US 15-501 Corridor Study

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Transportation Policy and Planning

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Public Engagement Plan for US 15-501 Corridor Study

Goals

The US 15-501 corridor acts as the primary connection between the cities of Durham and Chapel Hill. The corridor has changed significantly over the course of the past few decades, as Durham and Chapel Hill have grown, highways have been added and rerouted, and new development and businesses have lined the corridor. Much of this change has occurred somewhat unrestrained and unguided, bringing with it impacts to communities and stakeholders alongside it and within the region beyond. As the area continues to change and grow, a clear vision and plan are integral to guide the future design and development of the corridor and avoid repeating the mistakes of the past decades.

The primary objective of this public engagement plan is to make sure that public voices are guiding this corridor study process, and that the vision for the corridor and the majority of goals are determined by the public. While the Town of Chapel Hill, the City of Durham, and NCDOT have teams of experts that can complete the technical parts of a corridor study, it is critical that the people most affected by this study and any resulting transportation changes are setting the agenda. An additional goal is that voices are heard from a variety of people representative of the demographics of the area, as equitably as possible. Particular care should be placed in making sure that individuals from historically disenfranchised groups are able to share their opinions throughout this study.

Stakeholders

There are many stakeholders that will be affected by this corridor study. As the planned end result of this study is a change in the design of 15-501, all of these stakeholders will be impacted in some way, positive or negative, and thus need to be engaged in the process to ensure their wants, needs, and concerns are taken into consideration. This list of stakeholders has been simplified some to include the following groups, categorized based on their usage of the corridor:

- "Through traffic;" those that commute/travel between Durham and Chapel Hill on 15-501
- "To traffic;" those that use 15-501 to access the adjacent shopping centers, business parks, lodging, and restaurants
- Nearby residents
- Area businesses being accessed via 15-501
- Transit riders
- Transit providers (mainly GoTriangle, GoDurham, Chapel Hill Transit)
- Pedestrians
- Bicyclists
- The Town of Chapel Hill and the City of Durham

This list comes with the understanding that many if not most individuals will fall into more than one of the above groups.

While not specifically listed as stakeholder groups in the above sense, various communities of concern and other groups considered more vulnerable to negative impacts from such a project would also be strongly taken into consideration, including but not limited to the following:

- Racial/ethnic communities of concern
- Households below the poverty line
- Individuals with disabilities
- Seniors
- Zero-car households and transit-dependent riders
- Non-English speakers

Public Engagement Process

The engagement process has been broken into three phases, as follows:

Table 1. Public Engagement Tools and Techniques by Phase of the Project

Phase	Tools and Techniques	Stakeholders
Project kickoff	Corridor study website, with comment sections, maps, progression timelines; website can be added to as needed. Site would be mobile-friendly and (as generally as possible) try to track what stakeholder types/demographics are responding	All
	Bus survey (would be made available in multiple languages)	Transit riders and transit providers
	Pedestrian and bike survey (would be made available in multiple languages)	Pedestrians, cyclists, transit riders
	Public Visioning Sessions - How do stakeholders envision the future of this corridor	All
	Kickoff community meetings - Agenda can be set mainly by stakeholders. Ideal to have surveys, an "open mic" to express their feelings, and technical experts to explain the study more to those interested in learning more	All
Throughout project	Booths at major shopping centers - to advertise local meetings and to allow a low-stakes environment for people to learn more about the study and to provide feedback	"To traffic," area businesses, transit riders, pedestrians, bicyclists, nearby residents
	Regular community meetings - gives more opportunity for stakeholders to attend meetings. Agenda can be set mainly by stakeholders. Ideal to have the same components listed in the kickoff meeting. Meetings should take place at various locations along the corridor and in different neighborhoods at different times to be accessible to as many people as possible.	All
	Information posters/bulletins on area transit	Pedestrians, cyclists, transit riders
Project completion	Post-study bus survey (would be made available in multiple languages)	Transit riders and transit providers
	Post-study pedestrian and bicyclist survey (would be made available in multiple languages)	Pedestrians, cyclists, transit riders
	Post-study community meeting - have time set aside to complete a survey about the public engagement process, retain "open mic" and technical experts	All

Data Tracking and Evaluation

Throughout this study, our goal is to keep track of the level of engagement. There are many communities of concern within the surrounding area, and all efforts need to be made to give members of those communities a way to engage with this study. Ideally, we would have *at least* one person from each demographic group that makes up the surrounding area. In addition, the process needs to ensure we are receiving adequate feedback and input from all major stakeholder groups involved.

Tracking the locations for the website responses coupled with very brief questions about what stakeholder groups people are responding as part of will help with geospatial analysis of who is responding. Similar methods would be employed for in-person feedback sessions, surveys, and booths (potentially using tactics such as marking on a map neighborhoods where people are from and multiple answer stakeholder lists to track locations and groups being heard from). Optimally, this would also include some demographic tracking on top of geographic tracking and stakeholder categories. However, we do understand that demographics and income can be sensitive information that needs to be handled carefully. In order to do this successfully, we will need closer analysis of examples of successful engagement with communities of concern to ensure that we can make sure we are reaching certain groups without singling them out in a negative way that could decrease willingness to participate.

At various points throughout the process (potentially on roughly a monthly basis after the initial process has sufficiently gotten under way), our team will review data for who we have engaged with and received feedback from based on the tracking that we've done to look for gaps. If there are areas, stakeholder groups, or communities of concern that we have failed to receive adequate input from to that point, additional plans will be put into place to target engaging those groups, even if it delays the project slightly, to ensure reasonably complete feedback.

These additional plans may include meetings in specific areas where little feedback has been received, working with specific community leaders to engage communities that may be less inclined to engage with the NCDOT or other consultants, and targeting days or times where individuals with certain non-9-to-5 work schedules or life schedules would be more able to attend if such gaps emerge. This will especially be taken into consideration for groups that are communities of concern, environmental justice groups, or otherwise disadvantaged (transit-dependent riders, zero-car households, individuals with disabilities) in the current design of the corridor. While all voices should and would matter, special effort will need to be taken to ensure that advantaged voices do not drown out the needs and concerns of groups more vulnerable to impact.

Vision, Goals, and Objectives for US 15-501 Corridor

Vision

Following the visioning session and data collection along US 15-501, several common themes remained apparent throughout the process. These themes can be condensed into four main ideas: safety, multimodality, connectivity, and environment. Based on this, the envisioned 15-501 of the future is one in which the corridor is a safe and welcoming place for pedestrians, bicyclists, and transit riders, yet remains an efficient thoroughfare for automobiles moving between Chapel Hill and Durham.

The corridor vision statement is as follows:

> *US 15-501 will be a multimodal corridor that provides safe, efficient, and welcoming transportation options to all, whether individuals use the corridor as a connection between Chapel Hill and Durham, or use businesses along the corridor for employment, shopping, and recreation.*

Goals

There are four primary goals for US 15-501, based on the four previously described themes.

1. Safety: Improve safety for all users.
2. Multimodality: Create a multimodal road network that can be efficiently utilized by bicyclists, pedestrians, transit riders, and automobile drivers and passengers.
3. Connectivity: Improve connectivity between developments along the corridor and between the beginning and end destinations of Chapel Hill and Durham.
4. Environment: Create a corridor with a welcoming human-scale environment that also mitigates future and current environmental climate concerns.

Goal #1: Safety

The primary goal for the future of US 15-501 is to improve safety for all users.

Objective #1: Decrease accidents at intersections that experience a disproportionate number of accidents every year. Decreasing (and preferably eliminating) roadway injuries and fatalities is critical to the future of 15-501.

Measure of Effectiveness #1: Number of fatal accidents and non-fatal injuries.
Measure of Effectiveness #2: Number of pedestrian and bicyclists per hour.
Measure of Effectiveness #3: Number of automobiles per hour.
Measure of Effectiveness #4: Number of transit riders per hour.

Objective #2: Improve crosswalk infrastructure at signalized intersections and other crossings and to ensure Americans with Disabilities Act (ADA) compliance. Better infrastructure should make movement along the corridor safer for all.

Measure of Effectiveness #1: Percentage of completed, ADA compliant improvement projects.
Measure of Effectiveness #2: Number of pedestrians and bicyclists per hour.

For a corridor to increase safety, it needs to improve upon existing infrastructure and have ADA compliant crosswalks. This should decrease pedestrian and bicyclist injuries and fatalities, leading to an increase in pedestrian and bicyclist utilization of the corridor.

Goal #2: Multimodality

The second goal for the future of US 15-501 is to create an efficient, multimodal corridor.

Objective #1: Create new (or improve existing) transit, bicycle, and pedestrian infrastructure.

Measure of Effectiveness #1: Number of mode users (transit riders, bicyclists, or pedestrians) per hour.
Measure of Effectiveness #2: Age of mode users.
Measure of Effectiveness #3: Mode user surveys.

Objective #2: Improve automobile traffic flow through the corridor. Multimodality requires efficiency for all modes, including motorized vehicles.

Measure of Effectiveness #1: Number of automobiles per hour.
Measure of Effectiveness #2: Automobile driver and/or passenger surveys.

A modern transportation corridor needs to be an efficient conduit for roadway users of all modes and needs to flow together without creating an impedance on other modes. This is a crucial step towards transportation equity.

Goal #3: Connectivity

The third goal for the future of US 15-501 is to improve interconnectivity between developments along the corridor and between the beginning and end destinations of Chapel Hill and Durham.

Objective #1: Improve access to employment and retail centers.

Measure of Effectiveness #1: Survey of mode users.
Measure of Effectiveness #2: Mode users per hour.

Objective #2: Improve transit connections between employment and retail centers along the corridor.

Measure of Effectiveness #1: Travel time between centers.
Measure of Effectiveness #2: Business owner survey.
Measure of Effectiveness #3: Survey of patrons.

Employment and retail centers are the main components of this corridor. As such, 15-501 needs to efficiently connect with external and internal traffic.

Goal #4: Environment

The fourth and final goal for the future of US 15-501 is to create a welcoming, climate-friendly environment along the corridor.

Objective #1: Create pedestrian scale infrastructure at crosswalks and along sidewalks.
- Measure of Effectiveness #1: Pedestrians per hour.
- Measure of Effectiveness #2: Pedestrian survey.

Objective #2: Create and maintain an environmental protection plan for the corridor.
- Measure of Effectiveness #1: Greenhouse gas emissions.
- Measure of Effectiveness #2: Environmental health survey.
- Measure of Effectiveness #3: Percent of minimum federal requirements met.

User comfort and environmental stewardship are important to the future of 15-501. The corridor needs to be a welcoming place for users while mitigating the increasingly severe threat of climate change.

In summary, four goals need to be met to create the envisioned US 15-501 of the future. These goals encompass the themes of safety, multimodality, connectivity, and the environment. Each goal contains a list of objectives and measures of effectiveness to guide the process of infrastructure improvements along this critical transportation corridor. The singular combined goal is that US 15-501 will be a safe, efficient, and welcoming street to pedestrians, bicyclists, transit users, and automobiles alike, helping to connect the town of Chapel Hill with the city of Durham.

Table 2. Goals, Objectives, and Measures of Effectiveness for US 15-501

Goals	Objectives	Measures of Effectiveness
Improve Safety	Decrease accidents at intersections	Number of fatal accidents and non-fatal injuries
		Pedestrians and bicyclists per hour
		Automobiles per hour
		Transit riders per hour
	Improve crosswalk infrastructure and ensure ADA compliance.	Percentage of completed improvements
		Pedestrians and bicyclists per hour
Create Multimodality	Create new (or improve existing) transit, pedestrian, and bicycle infrastructure	Mode users per hour
		Age(s) of mode users
		Mode user survey
	Improve automobile traffic flow through the corridor	Automobiles per hour
		Automobile driver and/or passenger survey
Improve Connectivity	Improve access to employment and retail centers	Survey of mode users
		Mode users per hour
	Improve transit connections between employment and retail centers	Travel time between centers
		Business owner survey
		Survey of patrons
Create Welcoming, Climate-Friendly Environment	Create pedestrian scale infrastructure at crosswalks and along sidewalks	Pedestrians per hour
		Pedestrian survey
	Create environmental protection plan for the corridor	Greenhouse gas emissions
		Environmental health survey
		Percent of minimum federal requirements

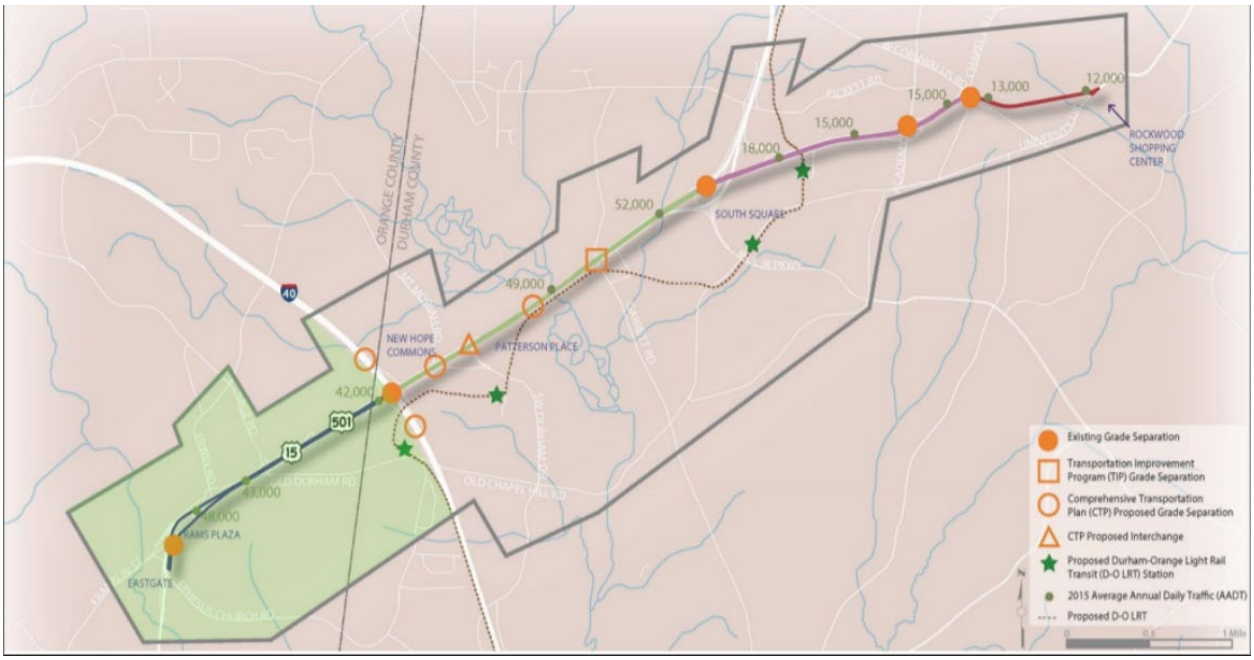

Figure 1. Corridor Overview Highlighting Segment 1

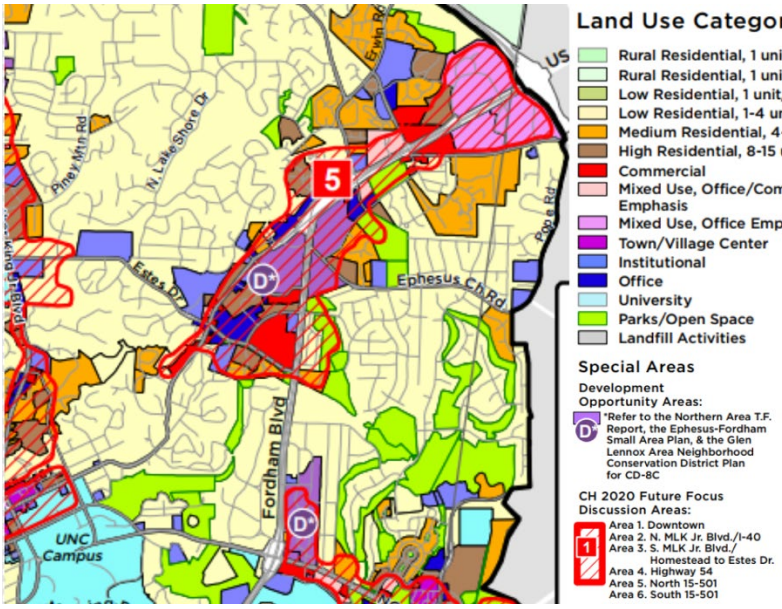

Figure 2. Land Use Map Showing Area of Segment 1

Corridor Land Use and Demographics Profile

This technical memo includes analysis of the broader 15-501 corridor, but in many areas focuses on segment one between Ephesus Church Road and the I-40 Interchange, as highlighted in figure 1 above.

There is a heavy emphasis on density and mixed use within the segment. As pictured in figure 2, Town Center zoning surrounds Eastgate and Rams Plaza, and the rest is mostly zoned for commercial, mixed use or medium and high density residential. Very little of the immediate frontage of Franklin or 15-501 is low density residential or zoned for a lower density use. In addition, the choice of Town/Village Center zoning for the area immediately surrounding the Franklin/Fordham interchange indicates the town's hopes of redeveloping the area (Rams Plaza, Eastgate) into more of a dense, walkable mixed-use center. The area is also part of a "Chapel Hill 2020

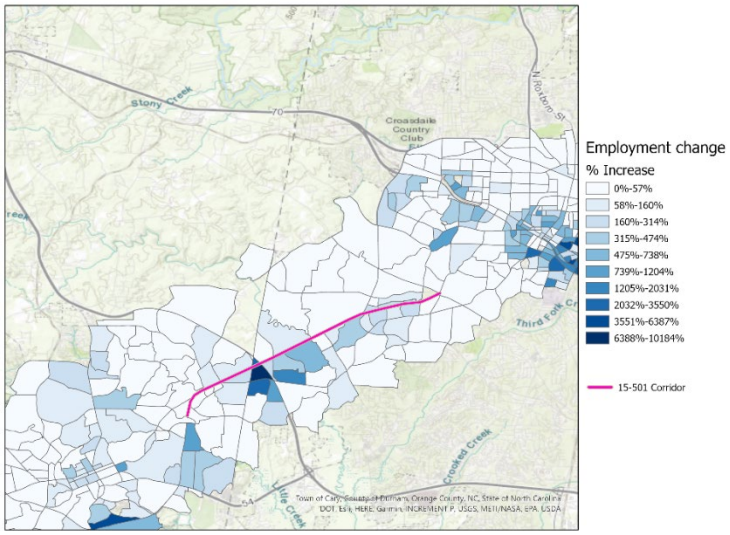

Figure 3. Projected Percent Increase in Employment 2015-2045

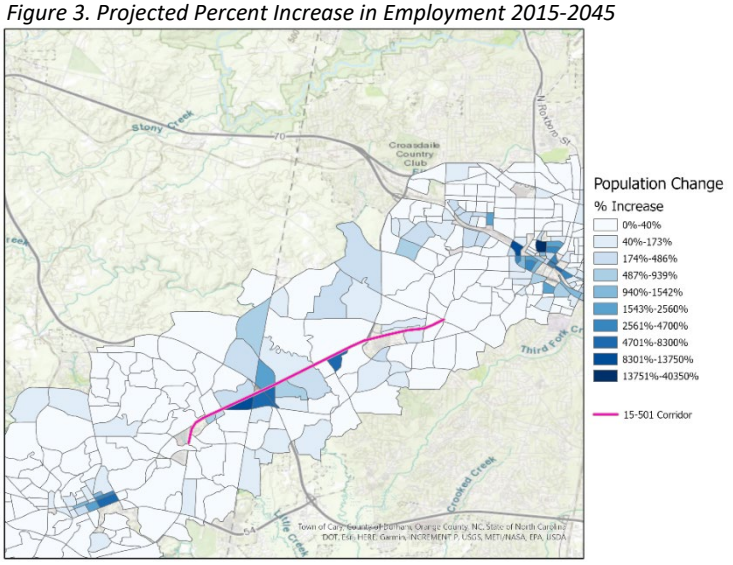

Figure 4. Projected percent increase in population 2015-2045

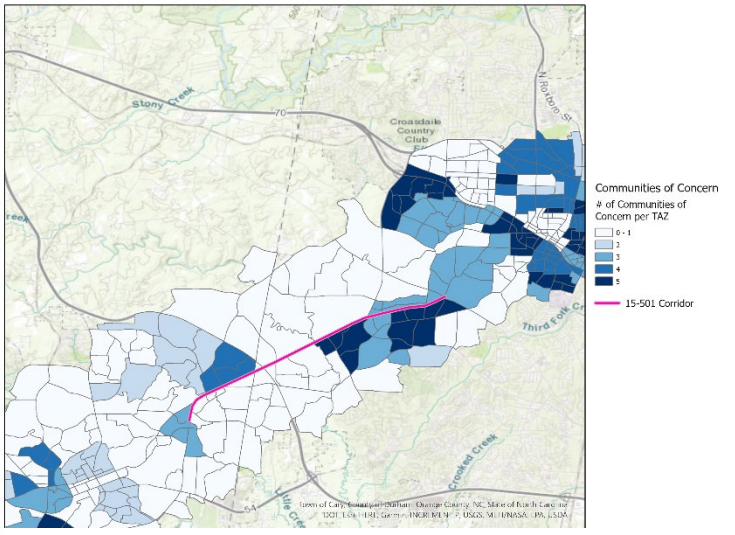

Figure 5. Communities of Concern by Traffic Analysis Zone

Future Focus Discussion Area", another indication of the segment being prioritized as a major part of Chapel Hill's land use and development plans.

The density of this corridor segment stands out among its surroundings, with low density residential surrounding it on most sides. The concentration of high-density zoning brings both opportunity and struggle- the land is zoned to support dense urban development, but the way 15-501 bisects the corridor itself makes servicing with transit or making developments walkable challenging. Any successful development strategy will have to take that into consideration and grapple with the division making access difficult.

The corridor is expected to see a significant growth in both population and employment between 2015 and 2045 (see figure 3 and figure 4), but the largest increases are mostly forecasted for points over the Durham county border between the area surrounding the I-40 Interchange and the start of the 15-501 Bypass.

Much of the expected population change is projected to be closer to the I-40 interchange around Patterson Place or slightly west around the newly opened Wegman's. In some of these cases, the seemingly large increase would likely be from the addition of apartment complexes in TAZs that currently have very little residential, such as the area just east of the Wegman's currently occupied by an office building.

Projected increases in employment follow a similar pattern but seem to be spread more evenly along the corridor.

Figure 5 shows how many communities of concern overlap in TAZs along the corridor. While not a perfect

Table 3. Race and Ethnicity by Segment

Race	Seg 1	Seg 2	Seg 3	Seg 4
White	11,200	9,200	7,000	5,300
Percent White	*72%*	*64%*	*58%*	*61%*
Black	1,400	2,700	3,600	2,700
Percent Black	*9%*	*19%*	*29%*	*31%*
American Indian/Alaska Native	90	30	0	10
Percent Native Am./Alaskan	*<1%*	*<1%*	*<1%*	*<1%*
Asian	2,300	1,200	700	300
Percent Asian	*15%*	*8%*	*5%*	*3%*
Native Hawaiian/Pacific Isl.	0	0	0	0
Percent Native Hawaiian/PI	*<1%*	*<1%*	*<1%*	*<1%*
Other/Two or More Races	600	1,400	900	400
Percent Other/2+ Races	*4%*	*10%*	*7%*	*5%*
Total	**15,500**	**14,500**	**12,100**	**8,800**

Ethnicity	Seg 1	Seg 2	Seg 3	Seg 4
Hispanic or Latino	700	2,200	2,400	1,400
Percent Hisp/Latino	*4%*	*15%*	*20%*	*16%*
Total	**15,500**	**14,500**	**12,100**	**8,800**

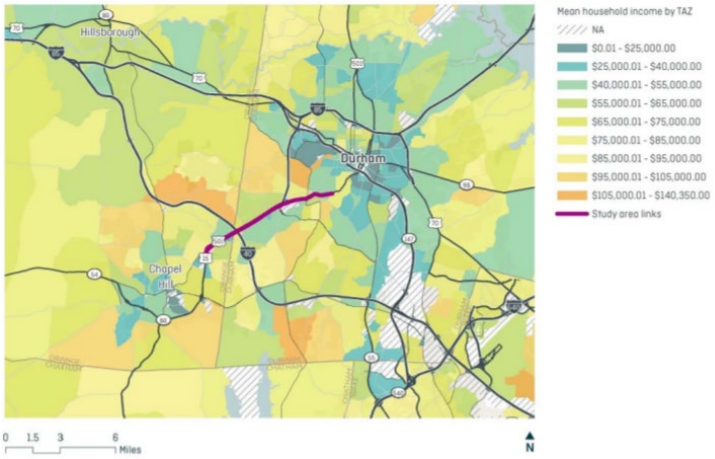

Figure 6. Average Household Income by TAZ

measurement of need or local conditions, this information can be helpful in understanding the geographic distribution of equity concerns and aspects such as transit propensity.

The largest amounts within the segment seem to mostly be located around the Franklin/Fordham split at Eastgate and north of 15-501 around Erwin and Sage. Outside of the segment, the highest amounts of communities of concern are further into Durham near South Square south of 15-501 and along University Drive.

Table 3 shows the racial composition of the different segments of the corridor. Segment one has a higher-than-average Asian population, but the majority of the Black, mixed, and Hispanic or Latino population is further east along the Durham stretches of the corridor.

As shown in Figure 6, Most of the areas of lower income communities overlap with the areas along the corridor expected to see the most population increase. This is an important consideration in ensuring that housing in the area remains affordable as the corridor continues to develop.

There are several pockets of zero-car households along the corridor, with the largest amounts being concentrated either near Rams Plaza or further into Durham (see figure 7). Notably, much of the area on the Durham side of 15-501 with a concentration of zero-car households are completely unserved by transit, though this may be complicated by the usage of block groups rather than TAZs to calculate community of concern data. Further analysis to figure out how those zero car households are accessing employment, etc would be useful.

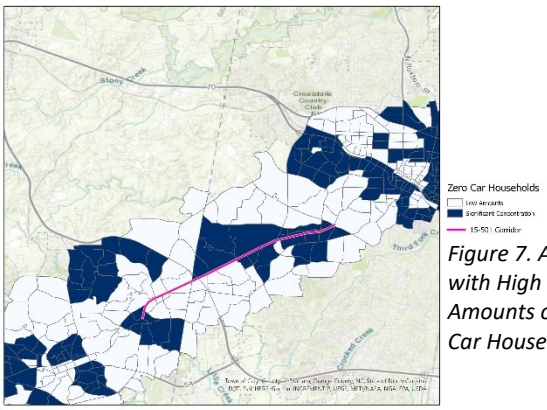

Figure 7. Areas with High Amounts of Zero Car Households

Corridor Demand and Travel Profile

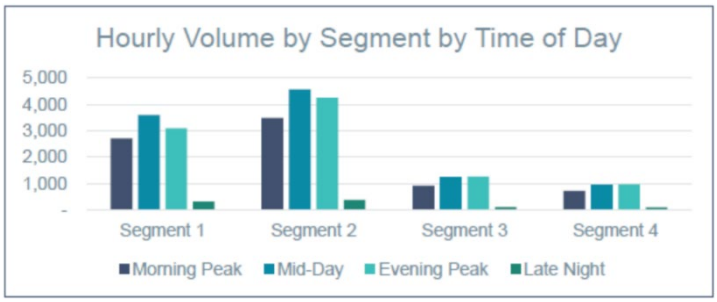

Figure 8. Hourly Volume by Segment and Time of Day

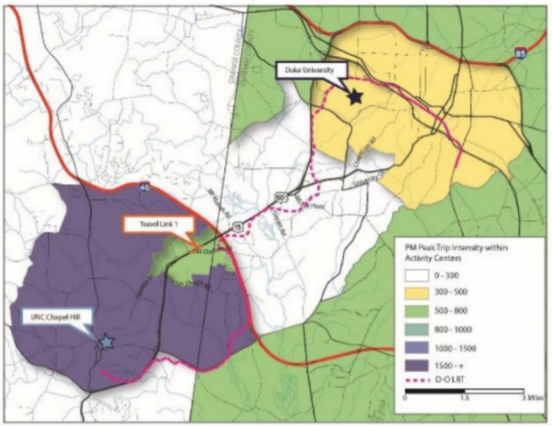

Figure 9. Trip Intensity Over Link One (through Segment 1)

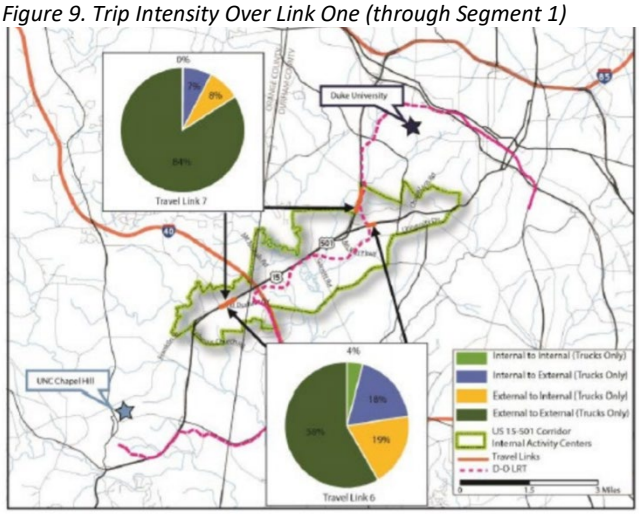

Figure 10. Truck Trip Patterns for Bypass and Business 15-501.

Regional Demand Analysis

Segment one sees the second highest traffic volume in the corridor, second only to segment 2 (which is likely higher due to traffic from I-40 heading into Durham). Traffic volumes drop significantly after the 15-501 bypass splits off, as most through traffic follows the bypass rather than continuing east along the old 15-501 corridor. Notably, traffic drops off significantly in late night hours, and actually peaks in the midday rather than at the morning or evening peak as shown in figure 8.

Most traffic through segment one (as measured using Travel Link 1 in figure 9) is either going to someplace within the area, Chapel Hill, or to north, central or southeastern Durham. Traffic to areas between I-40 and the bypass split is comparatively quite low.

Truck traffic also heavily utilizes the corridor, but mostly as a through route. As shown in figure 10, trucks that use the bypass are overwhelmingly just passing through, with a small amount of internal-to-external and external-to-internal traffic likely making deliveries to/from businesses. Trucks using the business route/old 15-501 have a much higher amount of internal and internal-to/from-external traffic, though pass-through traffic still dominates.

Corridor Highway Performance

Tables 4 and 5 show a statistical summary of highway performance in 2013 and 2045. The average for every measure increases from 2013 to 2045, except for average speed, which decreases. Demand, VOC, and VMT increases about 30%, VOC increases 80%, average speed decreased 12%, and delay increases by over 200%. Based on the data, the greatest problem will be the hours of delay within segment one of the study area.

Table 4. 2013 AM and PM Highway Performance Statistics

Field	Sum		Minimum		Maximum		Mean		Standard Deviation	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
DEMAND	135,948	164,664	0		3,383	4,151	1,045.75	1,266.65	812.25	904.74
VOC	74.16	88.05	0		1.55	1.60	0.57	0.68	0.30	
VMT	27,999	32,010	0		3,989	4,645	215.38	246.23	517.01	568.01
VHT	836	1,045	0		62	74	6.43	8.04	9.74	11.33
AVGSPD	3,724.35	3,576	6.17	6	64.81	64	28.87	27.51	11.02	11.34
DELAY	15,178	22,122	-6	-5	1,407	1,957	116.75	170.17	227.84	318.26

Table 5. 2045 AM and PM Highway Performance Statistics

Field	Sum		Minimum		Maximum		Mean		Standard Deviation	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
DEMAND	221,961	260,487	0		4,794	5,729	1,370.13	1,607.94	1,066.51	1,203.53
VOC	122.53	139.44	0		1.97	2.23	0.76	0.86	0.38	0.39
VMT	44,445	49,928	0		6,033	6,659	274.35	308.20	682.84	737.47
VHT	1,865	2,384	0		120	155	11.51	14.72	17.98	22.62
AVGSPD	4,055	3,787	2		66	65	25.34	23.67	14.90	14.93
DELAY	58,476	85,862	0	-2	4,710	8,432	360.96	530.01	680.68	976.00

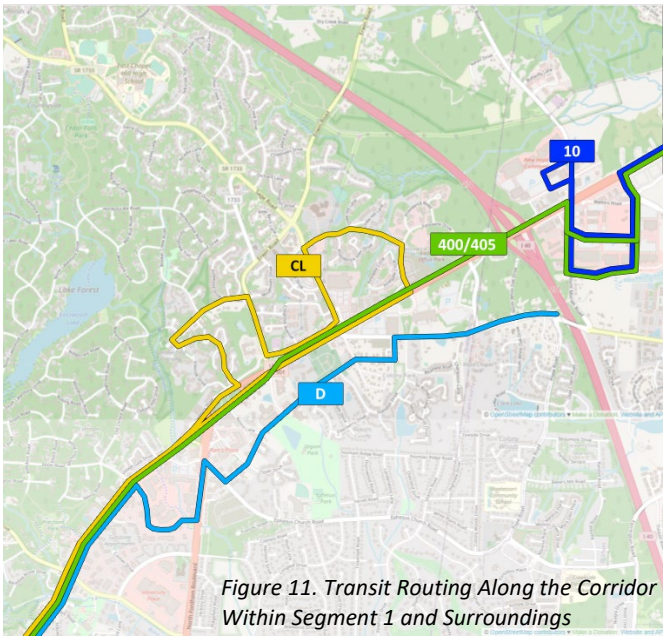

Figure 11. Transit Routing Along the Corridor Within Segment 1 and Surroundings

Corridor Transit Profile

The nature of the corridor makes it difficult to serve with transit, with 15-501 itself essentially bisecting the area and separating neighborhoods on either side from each other. As such, despite the corridor being served by multiple parallel lines, service is arguably lower than needed and connections between routes are lacking.

Chapel Hill Transit, GoTriangle, & GoDurham all serve the corridor in different capacities, with the D, CL, 10/10B, 400, and 405 all serving stops along the corridor.

In addition, the Robertsons Scholars Express, a free UNC-Duke connector, also utilizes the corridor, but does not have any stops along it.

The GoTriangle routes (400 and 405) largely stay on US15-501 itself, running express between the Franklin/Fordham merge and Patterson Place. In contrast, the D, CL, and 10 predominately serve the developments on either side of the 15-501 running local on side streets and service roads. Figure 11 shows the routing of buses serving segment one of the corridor.

Currently, GoDurham and Chapel Hill Transit do not meet despite line D running almost completely to I-40 on Old Durham Road. Chapel Hill Transit has floated the idea of extending the D to Patterson Place and potentially New Hope Commons, which would go a long way in creating alternative routes between Durham and Chapel Hill and connecting between systems.

D: all day core service from UNC Hospitals, campus, and downtown Chapel Hill along Franklin Street to the Eastgate/Rams Plaza area, then serves Old Durham and the area south of 15-501. Chapel Hill Transit has expressed interest in extending to serve Patterson Place/New Hope Commons to connect with 10/400/405. • ***Service**: Every 20 minutes weekdays, hourly on weekends. Operated by Chapel Hill Transit.*
CL: Weekday only service running alongside the D on Franklin Street from UNC & downtown Chapel Hill to Eastgate/Rams Plaza, then serves the neighborhoods on the north side of 15-501. • ***Service**: Every 20 minutes weekdays only. Operated by Chapel Hill Transit.*
10: all day core service from New Hope Commons/Patterson Place to downtown Durham mostly serving roads just east of 15-501 itself (University Dr around South Square), currently does not connect with the D. Paired with **10B** on weekdays, which runs from South Square to Durham. • ***Service**: Every 30 minutes 7 days a week within most of the corridor, but every 15 minutes weekdays from South Square to downtown Durham due to 10 and 10B alternating. Operated by GoDurham.*
400: all day core service from UNC Hospitals, campus and downtown CH along the corridor to Patterson Place, Duke/Veterans Affairs Hospitals, and downtown Durham. • ***Service**: Every 30 minutes Mon-Sat, hourly Sun. Operated by GoTriangle.*
405: peak-only weekday service serving the same route as **400** but running express through much of Chapel Hill and connecting to Carrboro. • ***Service**: Select trips Mon-Fri peak only. Operated by GoTriangle.*
Robertson Scholars Express: Utilizes the corridor to run express from UNC to Duke but makes no stops along the corridor. • ***Service:** Every 30 minutes weekdays, hourly weekends, under normal circumstances/during academic school year.*

Population and Employment Densities

Figures 12 and 13 show the population density within segment one of the US 15-501 corridor for 2015 and 2045. Tertiles were used to break down the density into low, medium, and high densities. The locations with high population densities are roughly the same areas, with a few less areas ranking as "high" in 2045 than 2015. There are also less areas ranking as "medium" in 2045 than 2013. Densities remain highest in the southwestern and northeastern sections of the segment one study area.

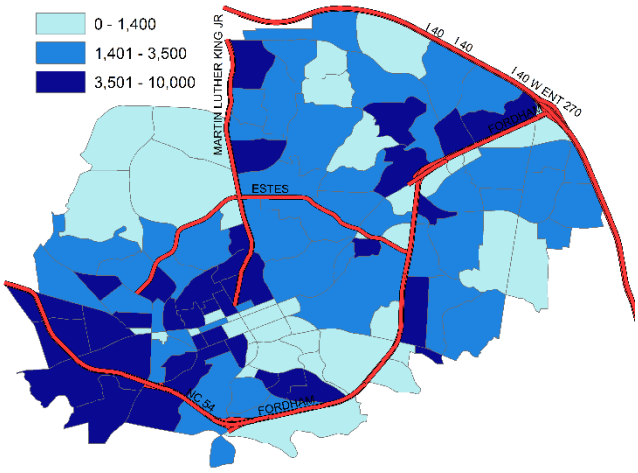

Figure 12. 2015 Population Density

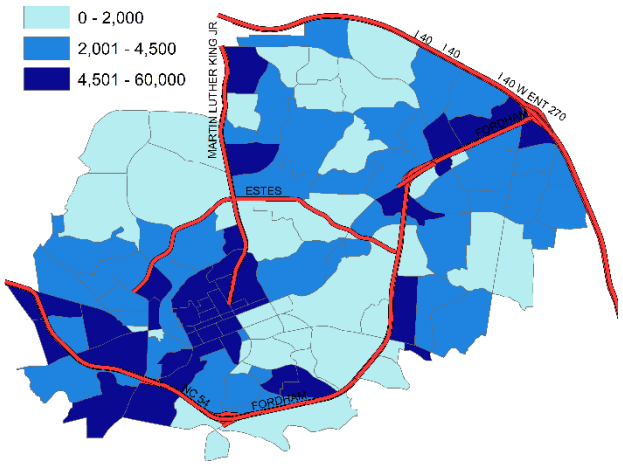

Figure 13. 2045 Population Density

Figures 14 and 15 show the employment density within segment one for 2015 and 245. Tertiles were used to break down the density into low, medium, and high densities. Once again, areas of "high" density are roughly the same areas, same for "medium" densities. Employment densities are greatest in the south-central, northern, and northeastern sections of the segment one study area.

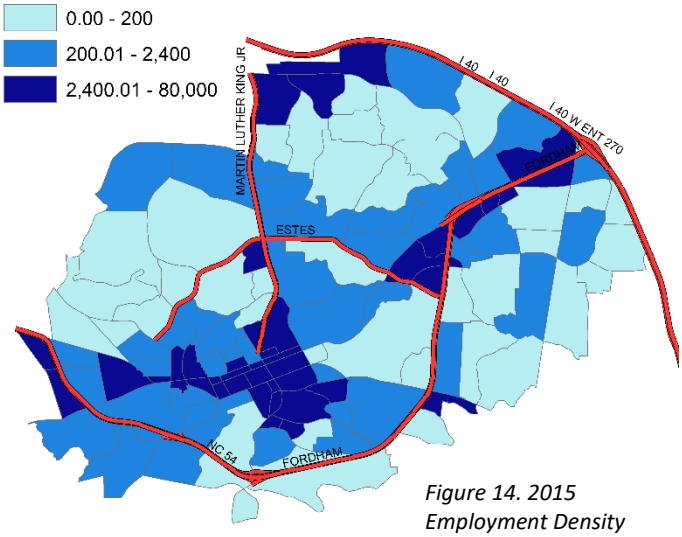

Figure 14. 2015 Employment Density

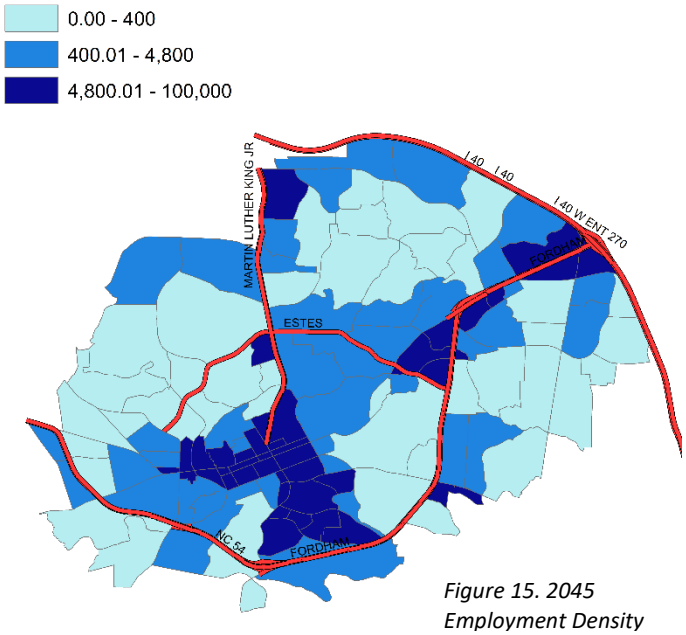

Figure 15. 2045 Employment Density

Transit Propensity

For transit propensity, various "communities of concern" were given weighted scores to determine how important being a member of those communitie(s) is in determining the likelihood of using transit. Seniors are ranked lowest, because at a certain age walking to and from bus stops is no longer feasible. Zero car households are ranked highest. Not having a car makes someone significantly more likely to choose to ride transit. Minority, Hispanic/Latinx, and impoverished communities of concern are given a medium ranking. Table 6 shows the transit propensity scores and weights, and table 7 shows more complete scores. Table 7 shows composite scores by TAZ and also gives a final score based on 2015 and 2045 trips.

Table 6. Communities of Concern Weighted Score

Population Group	Score	Weight	WtScore
Seniors	0.31	0.1	0.031
Non-White	1.37	0.2	0.274
Hispanic/Latinx	0.39	0.2	0.078
Poverty	1.12	0.2	0.224
Zero-Vehicle HH	2.37	0.3	0.711

Table 7. Complete Scores by TAZ

	CoC Indicator					Weight Score								Final Score	
						0.031	0.274	0.078	0.224	0.711					
TAZ	Seniors	NonWhite	Hispanic	Poverty	0Veh	Sr-WtS	NW-WtS	H-WtS	P-WtS	0V-WtS	Composite	2015 Trips	2045 Trips	15-Score	45-Score
165	0	1	0	1	0	0	0.274	0	0.224	0	0.498	76	97	38	48
167	0	0	1	1	0	0	0	0.078	0.224	0	0.302	7	11	2	3
613	0	1	1	1	1	0	0.274	0.078	0.224	0.711	1.287	28	34	36	44
616	0	1	1	1	0	0	0.274	0.078	0.224	0	0.576	30	74	17	43
618	0	0	0	0	1	0	0	0	0	0.711	0.711	155	233	110	166
625	0	0	0	0	1	0	0	0	0	0.711	0.711	0	9	0	6
626	0	0	0	0	1	0	0	0	0	0.711	0.711	130	159	92	113
629	1	0	0	0	1	0.031	0	0	0	0.711	0.742	1	2	1	1
633	1	0	0	0	0	0.031	0	0	0	0	0.031	4	217	0	7
638	1	0	0	0	0	0.031	0	0	0	0	0.031	19	53	1	2
647	0	0	0	1	0	0	0	0	0.224	0	0.224	11	12	2	3
1235	0	1	1	1	0	0	0.274	0.078	0.224	0	0.576	33	40	19	23
1237	0	1	1	1	0	0	0.274	0.078	0.224	0	0.576	91	207	52	119
1322	1	0	0	0	0	0.031	0	0	0	0	0.031	21	24	1	1
1327	1	0	0	0	0	0.031	0	0	0	0	0.031	44	50	1	2
1337	0	0	0	0	0	0	0	0	0	0	0	29	40	0	0
1340	0	0	0	0	0	0	0	0	0	0	0	10	66	0	0
1346	1	0	0	0	1	0.031	0	0	0	0.711	0.742	90	118	67	88
1354	0	0	0	0	1	0	0	0	0	0.711	0.711	16	19	11	14

Activity Centers

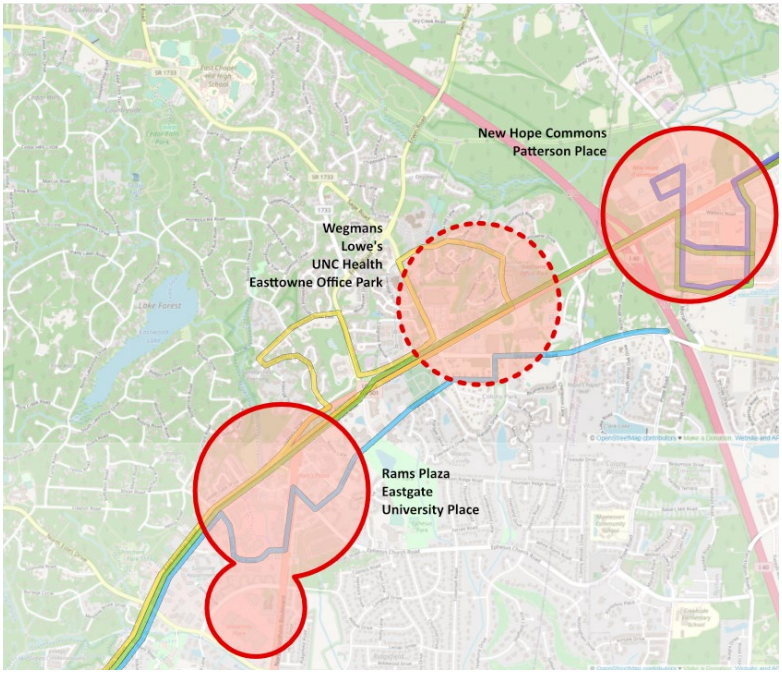

Figure 16. Activity Centers in Segment 1

As seen in figure 16, the most significant activity centers in the first segment of the corridor are mostly commercial/retail. In the Rams Head neighborhood, several shopping centers (Village Plaza, Shops at Eastgate, Rams Plaza) make up the biggest activity center.

The recently constructed Wegman's may be start of an emerging activity center as areas round it develop further. A Lowe's, newly constructed UNC Health building, and the Easttowne Office Park are located across the corridor from the Wegman's, creating a cluster, but the two sides are largely disconnected due to 15-501 running between them.

Patterson Place and New Hope Commons also make up a major activity center on the east side of I-40. Though just outside of segment one, the significant and growing retail and mixed-use area, and future development may fill in around the western side of the I-40 interchange.

All three of these activity centers are served by transit, but not particularly well. Rams Plaza/Eastgate is the most well connected in both directions due to Franklin Street making up part of the area, but Rams Plaza itself is somewhat disconnected due to the nature of the Fordham/Franklin interchange. The area surrounding the Wegman's is largely not walkable and split in half by 15-501, separating all three routes serving the spot from each other. Patterson Place is well connected to both Durham and Chapel Hill, but New Hope Commons is only directly connected to Durham. Riders coming from Chapel Hill have the choice of transferring to go one stop across the corridor or to take a 20-minute walk that requires crossing one of the wider parts of 15-501.

Further along the corridor after the split between business and bypass 15-501, one last major cluster exists around University Dr/Westgate, the location of South Square and a few other shopping centers. There's also a more linear set of small businesses along the furthest end of the corridor heading towards central Durham.

Travel Patterns

Most travel activity along the 15-501 corridor can largely be categorized as people using the corridor as one of the following:

- Main **through** route connecting Durham to Chapel Hill and the major destinations within each (including the two downtowns, Duke University & Duke/VA Hospitals, UNC and UNC Hospitals)
- Access **to** major clusters of commercial and retail along the corridor (Rams Plaza/Eastgate, Patterson Place/New Hope Commons, South Square, etc)

The through route group includes a large number of commuters travelling to employment centers in Durham and Chapel Hill's campuses and downtowns. The to group is mostly people patronizing businesses along the route.

Analysis of trip intensity by region indicates that the majority of through traffic along the westernmost part of the corridor is splitting off along the 15-501 bypass towards Duke rather than continuing straight along the old 15-501 into Durham (see figure 17*)*. This largely matches the routing of GoTriangle's route 400, which largely follows the 15-501 bypass until branching off to serve Duke University and downtown Durham.

Likewise, the bulk of the traffic along the furthest east part of old 15-501 after the split from the bypass only goes as far west along the corridor as South Square and Patterson Place, not continuing into Chapel Hill (see figure 18*)*, which mostly matches the routing of GoDurham's routes 10 and 10b, though said routes serve roads parallel to old 15-501 such as University Drive rather than running along it.

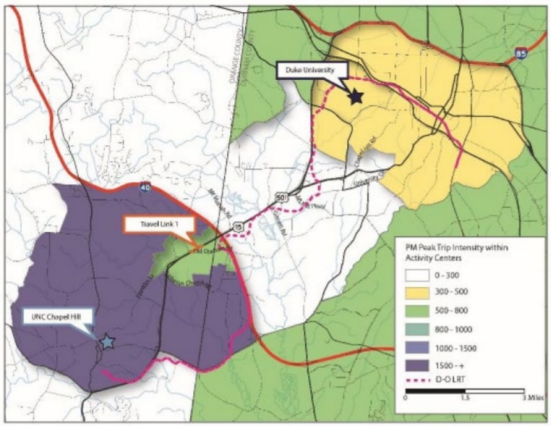

Figure 17. Trip Intensity by Region

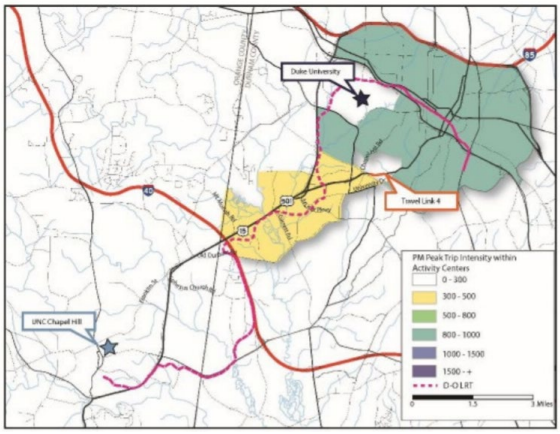

Figure 18. First and Last Links of Corridor

Accessibility

Figure 19 shows the transit to auto accessibility ratio. The brighter the color, the more accessible an area is by transit. Those particular areas are typically the central business districts of the town and city in which they are located. The areas with lowest transit access are those areas along interstates and highways that have limited to no transit access.

Considering the employment densities along 15-501, there should be greater transit access than there currently is. One potential cause of this may be a lack of safe and/or comfortable pedestrian facilities along the corridor, causing some potential transit riders to find other ways to get to work.

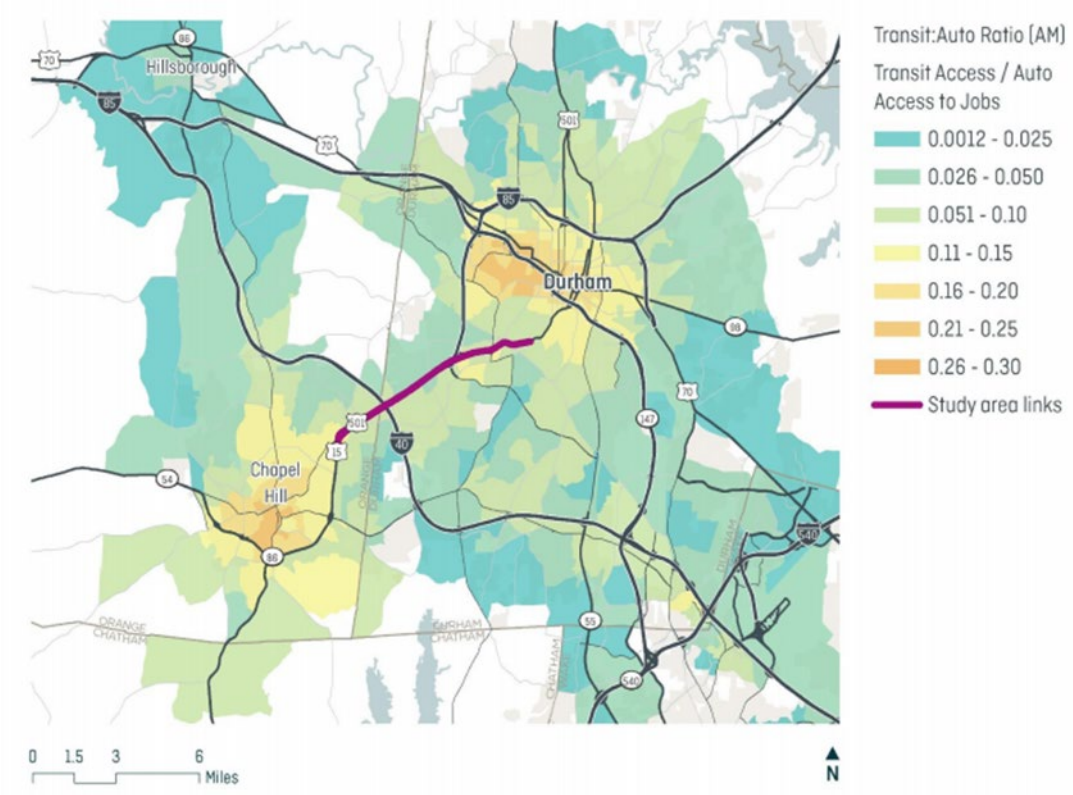

Figure 19. Transit to Auto Ratio

Active Transportation

Figure 20 shows existing facilities within segment one of the US 15-501 study area. Pink shows existing sidewalk network, green is existing trails, and blue is existing bicycle facilities. Along 15-501 itself, there is no evidence on the map of existing sidewalks and bicycle lanes. This underscores the need for those facilities along the corridor.

Figure 21 shows the location of transit stops and the walk time to transit. The cooler the color, the longer it takes to walk to a transit stop from those areas. One area that sticks out is Clark Hills. It's surrounded by five minute or less walk time and many transit stops, but Clark Hills itself has no transit stops and has walk times from five to 20 minutes. Similar areas to Clark Hills include Tenney Circle, The Oaks, and Briarcliff.

Figure 22 shows access to jobs within a 30 minute walk. There is high employment density along segment one of the corridor, and yet areas along this segment have some of the lowest walk access to jobs on the entire map. All of these maps together appear to show a severe lack of pedestrian facilities along the 15-501 corridor.

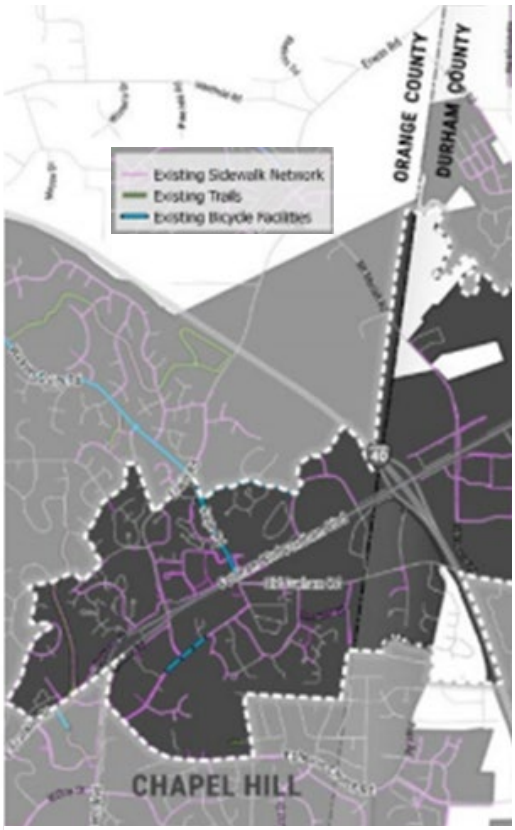

Figure 20. Existing Facilities in Segment 1

Figure 21. Walk Time to Transit

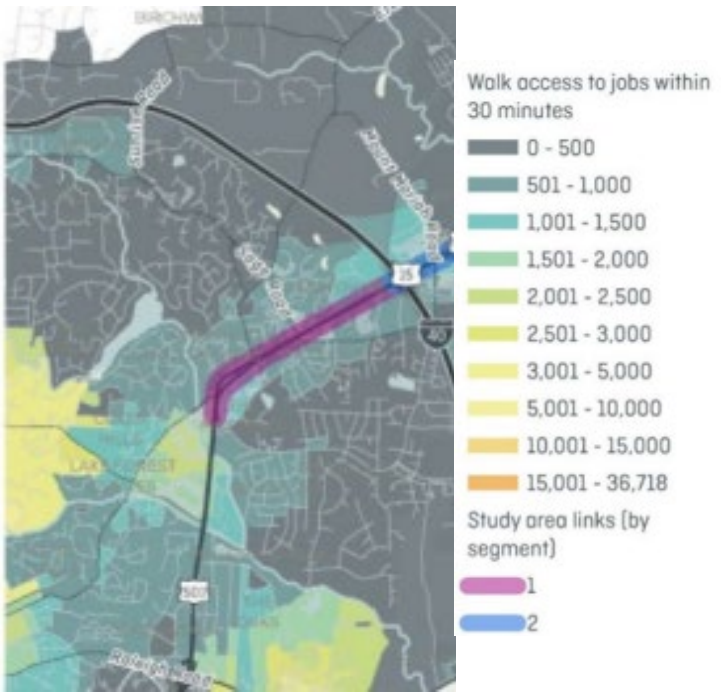

Figure 22. Walk Access to Jobs Within 30 Minutes

Figure 23 shows the results of a Level of Traffic Stress (LTS) analysis. LOC 1 is the most comfortable, and LOC 4 is the least comfortable. The section of this map that is the least comfortable for bicyclists and pedestrians is along 15-501 itself, and LOC 3 is mostly along streets connecting to 15-501. This map shows a critical need for bicycle and pedestrian facilities along segment one of 15-501

Figure 24 shows the demand for active transportation along within the segment one study area of 15-501. The majority of the area shows high demand for active transportation, though the demand starts to wane just east of Sage Road and along I-40.

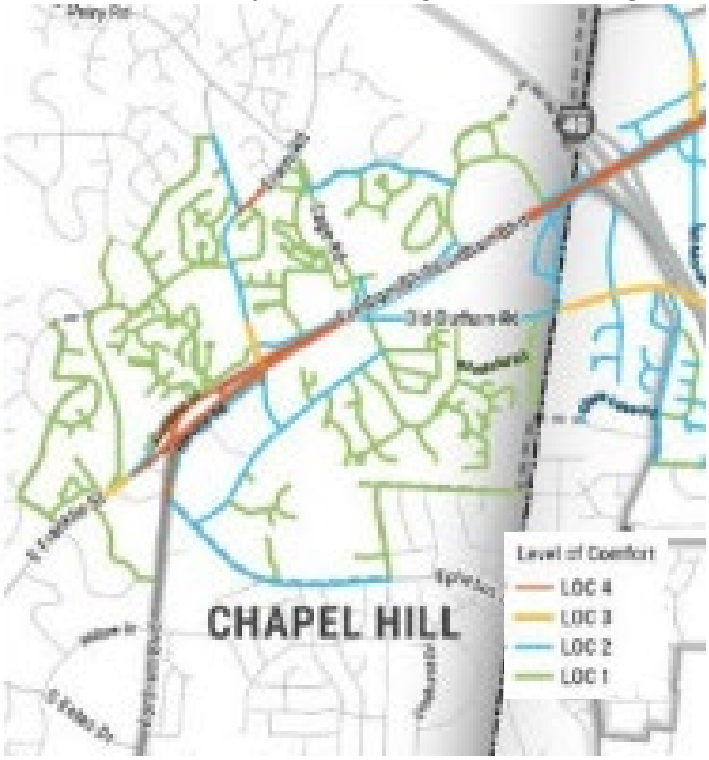

Figure 23. Level of Comfort Analysis

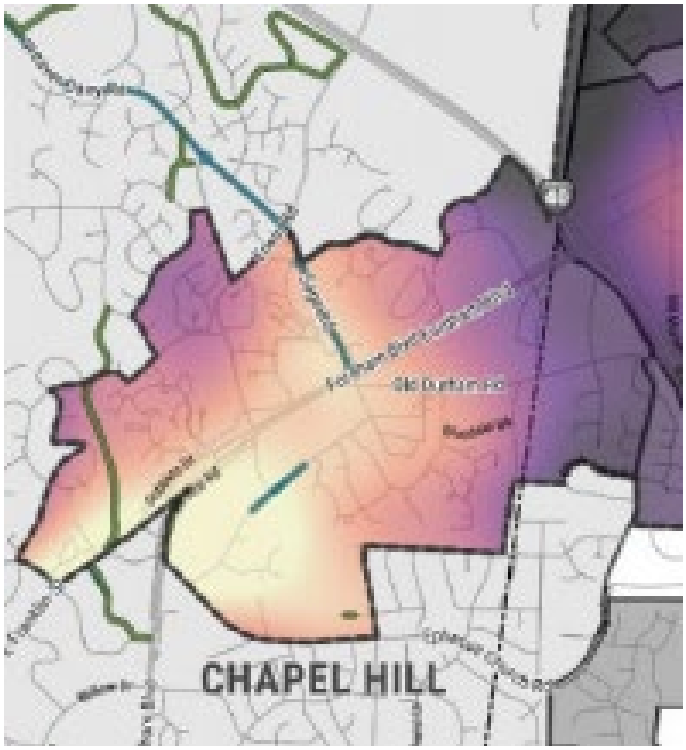

Figure 24. Active Transportation Demand

Figure 25 shows the concentrations of “communities of concern” within the segment one study area of 15-501. These communities include minorities, seniors, non-English speaking, zero car households, and individuals living below the poverty line. Concentrations appear to be highest in the northeast and southwestern parts of the map, signifying the potential need for transit and active transportation improvements within those sections.

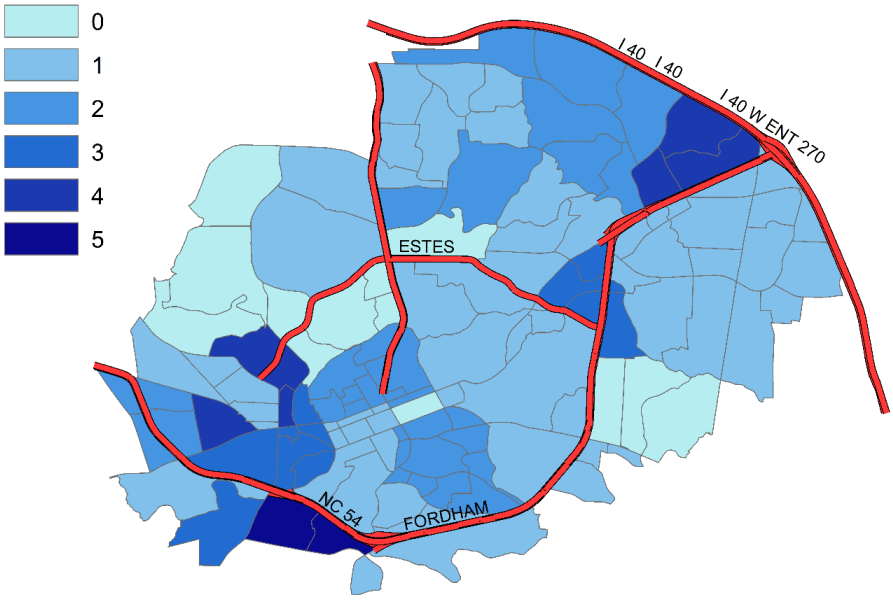

Figure 25. Concentrations of Communities of Concern

Corridor Safety and Operations

Table 8. Crash Summary of US 15-501 Study Area

Segment	Fatal	Injury*			PDO**	Total	Severity Index	Crash Rate (per MVM traveled)
		A	B	C				
1	0	0	29	165	408	602	3.38	3.93
2	0	4	36	212	1,025	1,277	2.67	6.15
3	0	1	12	42	203	258	2.84	4.07
4	0	0	14	46	143	203	3.19	9.68

*A = severe injury, B = visible but not serious injury, C = no visible injury
**Property Damage Only

When it comes to crashes, 15-501 is a safe corridor. Out of 561 wrecks (not counting property damage only (PDO) crashes) in all four segments of the study area, zero were fatal and only five contained serious injuries. That's not even 1% of all crashes. Segment one has no fatal or serious injury crashes. 60% of crashes in the entire study area are "rear end, slow, or stop and turn" crashes – typically low speed and low severity. Between 2012 and 2017, the number of crashes along the corridor decreased from 408 to 382.

Figure 26 shows the location of bicycle (red) and pedestrian (yellow) crashes in segment one of the study area. There's a particular high concentration of crashes within the University Place shopping mall. These are likely minor incidents because they are mostly occurring in parking lots at low speeds. There is another fairly high concentration of pedestrian crashes just north of the mall, right where the study area begins, and right at the beginning of segment two, just east of I-40. The area that appears to be in greatest need of pedestrian infrastructure improvements is the area north of the mall.

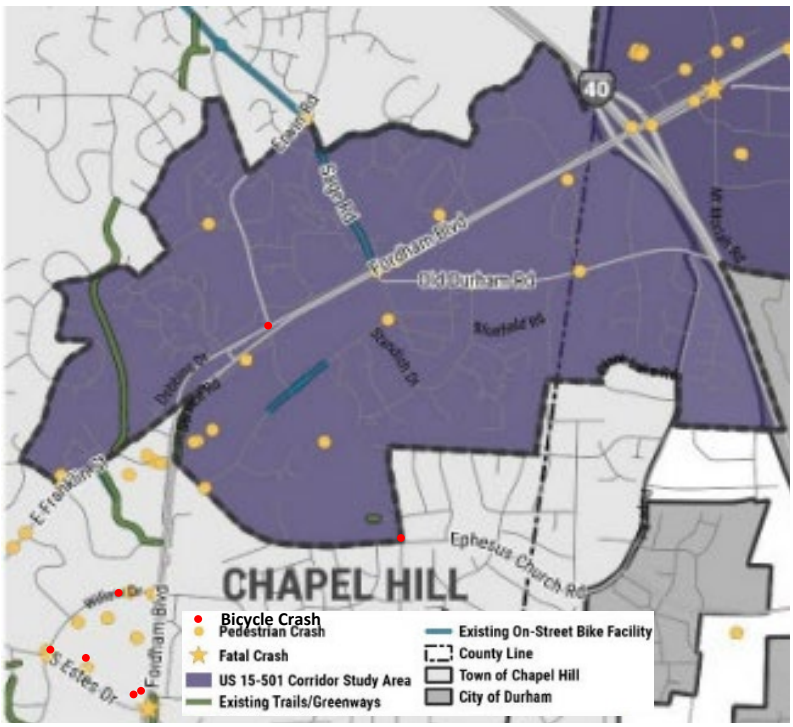

Figure 26. Location of Pedestrian and Bicycle Crashes

Figures 27 and 28 show pedestrian and bicycle hotspots within segment one of the 15-501 study area. As predicted, the areas with the most pedestrian and bicyclists correspond to the areas in Figure 26 with the most pedestrian and bicycle crashes. These locations show the same need for improvements as the locations indicated in Figure 26.

Figure 27. Pedestrian Hotspot Analysis

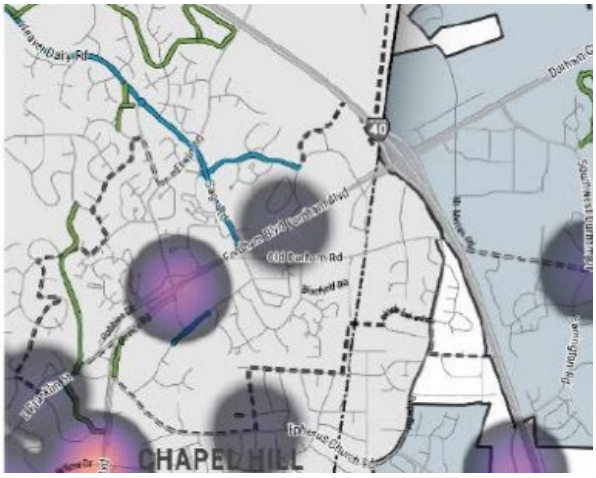

Figure 28. Bicycle Hotspot Analysis

Figure 29 shows the base year (2013) AM delay for streets within the segment one study area of US 15-501. The areas of greatest delay are 1) Erwin Road, west on Durham-Chapel Hill Boulevard, 2) in between Erwin and Sage Roads, 3) western Eastowne Drive to I-40, and 4) the I-40 West exit ramp. The area of priority for infrastructure improvements would be western Eastowne Drive to I-40. The options for improvements on flyovers and exit ramps are limited, so Eastowne to I-40 gives the most options for improvement. The base year PM delay map shows the same delay locations and is included in the appendix. The maximum delay for the PM map is 2000.

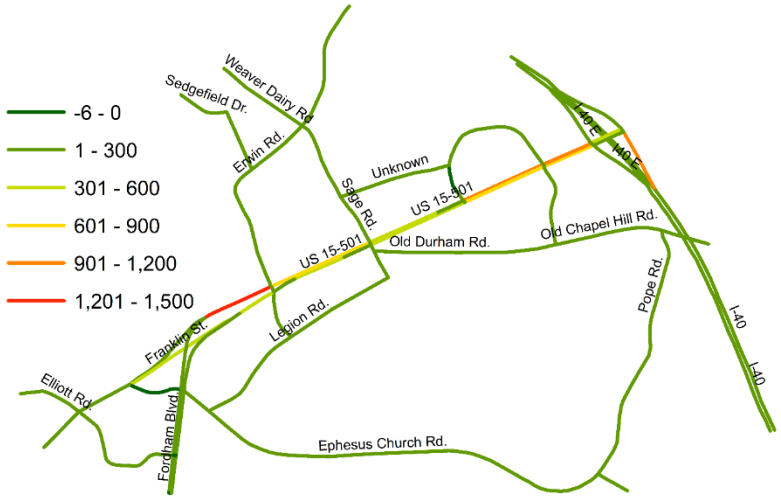

Figure 29. 2013 AM Delay

Figure 30 shows the 2045 AM delay for streets within the segment one study area. On this map, the areas of greatest delay are western Eastown Drive to I-40 and the I-40 West exit ramp. Similar to 2013, the area with the most options for improvements is western Eastowne to I-40. The 2045 MP delay map shows the same delay locations and is included in the appendix. The maximum delay for the PM map is 8,750. More specific delay information, particularly at intersections, is located in Table 12 in the appendix.

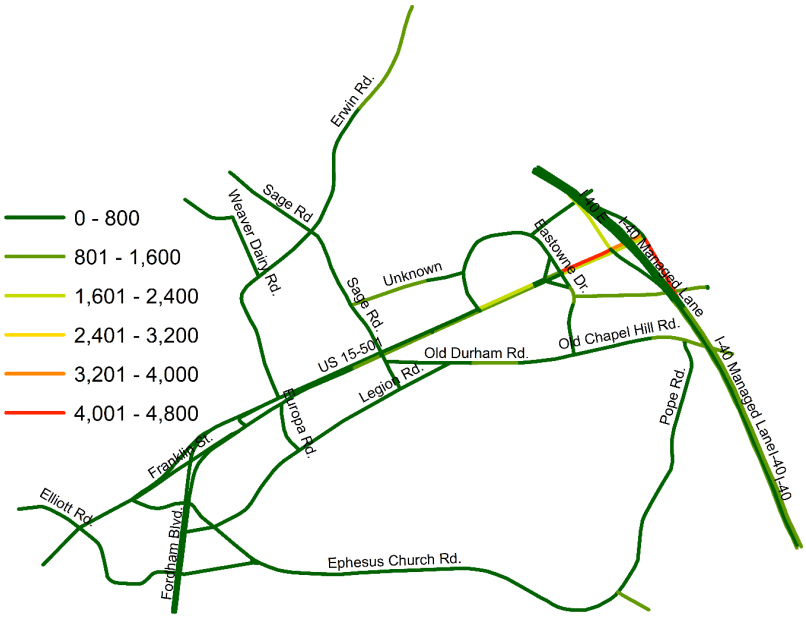

Figure 30. 2045 AM Delay

Appendix

Corridor Demand and Travel Profile

Corridor Highway Performance

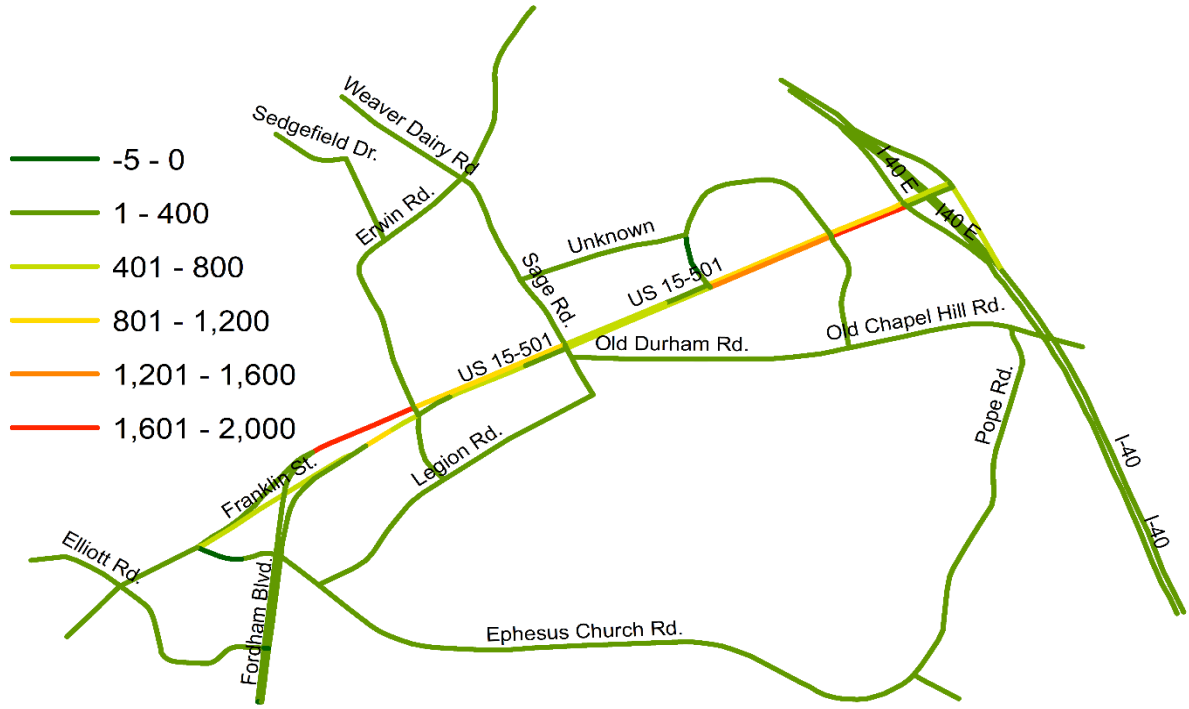

Figure 31. 2013 PM Delay

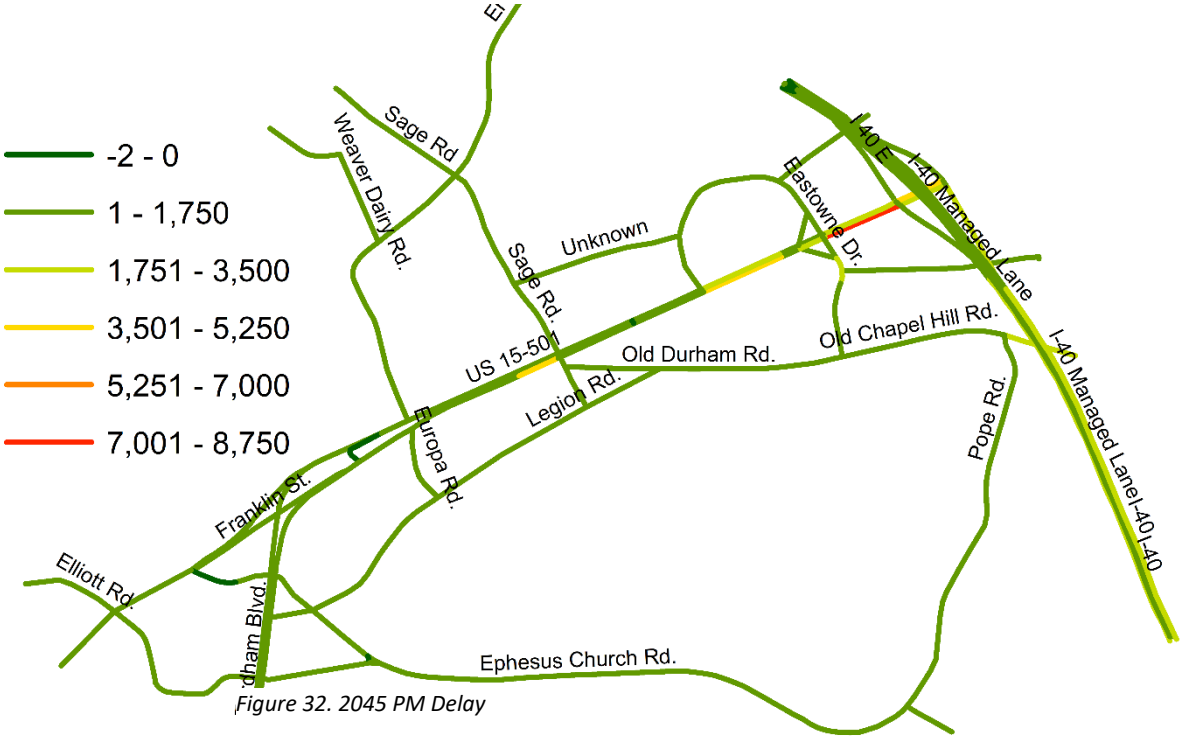

Figure 32. 2045 PM Delay

Transit Propensity

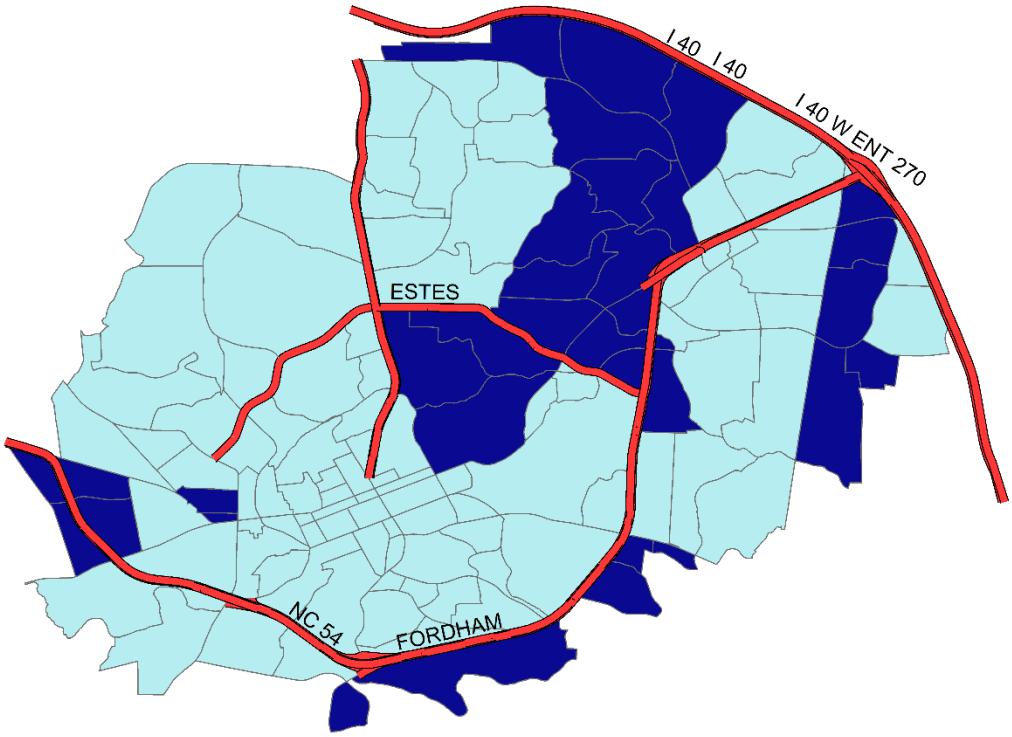

Figure 33. Concentrations of Seniors

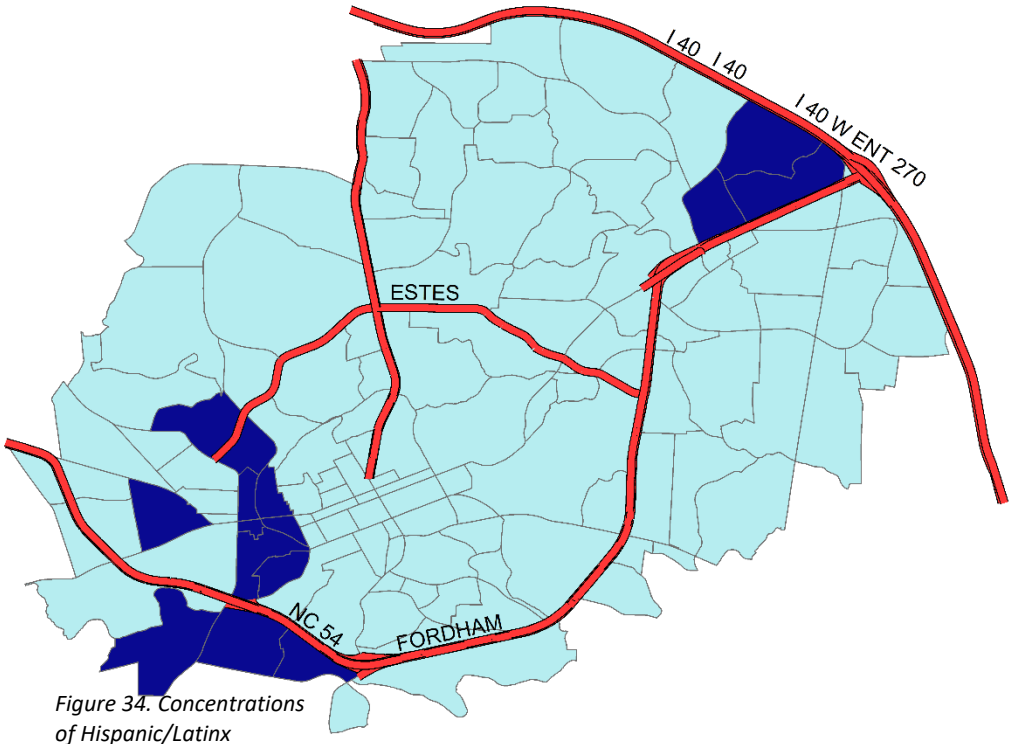

Figure 34. Concentrations of Hispanic/Latinx

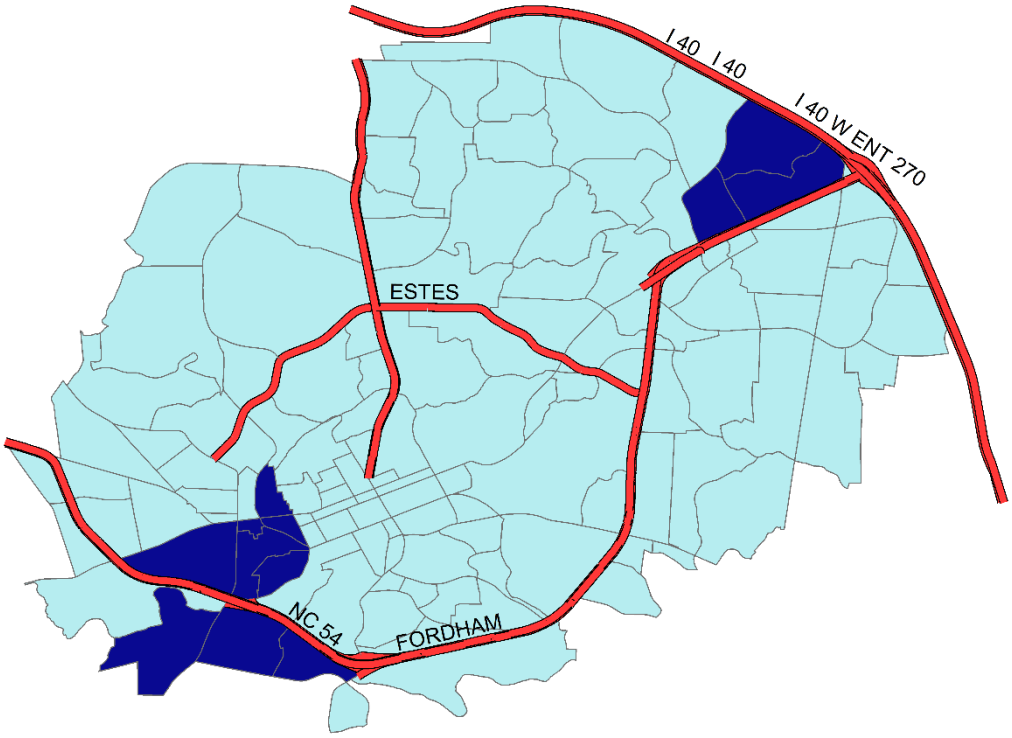

Figure 35. Concentrations of Racial Minorities

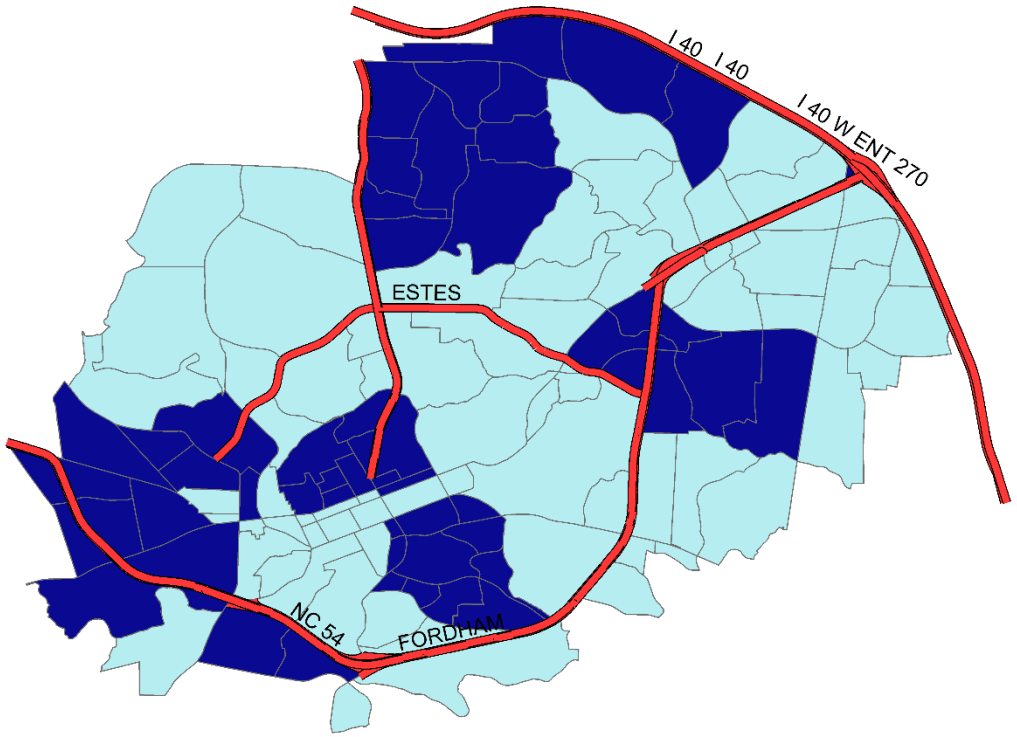

Figure 36. Concentrations of Zero Car Households

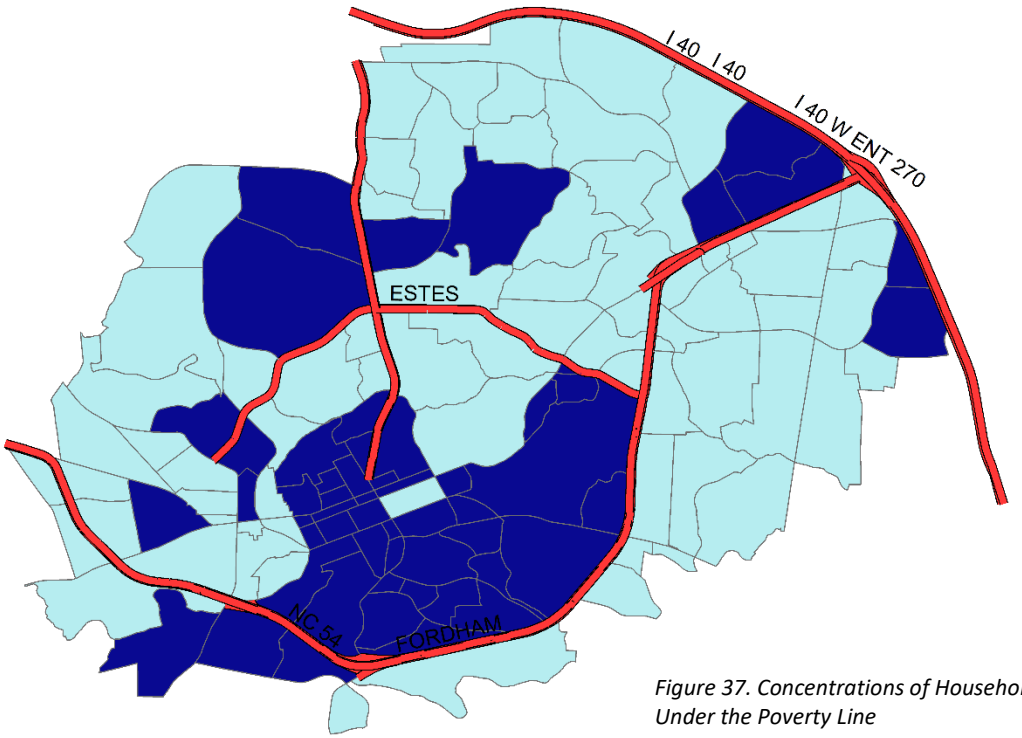

Figure 37. Concentrations of Households Living Under the Poverty Line

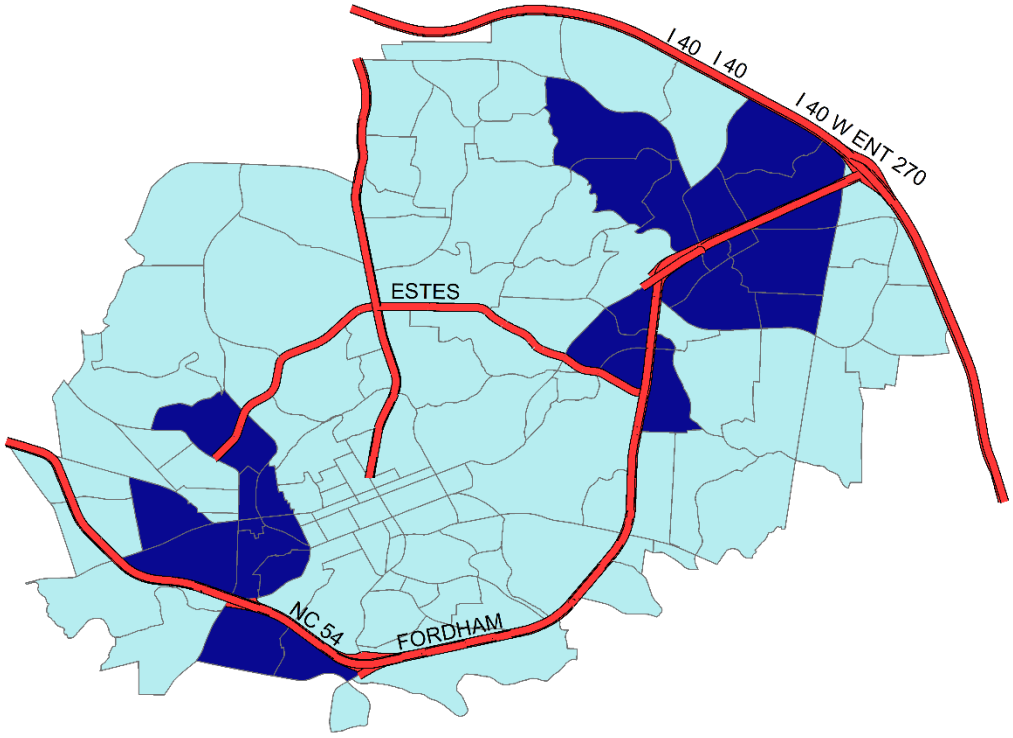

Figure 38. Concentrations of Households with Limited English Proficiency

Table 9. Level of Traffic Stress for Cyclists in Mixed Traffic

Number of lanes	Prevailing Speed						
	≤ 20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50+mph
Unlaned 2-way street (no centerline)	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3
	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4	LTS 4
	LTS 2	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
1 through lane per direction (1-way, 1-lane street or 2-way street with centerline)	LTS 1	LTS 1	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3
	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4
	LTS 2	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4
2 through lanes per direction	LTS 3	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4
	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4
3+ through lanes per direction	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4	LTS 4	LTS 4

* Effective ADT = ADT for two-way roads; Effective ADT = 1.67*ADT for one-way roads

Table 10. Level of Traffic Stress for Cyclists Using Bike Lanes

Number of lanes	Prevailing Speed					
	≤ 25 mph	30 mph	35 mph	40 mph	45 mph	50+ mph
1 through lane per direction, or unlaned	LTS 1	LTS 1	LTS 2	LTS 3	LTS 3	LTS 3
	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 4
2 through lanes per direction	LTS 2	LTS 2	LTS 2	LTS 3	LTS 3	LTS 3
	LTS 2	LTS 2	LTS 2	LTS 3	LTS 4	LTS 4
3+ lanes per direction	LTS 3	LTS 3	LTS 3	LTS 4	LTS 4	LTS 4

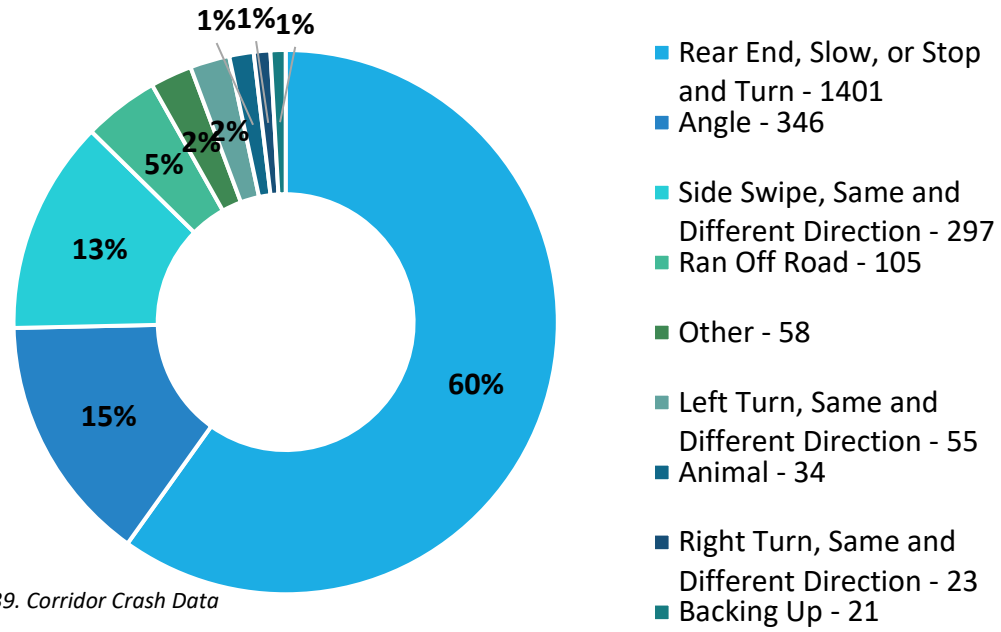

Figure 39. Corridor Crash Data

Table 11. Crashes in Study Area per Year

Year	Number of Crashes
2012	408
2013	424
2014	373
2015	379
2016	374
2017	382

Table 12. AM and PM Peak Delay at Various Intersections Along 15-501

Intersection		AM Peak		PM Peak	
		Delay (sec)	Level of Service	Delay (sec)	Level of Service
US 15-501 (Durham-Chapel Hill Blvd) 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 (Durham-Chapel Hill Blvd) 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 (Durham-Chapel Hill Blvd) 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 (Durham-Chapel Hill Blvd) 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

Recommended Strategies for US 15-501 Corridor

Building on our previous memo detailing a profile of the corridor and assessing needs, this memo represents our finalized recommendation to the Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC). This memo includes a series of recommendations across three broad categories – transit, pedestrian, and feeder roads/grade separation, while also considering some of what is already being done in land use and demand management.

Connection to Goals

As explained in previous memos, our recommendations were informed by a series of goals and objectives focused on improving safety, creating multimodality, improving connectivity, and creating a welcoming climate friendly environment. All of our recommended changes tie into one or more of these goals.

Improve Safety

- Sidewalks and accessible crossings to make walking along or crossing roadway easier

Create Multimodality

- Bus Rapid Transit improving transit mode share, new bus connections
- Improvements to pedestrian infrastructure encouraging active transportation
- Potential for bike infrastructure along calmed surface roads

Improve Connectivity

- Grade separation improving through traffic flow
- Better connections between Durham & Chapel Hill for transit riders

Create Welcoming, Climate Friendly Environment

- Traffic calming on feeder roads
- Design for walkable, urban neighborhoods along the side roads
- More reliable public transit

Transit Improvements

D Bus to Patterson Place

For the short term, our recommendation is to connect Chapel Hill Transit's 'D' bus route to Patterson Place (and potentially New Hope Commons). This will provide an additional Durham-Chapel Hill alternative to GoTriangle's '400' by connecting with GoDurham's '10.' Timed properly, this improvement can increase the frequency of trips between Downtown Durham and Chapel Hill, while also better connecting residents along Legion Drive and Old Durham to Durham and the stores at New Hope Commons. This improvement has a low connection with our goals, largely focusing on making better connections using existing transit. As per equity benefits, this improvement ranks medium because it does still improve connections between Chapel Hill and Durham. We expect that this will be a low-cost improvement that can be completed in the short term with minimal change. We do not foresee any major negative effects.

Durham-Chapel Hill Bus Rapid Transit (BRT)

For the medium term, our recommendation is to create a Bus Rapid Transit (BRT) line with dedicated lanes and ADA-accessible stations roughly following GoTriangle's Route 400. Figure 40 shows the potential routing of the BRT along the corridor. Despite the demise of the Durham-Orange Light Rail project, both Durham and Chapel Hill are committed to rapid transit in this corridor. The creation of a BRT would increase ridership, decrease transit travel times, and increase frequency of service along the corridor. In addition, the BRT can strategically be used to encourage further urban-scale development along the corridor. This is especially relevant for the area near the I-40 interchange, which had been planned to see development around the light rail proposal before it was cancelled. The 15-501 corridor is wide enough to support a BRT without hindering auto traffic, and bus lanes could be placed in the median, on the sides of the main highway, or along service roads.

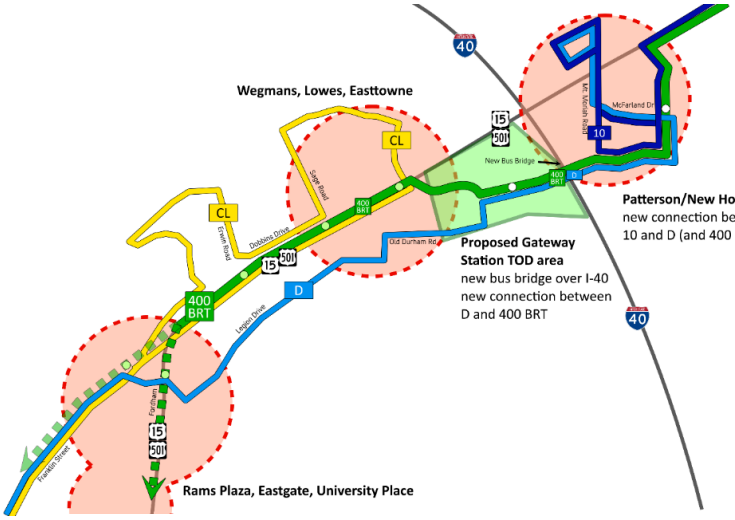

Figure 40. Long Term Transit Proposal for the Corridor, Including D Extension and 400 BRT.

This improvement has a high connection with our goals by encouraging active transportation along the corridor and greatly improving transit access for many areas along the route. As per equity benefits, this improvement ranks medium because it should improve mobility and accessibility for zero car households, seniors, and communities of color living and working along the corridor. This will be a high-cost improvement to be completed in the medium-term, as planning for rapid transit in the corridor is in the early stages. We do not foresee any negative effects, though placement within the road may reduce auto lanes depending on final design.

Pedestrian Improvements

Sidewalks along Service Roads

Our initial recommendation is to complete sidewalks along the corridor, next to the service roads lining 15-501. One of the town's larger goals for the corridor is to achieve a walkable town center layout. However, currently there are few sidewalks along the corridor, and those that exist are largely disconnected. Completing these sidewalks would make major steps towards our design goals by improving walkability, pedestrian safety and comfort, and access to nearby destinations, making urban scale development more viable. As per equity benefits, this improvement ranks medium because of improved access and mobility along the corridor for zero car households, individuals with disabilities, and transit riders. This will be a medium-cost improvement to be completed in the short-term, as soon as reasonably possible. We do not foresee any major negative effects from this improvement.

Americans with Disabilities Act (ADA) Compliant Crossings at Intersections

Building on the completion of sidewalks along the corridor, our next recommendation is to create crosswalks at all major intersections and to ensure ADA compliance. The expected results of this improvement are improved walkability, improved pedestrian safety and comfort, and more connections across the highway. This improvement has a high connection with our goals, helping encourage active transportation and urban scale connectivity. As per equity benefits, this improvement ranks medium because of increased safety for those that may be travelling by a mode other than car. This will be a low to medium-cost improvement (cost will vary by location) to be completed in the short term. However, there remain safety concerns with the number of lanes pedestrians would have to cross due to roadways widening near major intersections. This can be addressed in some areas by creating pedestrian islands where possible.

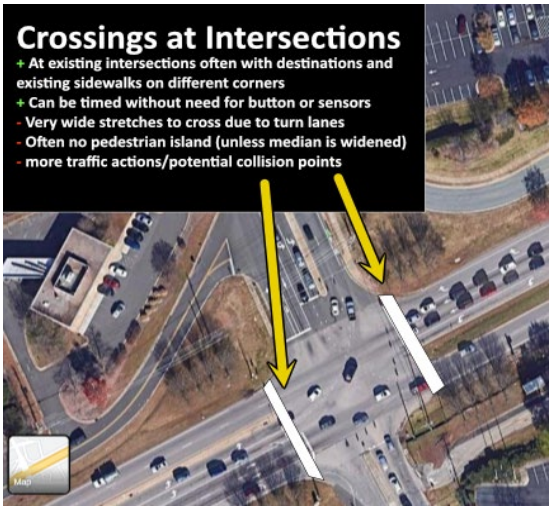

Figure 41. Crossings at Intersections

ADA Compliant Midblock Crossings

As an additional way of addressing the safety concerns with crossings with many lanes and the distance between safe crossings, our next recommendation is to create ADA-compliant mid-block crossings where there are destination centers on either side of the corridor. By placing these crossings mid-block, there are less lanes to cross and in many cases the existing median can be used to create a pedestrian island. The expected results of this improvement are improved walkability, improved pedestrian and comfort, and shorter distance between connections across the highway. Similar to the intersection crossings, this improvement has a high connection with our goals, helping encourage active transportation and urban scale connectivity. As per equity benefits, this improvement ranks medium because of safer mid-block crossings for those walking along the corridor. This will be a low to medium-cost improvement to be completed in the short to medium-term. One remaining issue is how to make the crossings truly accessible. These crossings would likely be by pedestrian request but beg buttons can pose accessibility issues and censors often break. Other potential negative effects involve more frequent interruptions to traffic flow.

Figure 42. Separate Surface Pedestrian Crossings

Feeder Roads and Grade Separation

Make One-Way Feeder Roads

In the short term, our recommendation is to improve the current service roads alongside 15-501, connecting them into feeder roads that traffic to certain destinations along the corridor would exit onto. Rather than an end, this is meant to be a step towards longer term grade separation, similar to the example in Figure 4. This would allow for better use of the service roads and potentially make it possible to narrow the main highway slightly. These feeders could also be upgraded to include bike lanes and transit stops, out of the way of the through traffic in the center of the corridor.

As related to our goals, this improvement has a medium connection with our goals because it helps improve traffic flow by separating some of the local traffic off of the main roadway and may help turn the service roads into more urban scale roadways lined with walkable development. As per equity benefits, this improvement ranks neutral in itself (more directly affects traffic flow than any vulnerable populations), though if things like bike lanes and the previously recommended sidewalks are included, it should have a positive impact. This will be a medium-cost improvement to be completed in the short term. The largest negative effect is the loss of two-way traffic to many of the destinations along the sides of the corridor. In addition, a lot of the overall traffic flow

Figure 43. Example of a Highway with One-Way Feeder Road

improvements for through traffic would not be fully realized until the main roadway was grade separated as per our next recommendation.

Grade Separation

In the long term, we recommend grade separating 15-501 at all major intersections along the corridor, using the improved feeder roads as exits and surface roads serving the destinations lining the corridor. While this would reinforce some of the separation between sides in some areas, this can be done in a way that does not interfere with the planned urban scale of the corridor or ability to cross between sides. We recommend looking to cities with this setup to learn best practices.

We expect the grade separation to greatly improve flow for “through” traffic with destinations beyond the corridor. It should also further decrease surface traffic on the feeders allowing for a gentler urban scale at street level more suited for safe crossings, dense street frontage, and active transportation. Grade separation also removes the need for left turn lanes, allowing potentially for further narrowing of the roadway. For those reasons, this improvement has a medium connection with our goals. As per equity benefits, this improvement ranks neutral because while it may help improve safety along the feeder roads, the effect is more on traffic flow. This will be a high-cost improvement to be completed in the long-term. Potential negative effects are the further separation of the two sides of the corridor and potentially harder to place BRT stations.

Land Use and Demand-Side Strategies

As part of this recommendation process, we also briefly considered land use and demand management strategies. However, overall, we found that the existing state of things was largely in good shape and largely recommend continuing on the already planned path. On the land use side, Chapel Hill and Durham have done a good job of planning the zoning and land use for the corridor to encourage largely medium or higher density uses as the corridor continues to change. As far as demand-side strategies, area transit authorities including Chapel Hill Transit, GoTriangle, GoDurham, etc have carpool/vanpool incentive programs, student and employee transit incentives, and other similar programs. In addition, UNC has limited (and somewhat discouraged) parking, and Town Center-zoned areas such as along the corridor have smaller parking minimums and alternative programs to pay into rather than build parking. We recommend continuing to expand and market these incentive programs and to continue encouraging density and walkability through low or waived parking requirements and high-density zoning.

Conclusion

As summarized in Table 1 in the appendix, all of these recommendations together help move towards a vision of a corridor that both acts as the through corridor needed to connect Durham and Chapel Hill and is also a vibrant urban destination with safe crossings, calmer more walkable streets, and reliable transit. While these likely would not be the only solutions involved, we believe our recommendations go a long way in helping transform the corridor as such, meeting both the area's needs and our collective goals through strategic short-term and long-term investments and interventions.

Table 13. List of Recommendations by Benefit, Cost, and Timeline

	Match with Goals	Equity Benefits	Cost	Timeframe	Expected Results	Potential Negatives
Connecting D bus to Patterson Place	Low	Medium	Low	Short Term	Additional alternatives connecting Durham & Chapel Hill, more direct access to Durham from Old Durham/NE Chapel Hill	N/A
Durham-Chapel Hill BRT	High	Medium	High	Medium Term	Increased ridership, decreased transit travel times, increased frequency, potential for transit-oriented development	N/A
Sidewalks	High	Medium	Medium	Short Term	Improved walkability, ped safety, access to destinations	N/A
ADA Crossings at Intersections	High	Medium	Low to Medium	Short Term	Improved walkability, ped safety, connection across highway	Safety concern w # of lanes
ADA Midblock Crossings	High	Medium	Low to Medium	Short to Med Term	Improved walkability, ped safety, connection across highway	Interruption to traffic flow
Make Feeder Roads One-Way	Medium	Neutral	Medium	Short Term	Better use of service roads, potential for narrowing main highway slightly	Loss of 2 way traffic
Grade Separation	Medium	Neutral	High	Long Term	Improved flow for “through” traffic, calmed surface traffic on feeders	Separation between sides, harder BRT placement