

NC 54/I-40 Corridor Study Introduction and Vision

Overview

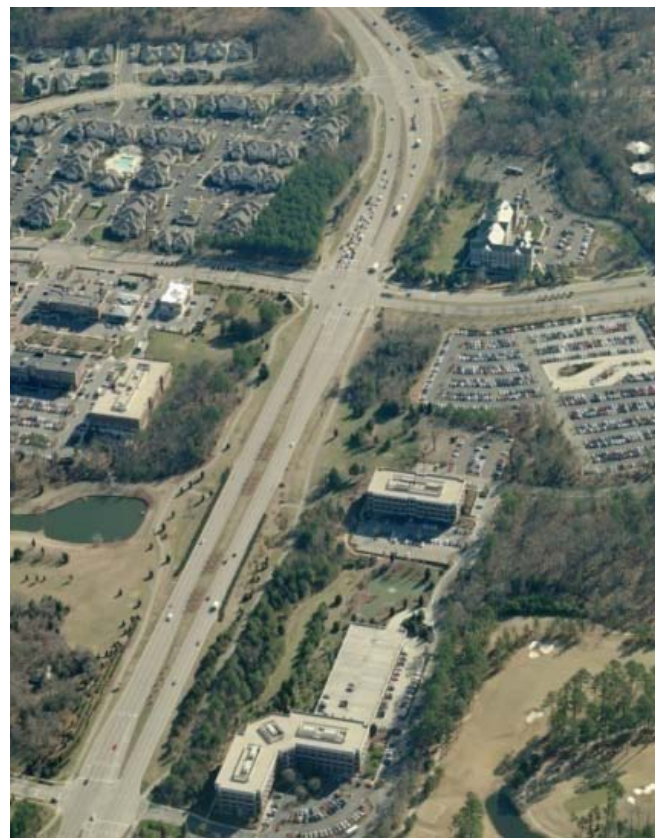
The NC 54/I-40 corridor is facing tremendous challenges from the Triangle Region’s fast-paced growth over the last decade. This corridor is extremely important to the communities in both Durham and Chapel Hill, where it serves residential, commercial and institutional land uses that depend on the corridor for access to employment, education and services. Rising levels of traffic congestion along NC 54 and at the interchange with I-40 – one of the state’s most severely congested locations – threatens property values and economic growth for both jurisdictions. Demand for statewide research and health care facilities at the University of North Carolina at Chapel Hill continue to increase, and the NC 54 corridor is the primary east-west access into the main UNC campus and medical center from I-40. Environmental constraints posed by the corridor’s proximity to the Jordan Lake watershed create an additional challenge that places greater emphasis on sustainable, environmentally sensitive mobility solutions. Despite the recent national economic downturn, the corridor is experiencing significant growth pressures that will likely resume in earnest as the economy rebounds.

NC 54 is an extremely complex corridor, involving multiple travel markets with each having unique characteristics and needs.

This is an extremely complex corridor, with multiple travel markets that are competing for service within a very limited space. These travel markets have distinct characteristics and needs, including university students, faculty and staff, medical facility commuters, patients and visitors, commuters from Chapel Hill traveling into the Research Triangle Park, and residents of Durham seeking to access employment, education and shopping destinations along the corridor. The corridor serves both local and regional travel, creating conflicts between those who just want to get between US 15-501 and I-40 as quickly as possible and those who need to access NC 54 from adjacent developments. It includes many transit riders who depend on bus service due to parking constraints and other factors. And, based on comments

from the community, there is also latent demand for walking and bicycling in the corridor if NC 54 could become less of a barrier.

Within this context, the NC 54/I-40 corridor requires an intensive examination of the future options for improving mobility and accessibility, with a phased implementation plan that links land use with transportation decision-making to create a blueprint for the corridor’s evolution. The dynamic nature of this critical corridor requires a bold vision supported by practical, achievable strategies that can guide public and private decisions over the next 20 to 30 years.



Study Objectives

Against that backdrop, the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization (DCHC MPO) initiated the NC 54/I-40 Corridor Study to develop a land use – transportation blueprint for this regionally significant high growth corridor. A scenario planning process was employed to explore long term development and transportation options for the corridor, with the use of analytical methods to evaluate the anticipated transportation impacts and benefits of the various alternatives. The outcomes anticipated for this study include development of a strategic master that accomplishes the following:

- Integrates and synthesizes various plans and studies that affect the corridor
- Engages corridor stakeholders and the public at large in the study process to understand, define and build consensus toward a corridor blueprint
- Defines multimodal transportation strategies to improve accessibility, safety and mobility, lessen environmental impacts and reduce congestion-related delay
- Identifies the optimum land use and urban form that complements planned transportation investments in the corridor, including the proposed Triangle Region light rail system
- Provides functional design recommendations for specific geometric improvements along NC 54 and at the interchange with NC 54 to improve regional mobility
- Creates a phased implementation plan with priority projects linked to the timing of growth, and
- Preparation of design guidelines to provide further support for implementing recommended land use and transportation strategies.

Study Partners

The DCHC MPO led the study, serving as the project manager in partnership with the consultant team hired for the project, Renaissance Planning Group, in association with ICF International and Michael Baker Corporation. The MPO, through its administrative arrangement with the City of Durham, provided the contractual oversight of the consultant, and coordinated the active involvement of a broad group of study partners. These partners included the North Carolina Department of Transportation (NCDOT), Triangle Transit (TTA), the City of Durham, Durham County, the Town of Chapel Hill, the University of North Carolina at Chapel Hill (UNC), Chapel Hill Transit (CHT), and the Durham Area Transit Authority (DATA). Funding partners included the MPO, the City of Durham, Durham County, and the Town of Chapel Hill.

A steering committee comprised of various staff representing each of the study partners was established to guide the process, provide input and feedback at key milestones, and review study work products. The steering committee met monthly throughout the duration of the year-long study process, and was instrumental in reviewing and refining the analysis and development of recommendations. In addition to monthly meetings, at several points in the process, a subcommittee of the steering committee met to work through various issues, such as the phasing of the transit recommendations and the analysis for development of the roadway recommendations. The study partners were extremely helpful in sharing data and offering guidance throughout the process.

Study Area

Figure 1-1 on the following page shows the NC 54/I-40 corridor study area. In light of the regional influence of the University of North Carolina, the potential land use changes in this dynamic corridor, and the need for an integrated multimodal transportation strategy to meet the corridor's future needs, the study area had to be drawn larger than the relatively narrow alignment of NC 54 itself. While the focus of the study is on how to address the transportation and land use issues affecting NC 54, the adjacent neighborhoods, potential development areas and intersecting roadways all had to be carefully considered in the study process. Thus, the corridor study limits were drawn to encompass Ephesus Church Road on the north, NC 751 on the east, the entrance to UNC campus on the west, and bounded by the Jordan Lake watershed, residential areas and Finley Golf Course to the south of the corridor.

Study Process

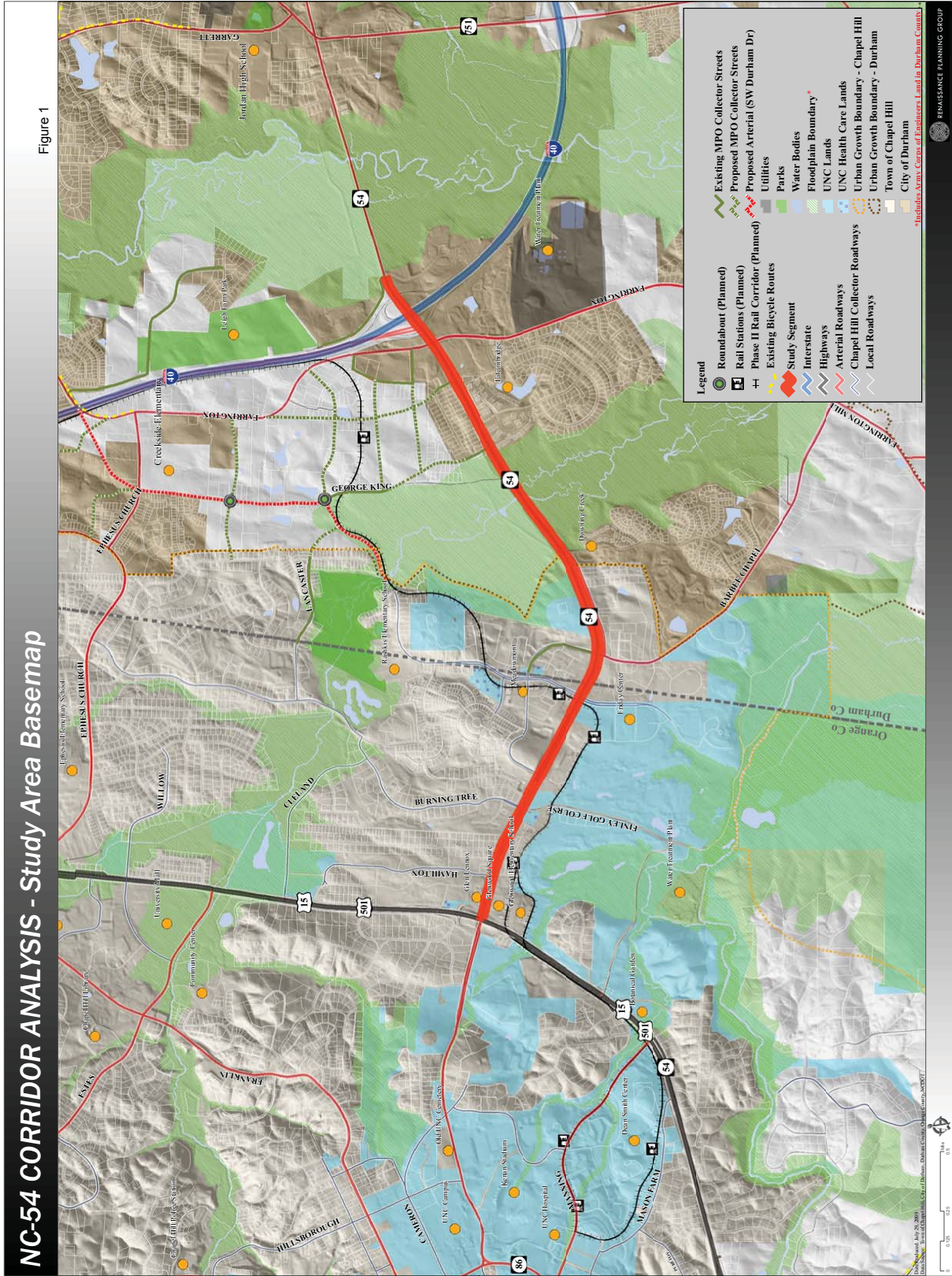
Contributing to the corridor's complexity, there are multiple interested stakeholders with expectations about the future of the NC 54 corridor. Their interests range from the convenient access to medical services for patients from all across the state to the protection of adjacent neighborhoods from diminished property values associated with cut-through traffic and noise. Both the Town of Chapel Hill and City of Durham have expectations for quality development in the corridor and convenient transportation options that meet their respective needs. Each study partner brought to the table issues and expectations for the corridor. Equally important to the various agencies involved, however, was the ability for the public at large and key constituent groups to raise issues and help develop solutions to improve the corridor. Toward that end, a vigorous public participation process was developed that helped guide the development of study recommendations. Detailed summaries of this process are included in the report appendix.

The public engagement process involved a series of in-depth focus group discussions with residents and area neighborhoods, representatives of the local jurisdictions and entities along the corridor, transit riders, bicycle and pedestrian advocates, and developers, property owners and businesses operating within the corridor. In addition to those meetings, a series of three public workshops were held at key milestones. The first workshop identified priority issues and opportunities, and provided the basis for creation of scenarios that would explore land use and transportation options.

The second workshop provided an analysis of the scenarios, and an opportunity to refine the alternatives prior to development of study recommendations. Finally, a third public workshop presented a draft set of recommendations for land use and transportation, at which the participants were able to react and suggest refinements to the plan.

In addition, a project web site (<http://www.nc54-i40corridorstudy.com/>) was created to share information and provide opportunities for the community to weigh in on issues of importance. The DCHC MPO staff and consultant also met informally with various individuals and groups to discuss the study. The recommendations contained in this report are a direct reflection of the input provided over the year-long public engagement process.

A draft report was submitted in August 2010 that represented the culmination of Phase 1 of the NC 54/I-40 Corridor Study. Following this submittal, the study recommendations underwent a thorough public review and comment period that included numerous meetings with affected governmental policy boards and their various advisory committees. Through that process, a number of technical issues were raised, with requests to further evaluate conditions to refine or justify some of the recommendations, including exploring certain alternatives. The recommendations contained in this report are a direct reflection of the input from the public engagement process and results of the technical analysis effort.



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Figure 1-1: Study Area

Vision for the Corridor

Through the study process, analysis and broad-based feedback, a vision emerged for a regionally significant multimodal corridor that serves both regional and local travel through an expanded and more efficient network of streets, bus routes, bicycle facilities and pedestrian enhancements. The integrated land use and transportation vision is to promote community livability by guiding future development into targeted mixed use areas to reduce trip lengths, enable greater use of non-auto travel options and provide choices for housing and transportation. These nodes will be supported by an expanded and higher-capacity bus transit network, along with a planned light rail system connecting the corridor's existing and future activity centers to downtown Durham, Chapel Hill, and elsewhere in the Triangle Region. The centers help transform the corridor from a drive-by strip into a highly accessible place defined by unique and vibrant focal points that serve as gateways to Durham, Chapel Hill and the University of North Carolina at Chapel Hill.

The NC 54 Corridor Master Plan promotes location-efficient decisions to help lower combined housing and transportation costs per household. It puts people and jobs closer together, served by a more energy efficient transportation system that enables more trips to be made by walking, bicycling and transit. The plan defines target growth areas that help reduce sprawl in outlying areas.

Land Use Strategy

Figure 1-2 presents the recommended nodal development vision for the corridor. This land use blueprint is explained in further detail in the next section of this report.

This nodal development plan embraces key livability principles that provide more transportation choices, create opportunities for affordable housing through location-efficient, higher density mixed use development around transit station areas, enhance economic competitiveness along the corridor through reliable and timely access to employment, educational opportunities and services, and support existing communities through transit-oriented, compact development that will help safeguard existing neighborhoods and preserve the rural landscapes.

The creation of highly developed mixed use centers can help reduce automobile travel demand by creating an environment where walking and access to transit are the priorities. Trips to work are only one part of the

solution, and many people need their car throughout the work day. However, if only 20-25 percent of daily travel nationwide is for commuting to and from work, then the potential exists for well-designed compact, mixed use development to enable more trips to be made by walking, bicycling and transit to restaurants, social activities, shopping destinations and the like. The nodal development plan also provides a mechanism to advance transportation funding opportunities that are unlikely to be available with the lower density development scenario. For instance, more intense development at the planned Leigh Village station and other "nodes" along the corridor can provide sufficient incentive to obtain funds to offset transportation costs for roadway improvements that eventually will be needed in the corridor even without the development. The traffic projections for the MPO's adopted 2035 Long Range Transportation Plan (LRTP) – without the nodal development plan in the NC 54 corridor – show that major capacity improvements will be needed. Higher densities also enable developers to incorporate

a greater percentage of workforce housing into the development program, which will help shorten trip lengths and create more purchasing power for those residents who can effectively lower both housing and transportation costs.

Transportation has a profound influence to shape growth in a region and along a corridor. The parking constraints on the UNC campus and elsewhere in the Town of Chapel Hill have certainly influenced the use of transit, and, at least to a certain extent, where people choose to live. Developers and their clients (businesses, residents) respond to transportation conditions when they decide where to build, live, or locate their business. A new or improved roadway or transit project can make access to a location easier – making it more attractive to develop. A transportation improvement can also improve visibility – an important consideration for commercial developers. Many businesses rely on being seen by “pass-by” traffic and want to locate where there is a lot of vehicle and/or pedestrian traffic. This has been the case at the NC 54/Farrington Road intersection, where development depends on highway visibility. Conversely, rail transit is likely to result in more compact development clustered within walking distance of the station, and opens up new opportunities for how people choose to live and travel.

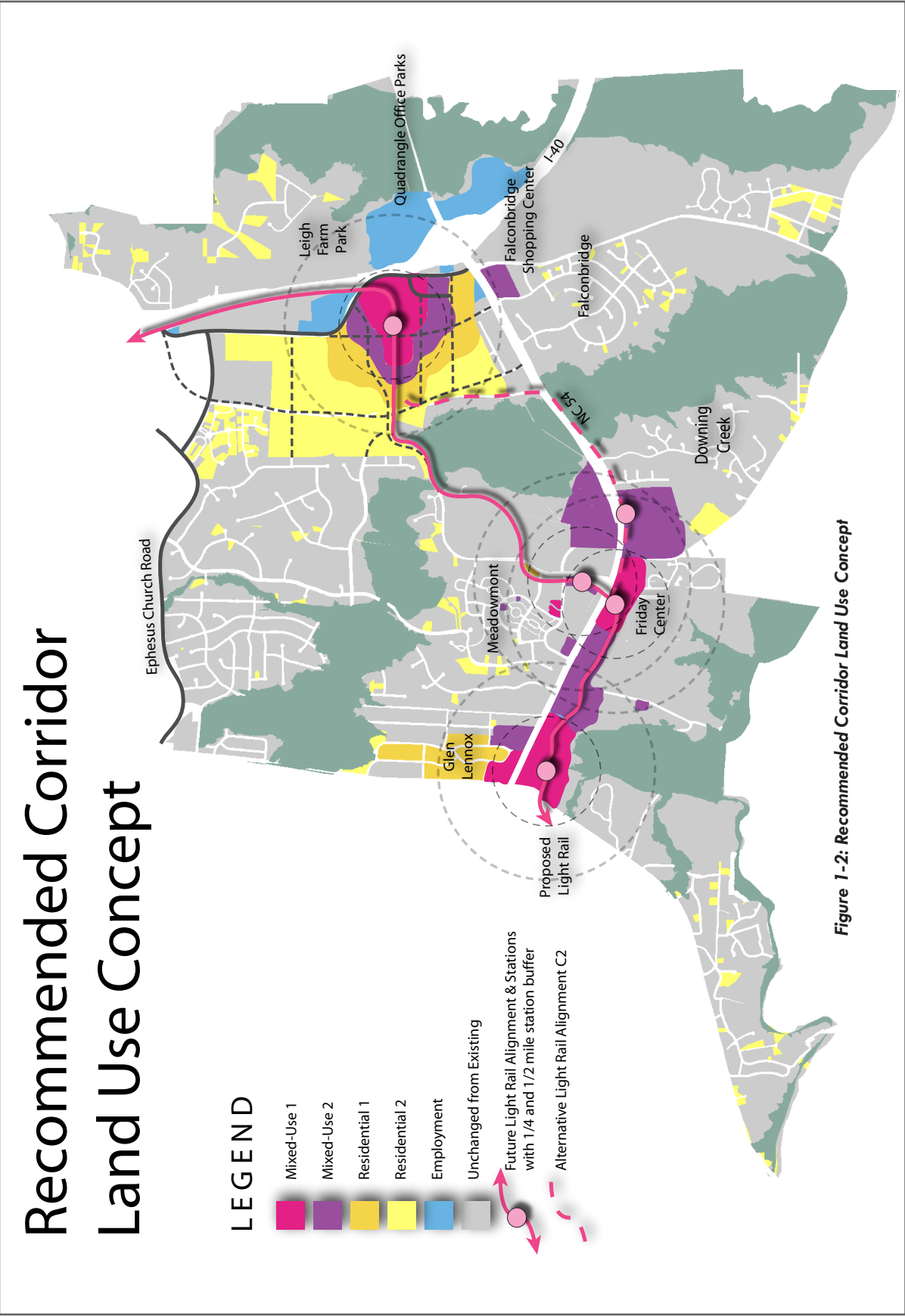
The response is also strongly influenced by the land use policy and planning context – for example, when the predominant mode of travel is the automobile, rail

transit needs to be accompanied by strong land use policies in order to concentrate development in station areas. This type of strategy in the NC 54 corridor is necessary to avoid a future scenario where rising levels of congestion will occur due to growth occurring throughout the region, and the demands placed on the NC 54 corridor and its interchange with I-40 will lack any financial support from planned development.

The timing of future development is largely dependent on the schedule for light rail and an interim expansion of regular bus service with a higher-capacity Bus Rapid Transit (BRT) service operating in the corridor. These transit lines will be needed to help meet the traffic demand from new development, which cannot be completely met by existing or planned roadways.

If the funding mechanism is approved and the light rail plan moves forward, detailed station area plans would guide the development plans for each station in the corridor. Build-out of the nodal development plan depends on the rail network or a comparable form of Bus Rapid Transit that can effectively support the planned development program and mitigate the demand for automobile traffic driving to the development. In the

interim, it is imperative that the corridor stakeholders work to advance premium transit in the form of BRT (such as through bus signal priority, queue jump lanes or other BRT strategies) to properly complement the phasing of proposed development plans. Due to the significant roadway capacity challenges of this corridor, increases in development intensity must be timed to occur with expansion of fixed route bus service, introduction of the higher capacity BRT service, and, ultimately, when the light rail system becomes operational. Timing development with the interim BRT and ultimate light rail network will help ensure that adequate transportation options exist as more intensive development occurs.



Transportation Strategy

Table 1-1 presents the phased multimodal transportation recommendations associated with the recommended nodal development plan. The recommendations are divided into short, mid-term and long term strategies. These are described in detail in Chapters 3 – 6 of this report. In general, the short term roadway strategies consist of a series of local street connections including the collector streets to provide alternate routes for local trips and improve traffic flow and operational efficiency.

The interim components include reconstruction of the I-40 interchange, where the critical intersection of Farrington Road and NC 54 causes significant congestion due to its proximity to the I-40 interchange, grade separation to eliminate traffic signals, and unconventional intersection designs commonly referred to as “superstreets.” Implementing these strategies will reduce delay and will support the anticipated traffic growth in the corridor.

Longer term, with the recommended nodal development pattern, a redesign of the US 15-501 interchange at NC 54 will be needed, and can enhance bicycle and pedestrian safety in the future Hamilton Road light rail station area.

Transit is an integral part of this overall strategy. In addition to the planned light rail system, a network of premium Bus Rapid Transit lines, expanded local bus service, and additional park-and-ride lots are recommended for the corridor. The key park-and-ride

strategy is the implementation of multiple facilities north and east of the NC 54/I-40 interchange to capture trips before they enter the corridor. The package of facilities will together serve regional commuters, latent demand for satellite parking, and future parking for light rail transit, and could provide an alternative to the Friday Center lot should it redevelop in the future.

From a bicycle and pedestrian network standpoint, the recommended plan fills in gaps and improves safety and access along NC 54 through geometric modifications and the creation of a 15’ shared use path adjacent to the roadway between Barbee Chapel Road and the I-40 interchange. This is a critical gap in the corridor, and high-speed traffic precludes an on-road solution for the section east of the Friday Center. Additional non-motorized transportation recommendations are identified throughout the corridor, including along Barbee Chapel Road and at US 15-501.

Table 1-1: List of Transportation Recommendations

PARK-AND-RIDE					
Description	Location	Jurisdiction	Phase	O&M	Capital
Coordinate with retailers to designate 50 shared park-and-ride spaces. Enhance TTA 805 service through Woodcroft.	Retail Center at NC 751/ NC 54 Intersection ¹	Durham	Short Term (2012-2020)	\$565,000 ²	n/a
Construct surface lot with 500 spaces. Implement a new CHT express route (or modify CHT Routes D and DX to serve facility. Extend Danziger Drive over I-40 for additional access.	Gateway Center Future Light Rail Station	Chapel Hill	Short Term (2012-2020)	\$565,000 ²	\$3,555,000 ^{3,4}
Coordinate with retailers to designate 300 shared park-and-ride spaces. Extend existing CHT DX route to serve facility.	Patterson Place	Durham	Short Term (2012-2020)	\$565,000 ²	n/a
Coordinate with retailers to designate 100 park-and-ride spaces for carpool and vanpool.	Retail Center at Governors Village	Durham	Short Term (2012-2020)	n/a	n/a
Coordinate with retailers to designate 160 park-and-ride spaces. Add a stop along TTA Route 405 to serve facility.	Oak Creek Village	Durham	Mid Term (2020-2025)	\$565,000 ²	n/a
Coordinate with retailer to replace or expand existing facilities in Southpoint Mall. Modify TTA and DATA routes as necessary.	Renaissance Parkway Target Store	Durham	Mid Term (2020-2025)	\$565,000 ²	n/a
Construct small facility with up to 500 spaces after construction of I-40 interchange improvements. Provide express bus service if constructed before light rail.	Leigh Village Future Light Rail Station	Durham	Long Term (2025-2035)	\$565,000 ²	\$10,000,000 ⁵
Convert surface lot into structured facility with 1,000 spaces.	Gateway Center Future Light Rail Station	Chapel Hill	Long Term (2025-2035)	n/a	\$20,000,000 ⁵
Construct structured parking facility with 1,000 spaces to service light rail station.	Patterson Place	Durham	Long Term (2025-2035)	n/a	\$20,000,000 ⁵
Implement CHT express route	Retail Center at Governors Village	Durham	Long Term (2025-2035)	\$565,000 ²	n/a

- 1 The pursuit of several locations for a park-and-ride facility along NC 751 is recommended, including Southpoint Auto Park Boulevard and the Renaissance Parkway Target Store. The retail center at the NC 751/NC 54 intersection represents an ideal location, but all three locations should be pursued.
- 2 Operating costs based on additional total annual hours multiplied by \$86, with 15 minute frequency during peak hours and 30 minute frequency during off-peak hours
- 3 Assumes \$5,000 per space, the average surface parking construction cost from the National Parking Association's 2009 study Parking in America: Annual Review of Parking Rates in the United States and Canada
- 4 Includes cost of two new buses based on a 50/50 split of \$400,000 non-hybrid buses and \$655,000 hybrid buses for an average of \$527,500 per bus
- 5 Includes cost of multi-level parking structure at \$20,000 per space.

TRANSIT					
Description	Location	Jurisdiction	Phase	O&M	Capital
Expanded Local Bus service with 30 minute frequency	Southeast along Barbee Chapel Rd and returning north back to NC 54 along Farrington Rd with transfer to regional service	Durham	Short Term (2012-2020)	\$1,355,400 ¹	\$700,000 (2 buses at \$350,000 each) ²
Express Bus service along NC 54 from the NC 751 park-and-ride facilities	From NC 751 park-and-ride facilities to downtown Chapel Hill along NC 751 and NC 54	Durham & Chapel Hill	Short Term (2012-2020)	\$1,355,400 ³	\$700,000 (2 buses at \$350,000 each) ²
Express bus service along US 15-501 or Franklin St from the Gateway Center park-and-ride.	From Gateway Center at the I-40/US 15-501 interchange to downtown Chapel Hill along US 15-501 or Franklin St	Chapel Hill	Short Term (2012-2020)	\$1,355,400 ³	\$700,000 (2 buses at \$350,000 each) ²
Light Rail Transit Preliminary Engineering and Design	Durham to Chapel Hill	Durham & Chapel Hill	Mid-Term (2020-2025)	n/a	n/a
Expanded Local Bus service with 30 minute frequency	North of NC 54 along Farrington Rd & SW Durham Dr to US 15-501 (Durham- Chapel Hill Blvd)	Durham	Mid-Term (2020-2025)	\$1,355,400 ¹	\$700,000 (2 buses at \$350,000 each) ²
Bus Rapid Transit - Phase 1. Five minute frequency with daily peak vehicle need of six buses	From Meadowmont along NC 54 to downtown Chapel Hill	Chapel Hill	Mid-Term (2020-2025)	\$11,566,080 ⁴	\$3,400,000
Bus Rapid Transit - Phase 2. Five minute frequency with daily peak vehicle need of six buses.	From NC 751 park-and-ride facilities along NC 54 towards Chapel Hill, aligning with Bus Rapid Transit - Phase 1	Durham	Mid-Term (2020-2025)	\$11,566,080 ⁴	\$3,400,000
Flex Route service	General service north and south of study area along Barbee Chapel Rd, Pinehurst Dr, Farrington Rd, Ephesus Church Rd, serving the Falconbridge Community, Downing Creek community, and Glen Lennox	Chapel Hill	Mid-Term (2020-2025)	\$4,066,200 ⁵	\$307,200 (4 buses at \$76,800 each) ²
Light Rail Transit (Final Design and Construction)	Durham to Chapel Hill	Durham & Chapel Hill	Long Term (2025-2035)	TBD ⁶	\$2,750,000 ²

1 Operating cost for normal fixed route service with 30 minute frequency is based on Long Range Transportation Plan.
 2 Source of vehicle cost is 2011 Transportation Improvement Program.
 3 Operating cost for express bus service is based on the operation of a fixed route service, but at a higher frequency.
 4 Bus Rapid Transit costs are based on the 2009 Long Range Transit Plan study conducted by the Town of Chapel Hill. They include the cost of roadway improvements.
 5 Flex Route costs are based on the normal operations of a fixed route service. Flex service is essentially the same type of service, only different in the method of delivery.
 6 Operating cost estimates for the light rail project cannot be provided. The project has a more complete analysis and cost estimated being conducted by Triangle Transit. The current cost for this project is limited to an estimate of preliminary engineering and design.

PEDESTRIAN AND BICYCLE				
Description	Location	Jurisdiction	Phase	Cost ¹
Install crosswalks and pedestrian signals at signalized intersections with pedestrian refuge islands and street lighting for crossing NC 54. ²	Burning Tree Dr/ Finley Golf Course Rd & NC 54	Chapel Hill	Short Term (2012-2020)	\$80,000
	W Barbee Chapel Rd & NC 54	Chapel Hill	Short Term (2012-2020)	
	Meadowmont Ln/ Friday Center Dr & NC 54	Chapel Hill	Short Term (2012-2020)	
	E Barbee Chapel Rd & NC 54	Chapel Hill	Short Term (2012-2020)	
	Huntingridge Rd & NC 54	Durham	Short Term (2012-2020)	
	Farrington Road (northern, southern and eastern approaches) & NC 54	Durham	Short Term (2012-2020)	
	Leigh Farm Rd/ Quadrangle Dr & NC 54	Durham	Short Term (2012-2020)	
Install crosswalks with pedestrian-activated flashers and expand refuge islands.	US 15-501 on/off ramps	Chapel Hill	Short Term (2012-2020)	\$40,000
Extend the solid marking designating the westbound exclusive right turn lane for US 15-501 on-ramps to minimize weaving movements at interchange and increase safety for on-road bicyclists.	From SB US 15-501 on ramp to 500 feet to the east	Chapel Hill	Short Term (2012-2020)	\$2,700,000
Provide a minimum 5-foot wide on-road bicycle lane by restriping travel lanes to be 11 feet wide and making minor median modifications.	NC 54 from Burning Tree Dr/ Finley Golf Course Rd to the west	Chapel Hill	Short Term (2012-2020)	
Modify sloped abutment wall to provide 8-foot wide sidewalk behind overpass structural piers.	NC 54 underneath US 15-501 overpass	Chapel Hill	Short Term (2012-2020)	
Pave road shoulders to accommodate bicyclists on select roads to provide connections to the American Tobacco Trail.	From NC 54 to the American Tobacco Trail via Barbee Chapel Rd, Farrington Rd, Stagecoach Rd, NC 751, and Massey Chapel Rd	Durham	Short Term (2012-2020)	\$4,000,000

PEDESTRIAN AND BICYCLE				
Description	Location	Jurisdiction	Phase	Cost ¹
Ensure adequate facilities for pedestrians and cyclists are available. Provide a 5-foot wide bicycle lane where possible, or provide “share the road” signage and a paved shoulder or sharrow markings for on-road bicycle travel. Many of the collector streets are designed with for low vehicular speeds with the intent for bicycles to share the travel lane. Fill in sidewalk gaps. ³	Farrington Road through the study area (Old Chapel Hill Rd to Stagecoach Rd)	Durham	Short Term (2012-2020)	Variable cost. Paving five-foot wide bike lanes on both sides of the roadway would cost approximately \$1,200,000 per lane assuming medium duty pavement. Striping a bike lane without paving would cost approximately \$5,000 per mile. Installing signage would cost about \$1,500 per sign. Installing sidewalks would cost about \$265,000 per mile.
	Ephesus Church Rd from Farrington Rd to E Franklin St	Durham & Chapel Hill	Short Term (2012-2020)	
	George King Rd & Crossland Dr (proposed collector street) from Ephesus Church Rd to NC 54	Durham	Short Term (2012-2020)	
	SW Durham Dr from Ephesus Church Rd to NC 54	Durham & Chapel Hill	Short Term (2012-2020)	
	Lancaster Dr and E/W collector street from Farrington Rd to Pinehurst Dr	Durham & Chapel Hill	Short Term (2012-2020)	
	Pinehurst Dr from Ephesus Church Rd to Burning Tree Dr	Chapel Hill	Short Term (2012-2020)	
	Burning Tree Dr from Pinehurst Dr to NC 54	Chapel Hill	Short Term (2012-2020)	
	Hamilton Rd from NC 54 to Cleland Dr	Chapel Hill	Short Term (2012-2020)	
	Cleland Dr from Burning Tree Dr to US 15-501	Chapel Hill	Short Term (2012-2020)	
Construct Little Creek Trail to connect Meadowmont Trail to Lancaster Drive.	Meadowmont Trail at Rashkis Elementary School	Chapel Hill	Short Term (2012-2020)	TBD
Widen the existing bicycle path to a 15-foot wide shared use path.	Along the east side of US 15-501 from Cleland Rd to S Estes Dr	Chapel Hill	Short Term (2012-2020)	TBD
Construct the Bolin Creek Greenway connection to Pinehurst Dr.	Bolin Creek Greenway	Chapel Hill	Short Term (2012-2020)	TBD

PEDESTRIAN AND BICYCLE				
Description	Location	Jurisdiction	Phase	Cost ¹
Construct an off-road shared-use path, with a boardwalk bridge as an alternative solution in environmentally sensitive areas. Path should have minimum 10-foot width; ideally 15 feet if possible.	Along NC 54 from E Barbee Chapel Rd to I-40 overpass	Durham & Chapel Hill	Mid-Term (2020-2025)	The cost for these improvements is included in the roadway projects list under the item "Widen NC 54 to six lanes in the Durham section. Construct the multi-use path concurrent with the road project."
	Along the NC 54 frontage to connect to the existing multi-use path at Burning Tree Dr	Chapel Hill	Mid-Term (2020-2025)	
Construct pedestrian facilities with ramps at Falconbridge Rd and Farrington Rd bridges over NC 54	Falconbridge Rd & Farrington Rd	Durham	Mid-Term (2020-2025)	
Construct sidewalk on south side of NC 54 to connect to I-40 overpass.	South side of NC 54 from Huntingridge Rd east to I-40 overpass	Durham	Mid-Term (2020-2025)	
Construct a 10-foot wide shared use path on south side of overpass.	NC 54 bridge over I-40	Durham	Mid-Term (2020-2025)	
Implement crosswalks and landscaped median refuges at superstreet intersections.	Huntingridge Rd & NC 54	Chapel Hill	Mid-Term (2020-2025)	The cost for these improvements is included in the roadway projects list under the item "Construct EB NC 54 to EB I-40 flyover from Farrington Road to I-40 EB on-ramp."
	Meadowmont Ln/ Friday Center Dr & NC 54	Durham	Mid-Term (2020-2025)	
Design and construct light rail bridge over NC 54 to serve as an elevated pedestrian crossing.	Across NC 54 connecting Meadowmont and Friday Center	Chapel Hill	Long Term (2025-2035)	TBD
Construct Southwest Rail Trail along light rail alignment during light rail construction.	Along future light rail corridor	Durham & Chapel Hill	Long Term (2025-2035)	TBD
Construct US 15-501 underpass to connect Bolin Creek Greenway.	S Estes Dr & US 15-501	Chapel Hill	Long Term (2025-2035)	TBD
Continue to make regional connections with greenways	where possible	Durham & Chapel Hill	Long Term (2025-2035)	variable cost

1 Cost estimates do not include right-of-way, utilities or escalation.
 2 Crosswalks, refuge islands, pedestrian signals and street lighting can be installed with developer mitigation funds. They may also be implemented concurrently with road maintenance projects such as resurfacing, or as part of more substantial road improvements (i.e., construction of the superstreet intersections)
 3 Although it may not be feasible to provide bike lanes or paved shoulders and construct sidewalks on all of these roads within the next five years, these recommendations should remain a priority and should be constructed as soon as funds are available.

ROADWAY				
Description	Location	Jurisdiction	Phase	Cost ¹
Construct Farrington Rd slip ramp for northbound traffic on Farrington Rd to access eastbound I-40 directly. Modify on-ramp to allow for transition.	Farrington Rd	Durham	Short Term (2012-2020)	\$3,400,000 ²
Construct collector street system including turn lanes on NC 54.	As specified in the adopted Southwest Durham – Southeast Chapel Hill Collector Street Plan	Durham	Short Term (2012-2020)	\$31,400,000
Construct access road behind the Farrington Road shopping center for connection between Farrington Rd and Falconbridge Rd.	Between Farrington Rd and Falconbridge Rd	Durham	Short Term (2012-2020)	\$400,000
Obtain Marriot Way, then upgrade to NCDOT standards and extend to Barbee Chapel Rd.	Between Friday Center Dr and E Barbee Chapel Rd	Chapel Hill	Short Term (2012-2020)	\$800,000
Construct other connections as opportunities arise through development proposals.	Through study area	Durham & Chapel Hill	Short to Long Term	Variable cost
Close Glenwood Square shopping center driveways along NC 54 and provide access via Hamilton Rd	Glenwood Square Shopping Center at US 15-501 interchange	Chapel Hill	Short Term (2012-2020)	\$100,000 ³
Construct dual exit lanes for I-40 WB to NC 54 WB loop ramp plus two thru lanes on NC 54 WB. Widen bridge for four EB lanes, three WB lanes, and 10-foot sidewalk on south side.	I-40 Interchange with NC 54	Durham	Mid-Term (2020-2025)	\$6,100,000 ⁴
Add new partial cloverleaf ramp for I-40 EB to NC 54 EB, remove existing signal and install yield sign at the I-40 EB to NC 54 WB ramp. Reconfigure EB approach at I-40 EB on-ramps for two free-flow lanes to EB I-40.	I-40 Interchange with NC54	Durham	Mid-Term (2020-2025)	\$2,100,000
Widen NC 54 to six lanes east of Barbee Chapel Rd to match six lane section to the west. Construct the multiuse path concurrent with the road project.	Barbee Chapel Rd to I-40 Interchange	Durham	Mid-Term (2020-2025)	\$22,700,000
Implement superstreet configuration at Crossland Drive.	Future western collector street ⁵ & NC 54	Durham	Mid-Term (2020-2025)	\$3,900,000
Convert Farrington Rd intersection to an overpass over NC 54 with pedestrian facilities.	Farrington Rd at NC 54	Durham	Mid-Term (2020-2025)	\$6,500,000
Convert Falconbridge Rd intersection to a grade separated interchange with pedestrian facilities.	Falconbridge Rd at NC 54	Durham	Mid-Term (2020-2025)	\$9,800,000

ROADWAY				
Description	Location	Jurisdiction	Phase	Cost ¹
Implement superstreet configuration at Meadowmont Ln/ Friday Center Dr.	Meadowmont Ln/ Friday Center Dr & NC 54	Chapel Hill	Mid-Term (2020-2025)	\$4,300,000
Construct Barbee Chapel Rd grade separation.	Barbee Chapel Rd & NC 54	Chapel Hill	Mid-Term (2020-2025)	\$9,200,000
Construct partial cloverleaf redesign of US 15-501 interchange.	US 15-501 & NC 54 interchange	Chapel Hill	Long Term (2025-2035)	\$17,300,000
Implement superstreet configurations at W Barbee Chapel Rd and Burning Tree Dr/ Finley Golf Course Rd.	NC 54 intersections with W Barbee Chapel Rd and Burning Tree Dr/ Finley Golf Course Rd	Chapel Hill	Long Term (2025-2035)	\$4,900,000

1 Cost estimates do not include right-of-way, utilities or escalation.
 2 Cost estimates includes fourth travel lane on eastbound I-40 to bridge across creek prior to NC 751 interchange. Recommendations extend travel lane to NC 751 interchange.
 3 Cost estimate does not include right-of-way damages.
 4 Cost estimate extends from I-40 ramps to Leigh Farm Rd/Quadrangle Dr.
 5 Crossland Drive refers to the future western collector street. Throughout the study process, public citizens raised concerns over the Crossland Drive alignment and proposed George King as a future collector street. The superstreet configuration is recommended for whichever road alignment becomes the collector street.

Report Contents

This final report includes sections addressing each element of the corridor blueprint strategy: land use and the various components of the multimodal transportation network that are necessary to support the corridor's future growth, economic vitality and environmental sustainability. The transportation recommendations are presented in sections addressing park-and-ride, transit, bicycle and pedestrian and roadway modifications, and include a phasing plan. These sections of the main body of the report are followed by a separate package of appendices that provide back-up information covering the community profile and foundational data development activities, modeling methodology, traffic growth projections, and an extensive summary of public participation activities and comments received throughout this process.