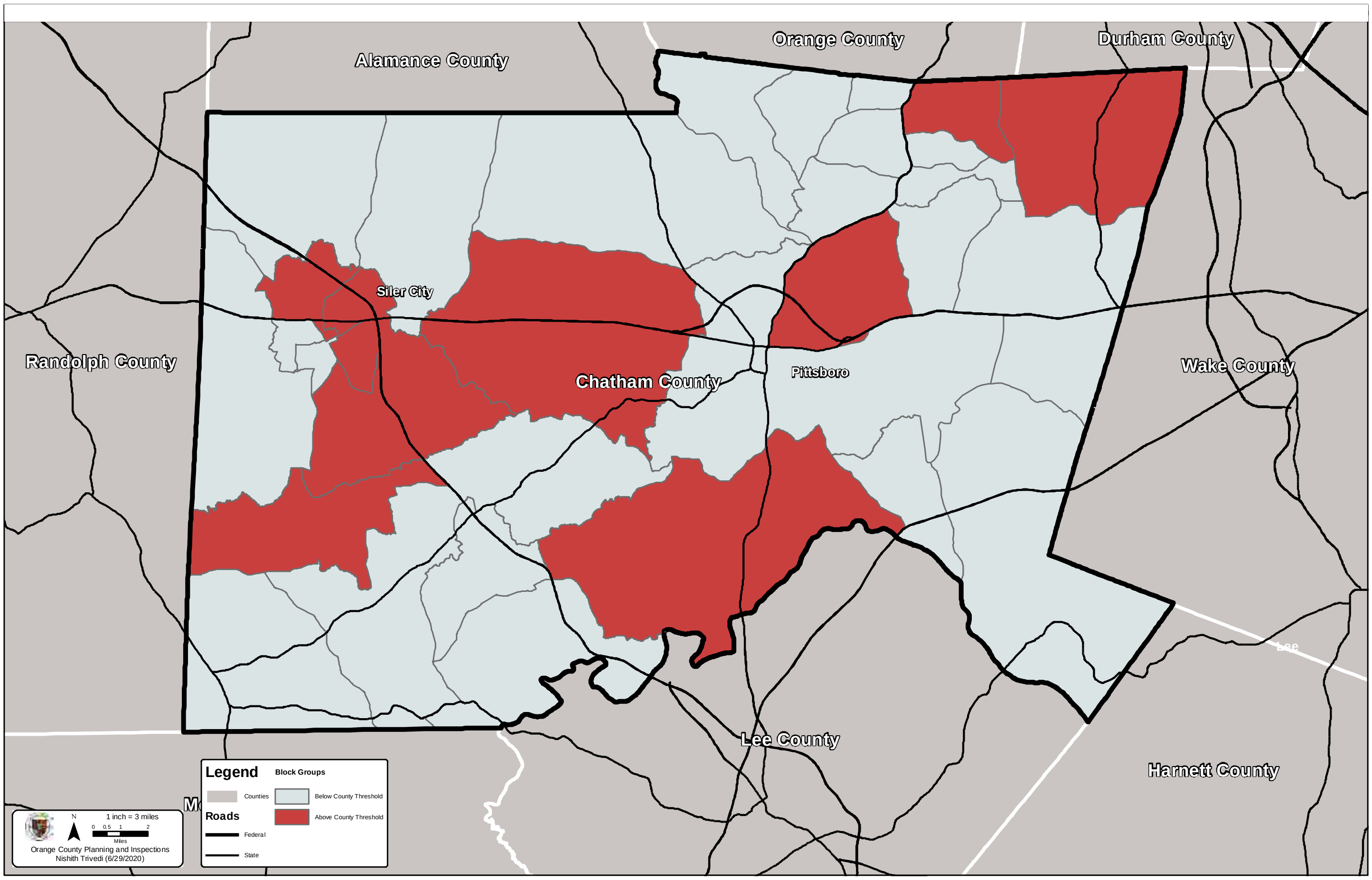
Environmental Justice - County Level Analysis - Minority



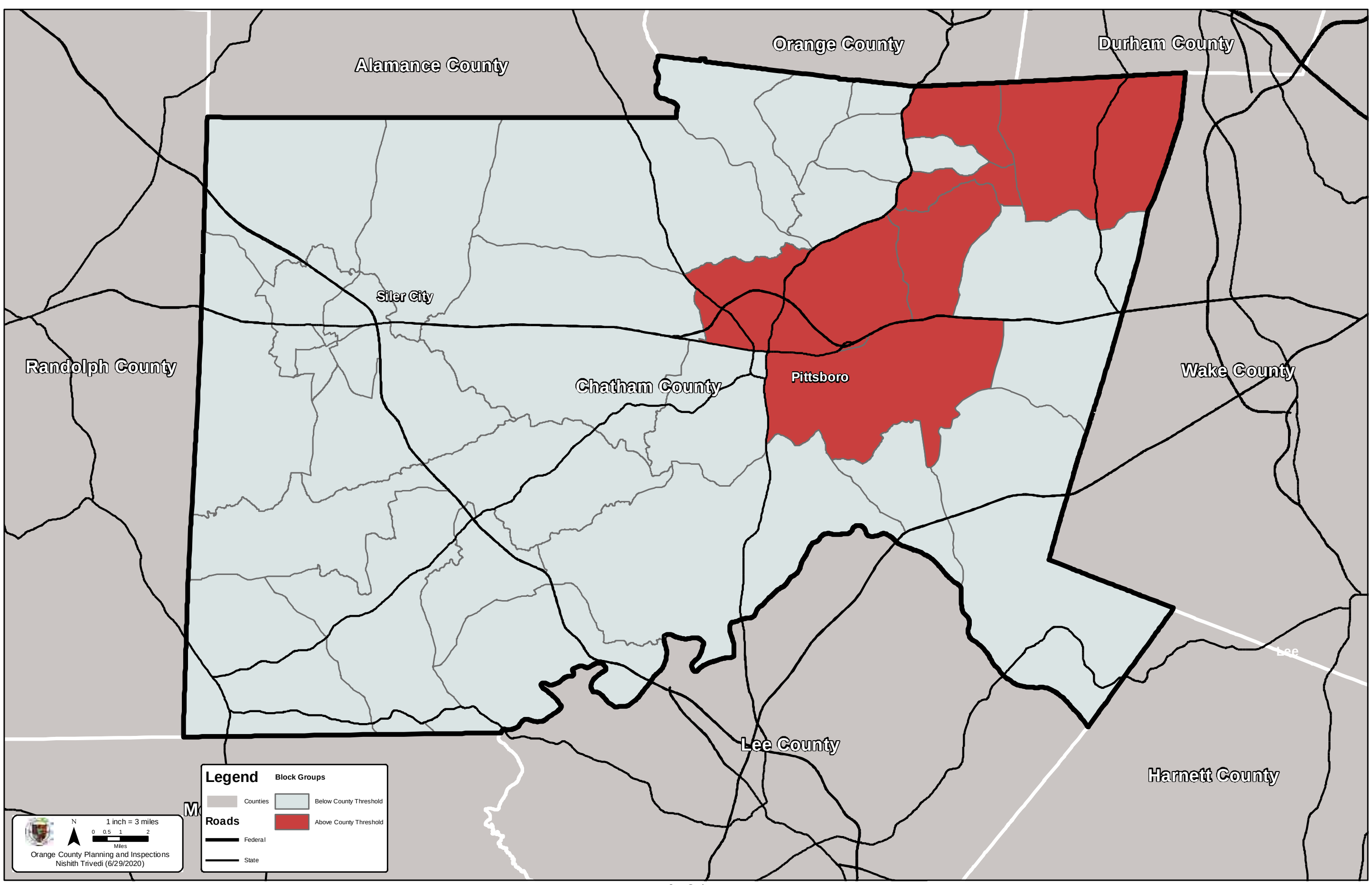
Environmental Justice - County Level Analysis - Hispanic/Latino



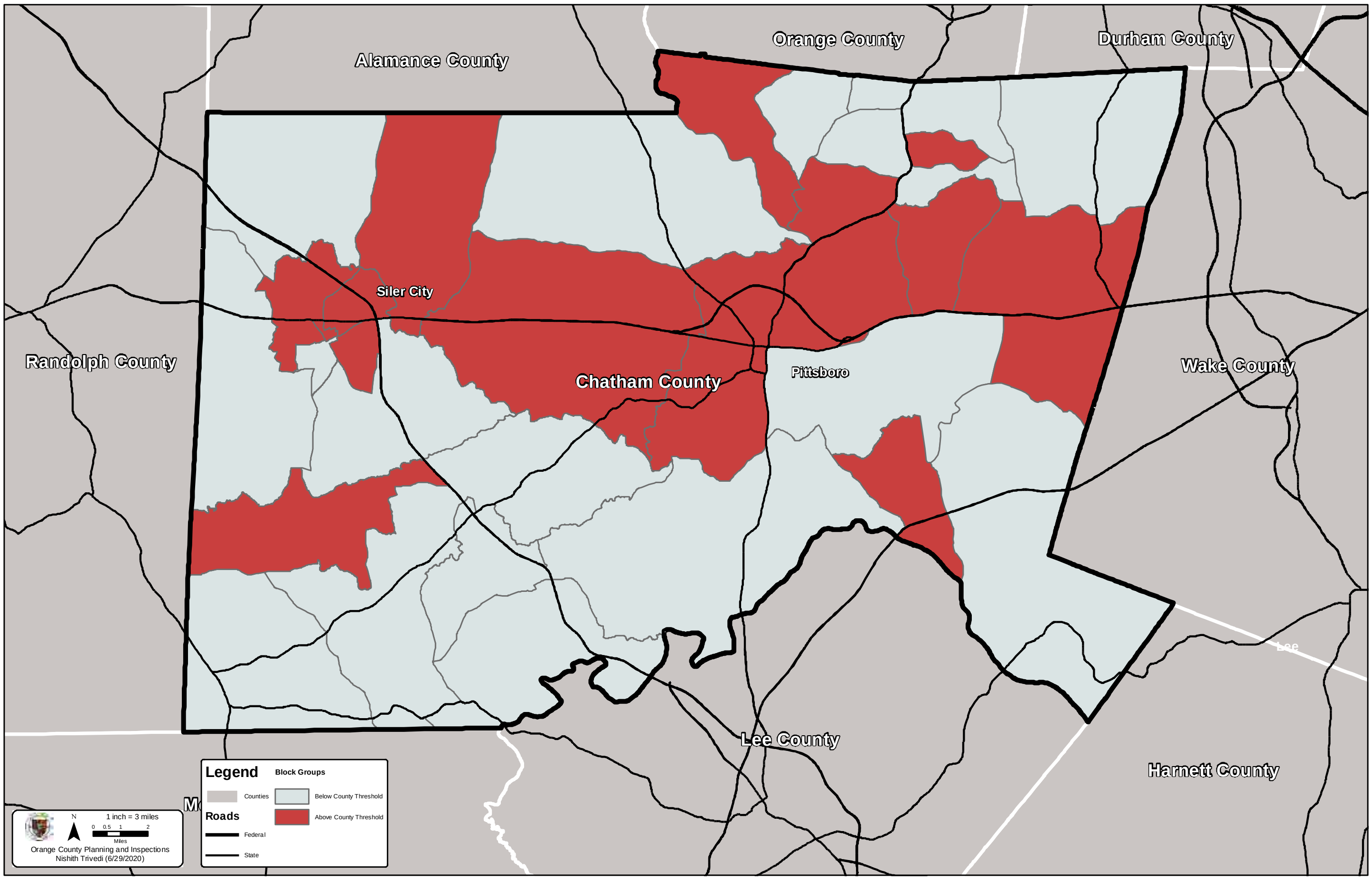
Environmental Justice - County Level Analysis - Below Poverty



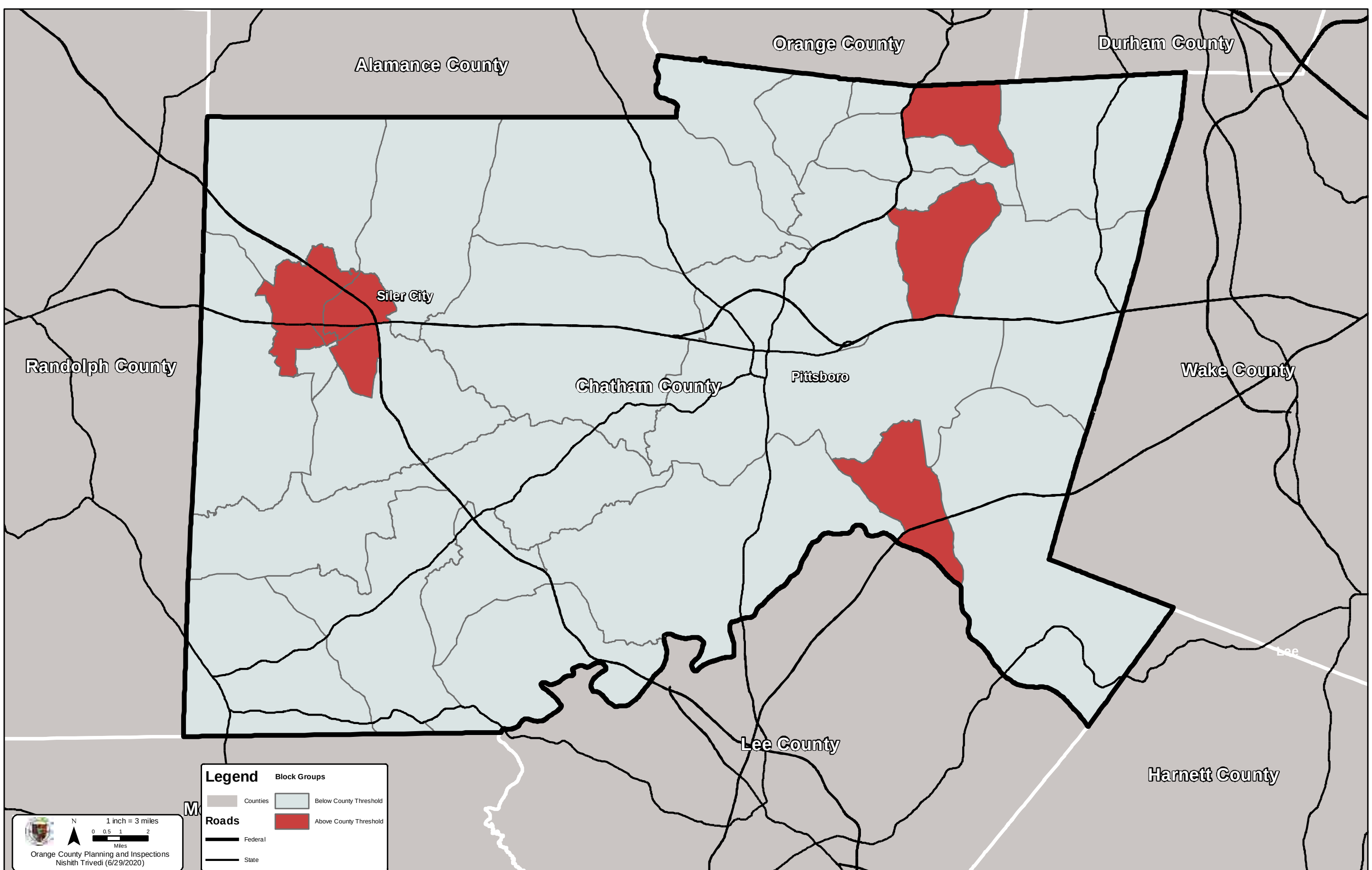
Environmental Justice - County Level Analysis - Elderly



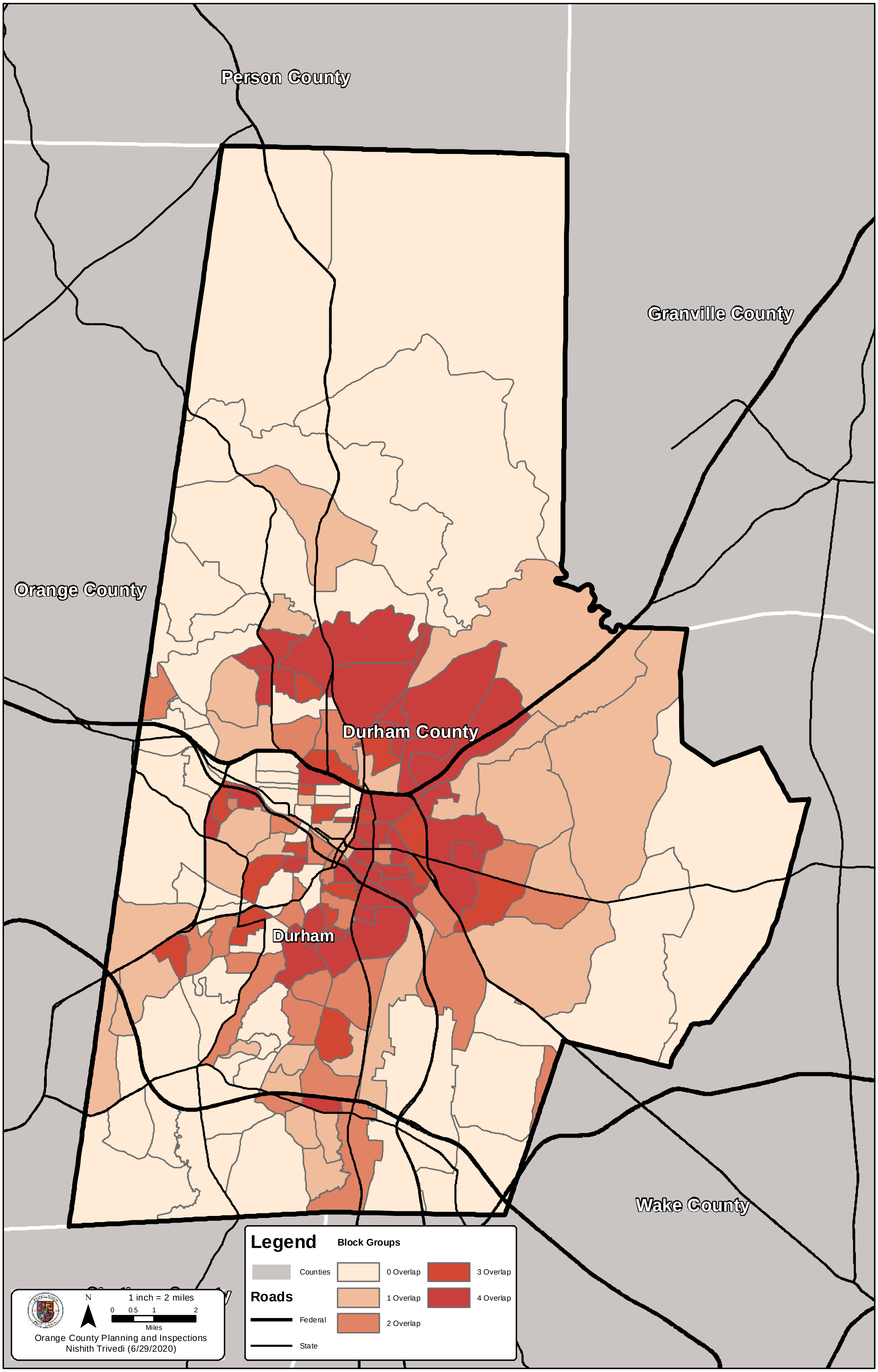
Environmental Justice - County Level Analysis - Zero Car Household



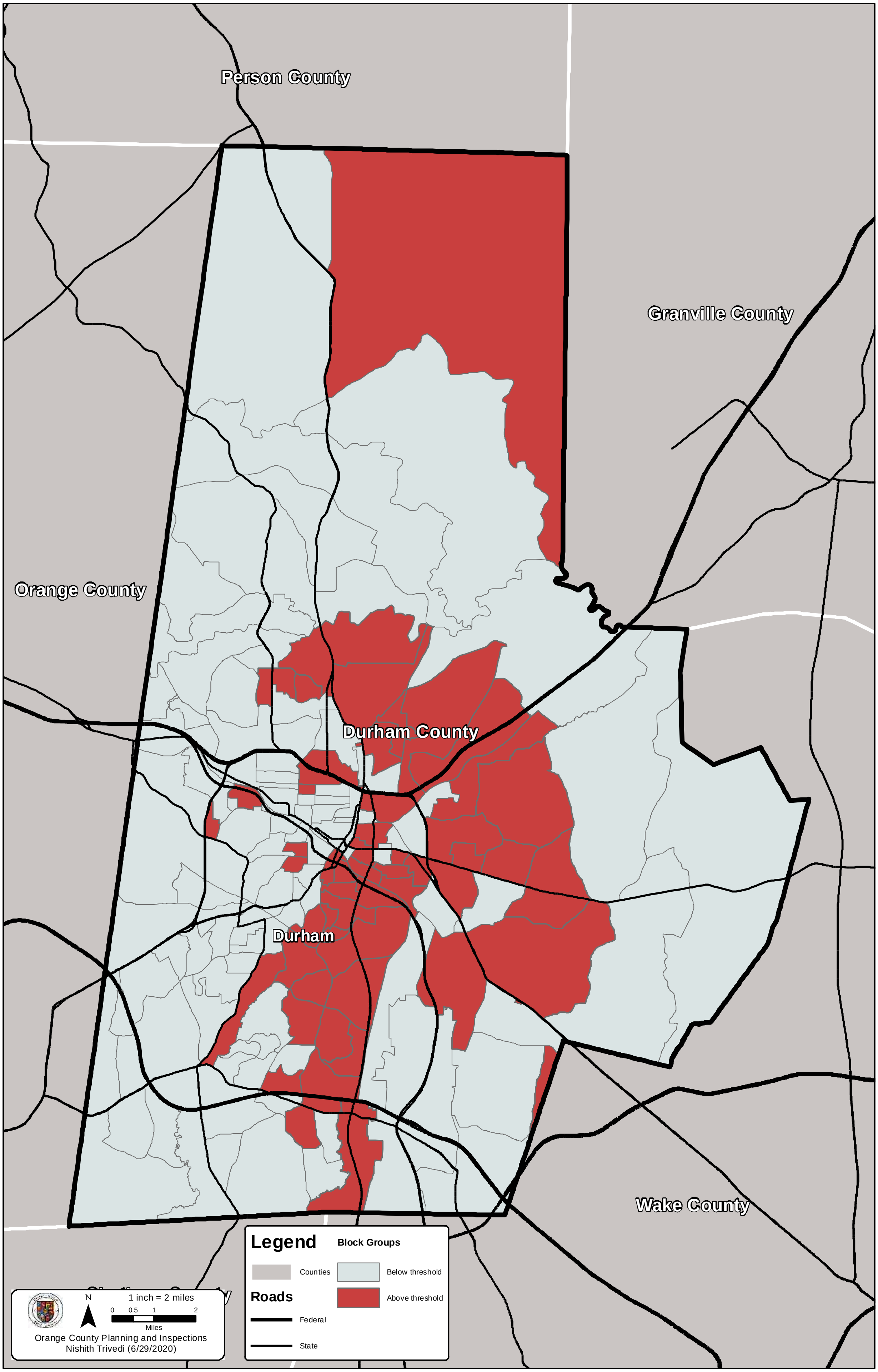
Environmental Justice - County Level Analysis - Limited English Proficiency (LEP)



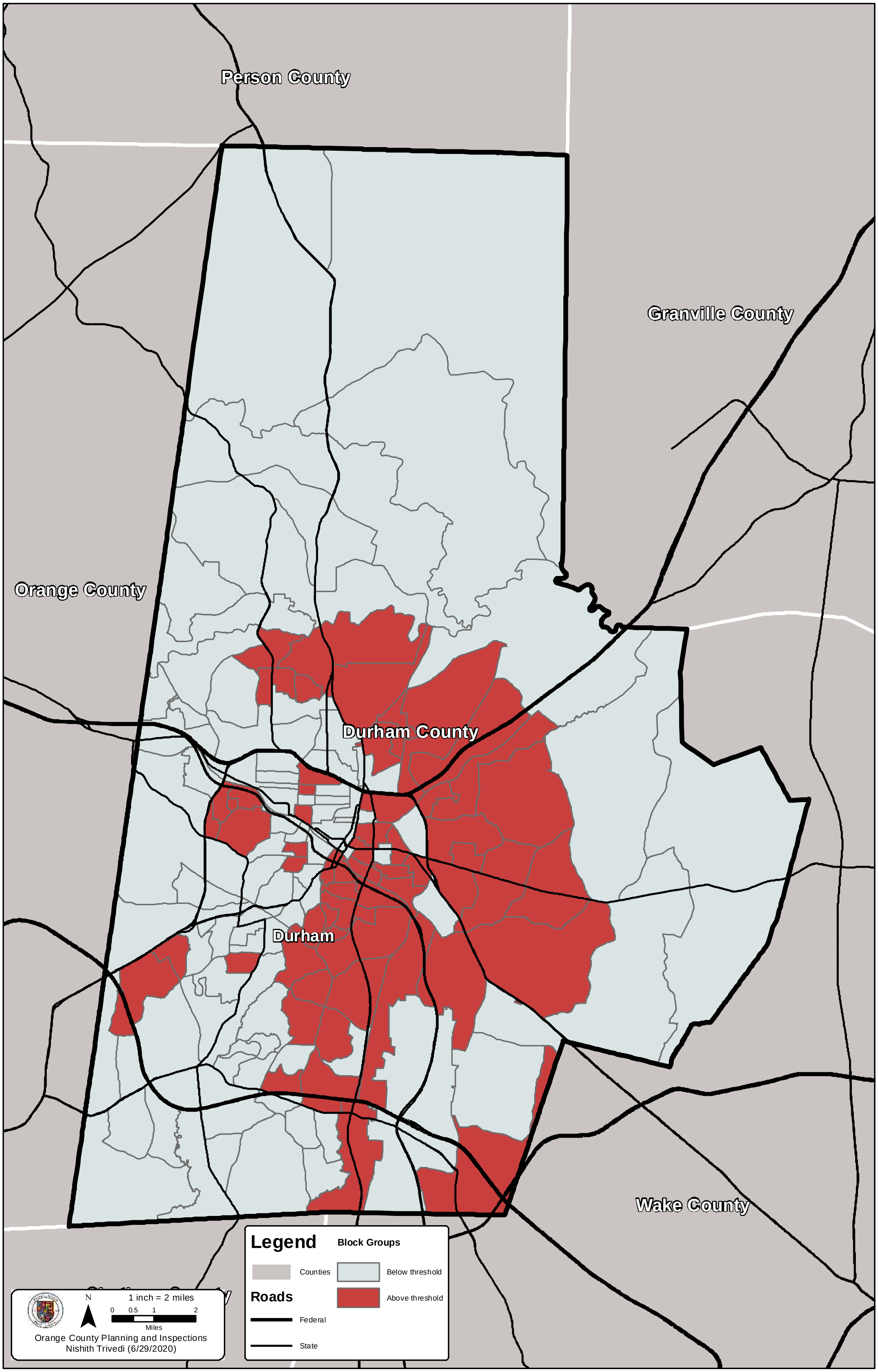
Environmental Justice - County Level Analysis - Communities of Concern



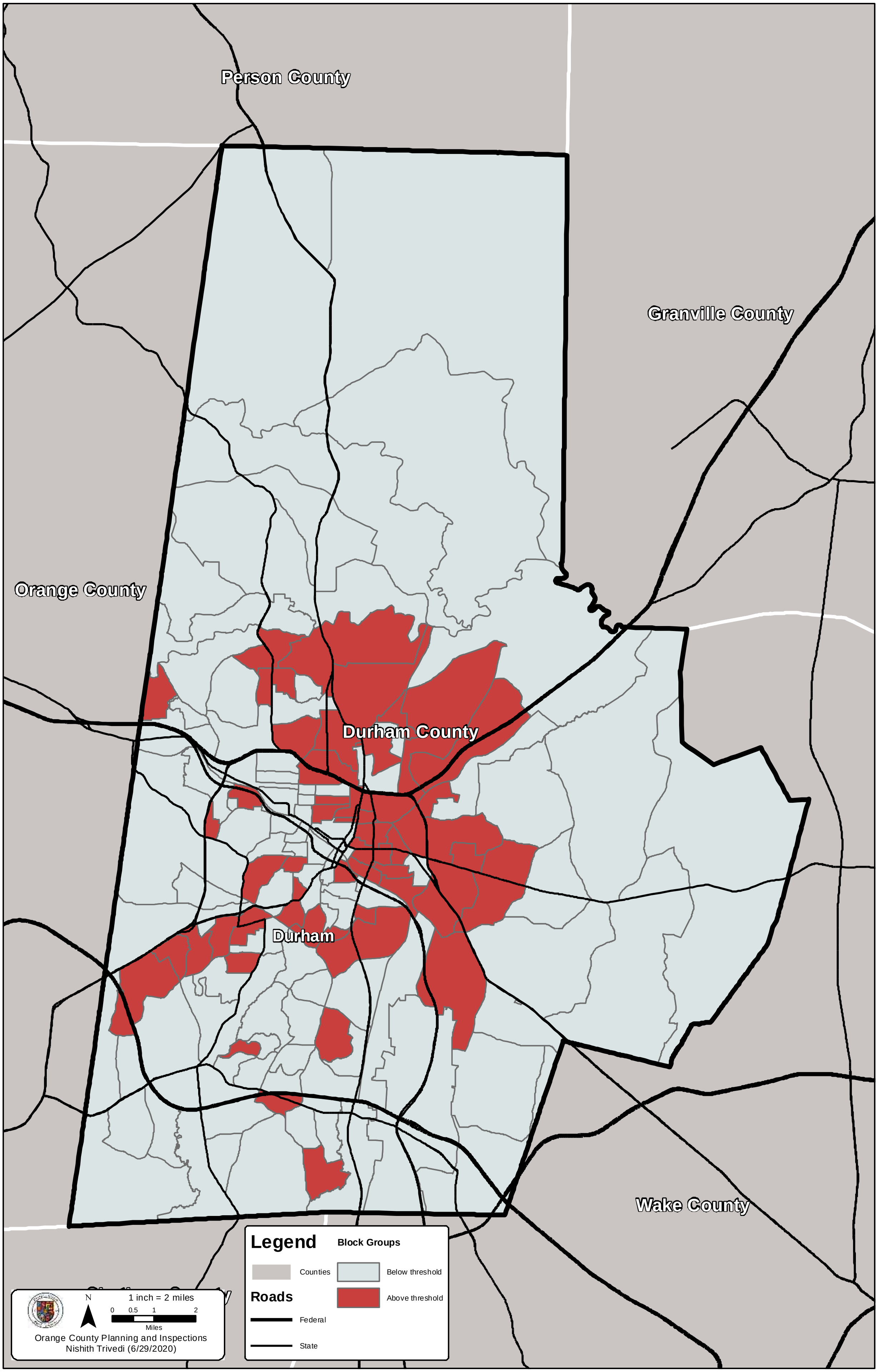
Environmental Justice - County Level Analysis - Black



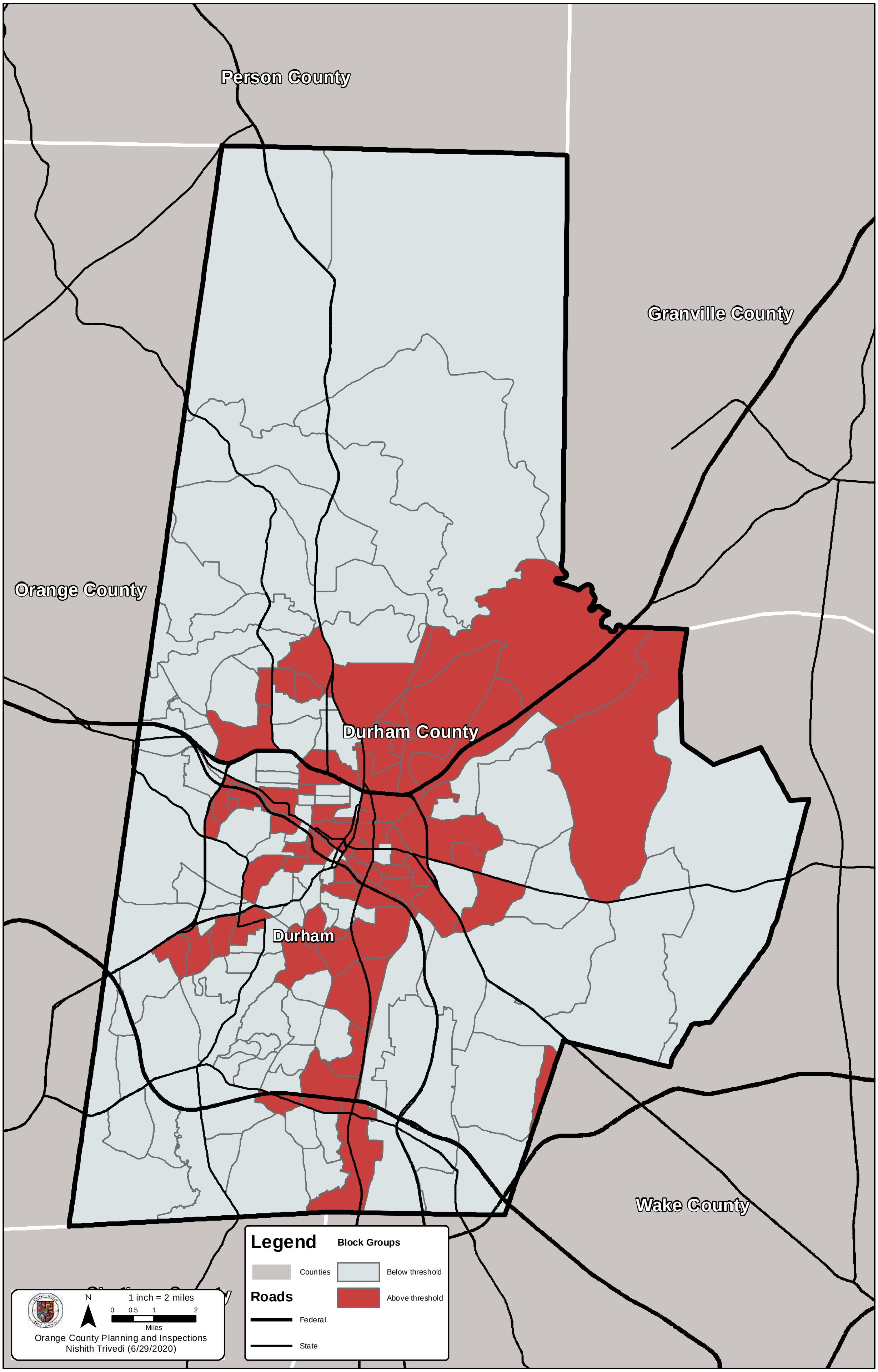
Environmental Justice - County Level Analysis - Minority



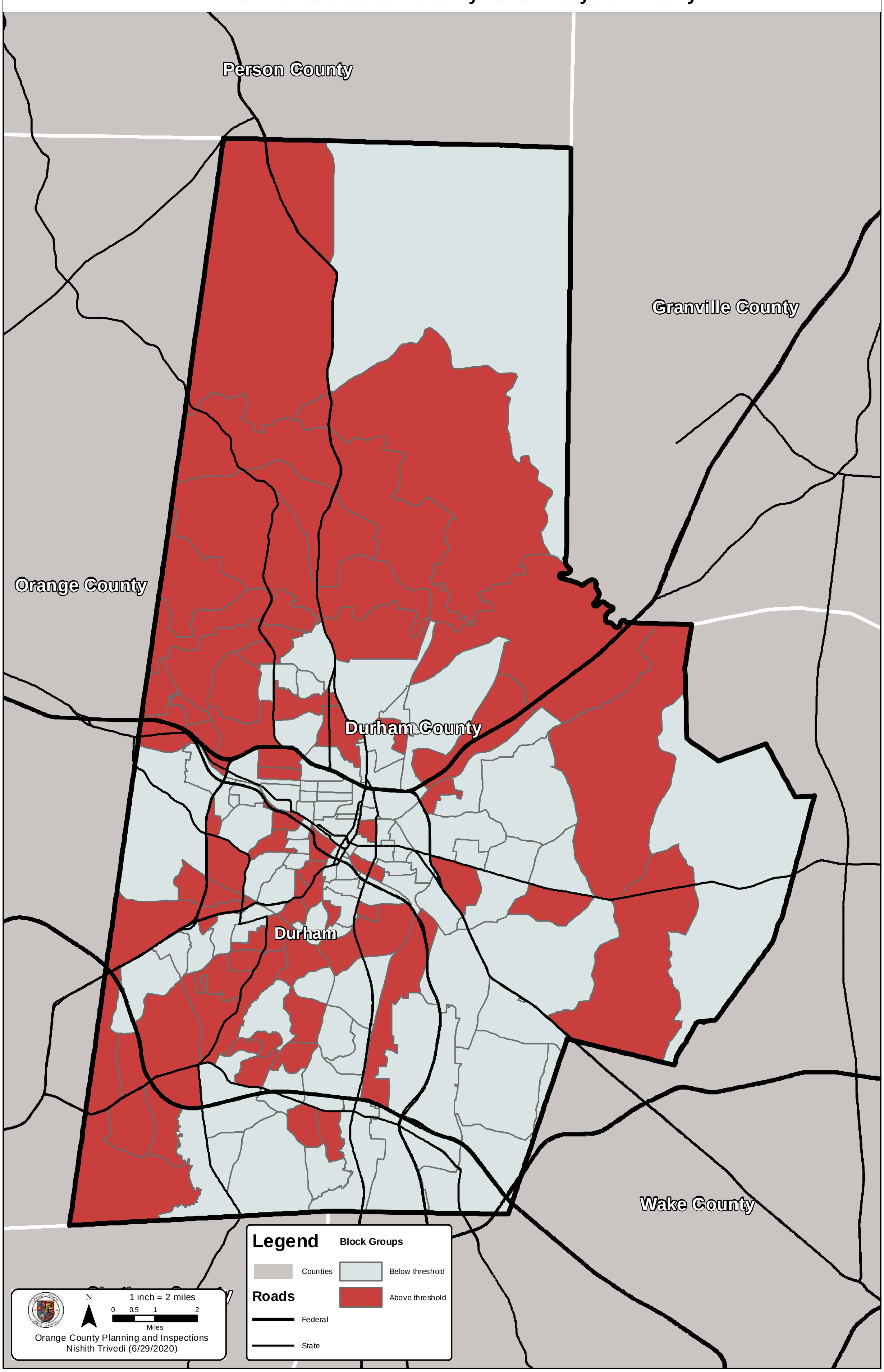
Environmental Justice - County Level Analysis - Hispanic/Latino



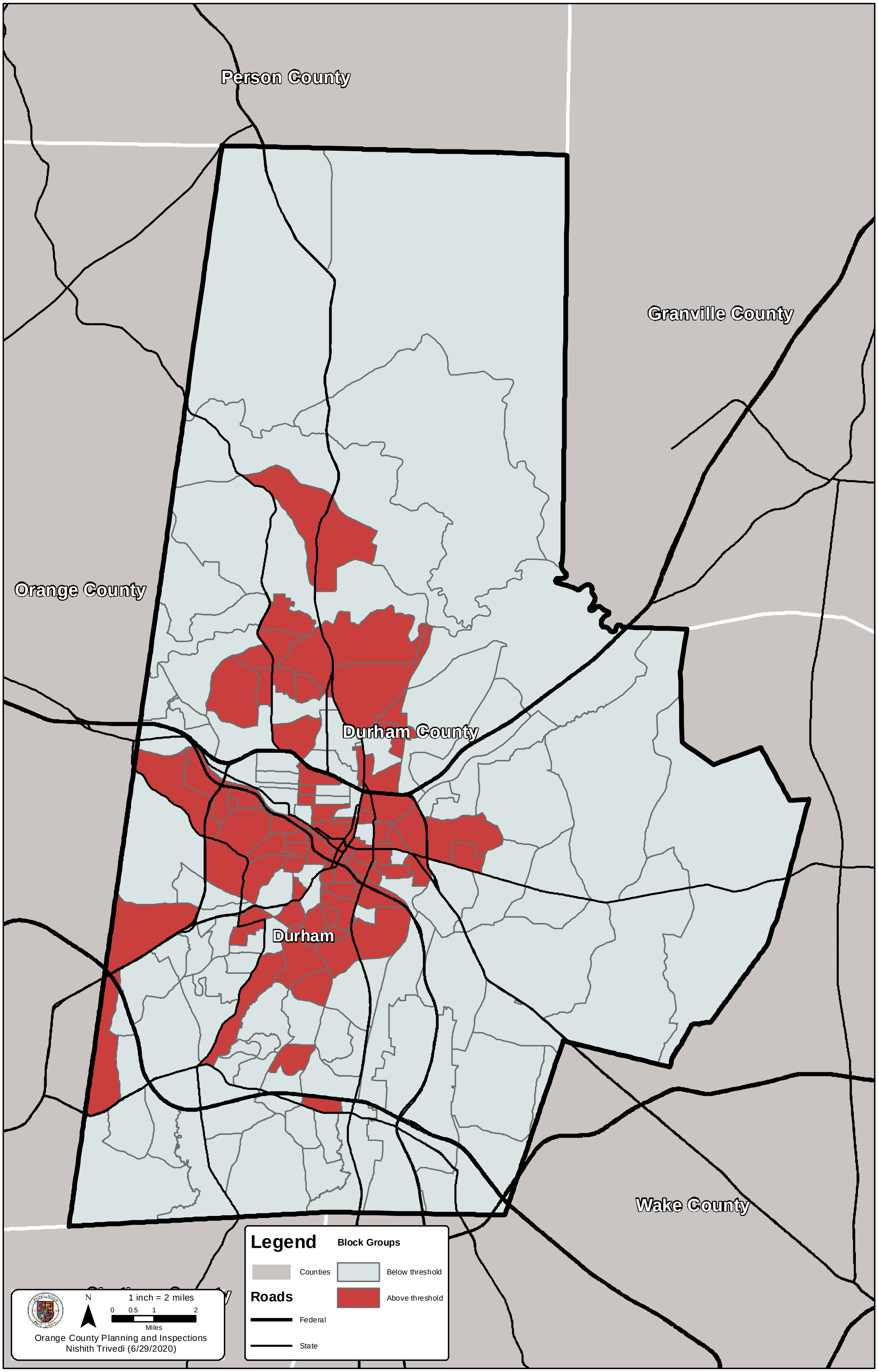
Environmental Justice - County Level Analysis - Below Poverty



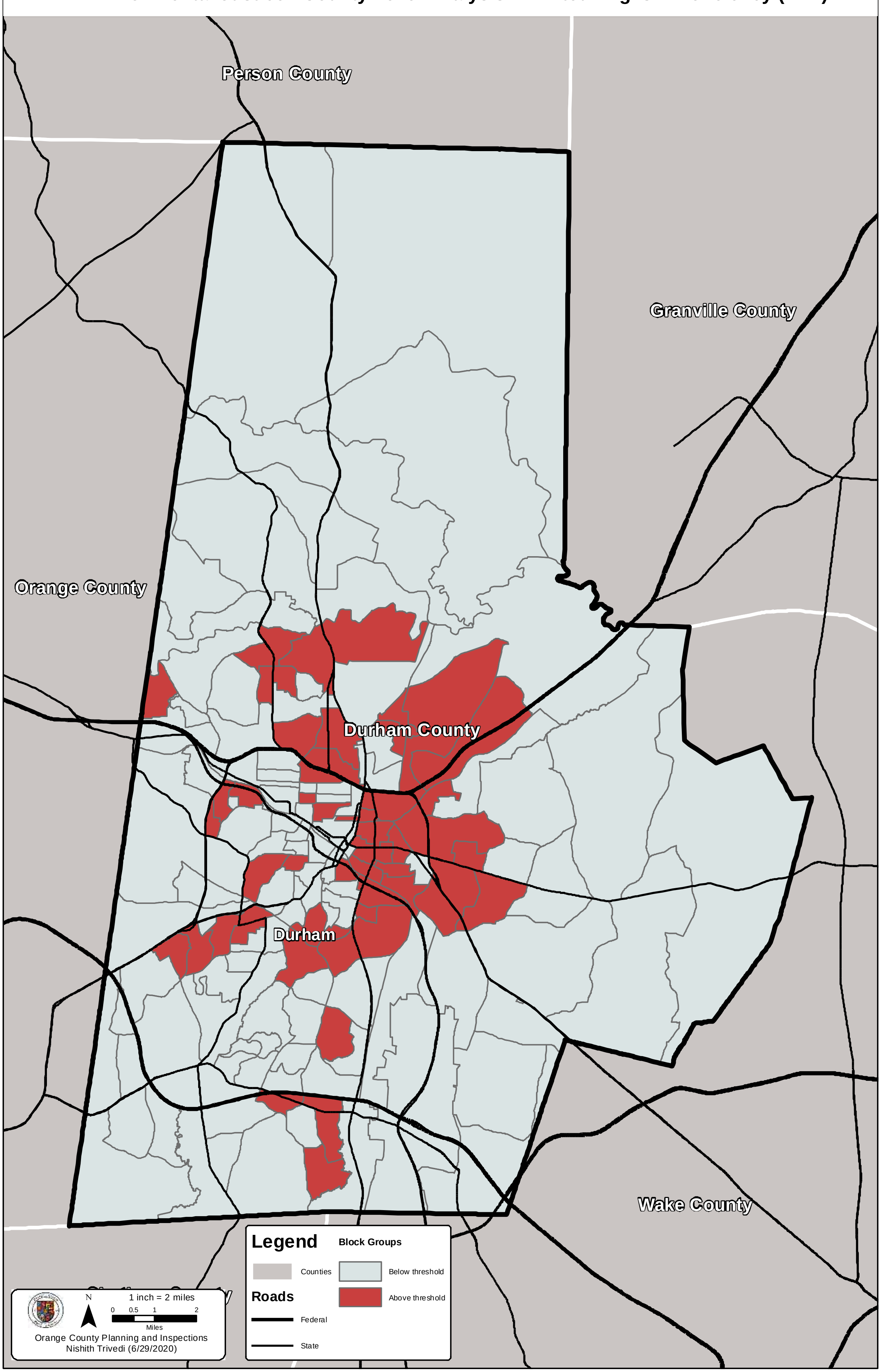
Environmental Justice - County Level Analysis - Elderly



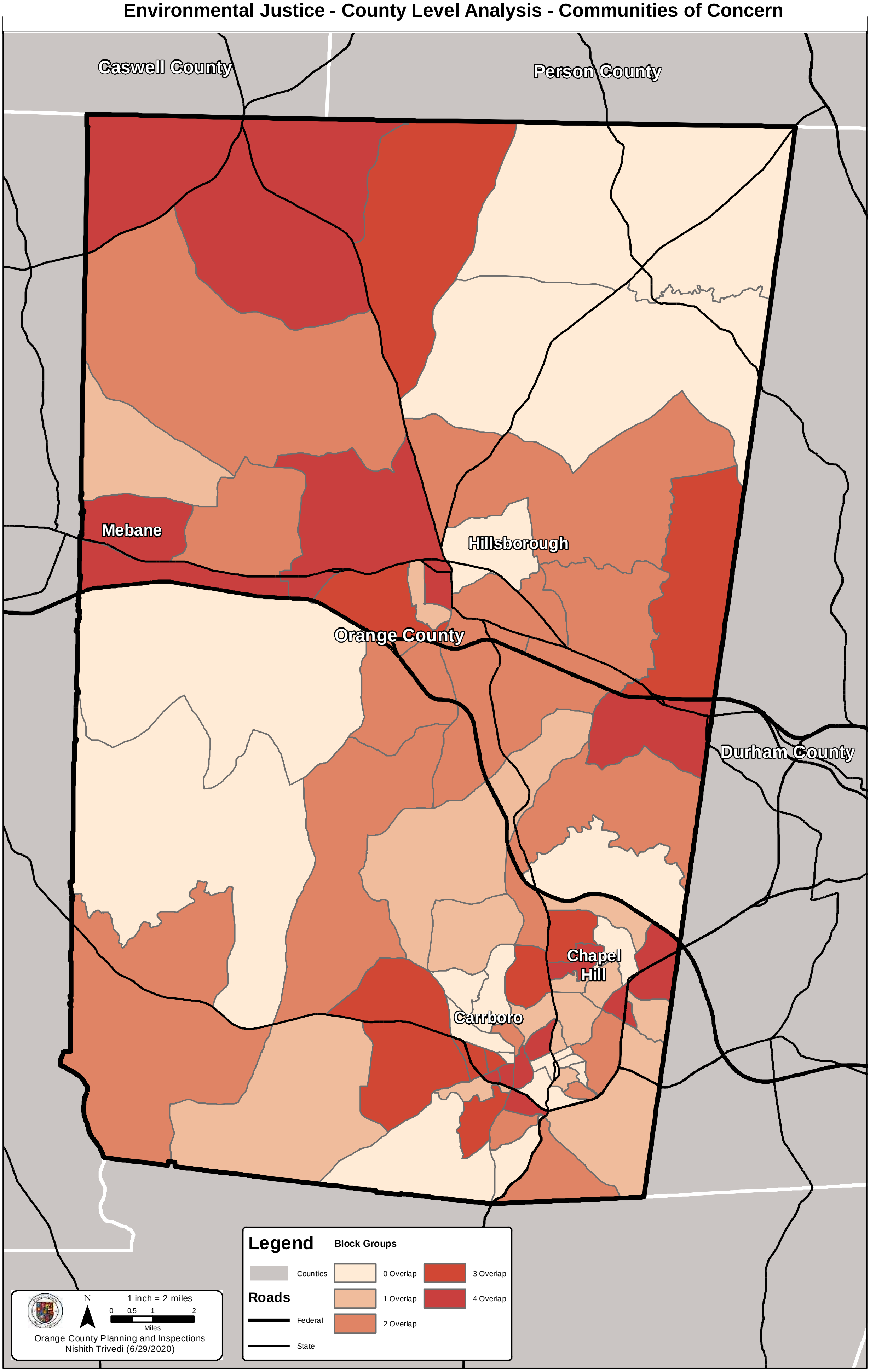
Environmental Justice - County Level Analysis - Zero Car Household



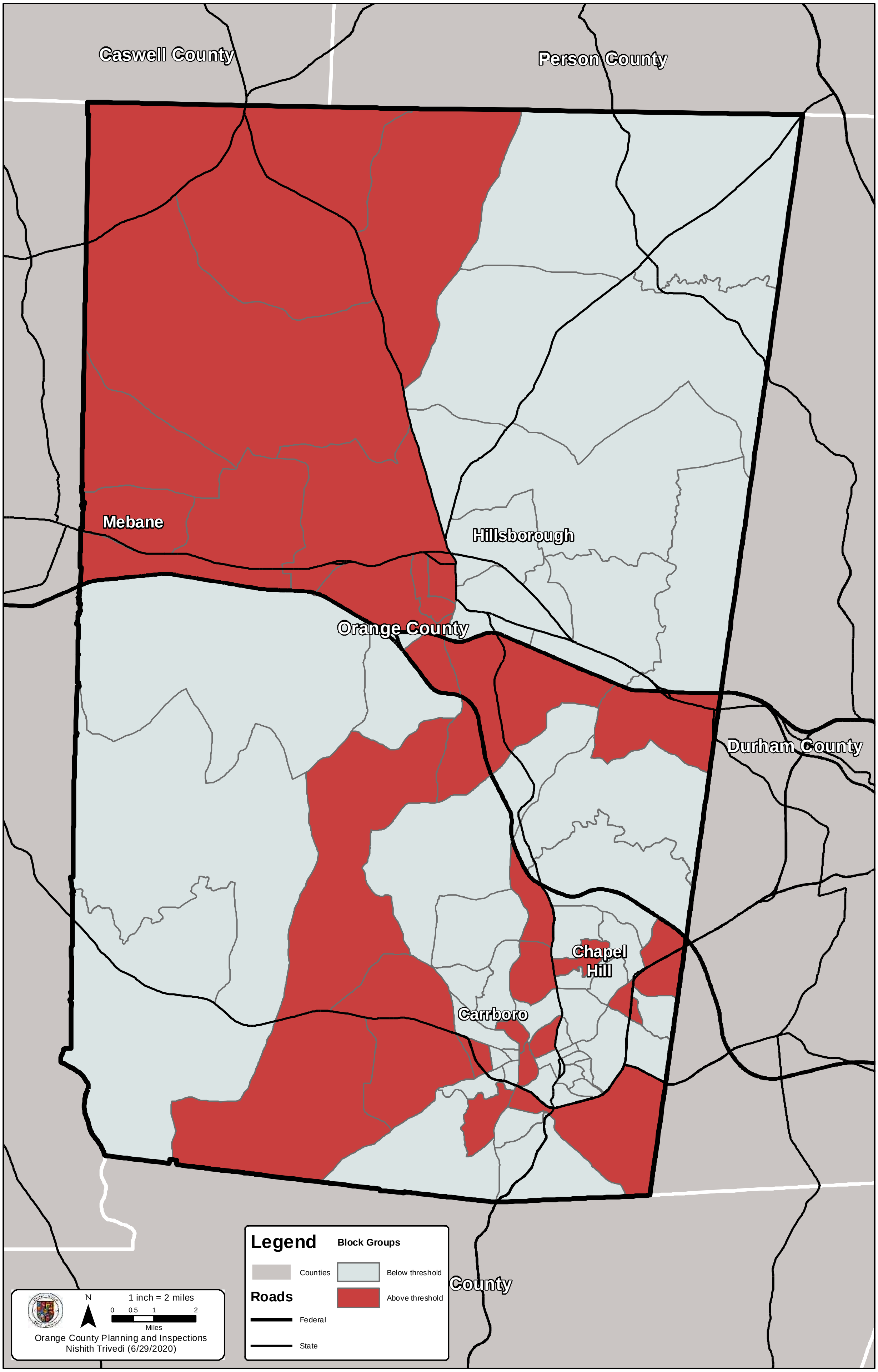
Environmental Justice - County Level Analysis - Limited English Proficiency (LEP)



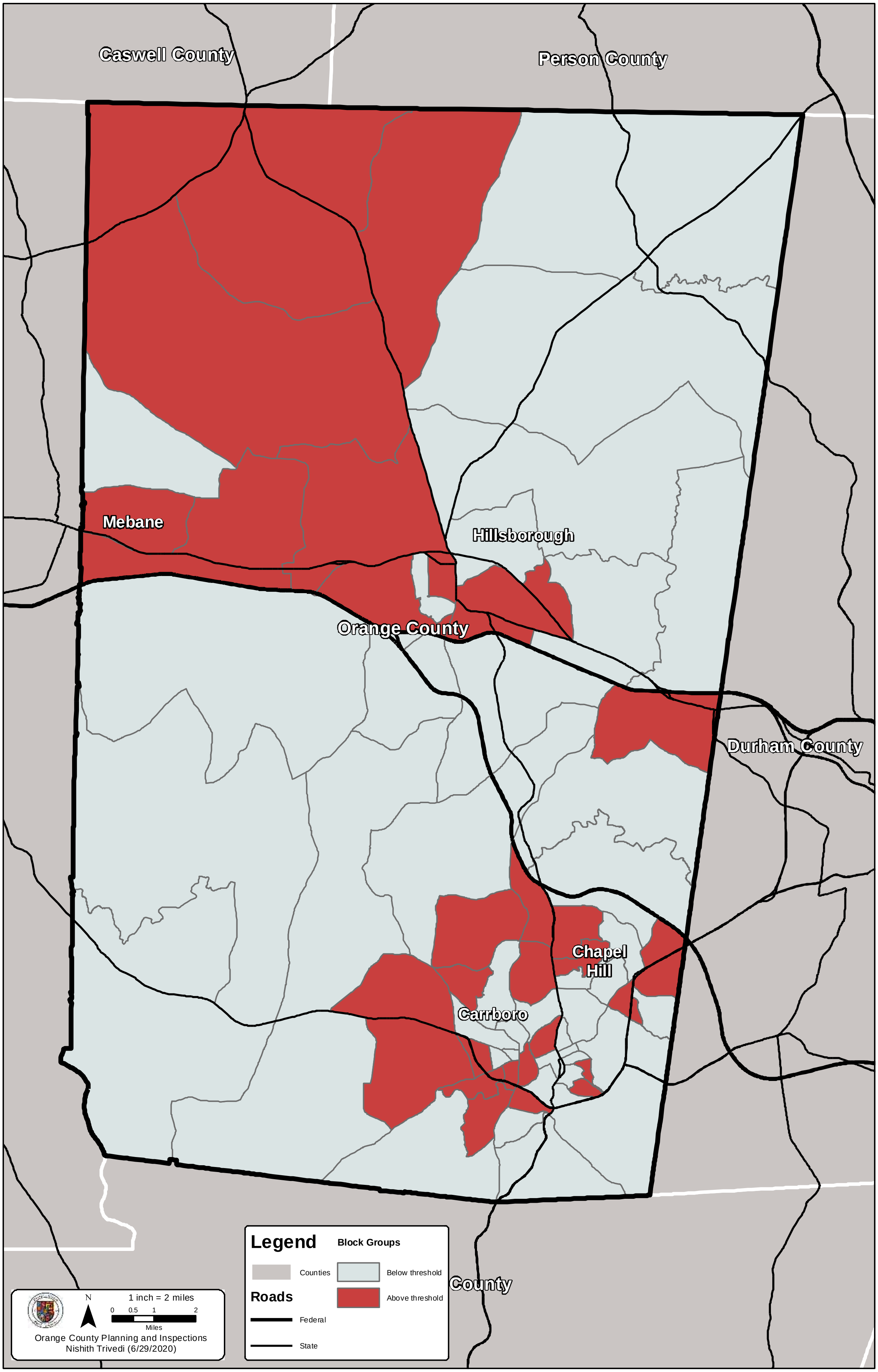
Environmental Justice - County Level Analysis - Communities of Concern



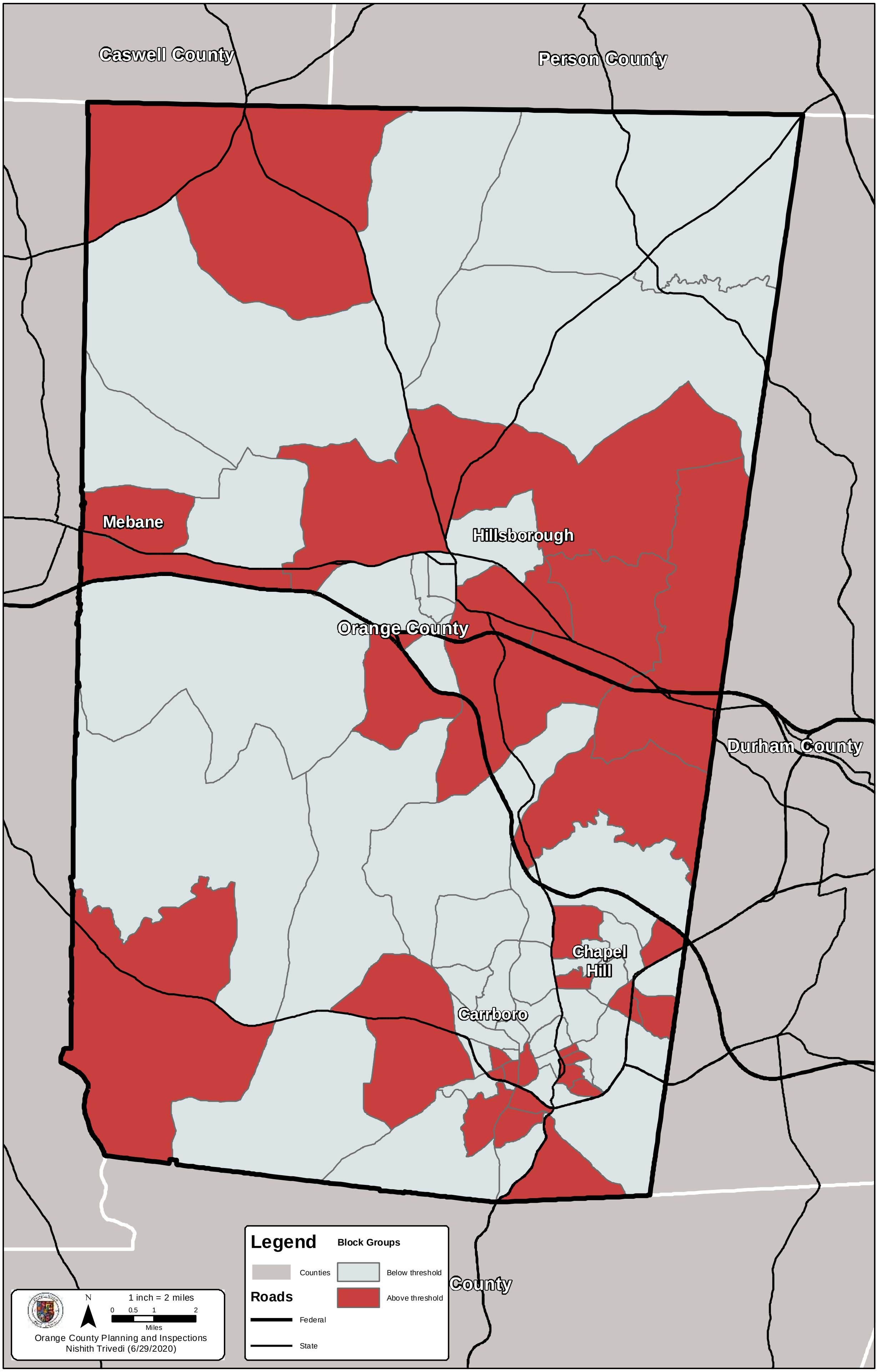
Environmental Justice - County Level Analysis - Black



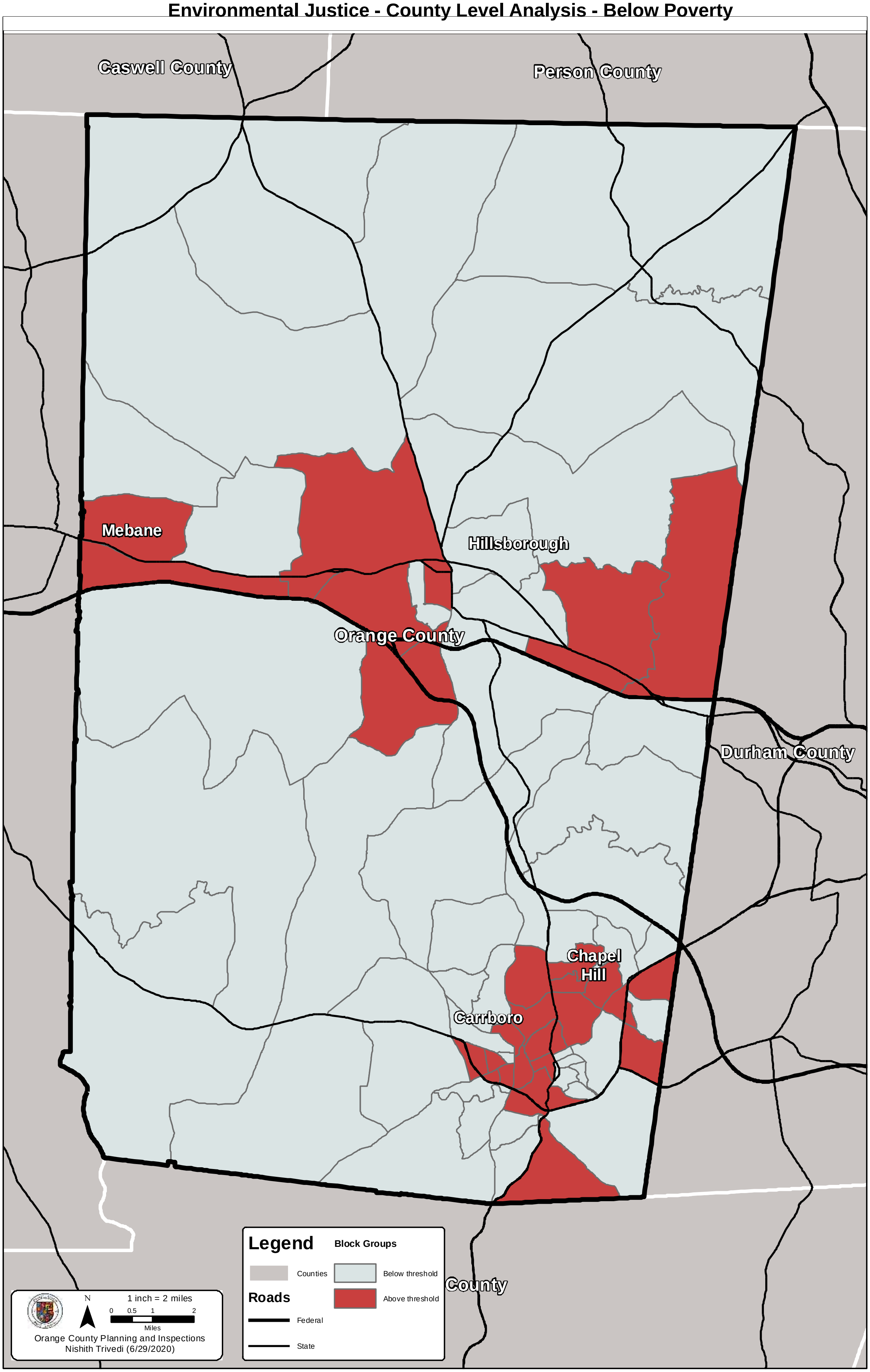
Environmental Justice - County Level Analysis - Minority



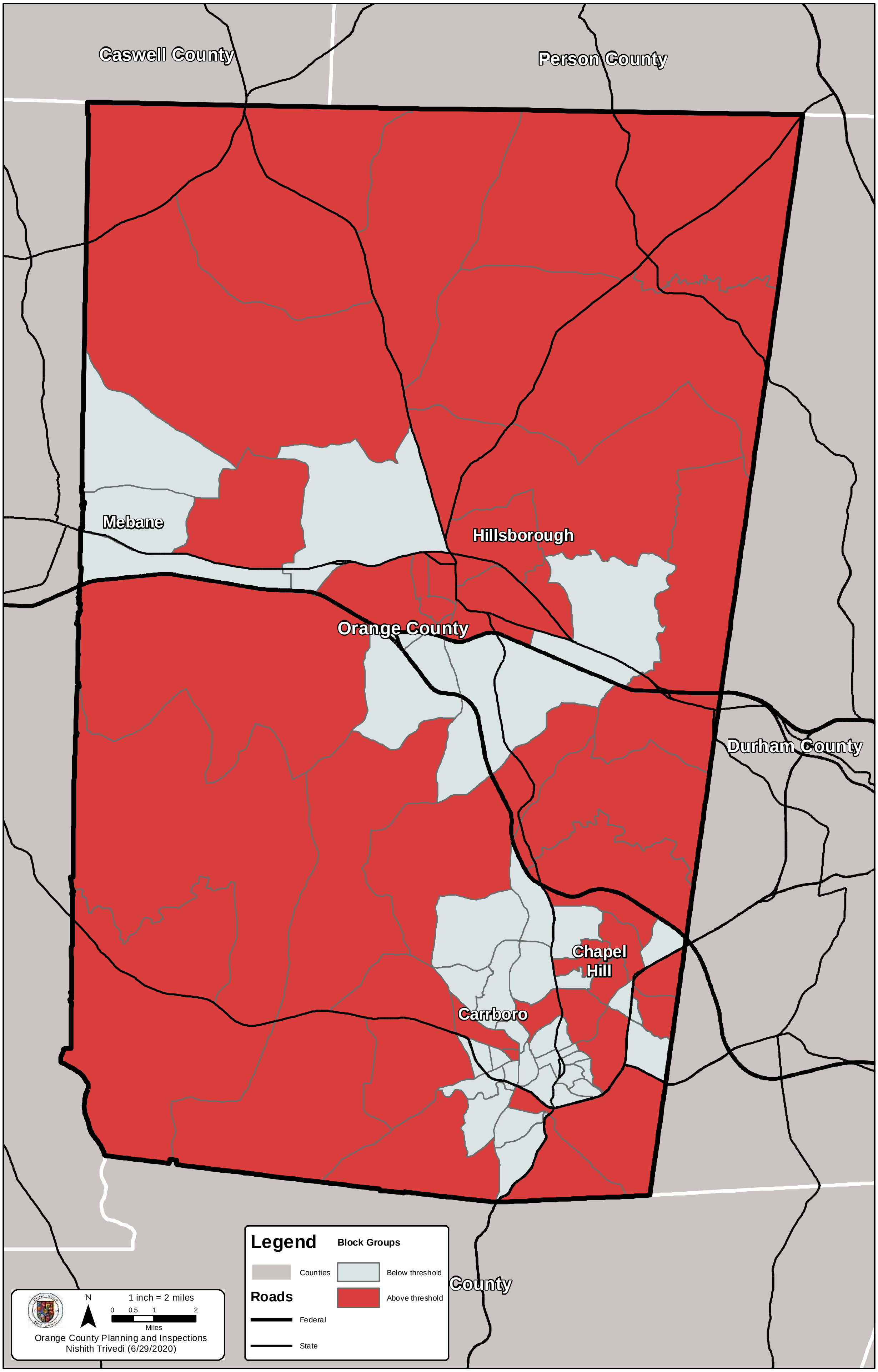
Environmental Justice - County Level Analysis - Hispanic/Latino



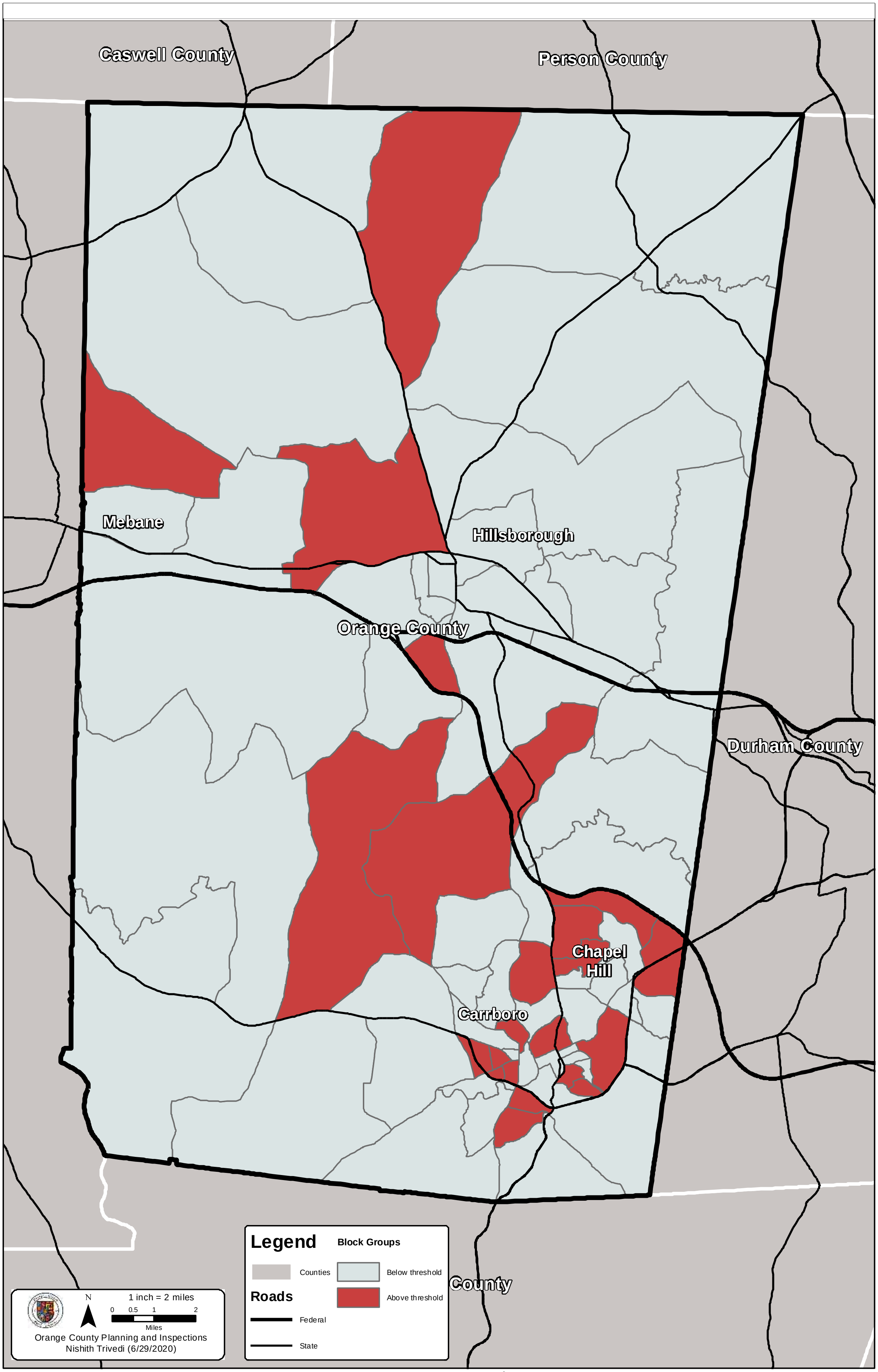
Environmental Justice - County Level Analysis - Below Poverty



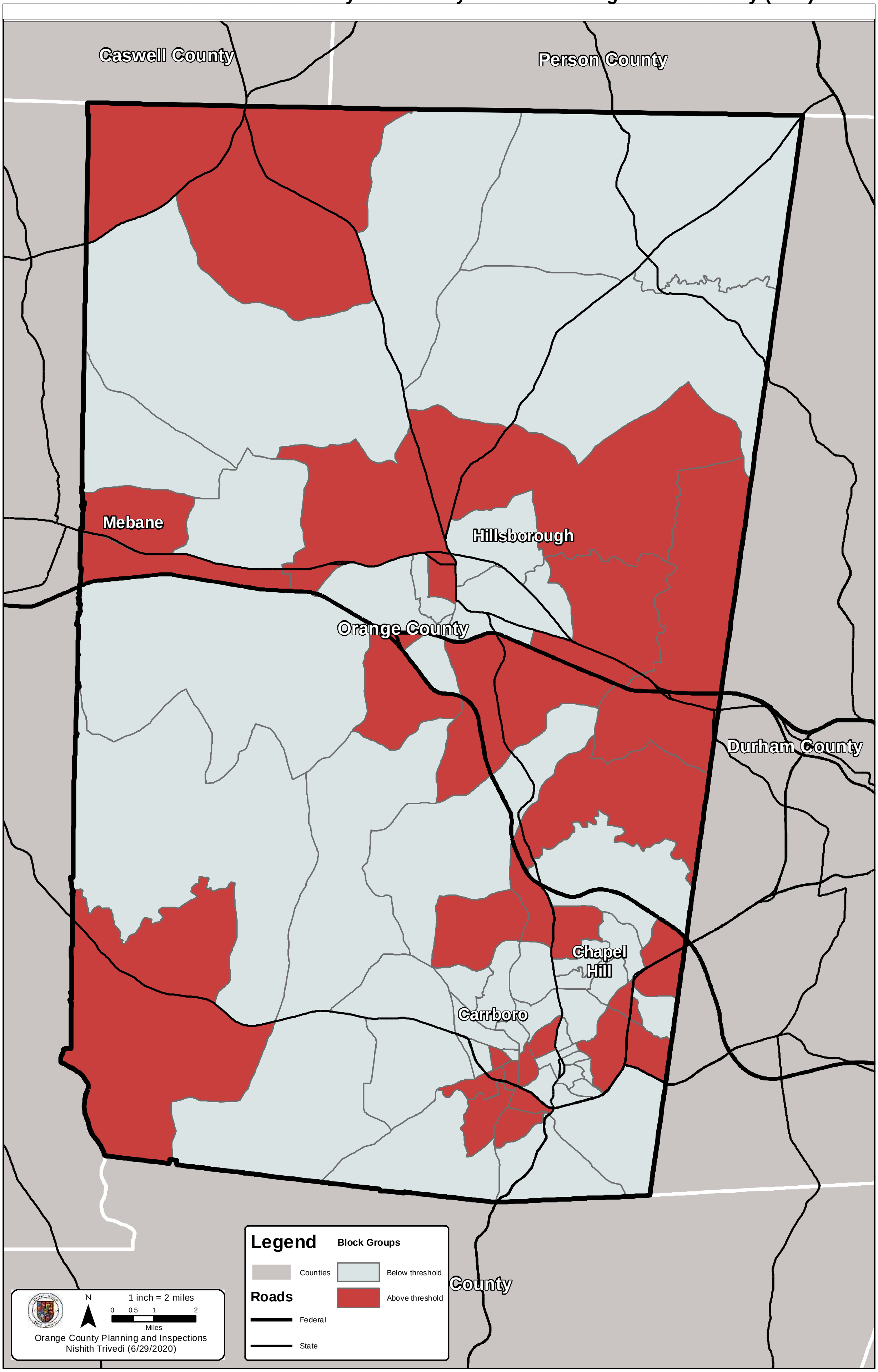
Environmental Justice - County Level Analysis - Elderly



Environmental Justice - County Level Analysis - Zero Car Household



Environmental Justice - County Level Analysis - Limited English Proficiency (LEP)



RESOLUTION ADOPTING THE 2020 ENVIRONMENTAL JUSTICE REPORT FOR THE DURHAM-CHAPEL HILL-CARRBORO METROPOLITAN PLANNING ORGANIZATION

September 9, 2020

A motion was made by MPO Board Member ______________________ and seconded by MPO Board Member ______________________ for the adoption of the following resolution, and upon being put to a vote, was duly adopted.

WHEREAS, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) is the designated regional transportation-planning agency for the DCHC urbanized area; and

WHEREAS, the DCHC MPO Board has found that the MPO is conducting transportation planning in a continuous, cooperative, and comprehensive (3-C) manner in accordance with 23 U.S.C. 134 and 49 U.S.C. 1607; and

WHEREAS, federal regulations require MPOs to address Environmental Justice (EJ) and Title VI of the Civil Rights Act in the planning process; and

WHEREAS, Title VI of the Civil Rights Act of 1964 mandates, "No person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance;" and

WHEREAS, it is the policy of the DCHC MPO to ensure that no person shall, on the ground of race, color, sex, age, national origin, or disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity as provided by Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, and other related non-discrimination Civil Rights laws and authorities; and

WHEREAS, historically, low-income and racial minority communities have been shown to carry undue burdens of the transportation system and face inequities in the planning process; and

WHEREAS, Limited English Proficiency individuals, low-income, and racial minorities often face difficulties participating in the planning process; and

WHEREAS, the *2020 Environmental Justice Report for the DCHC MPO* is consistent with and furthers the goals and objectives of the DCHC MPO's 2045 Metropolitan Transportation Plan (MTP); and

WHEREAS, the *2020 Environmental Justice Report for the DCHC MPO* continues a process to analyze the present and future transportation needs of EJ populations; and

WHEREAS, the *2020 Environmental Justice Report for the DCHC MPO* provides recommendations to increase participation in the 3-C planning process and enhance the mobility and equity of EJ and non-EJ populations in the DCHC MPO area.

NOW, THEREFORE BE IT RESOLVED that the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization Board does hereby adopt the *2020 Environmental Justice Report for the DCHC MPO* on this, the 9th day of September, 2020.

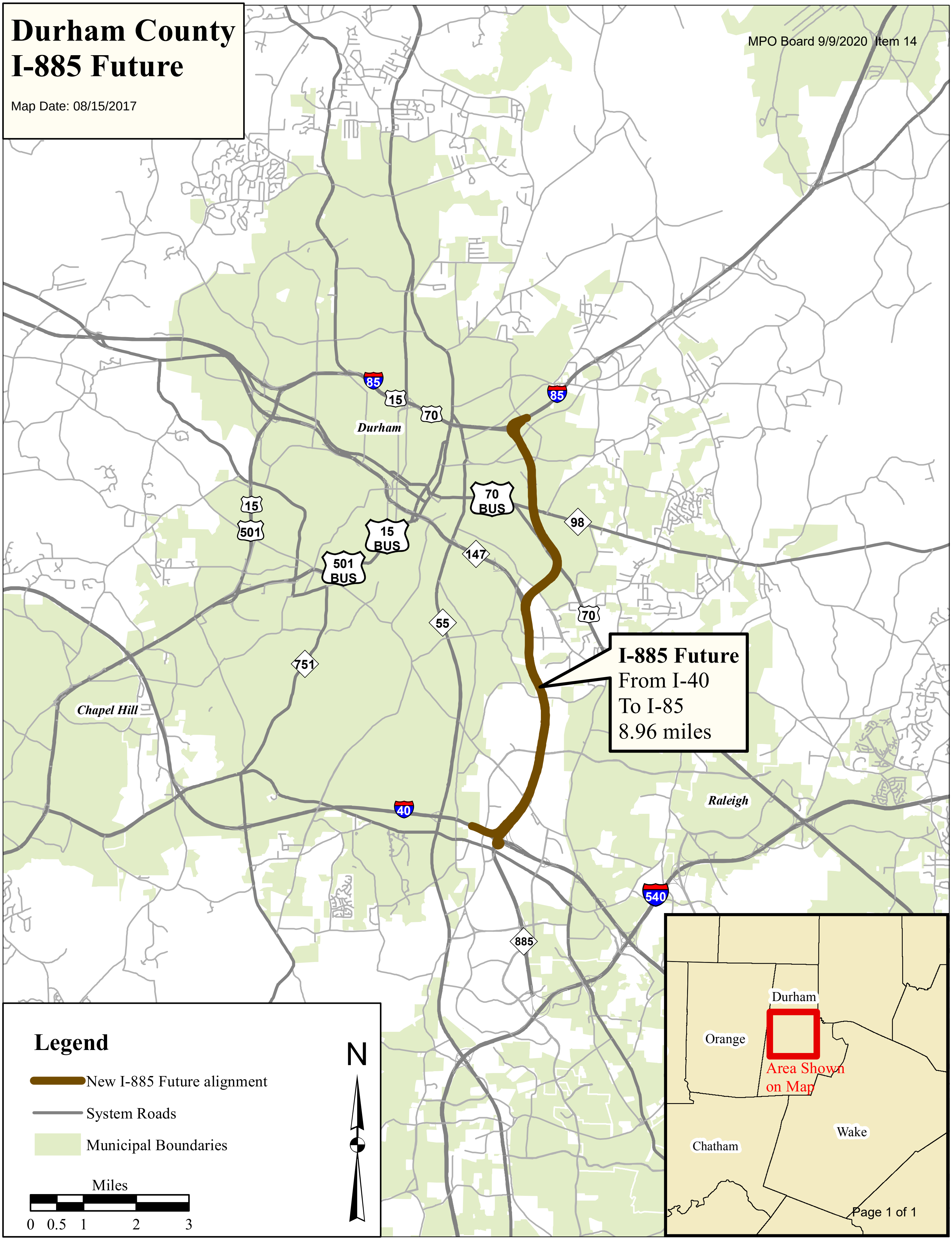
____
Wendy Jacobs, MPO Board Chair

Durham County, North Carolina

I certify that Wendy Jacobs personally appeared before me this day acknowledging to me that she signed the forgoing document.

Date: September 9, 2020

____
Frederick Brian Rhodes, Notary Public
My commission expires: May 10, 2025


Durham County
I-885 Future
Map Date: 08/15/2017
MPO Board 9/9/2020 Item 14
Durham
Chapel Hill
Raleigh
85
15
70
70 BUS
98
15
501
15 BUS
501 BUS
147
70
55
751
40
540
885
I-885 Future
From I-40
To I-85
8.96 miles
Legend
New I-885 Future alignment
System Roads
Municipal Boundaries
Miles
0 0.5 1 2 3
N
Durham
Orange
Area Shown on Map
Wake
Chatham
Page 1 of 1

RESOLUTION TO APPROVE THE ROUTING OF I-885 AND REMOVE NC 147 DESIGNATION FROM I-40 TO THE EAST END CONNECTOR INTERCHANGE UNDER THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION TIP PROJECT U-0071

September 9, 2020

A motion was made by______________________ and seconded by ______________________ for adoption of the following resolution, and upon being put to a vote was duly adopted.

WHEREAS, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) Board is the duly recognized transportation decision-making body for the DCHC MPO, as required by 23 CFR Part 134; and

WHEREAS, the DCHC MPO 2045 Metropolitan Transportation Plan (MTP) and the FY 2020-2029 Transportation Improvement Program (TIP) meet the planning requirements of 23 CFR Part 134; and

WHEREAS, TIP project U-0071 will establish I-885 from I-40 to I-85 in Durham County; and

WHEREAS, NC 147 currently runs along a section of the I-885 project from I-40 to the new East End Connector interchange and NCDOT proposes to remove the NC 147 designation along this section and establish it as I-885; and

WHEREAS, NC 147 will remain from the new East End Connector interchange westward to I-85; and

WHEREAS, future improvements to this highway, including U-5934, need to ensure cost-effective transit accommodations that would not require costly solutions to meet any new interstate-standard clearances -- including but not limited to dedicated transit/HOV/HOT lanes;

BE IT THEREFORE RESOLVED that the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization approves the routing of I-885 and the removal of NC 147 designation from I-40 to the new East End Connector interchange, as approved by the Board on this, the 9th day of September, 2020.

____

Wendy Jacobs, MPO Board Chair

Durham County, North Carolina

I certify that Wendy Jacobs personally appeared before me this day acknowledging to me that she signed the forgoing document.

Date: September 9, 2020

____

Frederick Brian Rhodes, Notary Public
My commission expires: May 10, 2025

MEMORANDUM OF AGREEMENT

THIS MEMORANDUM OF AGREEMENT, is made by and between the DURHAM-CHAPEL HILL-CARRBORO METROPOLITAN PLANNING ORGANIZATION (hereinafter, "MPO"), the NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (hereinafter, "NCDOT"), the NORTH CAROLINA DEPARTMENT OF ENVIRONMENTAL QUALITY (hereinafter, "NCDEQ"), the UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (hereinafter, "USEPA"), the FEDERAL HIGHWAY ADMINISTRATION (hereinafter, "FHWA"), the FEDERAL TRANSIT ADMINISTRATION (hereinafter, "FTA"), and collectively referred to hereinafter as the Parties.

RECITALS

WHEREAS, the Parties enter into this Memorandum of Agreement (hereinafter, "MOA" or "Agreement") for the purpose of implementing interagency consultation procedures for developing a State Implementation Plan (hereinafter, "SIP") and/or revisions, regional emissions budget comparisons and conformity determinations of Metropolitan Transportation Plans (hereinafter, "MTP"), Metropolitan Transportation Improvement Programs (hereinafter, "TIPs"), and Regionally Significant Projects (hereinafter, "RSP");

WHEREAS, the Parties enter into this Agreement in accordance with Section 176(c)(4)(E) of the Clean Air Act (hereinafter, "CAA"), as amended (42 USC 7401 et seq.) with respect to the conformity of MTPs, TIPs and FHWA/FTA projects, which are developed, funded or approved by the United States Department of Transportation (hereinafter, "USDOT") and by the MPO or other recipients of funds under Title 23 USC, or the Federal Transit Act (49 USC Chapter 53), and Title 15A North Carolina Administrative Code (hereinafter, "NCAC"), Subchapter 02D, Section .2000, relating to nonattainment and maintenance areas;

WHEREAS, the MPO desires to comply with the aforementioned federal laws and regulations and parallel state and local laws and regulations by preparing, modifying and evaluating MTPs and TIPs (which may include RSPs) in accordance with the SIP and in order to preserve the integrity of the SIP;

WHEREAS, NCDOT desires to comply with the aforementioned federal laws and regulations and parallel state and local laws and regulations by assisting the MPO in its conformity determination in accordance with the State Transportation Plan and State Transportation Improvement Program (hereinafter, "STIP") and in order to preserve the integrity of the SIP;

WHEREAS, NCDEQ desires to assist the MPO in its compliance with the aforementioned federal requirements and must enforce applicable state environmental laws and regulations regarding air quality;

WHEREAS, USEPA desires to effectively enforce the relevant federal laws and regulations regarding air quality and compliance with SIP requirements;

WHEREAS, FHWA desires to effectively enforce and administer the relevant aforementioned federal laws and regulations regarding metropolitan and statewide transportation planning and transportation conformity;

WHEREAS, FTA desires to effectively enforce and administer the relevant aforementioned federal laws and regulations regarding metropolitan and statewide transportation planning and transportation conformity; and

WHEREAS, the Parties wish to work together to perform the duties imposed upon them by law and to coordinate among themselves for efficient and thorough planning for air quality in the geographic area included within the MPO.

THEREFORE, in consideration of these conditions and for good and valuable consideration and the benefits flowing to the Parties from each other, the receipt of which is hereby acknowledged, and in further consideration of the mutual covenants, terms, conditions, and restrictions hereinafter set forth, the Parties hereby agree as follows:

PURPOSE

The purpose of this MOA is to satisfy the requirement in CAA Section 176(c)(4)(E) to create a state conformity SIP containing the following three requirements of the Federal Transportation Conformity Rule, 40 CFR Part 93, Subpart A: (1) 40 CFR 93.105, which addresses consultation procedures; (2) 40 CFR 93.122(a)(4)(ii), which states that conformity SIPs must require written commitments to control measures to be obtained prior to a conformity determination if the control measures are not included in an MPO's transportation plan and TIP, and that such commitments be fulfilled; and (3) 40 CFR 93.125(c), which states that conformity SIPs must require written commitments to mitigation measures to be obtained prior to a project-level conformity determination, and that project sponsors comply with such commitments.

1.0 <u>DEFINITIONS</u>

1.1 "Conformity" -- refers to the status of transportation plans, programs and projects within a region designated as nonattainment or maintenance for transportation-related pollutants, as to whether they comply with air emission levels and standards required by existing state and/or federal implementation plans for that region.

1.2 "Consultation" -- means when one Party confers with another identified Party, prior to any final decision, provides all information necessary to that Party needed for meaningful input, and considers and responds to the views of that Party in a timely and written manner.

1.3 "Interagency Consultation Conformity Determination Meeting" -- refers to a meeting called by the MPO or its designee and open to all Parties, designed to establish agreed upon procedures, protocols, and schedules for conducting a conformity analysis and determination.

1.4 "Metropolitan Transportation Plan" (MTP) -- means the official multimodal transportation plan addressing no less than a 20-year planning horizon that the MPO develops, adopts, and updates through the metropolitan transportation process.

1.5 "Transportation Improvement Program" (TIP) -- means a prioritized listing/program of transportation projects that are developed and formally adopted by the MPO as part of the metropolitan planning process, consistent with the MTP pursuant to 23 CFR, Part 450, and required for projects to be eligible for funding pursuant to Title 23 USC and 49 USC Chapter 53.

1.6 "State Implementation Plan" (SIP) -- means documents, including, but not limited to, State adopted regulations, attainment demonstrations, and maintenance plans, submitted by North Carolina to, and approved by, the USEPA, or the most recent revision thereof, in accordance with Sections 110, 301(d), and 175(A) of the CAA (42 USC 7410, 7601, and 7505(a)) and regulations promulgated by USEPA pursuant to the provisions of those Sections.

1.7 "Statewide Interagency Consultation Meetings" (SICM) -- refers to regularly scheduled informational meetings, sponsored by NCDEQ to which all Parties are invited, including all MPOs and Regional Planning Organizations throughout the State, which are required to have air quality conformity determinations pursuant to Title 15A NCAC Subchapter 02D, Section .2000.

1.8 "Statewide Transportation Improvement Program" (STIP) -- means a statewide prioritized listing/program of transportation projects that is consistent with the long-range statewide transportation plan, the MTP, TIPs, and required for projects to be eligible for funding pursuant to Title 23 USC and Title 49 USC Chapter 53.

1.9 "Timely" -- means within the timeframe agreed to in the schedule set at the Interagency Consultation Conformity Determination Meeting(s).

1.10 "Transportation Providers" -- means public agencies that provide transportation services to the public, these agencies are publicly owned and operated.

1.11 "Parties" -- means representatives from all signatory agencies to this Agreement.

1.12 "Transportation Control Measures" (TCMs) -- are strategies that are specifically identified and committed to in SIPs; and are either listed in Section 108 of the CAA, or will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.

1.13 All other terms used herein but not defined in this Agreement shall have the meaning given to them by the CAA, Title 23 and 49 USC 40 CFR 93.101, other USEPA regulations, other USDOT regulations, or 15A NCAC 02D.

2.0 DUTIES OF THE PARTIES

The roles and responsibilities of each Party are defined below:

2.0.1 Each Party member shall determine which staff members will represent the Party in the conformity process and shall take responsibility to see that the appropriate representatives are available to ensure a cooperative process and adequate communication among the Parties. Each Party shall choose its representative(s) and at least one alternate staff person for interagency consultation and provide their names and contact information to NCDEQ. It is the responsibility of each Party to notify NCDEQ of changes in their appointed designee(s) or contact(s).

2.0.2 All Parties shall review and provide comments to the MPO on draft MTPs, TIPs, and conformity analyses. All Parties shall review and provide comments to NCDEQ on draft SIP submissions. All Parties shall review and provide comments to NCDOT and/or local project sponsors on project-level conformity determination prepared during the National Environmental Policy Act (NEPA) process for FHWA/FTA projects located in the MPO jurisdiction. Parties shall provide their written review comments, if any, to these agencies within twenty-one (21) days of receipt of draft documents unless an alternate deadline has been agreed upon at an interagency consultation meeting. The MPO, NCDEQ, or NCDOT, as appropriate, shall respond in writing to all Parties to explain how comments were addressed or why they were not addressed in the subsequent version of the document that is distributed to all Parties.

2.1 MPO DUTIES

2.1.1 The MPO, or its designee, shall sponsor the Interagency Consultation Conformity Determination Meetings and prepare meeting agendas and meeting materials required for fulfillment of consultation procedures outlined in this Agreement. Any adjacent MPO will be invited to this meeting for purposes of coordination and consultation.

2.1.2 The MPO, or its designee, shall prepare meeting summaries and conclusions of said Interagency Consultation Conformity Determination Meetings and other appropriate meetings it sponsors. The MPO, or its designee, shall provide meeting summaries and conclusions to all Parties within a timely manner not to exceed fourteen (14) days after the meeting. The other Parties may provide comments on meeting summaries/conclusions to the MPO within a timely manner not to exceed fourteen (14) days, copying other Parties. The MPO, or its designee, shall respond to comments from Parties in writing in a timely manner not to exceed fourteen (14) days of receiving comments. The MPO's response to comments shall be distributed to all Parties.

2.1.3 The MPO shall consult with the Parties on the development process for MTPs, TIPs, and amendments thereto. This process will begin no later than one year prior to when the conformity determination is needed.

2.1.4 Notification of the MTP and TIP revisions and amendments that add or delete non-exempt projects.

2.1.5 Before the MPO conducts conformity analyses and determinations, as initiated under the terms and conditions of this Agreement, the MPO, or its designee, shall initiate and facilitate an Interagency Consultation Conformity Determination Meeting with all Parties on proposed procedures and protocol for conducting and performing conformity analysis prior to making a conformity determination. This meeting will take place preferably one year prior to, but no less than 9 months before the determination is needed.

2.1.6 The MPO, NCDOT, or its designee, shall conduct project-level conformity analysis for MPO-sponsored projects as part of the NEPA process for FHWA/FTA projects located in the MPO boundary. The MPO does not have to make project-level conformity determinations.

2.1.7 The MPO, or its designee, shall provide information requested by other Parties to track the implementation of TCMs funded by the MPO, or local municipalities, and included in the SIP by the dates agreed to in the Interagency Consultation Conformity Determination Meeting.

2.1.8 The MPO shall be responsible for development and maintenance of the travel demand model for the MPO area in consultation with the Parties. The MPO may delegate such responsibility to a third party through an agreement with NCDOT and/or neighboring MPOs and associated transportation agencies to develop a regional travel demand model. Any Party delegating responsibility to a third party shall notify the third party, in writing, that all documentation is subject to the applicable public records law. Responsibility for development and maintenance of a regional travel demand model should be established through a separate memorandum of agreement between the affected MPOs, NCDOT, and associated transportation agencies.

2.1.9 Upon written request by the Parties, the MPO, or its designee, shall provide all Parties with available travel data needed to determine various transportation emissions budgets, if they are responsible for this data.

2.1.10 The MPO, or its designee, shall assist NCDEQ and NCDOT as needed for modifications or revisions to the SIP, which includes the assessment of effectiveness of existing TCMs and implementation of potential TCMs for inclusion in the SIP, and providing critical input to the SIP development process, such as vehicle miles traveled (VMT) and speed assumptions for various road classifications.

2.1.11 The MPO, or its designee, shall submit concurrently, upon completion, a draft and/or final MTP and/or TIP document and related conformity determination to the NCDOT, NCDEQ, and FHWA. FHWA will coordinate the federal review effort and will forward the documents to FTA and USEPA unless an alternate coordination process is specified through interagency consultation. The MPO shall respond in writing to comments made by the other Parties on draft documents.

2.1.12 The MPO shall maintain procedures for public involvement in the conformity determination process consistent with its adopted Public Involvement Procedures including receiving and responding to public input on conformity findings, consistent with 23 CFR 450.316(a) and 40 CFR 93.105(e).

2.1.13 The MPO, or its designee, shall submit a written request for emissions modeling results required for conformity determinations to NCDEQ or its designee, and shall provide vehicle speed, VMT, and other data necessary to generate the emissions modeling results.

2.1.14 Enforceability of design concept and scope and project-level mitigation and control measures.

2.1.14.1 Prior to making a conformity determination on the MTP and/or TIP, the MPO will ensure any project-level mitigation or control measures are included in the project design concept and scope and are appropriately identified in the regional emissions analysis used in the conformity analysis.

2.1.14.2 The MPO shall fulfill commitments made for mitigation measures that were required for facilitating positive conformity determinations.

2.1.14.3 Written commitments to mitigation measures must be obtained prior to a positive conformity determination, and project sponsors and/or operators must comply with the agreed upon commitment obligations (in accordance with 40 CFR 93.122(a)(4)(ii)).

2.2 NCDEQ DUTIES

2.2.1 NCDEQ shall maintain a list of current interagency consultation members and distribute it to all members whenever a change in membership occurs.

2.2.2 NCDEQ shall participate in the Interagency Consultation Conformity Determination Meetings, sponsor the SICM meeting, and other appropriate committees/meetings established to advise the Parties on SIP and emissions control strategies and programs particularly as these relate to transportation issues.

2.2.3 NCDEQ shall participate in consultations with the Parties regarding the development process for MTPs, TIPs, and amendments thereto.

2.2.4 NCDEQ shall participate in the development and review of transportation system and emissions modeling activities and projection procedures to ensure consistency of air quality and transportation system evaluations.

2.2.5 NCDEQ shall ensure the SIP is developed using appropriate emissions and control measures. NCDEQ is to develop the applicable motor vehicle emissions budgets in consultation with the Parties to ensure that accurate and up-to-date data assumptions are being used at the initial phases of the development of the SIP by the deadline established by NCDEQ during the consultation process. NCDEQ shall update the SIP consistent with federal CAA requirements.

2.2.6 NCDEQ shall provide applicable transportation-related emission budgets and revisions to the NCDOT, MPO, and USDOT (FHWA and FTA).

2.2.7 NCDEQ shall keep the Parties apprised of its SIP revision submittals and USEPA's approval thereof and provide for and respond in writing to comments made by the MPO and NCDOT and the other Parties in transportation-related SIP development processes.

2.2.8 NCDEQ shall obtain MPO and NCDOT approval for the inclusion of transportation-related TCMs (for any TCM funded by the federal and state transportation budgets or local funds and where the implementing agency is the MPO) in the SIP.

2.2.9 NCDEQ shall provide a list of TCMs included in the SIP as well as their SIP implementation schedules at the Interagency Consultation Conformity Determination Meeting.

2.2.10 Upon initiating a modification or revision to the SIP, NCDEQ shall consult with NCDOT and the MPO, which will include the assessment of effectiveness of existing TCMs and implementation of potential TCMs for inclusion in the SIP. Additionally, NCDEQ will consult with NCDOT and the MPO about what critical transportation-related inputs for the SIP development process should be used, such as VMT and speed assumptions for various road classifications. A draft version of the SIP will be shared with the Parties, at a minimum, thirty (30) days prior to the end of the public comment period.

2.2.11 NCDEQ shall consult and review project narratives provided by NCDOT or appropriate project sponsor to determine if the project is an air quality concern pursuant to 40 CFR, Part 93.

2.2.12 NCDEQ at the written request of NCDOT or the MPO, shall provide appropriate emissions modeling results to NCDOT or the MPO for completion of the conformity analysis. NCDEQ shall provide a schedule for completion of work within two (2) business days of the written request. NCDEQ shall consult with NCDOT and/or the MPO for the availability and appropriate use of local data in the latest USEPA-approved emissions model.

2.2.13 NCDEQ shall review and provide comments to the MPO on draft conformity analyses. NCDEQ shall provide timely review comments to the MPO within twenty-one (21) days of receipt for inclusion in the final report in accordance with the terms and conditions of this Agreement.

2.3 NCDOT DUTIES

2.3.1 NCDOT shall participate in the SICM, Interagency Consultation Conformity Determination Meeting(s), and other appropriate committees/meetings established to discuss with the Parties on the development of a revised statewide transportation plan, including programs and projects.

2.3.2 NCDOT shall consult with the Parties to develop the STIP and amendments thereto. Furthermore, NCDOT shall keep the Parties apprised of the status and content of statewide transportation plans and the STIP.

2.3.3 NCDOT shall consult with the Parties to develop MTPs, TIPs, and amendments thereto by the dates agreed to in the Interagency Consultation Conformity Determination Meeting.

2.3.4 NCDOT shall participate in the development and review of transportation system emissions modeling activities and projection procedures to ensure consistency of air quality and transportation system evaluations.

2.3.5 NCDOT shall review and provide comments to the MPO on draft conformity analyses by the dates agreed upon in the Interagency Consultation Conformity Determination Meeting unless NCDOT has authored said conformity analysis report.

2.3.6 NCDOT shall also provide information requested by other Parties to track the implementation of TCMs included in the SIP by the dates agreed to in the Interagency Consultation Conformity Determination Meeting.

2.3.7 NCDOT shall assist NCDEQ and the MPOs as needed for modifications or revisions to the SIP, which will include the assessment of effectiveness of existing TCMs and implementation of potential TCMs for inclusion in the SIP.

2.3.8 NCDOT shall conduct project level conformity analysis for NCDOT sponsored projects as part of the NEPA process for FHWA/FTA projects located in the MPO boundary.

2.3.9 Enforceability of design concept and scope and project-level mitigation and control measures.

2.3.9.1 The NCDOT shall obtain written commitments from the project sponsor and/or operator to fulfill and complete all of the projects and operations identified by the project-level NEPA mitigation or control measures with respect to local hot-spot analysis.

2.3.9.2 The NCDOT shall fulfill commitments made for mitigation measures that were required for facilitating positive conformity determinations.

2.3.9.3 Written commitments to mitigation measures must be obtained prior to a positive conformity determination, and project sponsors and/or operators must comply with the agreed upon commitment obligations.

2.4 FHWA and FTA (USDOT) DUTIES

2.4.1 FHWA and FTA shall consult with the Parties regarding the SICM, the Interagency Consultation Conformity Determination Meetings, and other appropriate committees/meetings established to advise the Parties on the development of transportation plans, programs, and projects, particularly as these relate to air quality-related issues.

2.4.2 FHWA and FTA shall advise the Parties of changes to USDOT technical, regulatory, and policy guidance as it relates to the planning process and conformity.

2.4.3 FHWA and FTA shall assist NCDEQ, NCDOT, and the MPOs as needed for modifications or revisions to the SIP, which will include the assessment of effectiveness of existing TCMs and implementation of potential TCMs for inclusion in the SIP.

2.4.4 FHWA and FTA shall assess the MPO's compliance with public participation policy and procedures that meet the requirements of 23 CFR 450.316(a) and 40 CFR 93.105(e).

2.4.5 FHWA and FTA shall provide written comments to the other Parties concerning both draft and final conformity findings in accordance with the terms of this Agreement. The final conformity finding made by FHWA shall be consistent with the requirements of the national conformity memorandum of understanding.

2.4.6 FHWA shall review and provide timely approval or rejection, in writing, of the final conformity determination report by the MPO of an amended and/or adopted transportation plan, program, or project subject to conformity analysis and determination according to this Agreement by the dates agreed to in the Interagency Consultation Conformity Determination Meetings.

2.4.7 The FHWA will coordinate the federal review effort and will forward copies of the draft or final MTP and/or TIP document and related conformity determination to the FTA and USEPA unless an alternate coordination process is specified through interagency consultation.

2.4.8 In accordance with 40 CFR 93.125(c), prior to making a project-level conformity determination for a transportation project, FHWA must obtain from the project sponsor and/or operator written commitments, as defined in 40 CFR 93.101, to implement any project-level mitigation or control measures in the construction or operation of the project identified as conditions for NEPA process completion. The written commitments to implement those project-level mitigation or control measures must be fulfilled by the appropriate entities.

2.4.9 FHWA shall be responsible for final approval or rejection of project-level conformity determinations on FHWA projects.

2.5 USEPA DUTIES

2.5.1 USEPA shall participate in the SICM, the Interagency Consultation Conformity Determination Meetings, and other appropriate committees/meetings established to advise the Parties on the development of transportation plans, programs, and projects, particularly as these relate to air quality-related issues.

2.5.2 USEPA shall, in a timely fashion, advise the Parties of changes to USEPA policy, regulation, and guidance related to air quality and conformity.

2.5.3 USEPA shall review and comment, in writing to FHWA and the MPO, on draft and final conformity analyses in accordance with the terms of this Agreement and consistent with the requirements of the national conformity memorandum of understanding within twenty-one (21) days of receipt.

2.5.4 USEPA shall assist NCDEQ, NCDOT, and the MPOs as needed for modifications or revisions to the SIP, which will include the assessment of effectiveness of existing TCMs and implementation of potential TCMs for inclusion in the SIP.

2.5.5 USEPA shall review the adequacy of the motor vehicle emissions budgets, and determine the approvability determination of submitted SIPs, including the Conformity SIP (the subject of this MOA) and any subsequent revisions, and of control strategy SIPs and any revisions. USEPA's determination of approvability shall be published in the Federal Register.

2.5.6 USEPA shall be consulted with and will review compliance for hotspot requirements related to individual FHWA/FTA projects and provide comment in writing.

3.0 CONTENT AND SUBMISSION OF TRANSPORTATION PLANS, PROGRAMS, AND PROJECTS

3.1 CONTENT AND DESIGN

The MTP/TIP, programs, and/or projects to be analyzed for conformity shall meet the requirements of the current federal transportation authorizing legislation, and the most current USDOT and USEPA regulations. At the time that a new or revised transportation plan is proposed, the MPO, in cooperation with NCDOT and local transportation planning agencies, shall prepare a list of new or modified transportation projects and services included in the transportation plan and identify the time frame each new project or service is expected to become operational.

3.2 PUBLIC PARTICIPATION

Conformity determinations for MTP and TIPs shall follow the specific public involvement process established by the MPO, consistent with the requirements of 23 CFR, Part 450, which provides opportunity for public review and comment prior to formal action on a conformity determination. The public review must provide reasonable public access to technical and policy information considered by the affected parties in making the conformity determination.

Conformity determinations in rural portions of nonattainment and maintenance areas outside and adjacent to the MPO boundaries shall follow the specific public involvement process established by NCDOT, consistent with the requirements of 23 CFR, Part 450, which provides opportunity for public review and comment prior to formal action to update the STIP.

Any charges imposed for public review and copying should be consistent with applicable fee schedules including but not limited to 49 CFR 7.43 and North Carolina General Statute 132-6.2.

4.0 STATEWIDE INTERAGENCY CONSULTATION MEETINGS

NCDEQ shall sponsor a SICM meeting on a regular basis for the purpose of keeping all Parties and all MPOs abreast of new information concerning transportation planning generally and as it relates to conformity analysis and determination.

4.1 MEETING FREQUENCY

SICM shall be held monthly unless otherwise agreed upon by all Parties. Meeting dates shall be determined by NCDEQ after consultation with the Parties. The meeting shall consist of updates and other pertinent information provided by each Party.

4.2 SPECIAL MEETINGS

If NCDEQ determines, in consultation with other Parties, a need for an unscheduled SICM meeting and there is a consensus among the Parties to have an unscheduled meeting, NCDEQ must provide prior notice to all Parties, at least fourteen (14) days in advance of the meeting. However, the Parties may waive the fourteen (14) day advance notice requirement if all Parties agree that an earlier scheduled meeting is in the best interest of the Parties.

4.3 MEETING LOCATION AND AGENDA

The SICM meeting location shall be determined based upon convenience and agreement by the Parties. NCDEQ shall provide all Parties, including all Statewide MPOs, advanced notice of the meeting time, location, and agenda. If necessary and convenient, the SICM meeting need not be a face-to-face meeting but may occur by telephone, video, or some other practical electronic means.

4.4 DISCUSSION OF SIP-RELATED ISSUES

NCDEQ shall use the SICM meeting as an opportunity to update the Parties on SIPs under development and SIP revisions submitted to USEPA. NCDEQ shall allow the Parties to review and comment on transportation-related SIP issues and respond to said comments. See Section 2.0.2 for the general process for commenting and responding to comments.

5.0 <u>INITIATING CONFORMITY DETERMINATIONS OR ANALYSIS</u>

The Parties shall make conformity determinations and consultations consistent with this Agreement and in accordance with the conditions described in 40 CFR, Part 93 for MTPs, TIPs, and FHWA/FTA projects.

5.1 EXEMPTIONS TO CONFORMITY DETERMINATIONS

5.1.1 <u>Notification of Exempt Status Required</u> --The MPO shall notify the Parties of adoption or approval of projects determined to be exempt by the MPO and provide a basis for such exempt status. Notification by the MPO shall also be made when the MTP or TIP is revised to add or delete exempt projects as defined in 40 CFR 93.126, 93.127, and 93.128. Notification of deleted projects does not have to be made prior to an MPO action.

5.1.2 <u>Objection to Exempt Determination</u> -- If the Parties disagree with the MPO's finding that the amendment to the MTP or TIP contains only exempt projects, the objecting Party shall notify all Parties in writing. See Section 9.0 for conflict resolution procedures.

6.0 INTERAGENCY CONSULTATION CONFORMITY DETERMINATION MEETING

When the need for conformity analysis and determination is initiated in accordance with this Agreement and aforementioned regulations, the MPO, or its designee, shall call an Interagency Consultation Conformity Determination Meeting to which all Parties of this Agreement shall be invited by the MPO, or its designee. The Interagency Consultation Conformity Determination Meeting shall be held prior to performing any conformity analysis or determination and shall address the specific processes outlined in 40 CFR 93.105(c). The purpose is to coordinate early with the Parties on information regarding the choice of some major parameters of the conformity analysis and to determine the schedule of preparation and review of the analysis. All of the information agreed upon by the Parties will be documented in the pre-analysis plan. If during the meeting a conflict arises, the Parties shall follow the conflict resolution procedures as outlined in Section 9.0 of this document.

6.1 NOTICE OF MEETING

The MPO, or its designee, shall provide at least fourteen (14) days prior written notice to the Parties that an Interagency Consultation Conformity Determination Meeting has been scheduled. Said prior notice shall also be given to local transportation providers represented by the MPO. However, the Parties may waive the fourteen (14) day advance notice requirement if all Parties agree that an earlier scheduled meeting is in the best interest of the Parties.

6.2 MEETING PLACE, TIME AND AGENDA

The meeting shall be scheduled at a time and location that allows representatives from the Parties to participate. The MPO, or its designee, shall distribute to the Parties draft agenda and meeting materials at least five (5) business days prior to the meeting. The Parties shall have the opportunity to add agenda items and will be responsible for presenting them. If it is agreed among the Parties that additional meetings are required the MPO, or its designee, may schedule such additional meetings.

Attendance at the Interagency Consultation Conformity Determination Meeting may be by telephone or teleconference so long as all the Parties agree. If some Parties are unable to attend the Interagency Consultation Conformity Determination Meeting(s), the MPO or its designee shall consider whether meaningful consensus can be reached with the available Parties. If the MPO or its designee determines the overall Party representation to be adequate, it shall document the meeting and provide all Parties with a summary of the important discussions and conclusions.

6.3 CONSULTATION ON CONFORMITY ANALYSIS APPROACH

The MPO, or its designee, shall outline, in the pre-analysis plan, the proposed methodologies to be used in the conformity analysis and share the pre-analysis plan with the Parties for comment at least seven (7) days prior to the meeting unless otherwise agreed upon by all Parties.

6.3.1 Interagency Consultation Procedures -- The issues listed in 40 CFR 93.105(c) shall be reviewed and discussed at this meeting, including but not limited to, the following activities:

6.3.1.1 Evaluating and choosing an appropriate model (or models) and associated methods and assumptions to be used in hot-spot analyses and regional emissions analyses;

6.3.1.2 Determining which minor arterial and other transportation projects should be considered RSPs for the purpose of regional emissions analysis, (in addition to those functionally classified as principal arterials or higher or fixed guideway systems or extensions that offer an alternative to regional highway travel);

6.3.1.3 Evaluating whether projects otherwise exempted from meeting the requirements of 40 CFR 93.126 and 93.127 should be treated as non-exempt in cases where potential adverse emissions impacts may exist;

6.3.1.4 Discussing whether or not adopted TCMs are on schedule and performing as anticipated, as required by 40 CFR 93.113. If TCMs are not on schedule, Parties shall discuss whether 40 CFR 93.113(c)(1) can be met and what will occur if 40 CFR 93.113(c)(1) cannot be met;

6.3.1.5 Choosing conformity tests and methodologies for areas outside the MPO boundary but within the nonattainment or maintenance area as required by 93.109(g)(2)(iii);

6.3.1.6 Consulting on emissions analysis for transportation activities which cross MPO, nonattainment area, or air basin boundaries;

6.3.1.7 For the metropolitan planning area that does not include the entire nonattainment or maintenance area, the MPO and NCDOT will work to provide cooperative planning and analysis for the purposes of determining conformity of all projects outside the metropolitan area and within the nonattainment or maintenance area through interagency consultation meetings;

6.3.1.8 Ensuring that plans for construction of RSPs, that are not FHWA/FTA projects, are disclosed to the MPO on a regular basis and any changes to those plans disclosed in writing to the MPO;

6.3.1.9 NCDOT and the MPO, or its designee, will consult on the design, schedule and funding of research and data collection efforts and regional transportation model development through interagency consultation meetings;

6.3.1.10 As defined in Section 2.1.10, the MPO, or its designee will provide final documents and supporting information to each applicable Party after adoption or approval;

6.3.1.11 Latest planning assumptions for developing emissions modeling results for the conformity analysis;

6.3.1.12 Projects without a determined design concept and scope shall be discussed at the Interagency Consultation Conformity Determination Meeting; and

6.3.1.13 Parties must agree on sufficient details of the design concept and scope for the project to be included in the conformity analysis and determination.

6.3.2 <u>TCM Analysis and Implementation</u> -- The Interagency Consultation Conformity Determination Meeting shall be used for assuring implementation of TCMs, which shall be a joint responsibility of NCDEQ, the MPO, and NCDOT. NCDEQ shall submit (at the Interagency Consultation Conformity Determination Meeting) a list of the TCMs and their implementation schedules included in the applicable SIP, to be included in the MTP or TIP.

6.3.3 <u>Scheduling Implementation</u> -- The MPO or its designee shall provide a list of transportation system elements from the most recent conforming MTP for inclusion in the current TIP to be completed in the time frame established in the MTP. NCDEQ or its designee (at the request of the MPO) shall provide the emissions modeling results to the MPO within a time agreed upon during the interagency consultations and to allow the MPO sufficient time to complete the conformity analysis on schedule. Additional meetings to address schedule changes or modifications shall be scheduled as needed. Due to the difficulty in assembling all Parties at one time, subsequent meetings may involve various subsets of the larger group. However, pertinent information discussed in these sub-meetings shall be shared with the other Parties as defined in Section 2.1.2.

6.3.4 TIP Conformity Analysis and Determination -- The MPO shall also discuss the TIP as it relates to conformity-related issues. If the TIP is a subset of a currently conforming MTP, the discussion of the TIP conformity analysis and determination may be made via e-mail or postal mail unless a Party member identifies sufficient reasons for including such discussions in a scheduled face-to-face meeting. If e-mail or postal mail is used, the MPO shall outline the manner in which the upcoming TIP conformity determination is to be carried out. The MPO shall inform the Parties of any proposed changes in procedure from the last TIP Conformity Analysis and Determination. The review and commenting procedures are outlined in Section 2.0.2.

7.0 CONFORMITY ANALYSIS RESULTS AND REPORTING

The draft conformity analysis report shall be circulated to the Parties defined during the Interagency Consultation Conformity Determination Meeting for their review prior to releasing said draft report for public review as required by Title 15A NCAC 02D .2003. After the Parties' twenty-one (21) day review period, or review period agreed upon by all Parties, the MPO shall provide public review and comments of the draft report in accordance with the MPO's public participation policies and procedures. The MPO shall not make a conformity determination or plan adoption or approval until after the agency review is completed or the required review period has ended and after public participation.

7.1 DOCUMENTATION OF CONFORMITY ANALYSIS

The conformity analysis shall document all assumptions and relevant information used to determine the impact of the MTP, TIP, or FHWA/FTA project on travel and emissions in the region.

Contents of the Regional Conformity Analysis Report --The conformity analysis report shall include, but not be limited to, the following documentation:

7.1.1 Forecasts of population, households, and employment in the analysis shall be either mentioned or referenced in report;

7.1.2 Mobile model inputs and outputs used to develop road network emissions modeling results; and

7.1.3 VMT and average speed for each federal functional classification.

7.2 COMMENTS BY THE PARTIES AND THE PUBLIC

The Parties may comment upon the analysis results after receiving the results of the draft conformity analysis and report. The results shall also be made available to the public for review and comment in accordance with the MPO's public participation policy and procedures and 23 CFR 450.316(a) and 40 CFR 93.105(e).

7.2.1 Evaluation of Comments from the Public -- After the completion of the public comment period, the comments received from the public on the conformity analysis shall be addressed in the final report and may be raised in an additional meeting between the Parties. Comments may be addressed individually or in summary form at the discretion of the MPO.

7.2.2 Evaluation of Comments from the Parties -- If the Parties disagree with the conclusions of the analysis, the MPO shall convene a meeting or consult with the Parties via an electronic communication means (telephone, teleconference, e-mail, etc.) if agreed to by the Parties, to consider and discuss the comments and determine whether further conformity-related analysis is needed.

8.0 CONFORMITY DETERMINATION ADOPTED BY MPO RESOLUTION

The MPO may make a conformity determination and approval/adoption of the MTP, TIP, RSP, or applicable transit project after addressing conformity-related objections and concerns raised by both the public and the Parties.

8.1 NOTIFICATION OF MPO RESOLUTION

The MPO shall provide FHWA and NCDOT with written notification of a conformity determination by MPO resolution within the time period agreed upon during interagency consultation meetings. The MPO shall include, along with the notification, a copy of the final conformity analysis and report. FHWA will be responsible for distribution of the final conformity analysis and report to the USEPA and FTA for formal review.

8.2 NCDEQ OBJECTION TO CONFORMITY DETERMINATION

If NCDEQ objects to the MPO's conformity determination, NCDEQ may appeal the MPO determination within fourteen (14) days of receiving notification of the MPO's determination. The appeal process and procedure to be followed shall be in accordance with the Conflict Resolution Section of this Agreement. Notwithstanding NCDEQ's right of appeal, NCDEQ may waive its right to object, in writing, at any time during the fourteen (14) day appeal period.

8.3 USDOT REJECTION OF CONFORMITY DETERMINATION

USDOT may reject the MPO determination within forty-five (45) days of receiving notification of the MPO's determination. The MPO may appeal the rejection to the Secretary of the USDOT. If no written approval or rejection has been received from USDOT after forty-five (45) days, the Secretary of NCDOT, the Chairperson of the MPO or the Secretary of NCDEQ may provide a written request of review by the Secretary of the USDOT seeking a resolution among the FHWA and FTA. The rejection of conformity determination and appeal procedure and process shall be in accordance with the Conflict Resolution Section of this Agreement.

9.0 <u>CONFLICT RESOLUTION</u>

The purpose of this Agreement is to ensure that necessary conformity analyses and determinations are made efficiently and with limited conflict. The Parties believe this Agreement establishes a means and protocol for consultation and document review that will avoid conflicts and disagreements among the Parties regarding final conformity determinations. Nevertheless, a means must be established to address the possibility that certain conflicts may arise that cannot be resolved among the designated representatives of the Parties. It is the purpose of this Section to address such situations.

9.1 RESOLUTION OF CONFLICTS AT THE STATE LEVEL

9.1.1 <u>Conflicts Arising Prior to Conformity Determination</u> -- Any conflict or disagreement between NCDOT, NCDEQ, and the MPO causing a lack of consensus among the state Parties as to acceptance of MPO conformity analysis may be resolved in the manner described below. If NCDOT or NCDEQ objects to the proposed conformity analysis prior to the MPO making a conformity determination by resolution, the issue may be resolved by the following procedure:

9.1.1.1 **Level I Resolution** -- After the objecting Party gives five (5) days written notice to the other Party members explaining the reasons for objection, each staff level Party member shall forward written objections to the Level I Resolution Negotiators who are defined as follows:
NCDOT-- the Transportation Planning Division Director
NCDEQ -- the Division of Air Quality Director
MPO -- the Chair of Technical Coordinating Committee or his or her designee.

The Level I Resolution negotiators shall have five (5) business days, from notice, to resolve the matter by mutually agreed upon meeting forum, including, but not limited to, face-to-face meetings, telephone, and e-mail.

9.1.1.2 **Level II Resolution** -If the Level I Resolution Negotiators are unable to resolve the dispute, it may be raised to Level II Resolution negotiators who are defined as follows:
NCDOT -- The Secretary of the NCDOT
NCDEQ -- The Secretary of NCDEQ
MPO -- the Chair of the MPO or his/her designee.

The Level II Resolution Negotiators shall have ten (10) business days to resolve the matter by mutually agreed upon meeting forum, including, but not limited to face-to-face meetings, telephone, and e-mail.

9.1.2 Conflicts Arising After MPO Regional Conformity Determination -- After the MPO has made its conformity determination by resolution and adoption/approval, NCDEQ may appeal said conformity determination by resolution and adoption/approval to the Governor of North Carolina within fourteen (14) days of confirmation that NCDEQ received notice. If NCDEQ appeals to the Governor, the final conformity analysis and determination must have the concurrence of the Governor of North Carolina. NCDEQ shall provide written notice of appeal under this Subsection to the Chairperson of the MPO, the Secretary of NCDOT, the FHWA North Carolina Division Administrator, and the USEPA and FTA Region 4 Administrators. Notwithstanding NCDEQ's right of appeal, if NCDEQ supports the final conformity determination, NCDEQ may voluntarily waive its right of appeal, in writing.

9.1.2.1 **Resolution of NCDEQ Appeal** --The Governor may delegate his or her role in this appeals process to another official or agency within the State, but not to the head or staff of NCDEQ, NCDOT, MPO, the North Carolina Board of Transportation, or any agency that has responsibility for any one of these functions.

If the NCDEQ does not appeal to the Governor within fourteen (14) days of the MPO's notification of conformity on the MTP or TIP, the MPO may continue submission of its conformity determination to USDOT for their final review and conformity determination. The MPO does not have to make conformity determinations on projects.

9.2 RESOLUTION OF CONFLICTS AT THE FEDERAL LEVEL

It is the affirmative responsibility of FHWA and FTA to raise issues prior to the end of any agreed upon review period. If FHWA or FTA determines there is a significant issue, it is that agency's affirmative responsibility to arrange a meeting with the Parties to resolve the issue prior to writing negative comments or finding that the MTP or TIP in question does not conform to the intent of the SIP.

If, after the fourteen (14) day prior notice of the MPO's final conformity determination by resolution and approval/adoption, NCDEQ has not appealed said final conformity determination (or waived it's right to appeal earlier), FHWA and FTA may provide written approval or rejection of the final conformity determination within forty-five (45) days of notice of the final conformity determination.

9.2.1 Consensus Among Federal Agencies -- If, within the forty-five (45) day period the FHWA and FTA are in disagreement over the approval or rejection of the conformity determination, the FHWA and FTA may escalate the conflict among their respective agencies in an attempt to resolve the issue within the forty-five (45) days' time period.

9.2.2 Rejection by the Federal Agencies -- If the FHWA and FTA reject the conformity determination, the MPO, NCDOT, or NCDEQ may appeal said rejection to the Secretary of USDOT.

9.2.3 No Action after Forty-Five (45) Days -- If after forty-five (45) days, no written approval or rejection has been provided from FHWA and FTA, the Secretary of NCDOT, the Chairperson of the MPO, or the Secretary of NCDEQ may provide a written request of review by the Secretary of the USDOT seeking a resolution among the FHWA and FTA.

10.0 MODIFICATIONS OF AGREEMENT

10.1 The Parties may propose revision(s) to this MOA, and request that Parties meet to consider such a revision. A change in duties will require this MOA to be reviewed.

10.2 The NCDEQ may make administrative amendments if necessary to preserve the accuracy and integrity of this MOA. The following administrative amendments shall not require the Parties to sign a new MOA:

10.2.1 Change information that is readily available to the public, such as when an organization or position is renamed;

10.2.2 Correct a citation to a referenced law or regulation when the citation has become inaccurate because of the repeal or reorganization of the cited text; or

10.2.3 Correct a typographical error.

If an administrative amendment is made, documentation of the change shall be submitted to each of the Parties. If no Party provides objections to the revision within twenty-one (21) days of receipt, the revised Agreement shall be adopted as final.

If a Party provides objections to the administrative amendment within twenty-one (21) days of receipt, the NCDEQ shall attempt to resolve the issue. If consensus cannot be obtained by the Parties, the revised Agreement shall not be adopted as final.

11.0 SAVINGS PROVISIONS AND OTHER

11.1 This MOA does not change any of the requirements and obligations contained in any existing law or regulation, including but not limited to CAA, transportation conformity regulations (40 CFR, Parts 51 and 93), NEPA, or 15A NCAC. In the event of conflict between the provisions of this Agreement and an existing regulatory provision, the regulatory provision shall prevail.

11.2 Upon its execution by the Parties this MOA supersedes any and all previous Agreements between the signatories with respect to matters addressed herein.

11.3 This MOA does not create any, nor does it affect any existing, administrative or judicial right of the Parties.

11.4 If any provision of this MOA is rendered or declared invalid by any final court action or decree, or by reason of preemptive legislation, the remaining Sections of this MOA shall remain in full force and effect for the duration of the MOA.

11.5 Unless otherwise specified, in computing any period of time prescribed or allowed in this MOA, Rule 6 "Time" of the North Carolina Rules of Civil Procedure shall apply.

IN WITNESS WHEREOF, the parties have executed this AGREEMENT on this the __________________ day of __________________, 2020.

MPO

By: ______________________________

Name: ______________________________

Title: ______________________________

IN WITNESS WHEREOF, the parties have executed this AGREEMENT on this the _________________ day of _________________, 2020.

NCDOT

By: _______________________________

Name: _______________________________

Title: _______________________________

IN WITNESS WHEREOF, the parties have executed this AGREEMENT on this the __________________ day of __________________, 2020.

NCDEQ

By: __________________________________

Name: __________________________________

Title: __________________________________

IN WITNESS WHEREOF, the parties have executed this AGREEMENT on this the _________________ day of _________________, 2020.

USEPA

By: ________________________________

Name: ________________________________

Title: ________________________________

IN WITNESS WHEREOF, the parties have executed this AGREEMENT on this the _________________ day of _________________, 2020.

FHWA

By: ________________________________

Name: ________________________________

Title: ________________________________

IN WITNESS WHEREOF, the parties have executed this AGREEMENT on this the _________________ day of _________________, 2020.

FTA

By: _______________________________

Name: _______________________________

Title: _______________________________

Air Quality Memorandum of Agreement (MOA)

Summary of Changes (September 2020)

In accordance with Clean Air Act (CAA) Section 176(c), the DEQ chose through rulemaking in 15A NCAC 02D .2005, *Memorandum of Agreement,* to develop transportation conformity Memorandum of Agreements (MOAs) to ensure that interagency consultation procedures for transportation conformity are followed in each of the State's maintenance areas pursuant to 40 Code of Federal Regulations (CFR) 93.105. The MOA outlines the responsibilities and processes that each signatory entity will follow to ensure that transportation plans conform to the emissions budgets set forth in North Carolina's State Implementation Plan (SIP). The existing MOAs were approved by the United States Environmental Protection Agency (EPA) into the SIP effective February 24, 2014 (78 FR 78266). Once the EPA approved the MOAs into the SIP, the MOAs remain in effect until the State revises the MOAs and EPA approves the revisions into the SIP. The DEQ initiated the process for renewing the MOA to fulfill the duties outlined in Section 10.1 of the existing MOA.

Below is a summary of the revisions made to all MOAs during this renewal cycle:

1. Updated the DEQs name;
2. Updated cross-references and definitions;
3. Revised "Long Range Transportation Plan" to "Metropolitan Transportation Plan";
4. Revised "emissions factors" to "emissions modeling results";
5. Updated the inputs needed to generate emissions modeling results;
6. Revised conformity determination timelines concurrent with current practices;
7. Added a duty to conduct project-level conformity analyses as a part of the National Environmental Policy Act process for MPO-sponsored federal projects. The introduced language originated from Section 2.1.6 of the Capital Area MOA and should have been incorporated into the MPOs duties for all other MOAs during the last revision cycle. Project-level conformity is required for all areas that are nonattainment/maintenance; however, the language was inserted to reduce the likelihood that a MOA would need to be revised in the unlikely event that the attainment status for the carbon monoxide (CO) or particulate matter (PM) National Ambient Air Quality Standards (NAAQS) changes. However, if the attainment status changes, the project sponsor would be responsible for conducting a hot-spot analysis (i.e. modeling runs) for these pollutants. As of now, no action is needed for this MOA provision since all areas of the State are attaining the CO and PM NAAQS.
8. Removed the term "particulate matter" under the DEQs duties for determining whether a project is an air quality concern since the MOA incorporates 40 CFR, Part 93, by reference and for the fact that 15A NCAC 02D .2000, *Transportation Conformity,* specifies the specific provisions to follow for particulates;
9. Added language in the "Modifications of Agreement" Section allowing the DEQ to make administrative amendments; and
10. Removed the "Termination and Renewal" Section to reduce the administrative burden for renewing the MOAs with each Party and completing a formal SIP revision on a cyclical basis.

The EPA designated the Triangle area "attainment" with the 1997 8-hour ozone NAAQS on December 26, 2007. The area will remain under a maintenance plan through December 26, 2027. Currently, the MPO is required to complete "short form" conformity for the 1997 8-hour ozone NAAQS. The TJCOG has coordinated the conformity process for the Triangle region over the last decade. In addition, it is important to have a formal consultation process in place for contingency purposes, should the area be designated for a future NAAQS.

2020 Program of Projects (FFY19 and FFY20 funds) - Section 5310 Grant

Program of Projects: Section 5310 FTA Grant Program **FTA/TrAMS Project ID: 1060-2018-1 (draft ID)**

MPO Approval Date	Subrecipient / Type of Agency	Project Name	Description of the Service / Location of Service	Project Type	Total Cost	Local Share	Federal Share	% Federal	Point of Contact
Total Federal Share Non-Traditional Project: $152,035 (28.7% of Apportioned Federal Share)									
9.9.20	**Chapel Hill Transit** Public Transit	**ADA Bus Stop Review and Design**	The project will review existing busstops in Chapel Hill and Carrboro for compliance with ADA and provide all necessary design work to make stops more accessible for seniors and persons with disabilities. **Location:** Orange County	Operating	$ 40,550	$ 20,275	$ 20,275	50%	Brian Litchfield 919-969-4908 6900 Millhouse Rd, Chapel Hill, NC 27516
9.9.20	**Chapel Hill Transit** Public Transit	**EZ Rider Senior Shuttle**	Chapel Hill Transit (CHT) will provide feeder service to the elderly and disabled population in the Chapel Hill/Carrboro area with the CHT EZ Rider Senior Shuttle service. **Location**: Orange County	Operating	$ 263,520	$ 131,760	$131,760	50%	Brian Litchfield 919-969-4908 6900 Millhouse Rd, Chapel Hill, NC 27516
Total Federal Share Traditional Projects: $334,200 (62.3% of Apportioned Federal Share)									
9.9.20	**GoDurham** Public Transit	**GoDurham ACCESS ADA trips beyond 3/4 mile**	The project will purchase service for passengers who are eligible for ADA services but reside outside the 3/4 mile ADA service area of GoDurham. Location: Durham County	Capital	$ 125,000	$25,000	$100,000	80%	Pierre Osei-Owusu, 919-560-1535, 101 City Hall Plaza, Durham NC, 27701
9.20.20	**Durham County Access** Public Transit	**GO' Durham County Access**	The project will purchase demand-response service for residents of Durham County to destinations for health and health-related, work and personal needs. **Location:** Durham County	Capital	$ 125,000	$25,000	$100,000	80%	Pierre Osei-Owusu, 919-560-1535, 101 City Hall Plaza Durham, NC 27701
9.9.20	**Orange County Dept. on Aging** Local Government Agency	**Orange County STEAMM**	The project will support an aging-related mobility manager responsible for educating older adults about public transportation systems, expand and manage a volunteer driver program, and purchase service from transportation operators to provide better access to community services. **Location:** Orange County	Capital	$ 167,750	$33,550	$134,200	80%	Alison Smith 919-245-4275, 2551 Homestead Rd., Chapel Hill, NC 27516
Admin is 8.1% of Apportioned Federal Share									
9.9.20	**DURHAM MPO** Government	**DCHC MPO-wide Admin.**	Administration of the 5310 program **Location:** Orange, Durham, & Chatham Counties	Admin.	$ 42,915	N/A	$42,915	100%	Felix Nwoko, 919-560-4366, 101 City Hall Plaza, Durham, NC, 27701
				Totals:	$ 764,735	$235,585	**$ 529,150**		

2020 Program of Projects (FFY19 and FFY20 funds) - Section 5310 Grant

MEMORANDUM

To: DCHC MPO Board

From: DCHC MPO Lead Planning Agency

Date: September 9, 2020

Subject: **Lead Planning Agency (LPA) Synopsis of Staff Report**

This memorandum provides a summary status of tasks for major DCHC MPO projects in the Unified Planning Work Program (UPWP).

- Indicates that task is ongoing and not complete.
- ✓ Indicates that task is complete.

Major UPWP – Projects

Comprehensive Transportation Plan (CTP) – Amendment #2

- Release Amendment #2 for public comment – November 2020
- Public hearing for Amendment #2 – December 2020
- Adopt Amendment #2 – January 2021

2050 Metropolitan Transportation Plan (MTP)

- Approve Public Engagement Plan – September 2020
- Approve Goals and Objectives – September 2020
- Approve land use model and Triangle Regional Model for use in 2050 MTP – January 2021
- Release Deficiency Analysis – April 2021
- Release Alternatives Analysis for public comment – June 2021
- Release Preferred Option for public comments – September 2021
- Adopt 2050 MTP and Air Quality Conformity Determination Report – March 2021

Triangle Regional Model Update

- ✓ Completed
- Rolling Household Survey – nearing completion

Prioritization 6.0 - FY 2023-2032 TIP Development

- ✓ LPA Staff develops initial project list – March-April 2019
- ✓ TC reviews initial project list – May 2019
- ✓ Board reviews initial project list (including deletions of previously submitted projects) – June 2019
- ✓ SPOT On!ine opens for entering/amending projects – October 2019
- ✓ MPO submits carryover project deletions and modifications – December 2019
- ✓ Board releases draft SPOT 6 project list for public comment – February 2020
- ✓ Board holds public hearing on new projects for SPOT 6 – March 2020
- ✓ Board approves new projects to be submitted for SPOT 6 – March 2020
- ✓ MPO submits projects to NCDOT – July 2020

- LPA updates local ranking methodology – September 2020
- Board approves local ranking methodology – January 2021
- MPO applies local ranking methodology for Regional projects – Winter 2021
- Board releases MPO initial Regional points list for local input/public comments – March 2021
- Approval of Regional Impact points – April 2021
- MPO applies local ranking methodology for Division projects – Summer 2021
- Board releases MPO initial Division points list for local input/public comments – September 2021
- Approval of Division Needs points – October 2021
- Draft STIP Released – February 2022
- Board of Transportation adopts FY2023-2032 STIP – June 2022
- MPO Board adopts FY2023-2032 MTIP – September 2022

US 15-501 Corridor Study

- ✓ 3rd public workshop: evaluate alternative strategies – October 2019
- Stakeholder meetings to discuss Chapel Hill cross-section, northern quadrant road, New Hope Commons access – completed August 2020
- Board releases final draft for public comment – September 2020
- Board holds public hearing on final draft – October 2020
- MPO Board approval of final plan – November 2020

Regional Intelligent Transportation System

- ✓ Project management plan
- ✓ Development of public involvement strategy and communication plan
- ✓ Conduct stakeholder workshops
- Analysis of existing conditions
- Assessment of need and gaps
- Review existing deployments and evaluate technologies
- Identification of ITS strategies
- Update Triangle Regional Architecture
- Develop Regional Architecture Use and maintenance
- Develop project prioritization methodology
- Prepare Regional ITS Deployment Plan and Recommendation

Project Development/NEPA

- US 70 Freeway Conversion
- NC 54 Widening
- NC 147 Interchange Reconstruction
- I-85
- I-40

Safety Performance Measures Target Setting

- ✓ Data mining and analysis
- ✓ Development of rolling averages and baseline
- ✓ Development of targets setting framework
- ✓ Estimates of achievements
- Forecast of data and measures

MPO Website Update and Maintenance

- ✓ Post Launch Services – Continuous/On-going
- ✓ Interactive GIS – Continuous/On-going
- ✓ Facebook/Twitter management – Continuous/On-going
- ✓ Enhancement of Portals – Continuous/On-going

Upcoming Projects

- Mobility Report Card
- Congestion Management Process (CMP)
- State of Systems Report

Contract Number:	C202581	**Route:**	SR-1838
Division:	5	**County:**	Durham
TIP Number:	EB-4707A		
Length:	0.96 miles	**Federal Aid Number:**	STPDA-0537(2)
NCDOT Contact:	James M. Nordan, PE	**NCDOT Contact No:**	(919)220-4680
Location Description:	SR-1838/SR-2220 FROM US-15/501 IN ORANGE COUNTY TO SR-1113 IN DURHAM COUNTY.		
Contractor Name:	S T WOOTEN CORPORATION		
Contract Amount:	$4,614,460.00		
Work Began:	05/28/2019	**Letting Date:**	04/16/2019
Original Completion Date:	02/15/2021	**Revised Completion Date:**	
Latest Payment Thru:	08/07/2020		
Latest Payment Date:	08/13/2020	**Construction Progress:**	13.88%

Contract Number:	C203394	**Route:**	I-885, NC-147, NC-98 US-70
Division:	5	**County:**	Durham
TIP Number:	U-0071		
Length:	4.009 miles	**Federal Aid Number:**	
NCDOT Contact:	Cameron D. Richards	**NCDOT Contact No:**	(919)835-8200
Location Description:	EAST END CONNECTOR FROM NORTH OF NC-98 TO NC-147 (BUCK DEAN FREEWAY) IN DURHAM.		
Contractor Name:	DRAGADOS USA INC		
Contract Amount:	$141,949,500.00		
Work Began:	02/26/2015	**Letting Date:**	11/18/2014
Original Completion Date:	05/10/2020	**Revised Completion Date:**	12/05/2020
Latest Payment Thru:	08/22/2020		
Latest Payment Date:		**Construction Progress:**	91.69%

Contract Number:	C203567	**Route:**	NC-55
Division:	5	**County:**	Durham
TIP Number:	U-3308		
Length:	1.134 miles	**Federal Aid Number:**	STP-55(20)
NCDOT Contact:	James M. Nordan, PE	**NCDOT Contact No:**	(919)220-4680
Location Description:	NC-55 (ALSTON AVE) FROM NC-147 (BUCK DEAN FREEWAY) TO NORTH OF US-70BUS/NC-98 (HOLLOWAY ST).		
Contractor Name:	ZACHRY CONSTRUCTION CORPORATION		
Contract Amount:	$39,756,916.81		
Work Began:	10/05/2016	**Letting Date:**	07/19/2016
Original Completion Date:	03/30/2020	**Revised Completion Date:**	02/11/2021
Latest Payment Thru:	08/15/2020		
Latest Payment Date:	08/26/2020	**Construction Progress:**	72.4%

Contract Number:	C204211	**Route:**	I-40, I-85, NC-55 NC-98, US-15, US-501 US-70
Division:	5	**County:**	Durham
TIP Number:	U-5968		
Length:	0.163 miles	**Federal Aid Number:**	STBG-0505(084)
NCDOT Contact:	James M. Nordan, PE	**NCDOT Contact No:**	(919)220-4680
Location Description:	CITY OF DURHAM.		
Contractor Name:	BROOKS BERRY HAYNIE & ASSOCIATES, INC.		
Contract Amount:	$19,062,229.77		
Work Began:	02/18/2020	**Letting Date:**	04/16/2019
Original Completion Date:	08/01/2024	**Revised Completion Date:**	04/09/2025
Latest Payment Thru:	07/31/2020		
Latest Payment Date:	08/07/2020	**Construction Progress:**	11.67%

Contract Number:	C204256	**Route:**	NC-98, SR-1800, SR-1809 SR-1811, US-70
Division:	5	**County:**	Durham
TIP Number:			
Length:	15.89 miles	**Federal Aid Number:**	STATE FUNDED
NCDOT Contact:	James M. Nordan, PE	**NCDOT Contact No:**	(919)220-4680
Location Description:	1 SECTION OF US-70, 1 SECTION OF NC-98, AND 3 SECTIONS OF SECONDARY ROADS.		
Contractor Name:	CAROLINA SUNROCK LLC		
Contract Amount:	$3,782,133.02		

Work Began:	03/13/2020	**Letting Date:**	10/16/2018
Original Completion Date:	11/30/2019	**Revised Completion Date:**	07/15/2021
Latest Payment Thru:	07/22/2020		
Latest Payment Date:	08/06/2020	**Construction Progress:**	38.1%

NCDOT DIVISION 5
DURHAM PROJECT LIST_ 5- Year Program
August 2020

Project ID	Description	R/W Acq Beings	Let Type	P Let Date	Let Date	Project Manager	Current Project Status	Shelved Status	Shelved Date	ROW $	CONST $	COMMENTS
17BP.5.R.83	BRIDGE 84 OVER CHUNKY PIE CREEK ON SR 1815		Division POC Let (DPOC)		03/13/30	Lisa Gilchrist						
17BP.5.R.134	BRIDGE 82 OVER LICK CREEK ON SR 1815 (N MINERAL SPRINGS ROAD)		Division POC Let (DPOC)		08/09/28	Lisa Gilchrist						
17BP.5.R.133	BRIDGE 49 OVER ENO RIVER ON SR 1401 (COLE MILL ROAD)		Division POC Let (DPOC)		07/26/28	Lisa Gilchrist						
17BP.5.R.126	BRIDGE 262 OVER A CREEK ON SR 1607 (BAHAMA ROAD)		Division POC Let (DPOC)		03/10/27	Lisa Gilchrist						
17BP.5.R.97	BRIDGE 89 OVER LICK CREEK ON SR 1902		Division POC Let (DPOC)		10/26/22	Lisa Gilchrist						
SM-5705I	Construct Left Turn Lane on US 15/501 Southbound Ramp at US 70 Bus (Hillsborough Road)		Division POC Let (DPOC)		04/27/22	Stephen Davidson					$350,000	Letting delayed due to cash balance shortfall.
SM-5705X	Construct Turn Lanes at Intersection of US 15/501 Northbound and SR 1317 (Morreene Road)		Division POC Let (DPOC)		04/27/22	Stephen Davidson					$550,000	Letting delayed due to cash balance shortfall.
SM-5705AA	Construct Right Turn Lane on US 15/501 Southbound Exit Ramp at SR 1317 (Morreene Road)		Division POC Let (DPOC)		04/27/22	Stephen Davidson					$600,000	Letting delayed due to cash balance shortfall.
U-5774B	NC 54 FROM US 15/US 501 IN ORANGE COUNTY TO SR 1110 (BARBEECHAPEL ROAD) IN DURHAM COUNTY	10/18/24	Raleigh Letting (LET)	06/16/26	10/17/28	PAM R. WILLIAMS				$11,000,000	$30,900,000	
U-5774C	NC 54 FROM SR 1110 (BARBEE CHAPEL ROAD) TO I-40	10/18/24	Raleigh Letting (LET)	06/16/26	10/17/28	PAM R. WILLIAMS				$3,000,000	$23,700,000	
U-5774F	NC 54 FROM I-40/NC 54 INTERCHANGE	10/18/24	Raleigh Letting (LET)	10/20/26	10/17/28	PAM R. WILLIAMS				$54,800,000	$39,300,000	
U-6067	US 15/US 501 DURHAM COUNTY FROM I-40 TO US 15/US 501 BUSINESS IN DURHAM UPGRADE CORRIDOR TO EXPRESSWAY.	02/21/25	Raleigh Letting (LET)	02/16/27	07/18/28	PAM R. WILLIAMS				$55,000,000	$140,300,000	
U-5720A	US 70 (MIAMI BLVD) FROM LYNN ROAD TO SR 1959 (SOUTH MIAMI BOULEVARD/SR 1811 (SHERRON ROAD)	12/15/23	Raleigh Letting (LET)	03/19/24	10/20/26	PAM R. WILLIAMS				$35,800,000	$57,000,000	
U-5720B	US 70 (MIAMI BLVD) AT SR 1959 (SOUTH MIAMI BOULEVARD)/SR 1811 (SHERRON ROAD)INTERSECTION	12/15/23	Raleigh Letting (LET)	03/19/24	10/20/26	PAM R. WILLIAMS				$17,321,000	$25,300,000	
U-5937	NC 147 DURHAM FREEWAY, DURHAM COUNTY FROM SR 1127 (WEST CHAPEL HILL STREET) TO BRIGGS AVENUE IN DURHAM. CONSTRUCT AUXILIARY LANES AND OPERATIONAL IMPROVEMENTS.	10/14/22	Raleigh Letting (LET)	03/21/23	10/20/26	PAM R. WILLIAMS				$10,202,000	$47,001,000	
P-5706	NORFOLK SOUTHERN H LINE, EAST DURHAM RAILROAD SAFETY PROJECT. PROJECT WILL STRAIGHTEN EXISTING RAILROAD CURVATURE BETWEEN CP NELSON AND CP EAST DURHAM AND INCLUES A COMBINATION OFGRADE SEPARATIONS AND CLOSURES AT ELLIS ROAD SOUTH END CROSSING (734737A), GLOVER ROAD (734735L), AND WRENN ROAD (734736	02/28/21	Raleigh Letting (LET)		01/20/26	BRADLEY SMYTHE				$9,000,000	$33,173,000	

Project ID	Description	R/W Acq Beings	Let Type	P Let Date	Let Date	Project Manager	Current Project Status	Shelved Status	Shelved Date	ROW $	CONST $	COMMENTS
I-6006	I-40 DURHAM/WAKE COUNTIES FROM NC 54 (EXIT 273) TO SR 1728 (WADE AVENUE). CONVERT FACILITY TO A MANAGED FREEWAY WITH RAMP METERING AND OTHER ATM / ITS COMPONETS.	01/21/25	Design Build Let (DBL)		01/21/25	PAM R. WILLIAMS				$20,000	$54,530,000	
I-5941	I-85 FROM ORANGE COUNTY LINE TO US 15 /US 501 IN DURHAM PAVEMENT REHABILITATION		Division Design Raleigh Let (DDRL)	12/19/23	12/17/24	CHRISTOPHER A. HOFFMAN					$2,973,000	
I-5942	I-85 /US 15 FROM NORTH OF SR 1827 (MIDLAND TERRACE) IN DURHAM COUNTY TO NORTH OF NC 56 IN GRANVILLE COUNTY PAVEMENT REHABILITATION		Division Design Raleigh Let (DDRL)	12/19/23	12/17/24	CHRISTOPHER A. HOFFMAN					$8,357,000	
B-5674	REPLACE BRIDGE 80 OVER SR 1308 IN DURHAM ON US 15-501 NORTHBOUND	09/16/22	Raleigh Letting (LET)		01/16/24	KEVIN FISCHER				$110,000	$2,209,000	
U-5934	NC 147 FROM I-40 TO FUTURE I-885(EAST END CONNECTOR)IN DURHAM ADD LANES AND REHABILITATE PAVEMENT	10/17/23	Design Build Let (DBL)	02/15/22	10/17/23	PAM R. WILLIAMS				$2,148,000	$177,100,000	
EB-5835	NC 55 (ALSTON AVE.) FROM SR 1171 (RIDDLE RD.) TO CECIL STREET IN DURHAM. CONSTRUCT SIDEWALK ON EAST SIDE TO FILL IN MISSING GAPS.	06/20/22	NON - DOT LET (LAP)		09/20/23	RAYMOND JOSEPH HAYES				$50,000	$525,000	
I-5707	I-40 - FROM NC 55 (ALSTON AVENUE) TO NC 147 (DURHAM FREEWAY/TRIANGLE EXPRESSWAY) IN DURHAM	10/16/20	Raleigh Letting (LET)		06/20/23	PAM R. WILLIAMS				$323,000	$7,600,000	
U-5516	AT US 501 (ROXBORO ROAD) TO SR 1448 (LATTA ROAD) / SR 1639 (INFINITY ROAD) INTERSECTION IN DURHAM. INTERSECTION IMPROVEMENTS.	04/16/21	Division Design Raleigh Let (DDRL)		05/16/23	JOHN W. BRAXTON JR		Shelved at Final Planning Document	09/30/19	$6,501,430	$12,400,000	Project is suspended due to cash balance shortfall.
U-5717	US 15 / US 501 DURHAM CHAPEL-HILL BOULEVARD AND SR 1116 (GARRETT ROAD) CONVERTING THE AT-GRADE INTERSECTION TO AN INTERCHANGE	04/23/19	Division Design Raleigh Let (DDRL)	04/20/21	04/18/23	JOHN W. BRAXTON JR		Shelved at R/W Plans Complete	09/30/19	$53,500,000	$32,000,000	ROW acquisition is suspended due to cash balance shortfall.
U-6021	SR 1118 (FAYETTEVILLE ROAD),FROM WOODCROFT PARKWAY TO BARBEE ROAD IN DURHAM. WIDEN TO 4-LANE DIVIDED FACILITY WITH BICYCLE / PEDESTRIAN ACCOMMODATIONS.	02/19/21	Division Design Raleigh Let (DDRL)		02/21/23	BENJAMIN J. UPSHAW				$5,769,000	$13,770,000	Project planning work was suspended in May.
I-5998	I-540 - DURHAM/WAKE COUNTIES FROM I-40 IN DURHAM TO US 70 IN RALEIGH. PAVEMENT REHABILITATION. COORDINATE WITH I-5999 &I-6000.		Division POC Let (DPOC)		01/25/23	CHRISTOPHER A. HOFFMAN					$3,800,000	
W-5705AM	DURHAM TRAFFIC SIGNAL REVISIONS TO INSTALL "NO TURN ON RED"BLANK OUT SIGNS AT SIX LOCATIONS		Division POC Let (DPOC)		12/07/22	JEREMY WARREN					$62,000	On hold due to cash balance shortfall. (Jeremy Warren is Project Manager)
W-5705S	US 15/501 AT NC 751 SOUTHBOUND ON RAMP - EXTEND RAMP		Division POC Let (DPOC)		09/21/22	STEPHEN REID DAVIDSON		Shelved at Final Planning Document	06/15/20		$460,000	Letting delayed due to cash balance shortfall.
EB-5834	NC 157 / SR 1322 (GUESS RD.) FROM HILLCREST DRIVETO SR 1407(WEST CARVER STREET) IN DURHAM. CONSTRUCT SIDEWALKS ON BOTHSIDES.	06/30/21	NON - DOT LET (LAP)		09/20/22	RAYMOND JOSEPH HAYES				$204,000	$589,000	

Project ID	Description	R/W Acq Beings	Let Type	P Let Date	Let Date	Project Manager	Current Project Status	Shelved Status	Shelved Date	ROW $	CONST $	COMMENTS
EB-5904	DUKE BELT LINE TRAIL - PETTIGREW STREET TO AVONDALE STREET IN DURHAM, CONSTRUCT A MULTI-USE TRAIL ON FORMER RAIL CORRIDOR	09/04/18	NON - DOT LET (LAP)		07/14/22	RAYMOND JOSEPH HAYES				$7,100,000	$3,750,000	
P-5717	NORFOLK SOUTHER H LINE CROSSING 734742W AT SR 1121 (CORNWALLIS ROAD) IN DURHAM. CONSTRUCT GRADE SEPARATION.	09/01/20	Raleigh Letting (LET)		06/21/22	KUMAR TRIVEDI				$4,378,000	$23,100,000	
EB-5703	DURHAM - LASALLE STREET FROM KANGAROO DRIVE TO SPRUNT AVENUE IN DURHAM. CONSTRUCT SIDEWALKS ON BOTH SIDES FROM KANGAROODRIVE TO US 70 BUSINESS (HILLSBOROUGH ROAD) AND ON ONE SIDEFROM HILLSBOROUGH ROAD TO SPRUNT AVENUE.	09/30/19	NON - DOT LET (LAP)		05/31/22	RAYMOND JOSEPH HAYES				$515,000	$1,440,000	
EB-5708	NC 54 FROM NC 55 TO RESEARCH TRIANGLE PARK WESTERN LIMIT INDURHAM CONSTRUCT SECTIONS OF SIDEWALK ON SOUTH SIDE	09/30/19	NON - DOT LET (LAP)		05/30/22	RAYMOND JOSEPH HAYES				$177,000	$491,000	
W-5705T	SR 1815 / SR 1917 (SOUTH MINERAL SPRINGS ROAD) AT SR 1815 (PLEASANT DRIVE)	06/01/20	Division POC Let (DPOC)		04/13/22	STEPHEN REID DAVIDSON				$85,000	$800,000	PE work was suspended in May.
W-5705AI	US 501 BUSINESS (ROXBORO STREET) AT SR 1443 (HORTON ROAD) /SR 1641 (DENFIELD STREET)	01/30/21	Division POC Let (DPOC)		03/23/22	STEPHEN REID DAVIDSON				$210,000	$630,000	Project surveys requested.
I-6000	I-540 - DURHAM/WAKE COUNTIES FROM I-40 IN DURHAM TO US 1 INRALEIGH. BRIDGE PRESERVATION/REHABILITATION. COORDINATE WITH I-5998 & I-5999.		Division POC Let (DPOC)		01/26/22	CHRISTOPHER A. HOFFMAN					$4,541,000	
EB-5715	US 501 BYPASS (NORTH DUKE STREET) FROM MURRAY AVENUE TO US 501 BUSINESS (NORTH ROXBORO ROAD) IN DURHAM CONSTRUCT SIDEWALK ON EAST SIDE TO FILL IN EXISTING GAPS	01/31/20	NON - DOT LET (LAP)		01/21/22	RAYMOND JOSEPH HAYES				$829,000	$2,680,000	
I-5993	I-40 - DURHAM COUNTY FROM US 15/US 501 TO EAST OF NC 147 (COMB W/I-5994).		Division Design Raleigh Let (DDRL)		01/18/22	CHRISTOPHER A. HOFFMAN					$18,000,000	On hold due to cash balance shortfall.
I-5994	I-40 - DURHAM COUNTY FROM US 15/US 501 TO EAST OF NC 147 (COMB W/I-5993).		Division Design Raleigh Let (DDRL)		01/18/22	CHRISTOPHER A. HOFFMAN					$9,100,000	On hold due to cash balance shortfall.
I-5995	I-40 - DURHAM/WAKE COUNTIES FROM EAST OF NC 147 TO SR 3015 (AIRPORT BOULEVARD). PAVEMENT REHABILITATION.		Division Design Raleigh Let (DDRL)		01/18/22	CHRISTOPHER A. HOFFMAN					$5,272,000	
U-4726HN	CONSTRUCT BIKE LANES/SIDEWALKS IN DURHAM - HILLANDALE ROAD	04/30/20	NON - DOT LET (LAP)		10/30/21	RAYMOND JOSEPH HAYES					$2,860,000	
C-4928	SR 1317 (MORREENE ROAD) FROM NEAL ROAD TO SR 1320 (ERWIN ROAD) IN DURHAM. CONSTRUCT BIKE LANES AND SIDEWALKS.	04/30/20	NON - DOT LET (LAP)		09/30/21	RAYMOND JOSEPH HAYES				$7,000	$5,783,000	
EB-5720	BRYANT BRIDGE NORTH/GOOSE CREEK WEST TRAIL, NC 55 TO DREW-GRANBY PARK IN DURHAM. CONSTRUCT SHARED-USE PAHT AND CONNECTING SIDEWALKS.	09/30/20	NON - DOT LET (LAP)		09/30/21	RAYMOND JOSEPH HAYES				$14,000	$4,432,000	

NCDOT DIVISION 5
DURHAM PROJECT LIST_ 5- Year Program
August 2020

Project ID	Description	R/W Acq Beings	Let Type	P Let Date	Let Date	Project Manager	Current Project Status	Shelved Status	Shelved Date	ROW $	CONST $	COMMENTS
U-4724	DURHAM - CORNWALLIS RD (SR 1158) FROM SR 2295 (SOUTH ROXBORO STREET) TO SR 1127 (CHAPEL HILL ROAD) IN DURHAM. BIKE AND PEDESTRIAN FEATURES.	09/30/20	NON - DOT LET (LAP)		09/30/21	RAYMOND JOSEPH HAYES					$4,978,000	
U-4726HO	CARPENTER - FLETCHER ROAD BIKE - PED; CONSTRUCT BIKE LANES / SIDEWALKS (CITY MAINTAINED) FROM WOODCROFT PARKWAY (CITY MAINTAINED) TO ALSTON AVENUE (SR 1945).	03/31/20	NON - DOT LET (LAP)		09/30/21	RAYMOND JOSEPH HAYES					$4,413,816	
U-5823	WOODCROFT PARKWAY EXTENSION. FROM SR 1116 (GARRETT ROAD) TONC 751 (HOPE VALLEY ROAD) IN DURHAM. CONSTRUCT ROADWAY ON NEW ALIGNMENT.	01/27/20	NON - DOT LET (LAP)		08/30/21	RAYMOND JOSEPH HAYES				$421,000	$1,798,000	
EB-5704	DURHAM - RAYNOR STREET FROM NORTH MIAMI BOULEVARD TO NORTH HARDEE STREET	09/16/19	NON - DOT LET (LAP)		06/30/21	RAYMOND JOSEPH HAYES					$510,000	
EB-5837	THIRD FORK CREEK TRAIL FROM SOUTHERN BOUNDARIES PARK TO THEAMERICAN TOBACCO TRAIL IN DURHAM	06/30/20	NON - DOT LET (LAP)		06/30/21	RAYMOND JOSEPH HAYES				$161,000	$2,546,000	
W-5601EM	SR 1118 (FAYETTEVILLE ROAD) AT PILOT STREET AND CECIL STREET IN DURHAM		On Call Contract (OCC)		12/03/20	JEREMY WARREN					$14,000	On hold due to cash balance shortfall.
W-5705M	I-40 WESTBOUND AT NC 147 SAFETY IMPROVEMENTS (MP: 9.359 - 9.359)		On Call Contract (OCC)		10/07/20	JEREMY WARREN					$80,000	On hold due to cash balance shortfall.
C-5605E	DURHAM BIKE LANE STRIPING		NON - DOT LET (LAP)		09/10/20	RAYMOND JOSEPH HAYES					$504,000	
C-5605H	DOWNTOWN DURHAM WAYFINDING PROGRAM TO INSTALL SIGNS & KIOSKS TO FACILITATE NAVIGATION AND PARKING		NON - DOT LET (LAP)		09/10/20	RAYMOND JOSEPH HAYES					$605,000	
C-5605I	NEIGHBORHOOD BIKE ROUTES IN CENTRAL DURHAM		NON - DOT LET (LAP)		09/10/20	RAYMOND JOSEPH HAYES					$540,883	
W-5705U	US 70 BUSINESS (MORGAN STREET) AT CAROLINA THREATRE		On Call Contract (OCC)		09/04/20	JEREMY WARREN					$20,000	On hold due to cash balance shortfall.
W-5705V	NC 54 AT HUNTINGRIDGE ROAD		On Call Contract (OCC)		09/04/20	JEREMY WARREN					$80,000	On hold due to cash balance shortfall.
C-5183B	SR 1945 (S ALSTON AVENUE) FROM SR 1171 (RIDDLE ROAD) TO CAPPS STREET. CONSTRUCT SIDEWALKS IN DURHAM		NON - DOT LET (LAP)		08/18/20	RAYMOND JOSEPH HAYES				$99,000	$706,000	

NCDOT DIV 7 PROJECTS LOCATED IN DCHCMPO - UNDER DEVELOPMENT

TIP/WBS #	Description	LET/Start Date	Completion Date	Cost	Status	Project Lead
W-5707K 48283	Remove and replace existing curb & gutter and sidewalk, add pedestrian signals, concrete island, and signal modifications on SR 1010 (E. Main St / W. Franklin St) from Brewer Ln to Graham St. in **Chapel Hill and Carrboro**	5/31/2019	Jul. 2020	$350,000	Construction - 100% complete, RTE final inspection pending	Chris Smitherman Derek Dixon
SM-5707H 48912.3.1	“To Pass Bicycles, 4 ft Min Clearance or Change Lane” sign installations on portions of no passing zones on SR 1107 (Hillsborough Road) and SR 1104 (Dairyland Road).	Oct. 2019	Jun. 2020	$5,000	Signs installed 10/17/19 - 100% complete, RTE final inspection pending	Dawn McPherson
SS-6007C 48888.1.1 48888.3.1	Guardrail installation on NC 86 just north of SR 1839 (Alexander Drive).	Oct. 2020	Apr. 2021	$50,400	Funds approved 9/5/19 but not released	Chad Reimakoski Derek Dixon
P-5701 46395.1.1 46395.3.1	Construct Platform, Passenger Rail Station Building at Milepost 41.7 Norfolk Southern H-line in **Hillsborough**	6/30/2021	FY2023	$7,200,000	PE funding scheduled 7/1/2020, Coordinate with U-5848	Matthew Simmons
I-3306AB 34178.1.5 34178.2.4 34178.3.8	I-40 widening from NC86 to Durham Co. line (US 15/501 Interchange). Includes a portion of interchange improvements I-3306AC in **Chapel Hill**	3/15/2022	FY2024	$37,635,000	Planning and design activities underway, Environmental document completed 3/21/19 under I-3306A, LET combined with I-3306AC and W-5707C	Laura Sutton
I-3306AC 34178.1.6 34178.2.5 34178.3.9	Interchange improvements at I-40 and NC86 in **Chapel Hill**	3/15/2022	FY2024	$15,200,000	Planning and Design activities underway, Environmental document completed 3/21/19 under I-3306A, LET combined with I-3306AB and W-5707C	Laura Sutton
W-5707C 44853.1.3 44853.3.3 47490	Revise pavement markings and overhead lane use signs for removal of inside lane drop configuration on I-40 Westbound in vicinity of US 15-501 interchange in **Chapel Hill**. Resurfacing I-40 WB by use of contingency funds	3/15/2022	FY2022	$425,000	No bids on most recent letting, LET combined with I-3306AB and AC	Chad Reimakoski
SS-4907CD 47936.1.1 47936.2.1 47936.3.1	Horizontal curve improvements on SR 1710 (Old NC 10) west of SR 1561/SR 1709 (Lawrence Road) east of Hillsborough. Improvements consist of wedging pavement and grading shoulders.	Jun. 2022	Nov. 2022	$261,000	Planning and design activities underway	Chad Reimakoski

NCDOT DIV 7 PROJECTS LOCATED IN DCHCMPO - UNDER DEVELOPMENT

TIP/WBS #	Description	LET/Start Date	Completion Date	Cost	Status	Project Lead
SS-6007E 49115.1.1 49115.3.1	All Way Stop installation and flashing beacon revisions at the intersection of SR 1005 (Old Greensboro Road) and SR 1956 (Crawford Dairy Road/Orange Chapel Clover Garden Road)	Jun. 2022	Sept. 2022	$28,800	Funds approved 3/5/20 but not released	Dawn McPherson
R-5821A 47093.1.2 47093.2.2 47093.3.2	Construct operational improvements including Bicycle/Pedestrian accommodations on NC 54 from SR 1006 (Orange Grove Road) to SR 1107 /SR 1937 (Old Fayetteville Road).	6/21/2022	FY2024	$3,194,000	Planning and design activities underway, coordinating with NC54 West Corridor Study	Chris Smitherman
I-3306AA 34178.1.4 34178.2.3 34178.3.7	I-40 widening from I-85 to NC86 in **Chapel Hill**	3/21/2023	FY2025	$88,000,000	Planning and Design activities underway, Environmental document completed 3/21/19 under I-3306A	Laura Sutton
I-5958 45910.1.1 45910.3.1	Pavement Rehabilitation on I-40/I-85 from West of SR 1114 (Buckhorn Road) to West of SR 1006 (Orange Grove Road)	11/21/2023	FY2025	$7,455,000	Funding approved 10/10/17	Chris Smitherman
U-5845 50235.1.1 50235.2.1 50235.3.1	Widen SR 1009 (South Churton Street) to multi-lanes from I-40 to Eno River in **Hillsborough**	7/16/2024	FY 2027	$39,390,000	Planning and Design activities underway, Coordinate with U-5848 and I-5967	Laura Sutton
I-5967 45917.1.1 45917.2.1 45917.3.1	Interchange improvements at I-85 and SR 1009 (South Churton Street) in **Hillsborough**	10/15/2024	FY2027	$16,900,000	Planning and Design activities underway, Coordinate with I-0305 and U-5845	Laura Sutton
I-5959 45911.1.1 45911.3.1	Pavement Rehabilitation on I-85 from West of SR 1006 (Orange Grove Road) to Durham County line	11/19/2024	FY2026	$11,155,000	Funding approved 10/10/17, Coordinate with I-5967, I-5984 and I-0305	Chris Smitherman
I-5984 47530.1.1 47530.2.1 47530.3.1	Interchange improvements at I-85 and NC 86 in **Hillsborough**	11/18/2025	FY2027	$11,000,000	Planning and Design activities underway, Coordinate with I-0305 and I-5959	Laura Sutton
I-0305 34142.1.2 34142.2.2 34142.3.2	Widening of I-85 from west of SR1006 (Orange Grove Road) in Orange Co. to west of SR 1400 (Sparger Road) in Orange Co.	10/17/2028	FY2032	$132,000,000	Planning and design activities underway, Project reinstated per 2020-2029 STIP (funded project) and delete project I-5983	Laura Sutton

North Carolina Department of Transportation

6/8/2020

Active Projects Under Construction - Orange Co.

Contract Number	TIP Number	Location Description	Contractor Name	Resident Engineer	Contract Bid Amount	Availability Date	Completion Date	Work Start Date	Estimated Completion Date	Progress Schedule Percent	Completion Percent
C202581	EB-4707A	IMPROVEMENTS ON SR-1838/SR-2220 FROM US-15/501 IN ORANGE COUNTY TO SR-1113 IN DURHAM COUNTY. DIVISION 5	S T WOOTEN CORPORATION	Nordan, PE, James M	$4,614,460.00	5/28/2019	2/15/2021	5/28/2019	2/15/2021	0	1.98
C204078	B-4962	REPLACE BRIDGE #46 OVER ENO RIVER ON US-70 BYPASS.	CONTI ENTERPRISES, INC	Howell, Bobby J	$4,863,757.00	5/28/2019	12/28/2021	6/19/2019	12/28/2021	24	26.36
DG00393		RESURFACE FOLLOWING SR'S: SR 1101, SR 1118, SR 1119, SR 1124, SR 1125, SR 1127,SR 1128 SR 1130, SR 1134, SR 1135, SR 1137, SR 1141, SR 1143, ETC.	RILEY PAVING INC	Howell, Bobby J	$1,084,520.40	4/2/2018	10/12/2018	6/18/2018	12/7/2018	100	99.97
DG00435		AST RETREATMENT ON 22 SECONDARY ROADS	WHITEHURST PAVING CO INC	Lorenz, PE, Kris	$846,340.66	4/1/2019	10/11/2019	43977			
DG00445	R-5787BB W-5707A	INSTALLATION OF ADA COMPLIANT CURB RAMPS AT VARIOUS INTERSECTIONS	LITTLE MOUNTAIN BUILDERS OF CATAWBA COUNTY INC	Howell, Bobby J	$319,319.80	6/25/2018	2/15/2020	8/6/2018	2/15/2020	100	92.94
DG00461		REHAB. BRIDGE #031 ON SR 1010 (E. FRANKLIN ST.) OVER BOLIN CREEK & BOLIN CREEK TRAIL	M & J CONSTRUCTION CO OF PINELLAS COUNTY INC	Howell, Bobby J	$2,456,272.12	11/12/2018	7/15/2019	3/15/2019	11/26/2020	73.86	56.95
DG00462		REHAB. BRIDGES 264, 288, 260, 543 IN GUILFORD COUNTY AND BRIDGE 031 IN ORANGE COUNTY	ELITE INDUSTRIAL PAINTING INC	Snell, PE, William H	$967,383.15	8/1/2019	1/1/2020				
DG00478		RESURFACE PORTIONS OF 41 SECONDARY ROADS IN ORANGE COUNTY	CAROLINA SUNROCK LLC	Hayes, PE, Meredith D	$3,270,144.99	7/8/2019	10/30/2020	12/9/2019	10/30/2020	19.8	60.89
DG00483		RESURFACE SR 1010 (MAIN STREET/FRANKLIN STREET) FROM SR 1005 (JONES FERRY ROAD) TO NC 86 (COLUMBIA STREET)	CAROLINA SUNROCK LLC	Howell, Bobby J	$845,631.59	5/18/2019	8/7/2020				
DG00485	U-5846	SR 1772 (GREENSBORO STREET) AT SR 1780 (ESTES DRIVE), CONSTRUCT ROUNDABOUT	FSC II LLC DBA FRED SMITH COMPANY	Howell, Bobby J	$3,375,611.30	5/28/2019	3/1/2022	7/29/2019	6/10/2022	36	33.65

Chatham County - DCHC MPO - Upcoming Projects - Planning & Design, R/W, or not started - Division 8--August 2020								
Contract # or WBS # or TIP #	**Route**	**Description**	**Let Date**	**Completion Date**	**Contractor**	**Project Admin.**	**STIP Project Cost**	**Notes**
U-6192	US 15-501	Add Reduced Conflict Intersections - from US 64 Pitts. Byp to SR 1919 (Smith Level Road) Orange Co.	FY 2027	TBD	TBD	Greg Davis (910) 773-8022	$45,640,000	Right of Way FY 2025
R-5825	NC 751 at SR 1731 (O'Kelly Chapel Road)	Upgrade and Realign Intersection	11/8/2022	TBD	TBD	Greg Davis (910) 773-8022	$759,000	

Airlines say they will resume trans-Atlantic and nonstop California flights from RDU

Herald-Sun By Richard Stradling August 28, 2020

RALEIGH – In a show of optimism about the return of air travel, airlines are planning to restore nonstop flights to Europe and California from Raleigh-Durham International Airport.

American Airlines plans to begin daily nonstops to London's Heathrow Airport sometime before Christmas, according to spokesman Brian Metham.

Meanwhile, Delta Air Lines has announced the resumption of nonstop flights to Paris in April, as part of a broad restoration of flights to Asia and Europe next year. The RDU Paris flights will operate five days a week: Tuesday, Thursday, Friday, Saturday and Sunday, according to spokesman Drake Castañeda.

Delta also plans to resume nonstop service between RDU and Los Angeles International Airport on Oct. 1, operating five days a week: Monday, Thursday, Friday, Saturday and Sunday, Castañeda said.

That same day, United Airlines may begin offering two nonstop flights a day from RDU to San Francisco, according to its website. A company spokeswoman said those dates are tentative, because the company is not setting its schedule until 30 days in advance.

The Los Angeles and San Francisco flights would be the first nonstops from RDU to California since the pandemic began last winter, though not the first to the West Coast. Alaska Airlines has maintained flights between RDU and its hub in Seattle.

Alaska has no plans to restart its nonstop service between RDU and San Francisco, the company said this week. And American has not made a decision about restoring its nonstop flights between RDU and Los Angeles, Metham said.

"We're still evaluating schedules for close-in travel and want to remain flexible to changes in customer demand," he wrote in an email.

Travelers are slowly taking to the skies again after the COVID-19 pandemic decimated the airline business in March and April. The Transportation Security Administration screened twice as many passengers departing RDU the week ending Aug. 10 as it did the entire month of April.

But less than 30% as many people are flying now as did this time last year, and airline schedules reflect that. Before the pandemic, airlines averaged more than 400 flights a day from RDU to 57 nonstop destinations, including 5 outside the country. This month, RDU has had about 79 daily departures to 29 nonstop destinations, all domestic.

American and Delta suspended their European flights from RDU in March, after the federal government began allowing U.S. citizens to return from Europe only through one of 11 major airports where they could be screened for coronavirus. The suspensions were extended because of low demand and continued restrictions on both sides of the Atlantic.

Those restrictions remain in place. People arriving in the United Kingdom from the United States must self-isolate for 14 days and may be contacted to verify compliance, according to the U.S. State Department. And France has barred all non-essential travel from the U.S., and those Americans who do travel to the country must present the results of a negative COVID-19 test carried out less than 72 hours before boarding their flight.

For the latest pandemic-related travel restrictions for countries around the world, go to travel.state.gov/content/travel.html and click on "COVID-19 Travel Information."