Evaluating Existing Conditions

Demographics

Community Growth

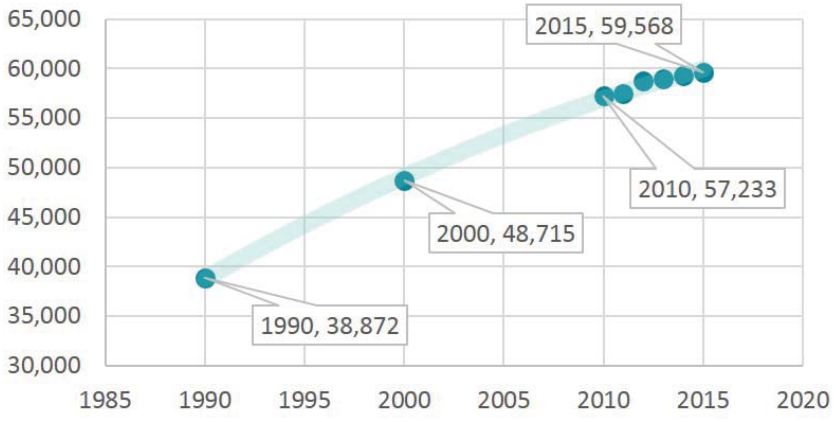
The Town of Chapel Hill's population, like that of the entire Triangle region, continues to grow, increasing by more than 50% over the 25-year period from 1990 to 2015. Orange County's population is expected to increase by 13% between the 2010 and 2020 Censuses, while its neighboring counties to the east are all expected to grow by 20% in the same period.

While its population is growing, the Town limits are not. Chapel Hill's "Urban Services Boundary" is comprised of 20.9 square miles where water, sewer, and other municipal services are provided. A Rural Buffer exists on the edges of Chapel Hill and Carrboro to maintain rural character and low-density uses without urban services outside of the towns. Most of the land in Chapel Hill is already developed or spoken for so community growth in Chapel Hill will occur primarily in the redevelopment of existing areas.

Preparing for Community Growth

Planning for and managing growth will be prominent issues for our community, and region. In order to adapt to and embrace these changes and the growth that is predicted, the Town needs to plan for transportation now and into the future.

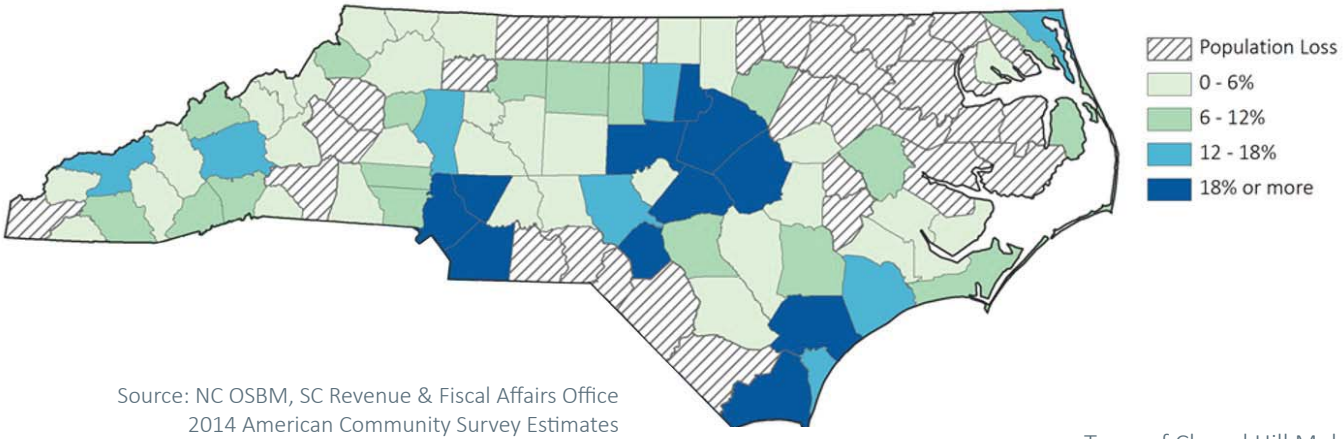
Population Growth - Chapel Hill, NC



Source: US Census Bureau, Census Data

Population Growth Areas in North Carolina

Projected growth and losses in population, 2010-2020



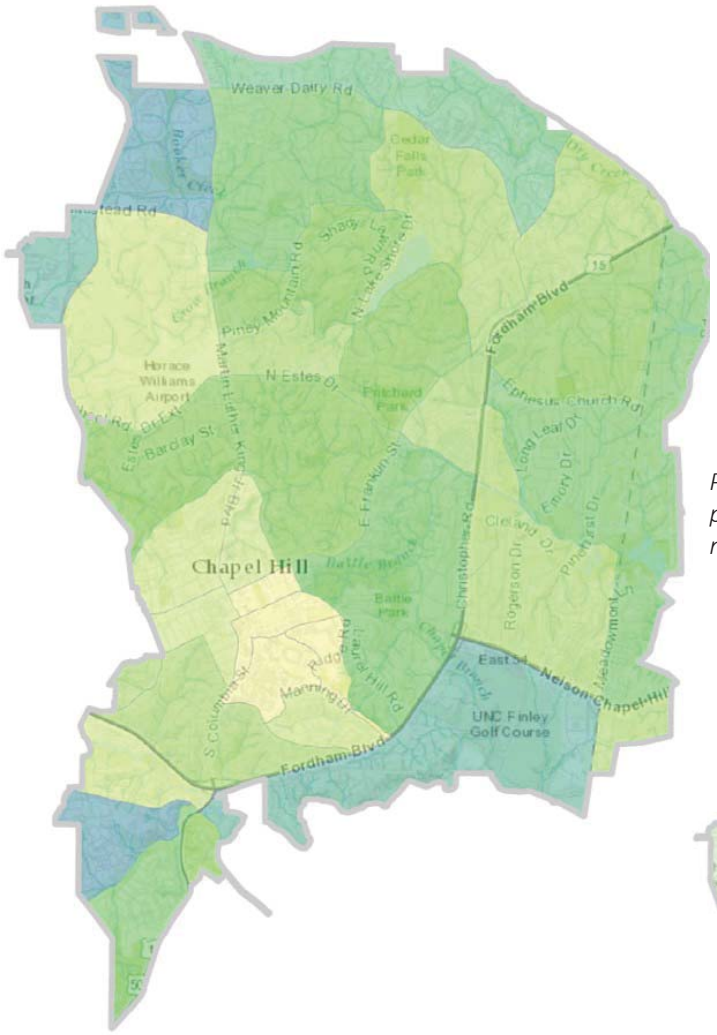
Source: NC OSBM, SC Revenue & Fiscal Affairs Office
2014 American Community Survey Estimates

Populations with Needs or Preferences for Bicycling and Walking

Census data can help planners identify areas where there may be a need or desire for transportation alternatives. Areas where a large number of households have low rates of vehicle ownership and lower incomes may need more transit service to link residents to jobs and services, as well as bike and pedestrian connections to transit.

2014 American Community survey data shows the following trends in Chapel Hill and may predict where some residents will most benefit from improvements to bicycling and walking mobility.

- A greater percentage of households with lower incomes, zero vehicle ownership, and non-family status are found in the central part of Chapel Hill adjacent to UNC. This pattern is typical for areas with both multifamily residential uses and large university student population.
- A greater percentage of zero-vehicle households occurs in areas to the northeast of downtown.
- Non-family households have an significantly lower average income than that of family households, and make up 48% of the total households in Chapel Hill. Much of this population is located along the MLK Jr Blvd. corridor and may be helped with frequent transit service.

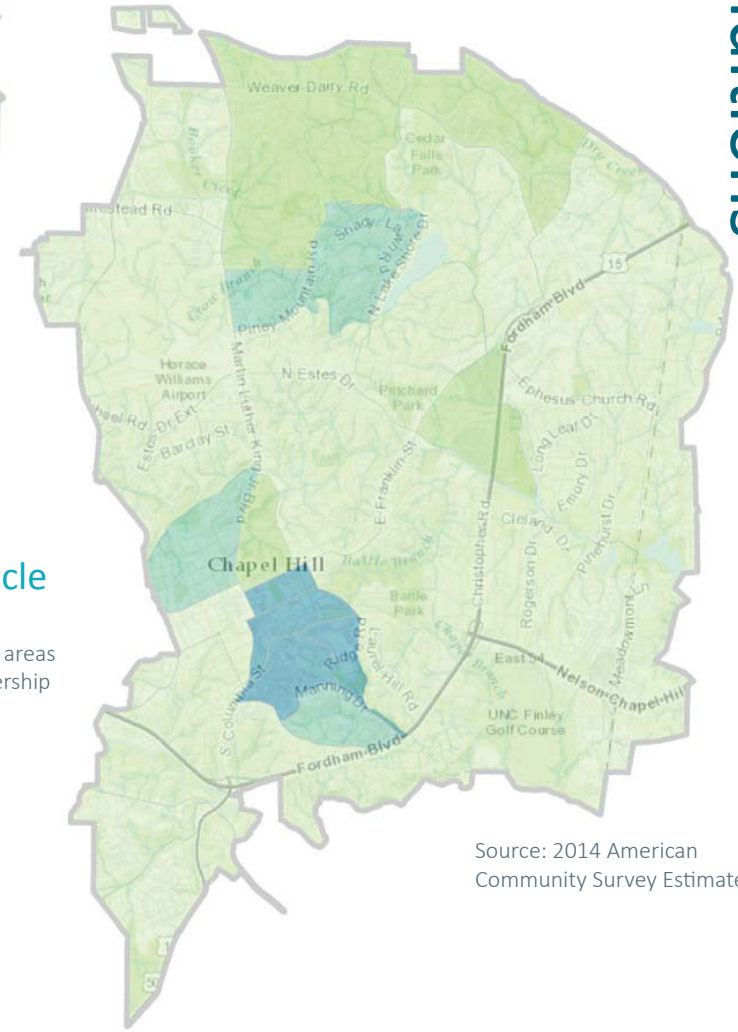


Lower Household Incomes

The lighter shaded areas indicate areas of the Town with lower median household incomes.

1 - 20,000	80,001 - 100,000
20,001 - 40,000	100,001 - 120,000
40,001 - 60,000	120,001 - 140,000
60,001 - 80,000	140,001 - 160,000

Populations in Chapel Hill with greater needs or preferences for bicycling and walking, including "last mile" trips to access transit.



Lower Rates of Vehicle Ownership

The darker shaded areas indicate areas that have lower rates of car ownership in the Town.

Percent of Occupied Units with Zero Vehicles	
	0-10%
	10-20%
	20-30%
	30-40%
	40% +

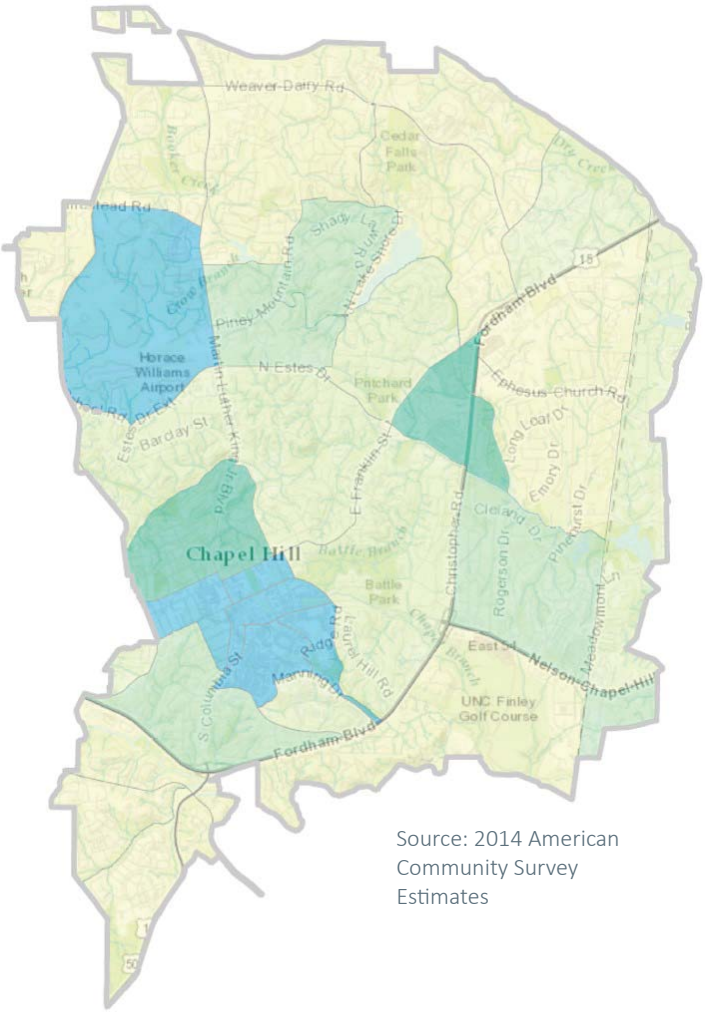
Source: 2014 American Community Survey Estimates

Demographics

Percent of Non-Family Households

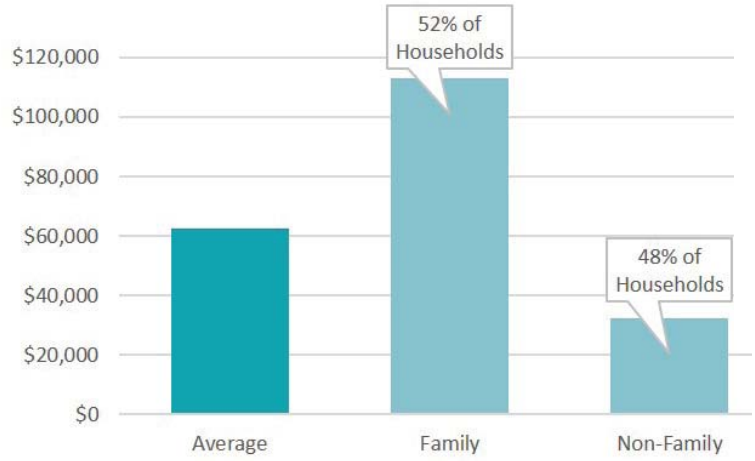
A household includes all the persons who occupy a housing unit, whether living alone or with others. The average household size in Chapel Hill is 2.35 persons.

The darker shaded areas indicate places in the Town that have higher percentages of Non-Family Households.



Source: 2014 American Community Survey Estimates

Household Income in Chapel Hill



Transportation Demand Management (TDM)

The Town's TDM Employee and Citizen Outreach includes year round campaigns, programming and special events to promote commute alternatives to and from work as well as getting out and about in the Chapel Hill community.

Outreach includes:

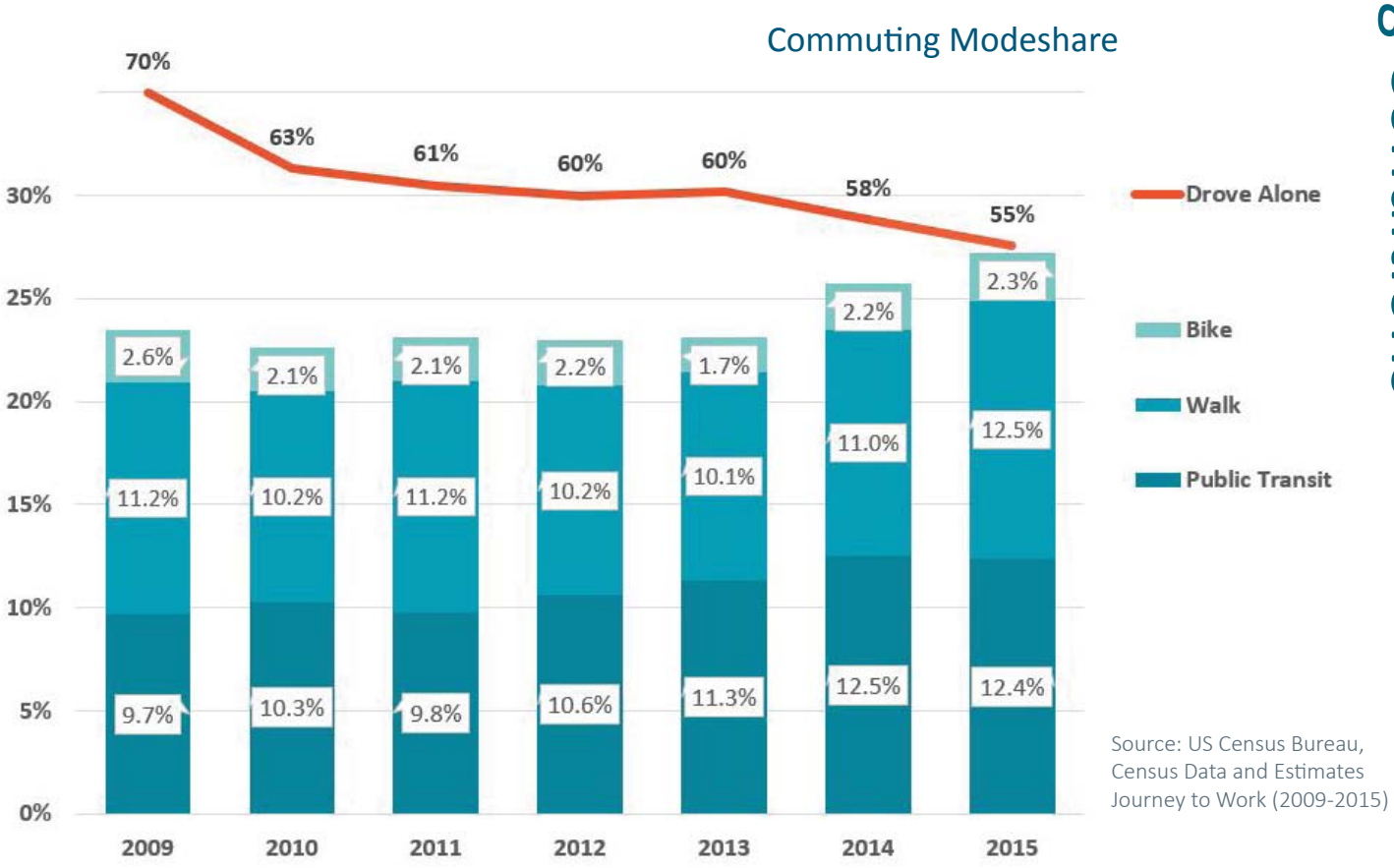
- Go Chapel Hill Transportation Management Plan (TMP) Program:
  - Outreach to local businesses
  - Commute Club
  - Annual TMP Champion Conference, trainings & workshops
- Bicycle Month special events
- Partnership & Collaboration with UNC-CH, Town of Carrboro, regional transit agencies, organizations, local businesses, bicycle stores and advocacy groups
- Social media including Instagram, Facebook, Twitter, Newsletter, E-Blasts and Go Chapel Hill website

Statistics

Changing Behaviors

There is already a culture of taking transit, walking, and bicycling to work in Chapel Hill. Journey to work data from 2015 shows residents commuting by alternative modes rose to over 27% of total trips while single occupancy vehicles decreased to 55%.

However, commuting does not represent the majority of transportation usage. It does not include travel such as running errands, trips to school, or business meetings. Nationally, commuting only accounts for 16% of trips.



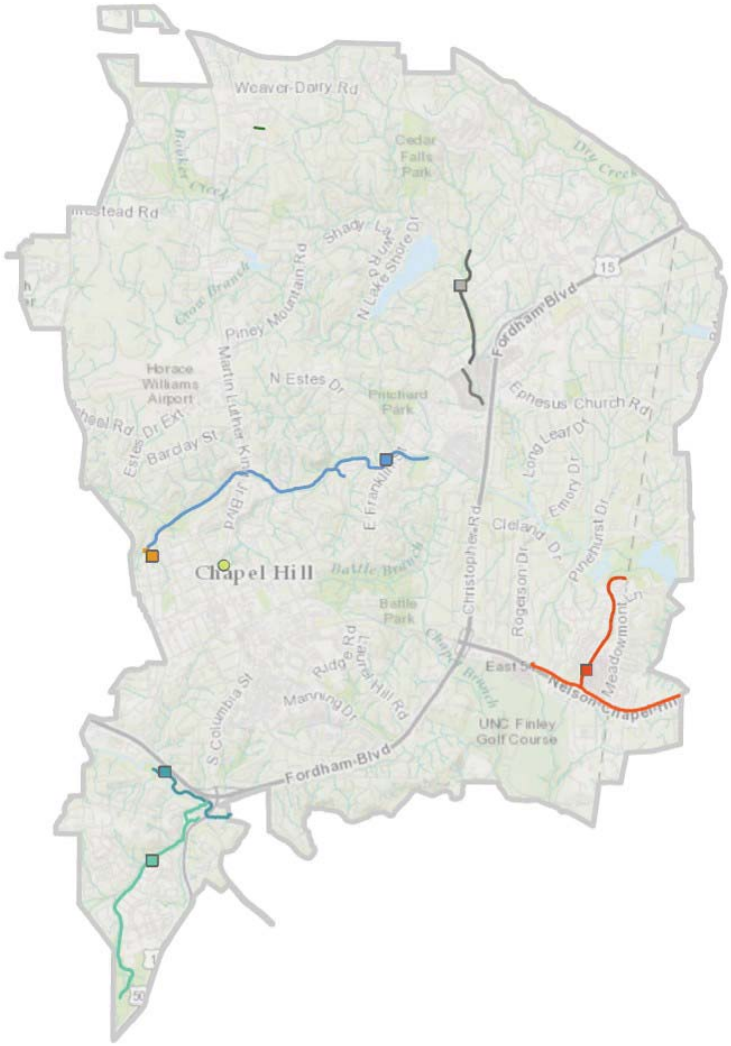
Source: US Census Bureau, Census Data and Estimates Journey to Work (2009-2015)

On the right trajectory! Trends indicate a decrease in the number of individuals commuting to work in a single occupancy vehicle. Enhancing "last mile" connections is key to increasing numbers of individuals using other modes.

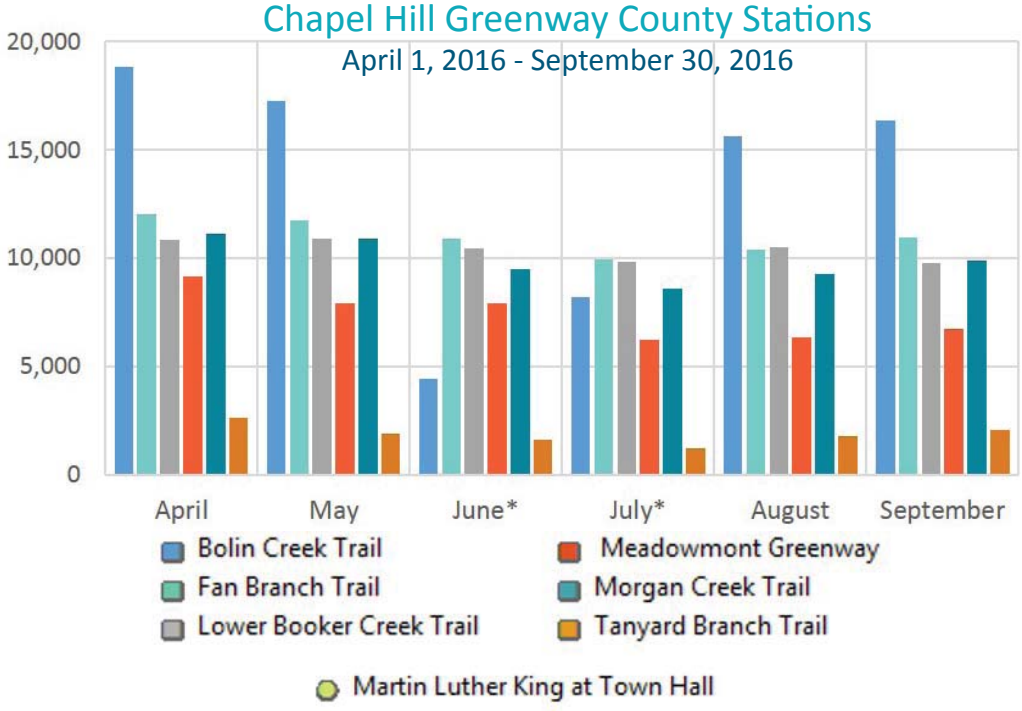
User Counts

The Town of Chapel Hill used to publish bicyclist and pedestrian counts through its Mobility Report Cards. The reports detailed user counts for as many as 117 locations but were discontinued in 2005. In 2015, the Mobility Report Card was reinstated by the DCHC-MPO.

In 2014, the Town partnered with NCDOT to install a permanent bicycle and pedestrian count location on Martin Luther King Jr Blvd. near Town Hall. This station is part of a bike/ped count program by NCDOT to analyze bicycling and walking in the state and institutionalize a non-motorized volume data program. The Town expanded the number of permanent count stations in 2016, focusing stations on longer segments of greenways in the town. Three more stations were installed in various locations by the end of 2017.



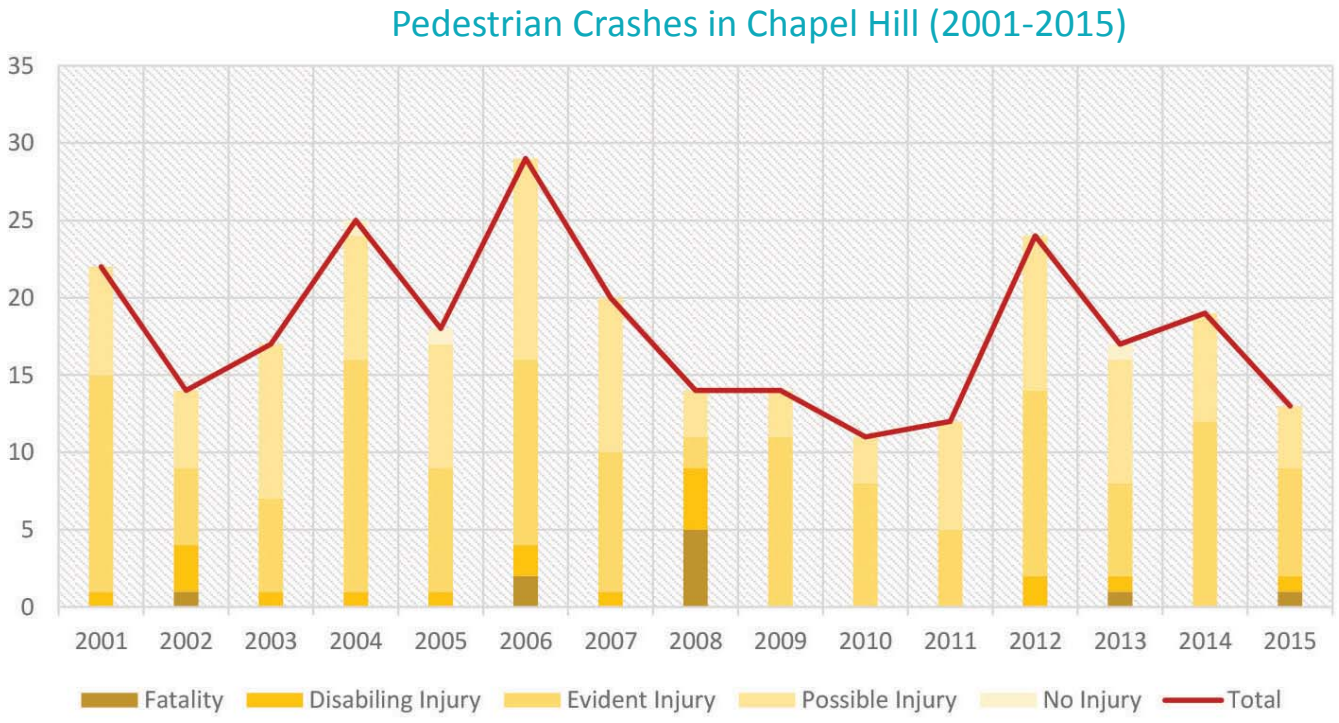
Chapel Hill has seven stations continuously collecting bicycle and pedestrian counts. User counts on most town greenways regularly meet or exceed 10,000 per month.



Town of Chapel Hill Mobility Plan

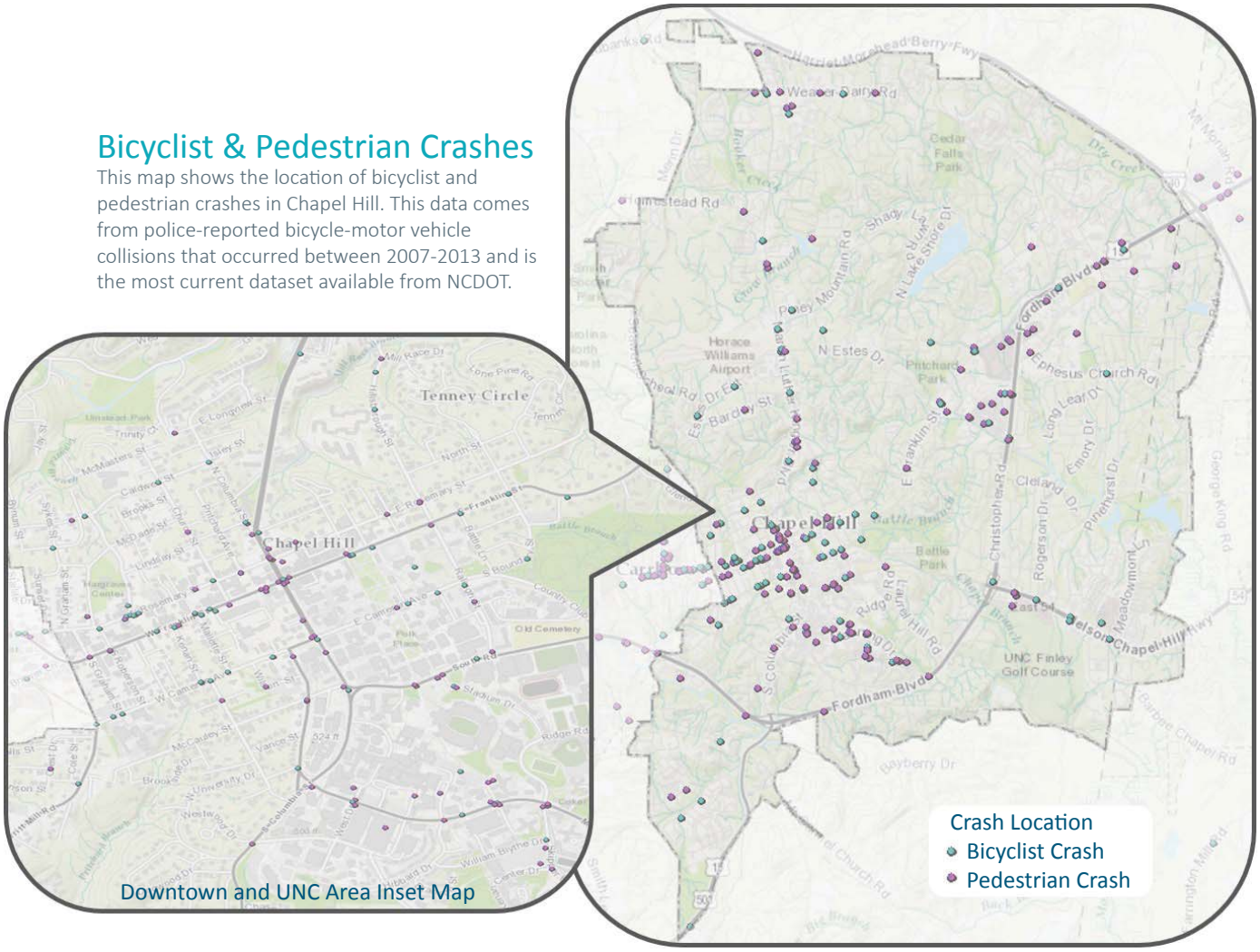
Crashes

Pedestrians and cyclists are at an inherent disadvantage when involved in traffic crashes. Between 2001 and 2015, there were 269 pedestrian crashes reported in the Town, an average of approximately 18 crashes per year, including a small number of fatal or disabling injuries occurring nearly every year. A 2005 survey by NHTSA found that nearly half of all crashes resulting in pedestrian injury go unreported. While there is no discernible pattern to suggest if pedestrian crashes are on the decline permanently, since 2012 there has been a steady decrease in the overall number of crashes reported. Fewer bicycle crashes were reported during the same period, making it difficult to look at trends.



Bicyclist & Pedestrian Crashes

This map shows the location of bicyclist and pedestrian crashes in Chapel Hill. This data comes from police-reported bicycle-motor vehicle collisions that occurred between 2007-2013 and is the most current dataset available from NCDOT.



Source: NCDOT Bicyclist and Pedestrian Crash Data 2007-2013

Areas of Concern for Bike/Ped Crashes

Crash Frequency

Downtown/UNC Campus
- Franklin Street
- Columbia Street
- Cameron Avenue
- South Road
- Manning Drive

Ephesus-Fordham District
Martin Luther King Jr. Boulevard
Weaver Dairy Road
NC 54 Raleigh Road

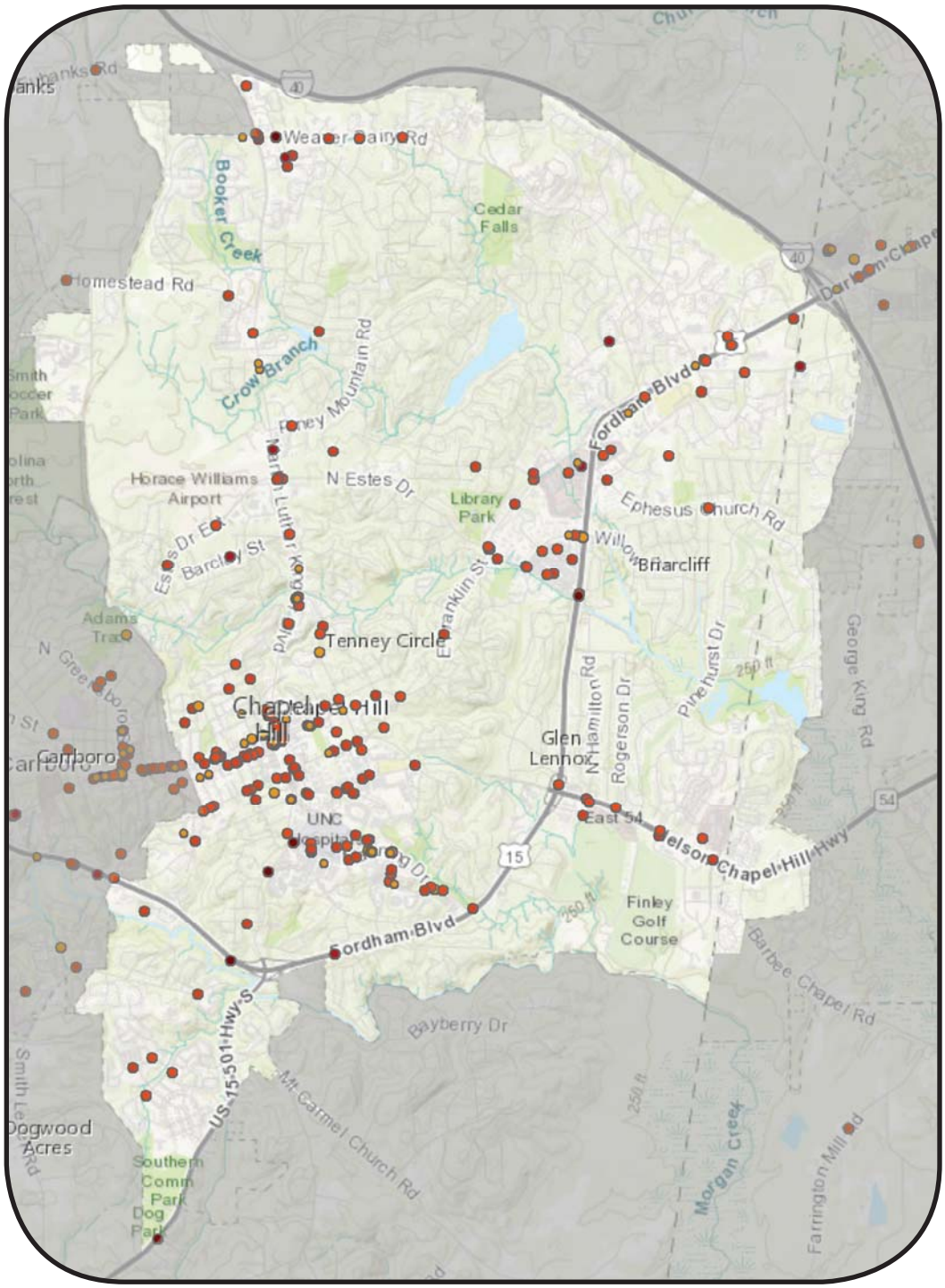
Crash Severity

S. Columbia Street
US 15-501/Fordham Blvd
Martin Luther King Jr. Blvd
Weaver Dairy Road

Crash Severity

This map focuses on the severity of crashes by location. Darker colored circles indicate more severe injury with crashes that resulted in death depicted using a dark red.

Both bicyclist and pedestrian crashes are depicted.

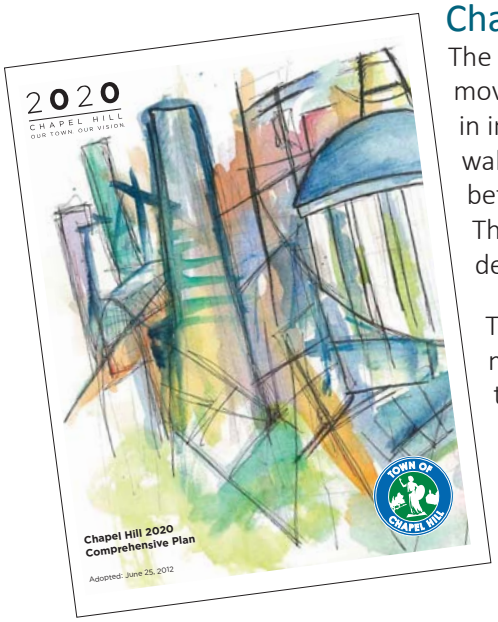


Crash Severity

- Killed
- Disabling Injury
- Evident Injury
- Possible Injury
- Unknown/No Injury

Existing Plans and Policies

Development of the Mobility Plan grew from the need to look at mobility issues from more than just a modal perspective. The 2020 Comprehensive Plan paints a big picture of the Town's transportation vision, while the Greenways Master Plan and the Bike Plan focus on pieces of that vision. The Mobility Plan seeks to identify gaps as well as opportunities to better link the Town's bike, ped, greenway, and transit systems.

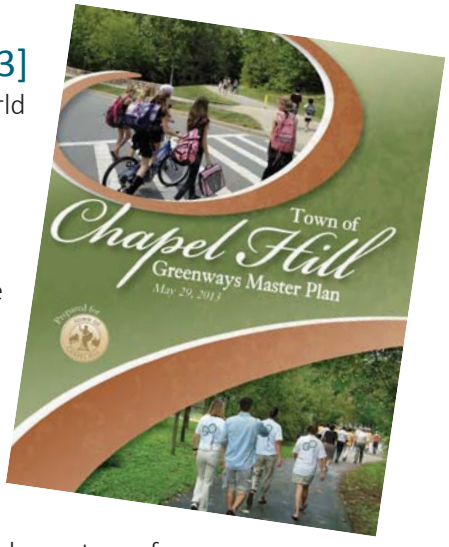


Chapel Hill 2020 Comprehensive Plan [2012]

The Chapel Hill 2020 Comprehensive Plan is a vision for the community of Chapel Hill moving forward and outlines different areas in which the community is interested in improving. One of the key "Big Ideas" outlined in the plan is to create a bikable, walkable, green communities plan that provides safe connections between neighborhoods, schools, commercial destinations, and recreational areas. The plan lays out strategies to encourage changes in growth, land use, economic development, and continued university collaboration.

The plan calls for a holistic transportation system that integrates the modes and minimizes the congestion that comes with a growing community. is key to this theme, recognizing the benefits from the enhanced mobility that multimodal connections can provide.

The Plan identifies six Focus Areas in Town and provides general recommendations for desired connectivity and improvements. The Mobility Plan expands upon the general principles outlined in the plan, giving details to the discussion.



Chapel Hill Greenways Master Plan [2013]

Integrating the urban environment with the natural world is a key tenet of the Greenways Master Plan. The Town of Chapel Hill maintains a popular and growing system for integrating citizens with nature. A thoughtfully developed greenway system can serve the backbone of a non-motorized transportation network, providing safe crossings and access to key destinations and transit for people of all ages and abilities.

In carrying out the Mobility Plan, goals of the Greenway Program should not be overlooked. This plan looks at the opportunities for synchronizing the existing and planned greenway network to the broader system of non-motorized travel. Prioritization elements in this plan that involve greenway projects need to strive to maintain a balance between resource protection, recreational use, and transportation opportunities. Goals and objectives related to the preservation of open

space, the implementation of park trails, and other elements of the plan that are not intended as a transportation function for the Town are outlined and maintained by the Greenways Master Plan.

Chapel Hill Bike Plan [2014]

Many Chapel Hill residents desire safer, more convenient, bicycling options. The town undertook a process in 2014 to identify priority projects that would encourage the "Interested but Concerned" group of bicyclists to ride bicycles more frequently and reduce bicyclist's "traffic stress" in the existing network.

Projects were selected to build a short-term priority network to establish connectivity near the center of Town and recommendations given for long term improvements using separated bicycle facilities such as "cycle tracks." Further, the Town worked with UNC-Chapel Hill to coordinate their bike plan in tandem with this effort to have consistent recommendations in each network plan.

The Mobility Plan builds on this planning effort, recognizing new design tools and bicycle facility types that have quickly entered the planning toolbox since the Bike Plan was developed. Furthermore, it gives a more comprehensive approach, looking at integration with greenways and transit.

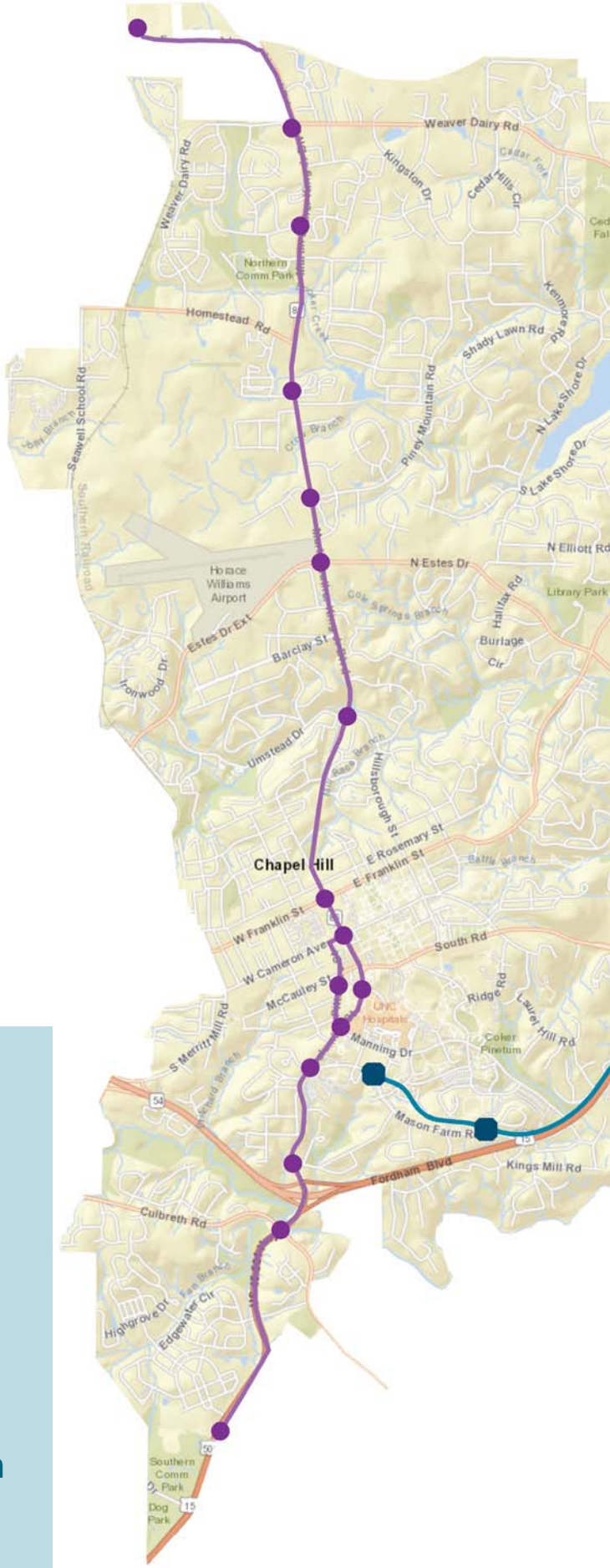
Projects in Development

Long Range Transit Planning

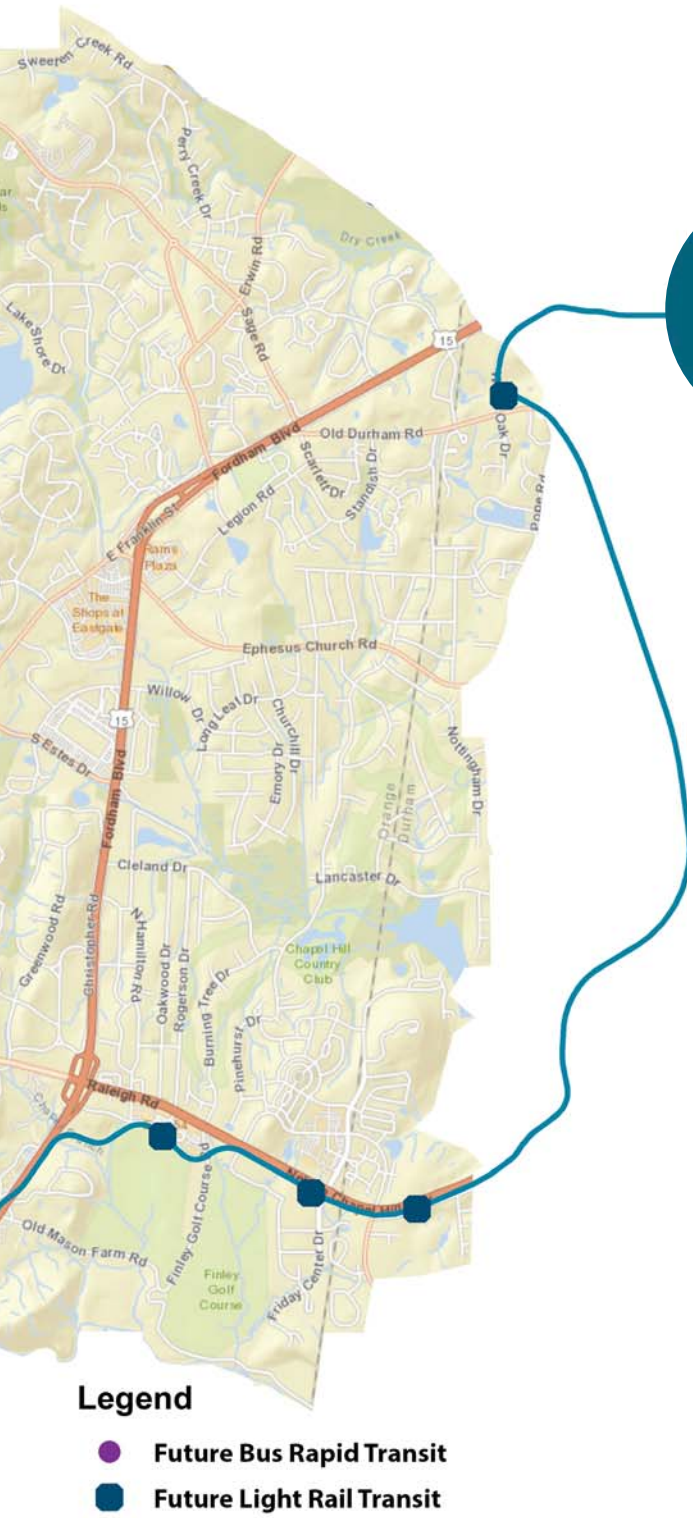
One of the challenges to an effective transit system is the first and last mile connections. The Mobility Plan considers bicycle and pedestrian travel to these future bus rapid transit and light rail station areas in the context of a long-term network build out for sidewalk, greenway, and bicycle projects.

Bus Rapid Transit

A Bus Rapid Transit system along the North-South Corridor is currently being designed to improve travel capacity and mobility; provide reliable transit; and create positive opportunities for economic development at stations. The proposed route includes 16 stations along a 7.3-mile route connecting the Eubanks Road Park-and-Ride with the Southern Village Park-and-Ride. One of the challenges to an effective transit system is the first and last mile connections.



The plan considers gaps in the existing pedestrian network and considers bicycle and greenway network linkages to create direct routes to the stations proposed in the Mobility Plan.



Understanding the need for non-motorized connections to proposed LRT facilities in the future, the Mobility Plan considers bicycle and pedestrian travel in the context of a long-term network build out for sidewalk, greenway and bicycle projects.

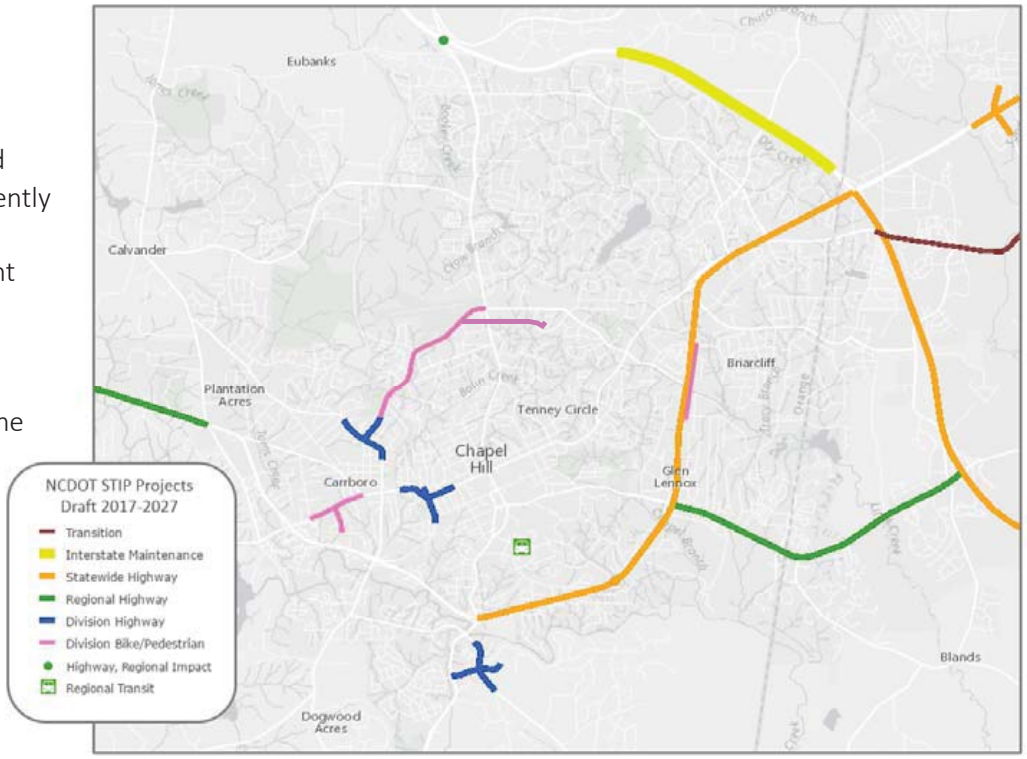
Light Rail Transit

The Durham-Orange Light Rail Transit (LRT) project includes three major universities, three major medical centers, and a number of residential and commercial areas. The proposed 17-mile, 18-station system links UNC Hospitals in Chapel Hill with NC Central University and destinations in Orange and Durham County. Six of the 18 stations within the Durham-Orange Light Rail Transit system are located within the Town of Chapel Hill with an estimated operating date around the year 2028.

Projects in Development

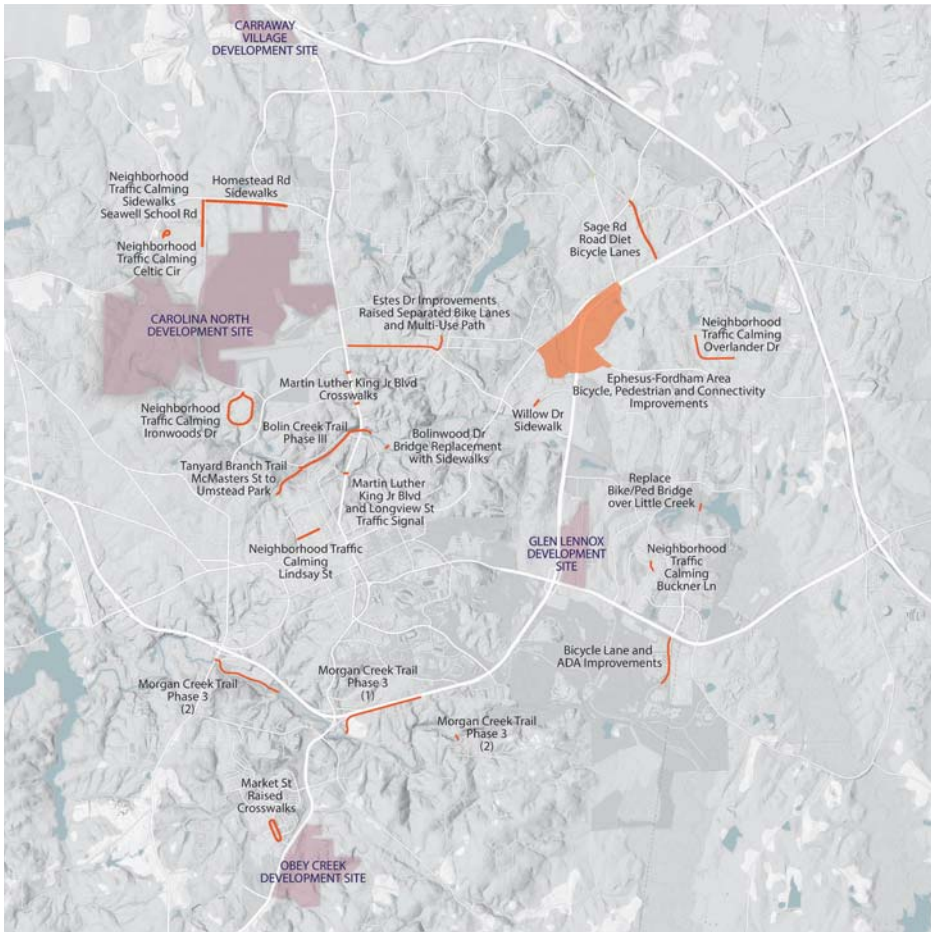
NCDOT Projects

A number of projects in and around Chapel Hill are currently in NCDOT's ten-year State Transportation Improvement Program (STIP). The STIP identifies the construction, funding, and scheduling for transportation projects at the state level over a 10-year period and projects. A list of the projects can be found in **Appendix B**.



Town Capital Projects

Numerous projects for bicycling and walking are included in the Town's Capital Improvement Plan (CIP). These all relate to the goal "Facilitate Getting Around" in the Chapel Hill 2020 Plan. Programmatic funding for traffic calming, ADA & curb ramps, and greenways totals approximately $1.2 million through 2025. More details on projects and funding can be found in **Appendix B**.



In November 2015, voters approved a bond referendum which included funding for improvements throughout the community. The bond contained over $21M in allocations for mobility improvements to biking and walking including $16.2M for Streets and Sidewalks and $5M for Trails and Greenways. Projects funded by the bond are identified from previous planning efforts, studies, and evaluations including the Bike Plan and Greenway Plan. Town staff reviews and prioritizes the Town's capital improvement needs on annual basis for the Capital Improvement Program (CIP) which is how these funds are obligated to projects. A previous bond referendum was conducted in 2003 which allocated $5.6M for Sidewalks and Streets and $5M for overall Parks and Recreation.

2015 Bond Referendum

Streets & Sidewalks $16.2M	Trails & Greenways $5M
Bike and Pedestrian Safety	Greenway System Expansion
Sidewalk Construction	Morgan Creek Trail
Streets Infrastructure	Bolin Creek Trail/Tanyard Branch Trail
Downtown Streetscape	

Development Agreements

Development agreements are contracts entered into by the Town and a developer to expressly define a project's rules, regulations and commitments. These agreements help to meet the Town's transportation needs and comprehensive planning goals in the future. Several bicycle and pedestrian improvements have been incorporated into mixed-use development agreements because of anticipated impacts as a result of the proposed development. More information on the four current development agreements and their associated improvements are available in **Appendix B**.

Needs Assessment

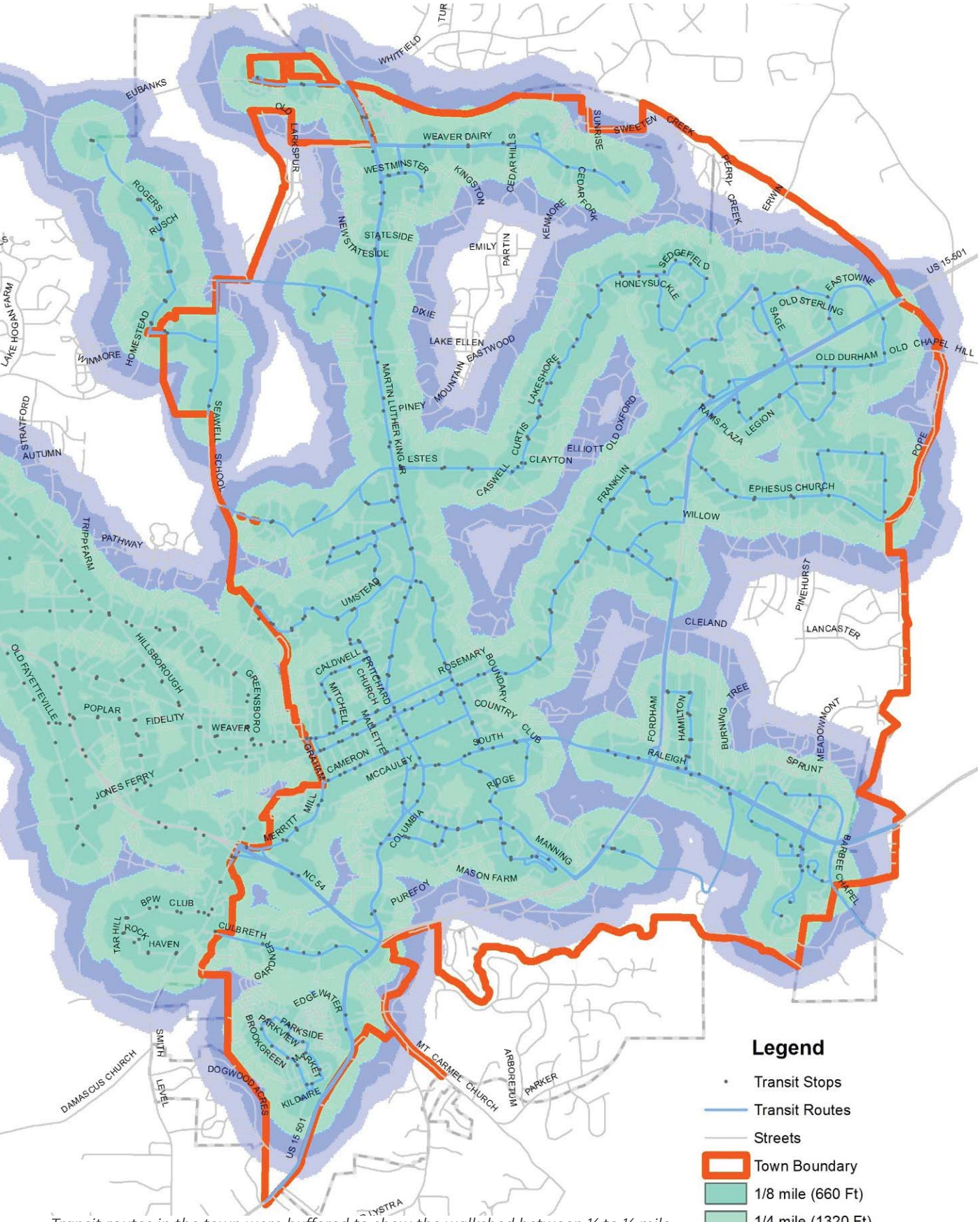
Transit Connectivity

In reviewing the Chapel Hill pedestrian network, sidewalk coverage near transit lines and stops was highlighted to identify gaps where missing sidewalks may hinder residents' access to transit. People are typically willing to walk a quarter mile to a half mile to access transit when conditions for walking are good. Creating and improving safe and comfortable routes for the pedestrian and cyclist is crucial. The routes, with frequent connections to the proposed priority ped/bike network, will act to enable alternate commute habits by residents and help the Town in meeting the goal of 35% alternative commute share by 2025 .

The Town already accounts for this need in their sidewalk prioritization ranking criteria, with points given to projects within ¼- and ½-mile buffers around transit stops. The map on the facing page shows the area in which sidewalks receive those extra points and are prioritized according to proximity to transit.

With the bus rapid transit and light rail transit service planned in the coming years, the effective walk- and bikesheds for these higher-level transit services need to reconsidered in light of Town bike/ped projects. Users may walk further for these premium transit routes, and distances may vary based on the surrounding land uses (Downtown vs. suburban) and the context (tree cover, perceived safety, etc.). Research suggests that buffer distances for sidewalk planning and prioritization around future light rail transit stations may remain at one quarter-mile for Downtown but double to one half-mile for suburban locations.

Evaluating sidewalk gaps in proximity to transit and providing high quality pedestrian environments along transit routes will help the Town meet the goal of increasing non-motorized modeshare.



Transit routes in the town were buffered to show the walkshed between ¼ to ½ mile in Chapel Hill. Gradations in between are included to assist with visualizing walk distances. These buffers are recommended to use as a tool for assigning additional points to the sidewalk prioritization score.

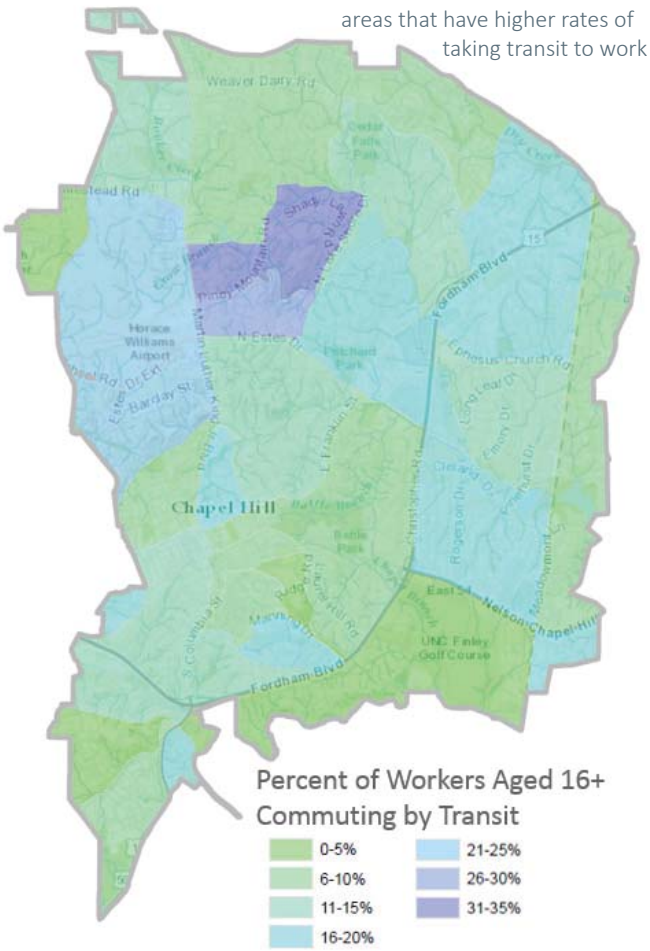
Enhancing First and Last-Mile Connections to Transit

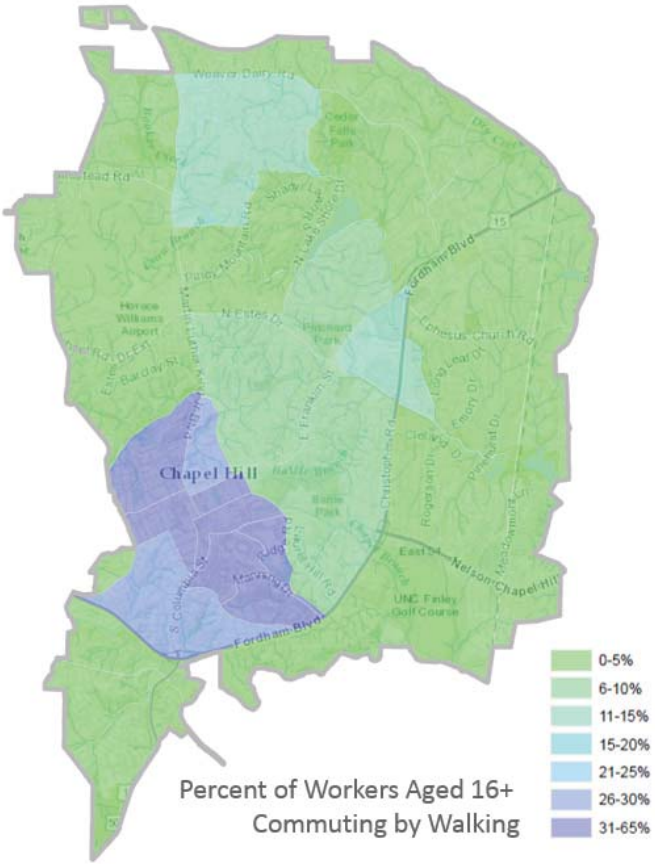
Residents of Chapel Hill have already developed habits around using alternative modes such as walking, bicycling and transit. While the Town's population is increasing overall, there is an overall decrease in the number of people commuting to work in a single occupancy vehicle. The rate of driving alone decreased from 70% in 2009 to 55% in 2015 while commuting to work by bike, foot, and transit rose to over 27%. Many of the those transit trips depend on the "first and last-mile" connections to get to and from the transit corridor. Working to meet the Plan goal to increase the bike/ped/transit modeshare to 35% by 2025 means focusing on these connections to existing and proposed transit stations.

Transit users come from both inside and outside of Chapel Hill. It should be noted that the two maps below do not include workers who reside in communities outside of Chapel Hill and commute into the Town. Looking at boarding/alighting data for 2016, the primary concentrations of transit usage in the town are in the vicinity of UNC-Chapel Hill and in the downtown core. Outside of these areas, riders are using area park-and-ride lots, indicating a propensity for individuals to drive into the area and change modes. Other areas of higher transit use include the Martin Luther King Jr Blvd. corridor, Franklin St., University Place, Ephesus Fordham area, and Meadowmont. Focusing on last-mile connection and intersection improvements in these areas will assist with safety and access for Chapel Hill residents.

Transit Commuters

The darker shaded areas indicate areas that have higher rates of taking transit to work





Walk Commuters

The darker shaded areas indicate areas of the Town with higher rates of walking to work.

Source: 2014 American Community Survey Estimates
Bicycle to work data not available at this geography.

Transit Riders

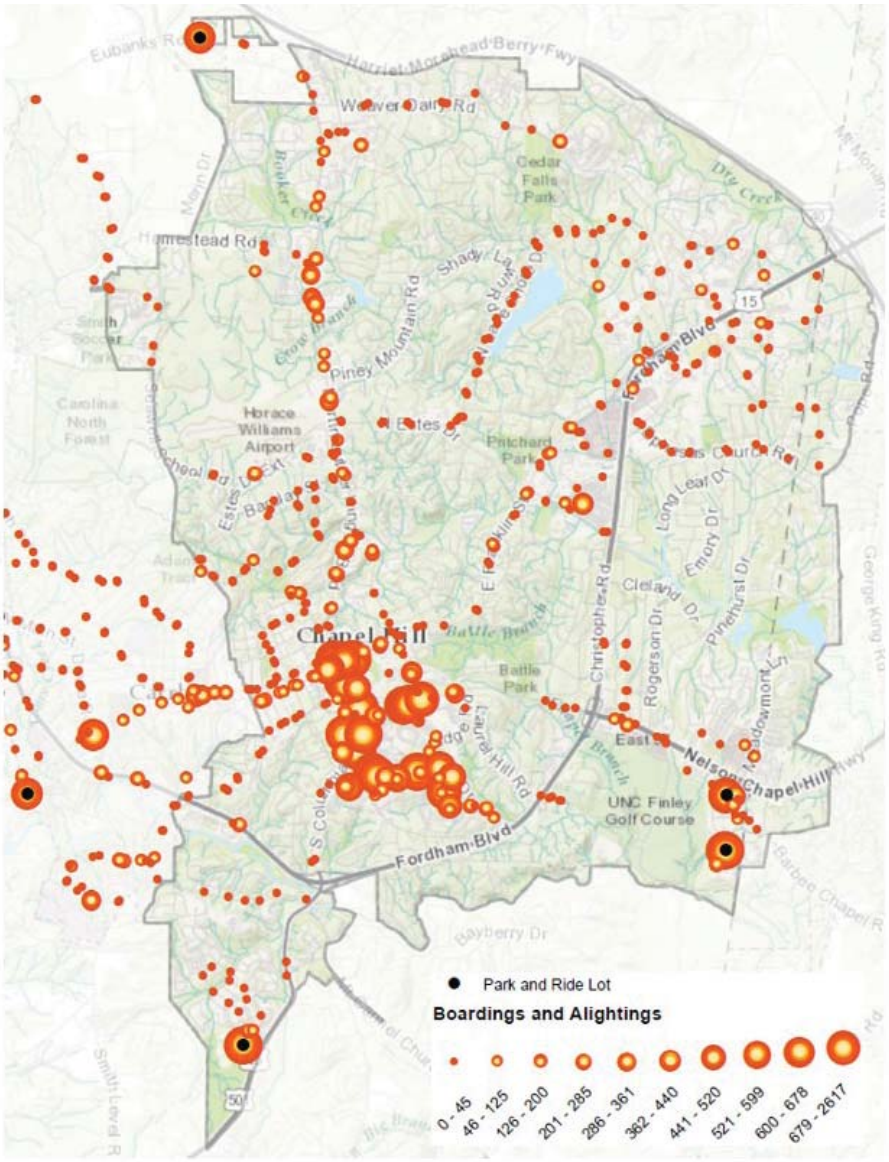
The highest transit usage in Chapel Hill typically occurs at UNC Chapel Hill and downtown stops.

High numbers of boardings and alightings also occur at Park and Ride locations:

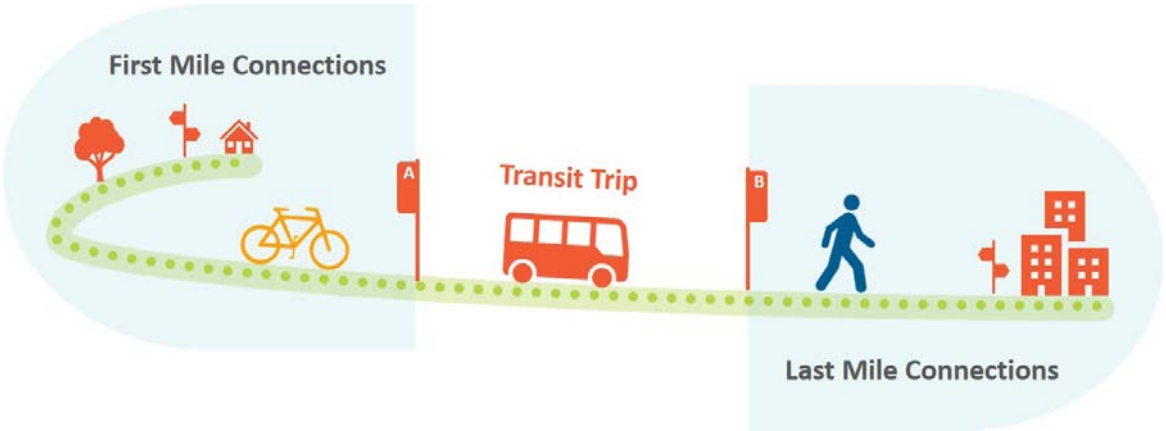
- NC 54 Park and Ride Lot
- Southern Village Park and Ride Lot
- Friday Center Park and Ride
- Jones Ferry Park and Ride
- Eubanks Road Park and Ride
- Chatham County Park and Ride

Transit usage also occurs in high frequency on:

- Martin Luther King Jr. Boulevard
- Ephesus-Fordham District
- University Place
- Highway 54



Source: GoTriangle Developer Resources, Nov. 2016



Regional Connections

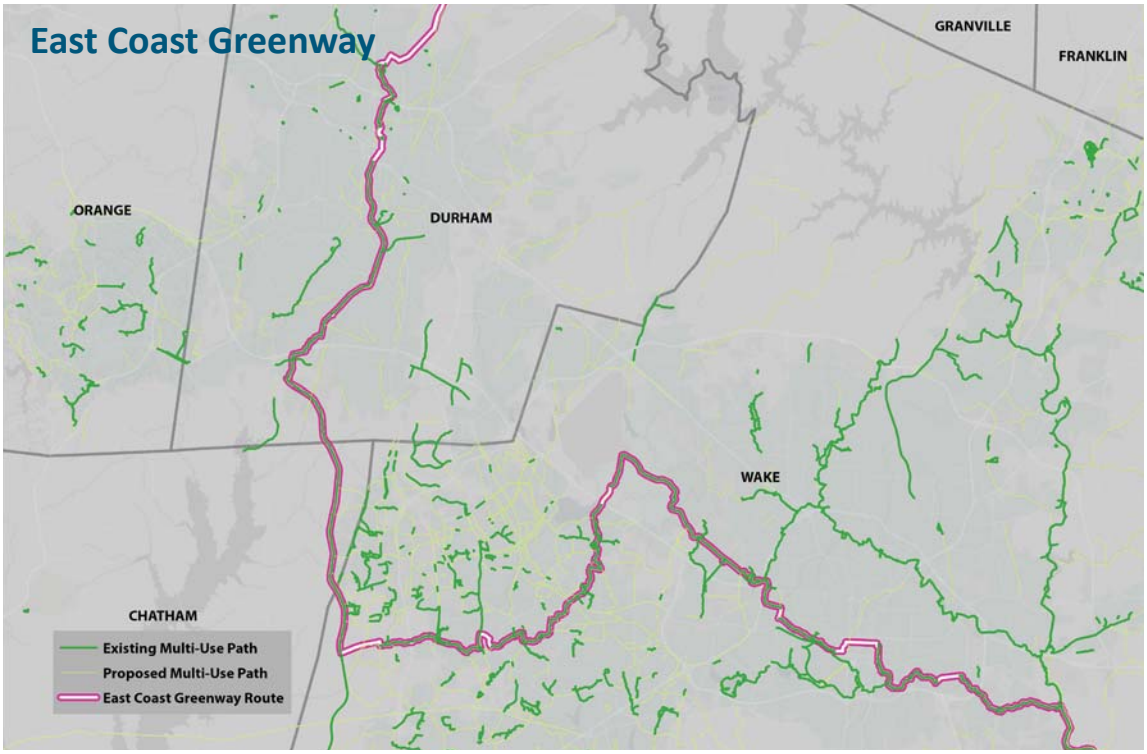
The region is amidst a greenway boom. In 2015, the Raleigh-Durham-Chapel Hill metropolitan area had nearly **300 miles of paved multi-use trails**. In Wake County alone, 250 miles of shared use paths are proposed and the County has more miles of greenway built than any county in the state. In Durham County, 186 miles are proposed. Orange County has not developed a cross-county, regionally significant greenway network but greenways are among the highest interest for future facility needs per the 2030 Orange County Parks and Recreation Master Plan.

Widespread support for greenways in the Triangle region is reflected in voter approval of virtually all bond referenda to fund more greenways.

The two Triangle area metropolitan planning organizations have dedicated increasing amounts of their capital budgets for pedestrian and bike projects, including greenways. In Cary, Knightdale, and Chapel Hill, developers have been required to build greenways as part of new developments. Virtually all communities require the dedication of easements along waterways and lakes to allow for construction of multi-use paths.

Additionally, there is growing public support for the development of on-road cycling facilities, including a leap from traditional facility types. In 2000, there were less than 10 miles of on-road bike lanes in the Triangle, but by 2015, total mileage of bike lanes (centerline) had grown to over 100 miles: Raleigh (39 miles), Durham (36 miles), Chapel Hill-Carrboro (32 miles), and Cary (20 miles). Facilities that go beyond bicycle lanes are being implemented and the “wide outside lane” is being phased out. The first cycle track in the Triangle is being constructed in Raleigh to connect a section of the East Coast Greenway, several municipalities are installing green paint at intersections to increase visibility, and towns including Chapel Hill are starting to implement buffered bike lanes.

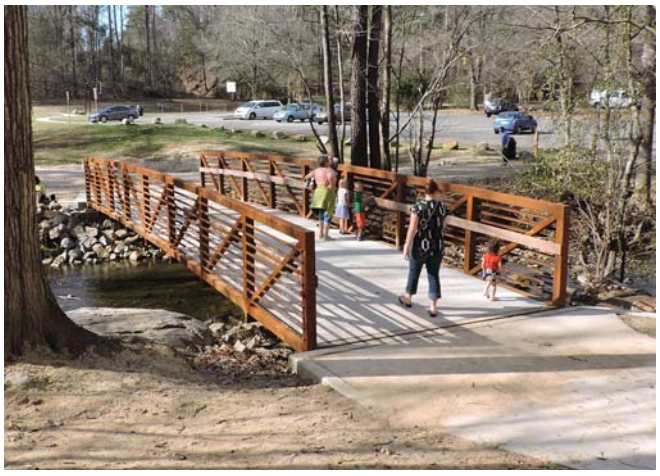
Lastly, sidewalks are being built along both busy thoroughfares and rural roads to fill gaps in communities throughout the Triangle. Chapel Hill now has over 130 miles of sidewalk and has achieved a 4% increase in sidewalk mileage since 2005.



Extensive planning and build out has occurred in the Triangle region with existing (dark green) and planned (light green) facilities shown. The East Coast Greenway route is highlighted.

Source: NCDOT Pedestrian and Bicycle Infrastructure Network, March 2016

Removing large barriers to active transportation increases commute trips, duration of physical activity, and trail-related spending

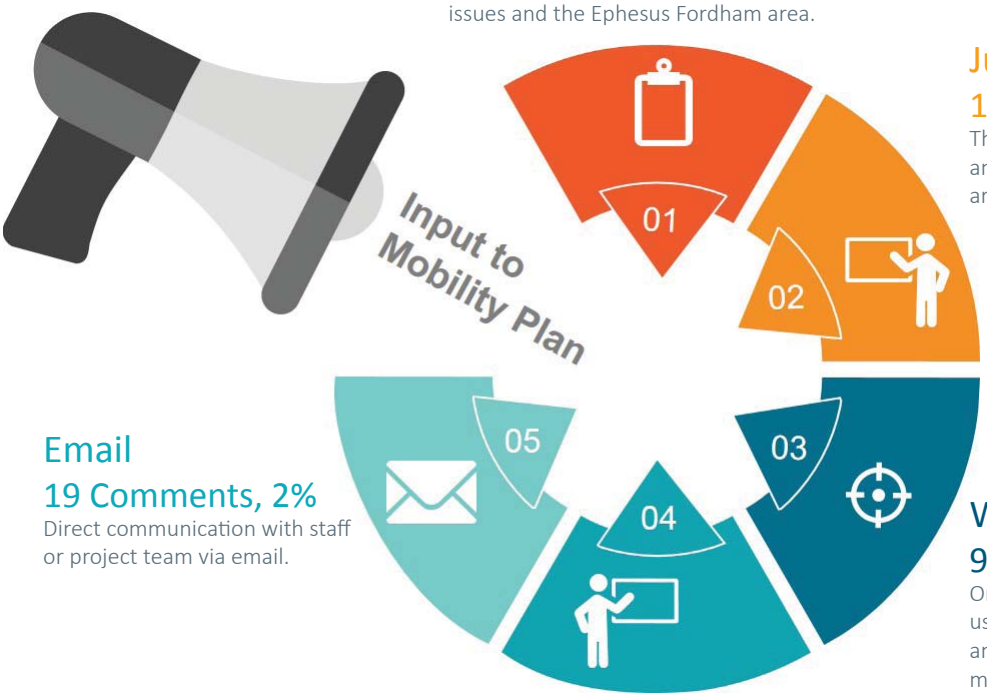


Various multi-use trails in Chapel Hill

Public Demand

Through the outreach opportunities discussed in Chapter 2, a wide cross-section of Chapel Hill residents were able to participate in the planning process through a variety of formats. The public input conducted for the plan resulted in **more than 850 comments** regarding mobility as it relates bicycling, walking, and access to transit in the town. In many cases, it was necessary to divide a single comment with multiple ideas/issues into several topics to create the summary and overall themes.

Survey
523 Comments, 61%
In-person and online surveys targeted at gaining more insight into pedestrian needs, accessibility issues and the Ephesus Fordham area.



June 30th Open House
135 Comments, 16%
This public meeting focused on issues and existing conditions in the five focus areas within the Town.

Email
19 Comments, 2%
Direct communication with staff or project team via email.

Wiki-Mapping
98 Comments, 12%
Online web-based mapping tool for users to indicate key intersections and corridors where they experience mobility issues.

September 6th Open House
80 Comments, 9%
This public meeting focused on plan goals, objectives, existing conditions, project types, and prioritization.

With a goal of increasing mobility for bicycling, walking, and transit, the survey asked respondents to identify what improvements would be needed to increase neighborhood walkability, connectivity, and safety. Lack of adequate sidewalks, paths, bike lanes were the most cited responses. Another highly cited improvement was to provide safe crossing facilities.

Location-based comments were further categorized to establish which main corridors and intersections posed the greatest challenges in the Town for walking, bicycling and accessing transit. These locations do not include greenways, which are further discussed in the Greenway and multi-use highlights of the summary. The problem corridors that appeared most often in public input were the high volume/high speed roadways in Town.

The following table highlights the issues and facilities most commented on for intersection, pedestrian, bike, and greenway improvements. Detailed information pertaining to specific issues and projects can be found in **Appendix A**.

Chapel Hill residents have a desire for expanding local greenways into a network and making regional connections.

Respondents' Top 5 most requested locations for improvements...

	...at intersections	...for bike facilities	...for pedestrian facilities	..on greenways
1	Fordham Blvd at Ephesus Church Rd	Martin Luther King Jr Blvd	Lake Forest Neighborhood	Booker Creek Trail
2	Fordham Blvd at Willow Rd	E Franklin St	Homestead Rd	Bolin Creek Trail
3	Fordam Blvd at Raleigh Rd	US 15-501	US 15-501	Grade Separation across US 15-501
4	Fordham Blvd at S Columbia St	Estes Dr Extension	Martin Luther King Jr Blvd	Morgan Creek Trail
5	MLK Jr Blvd at Stateside Dr	Homestead Rd	Numerous minor thoroughfares	Connection for Booker & Bolin Creek Trails

850 Comments

Safety, Especially at Intersections

More than one third of the comments were related to safe crossing of busy streets. The majority of these comments were recommendations for crosswalks and safety improvements related to crossing busy intersections both on bicycle and on foot. Of these, 20 comments gave specifics regarding improvements to intersection signalization including pedestrian timing and bicycle detection.

More than one quarter of comments were related to specific locations for bicycling and walking facilities to improve mobility and access to destinations in the town. Top locations and issue areas were grouped and ranked by street and intersection in the public input summary.

Better Facilities

Increased Connectivity

Residents want to see bicycle and pedestrian facilities link neighborhoods, schools, and commercial centers. Nearly 20% of comments were related to generalized connections in the Town, especially expanding and making connections with a greenway network followed by comments related to making connections between residential neighborhoods.

While streets were identified through public input across the entire Town, several corridors were repeatedly identified as being problematic for walking and bicycling.

US 15-501 received more than 150 comments. Martin Luther King Jr Blvd was referenced nearly 100 times. Franklin St received over 50 comments, with the clear majority of these being on the eastern portion of the corridor. Homestead Rd, Estes Dr, Ephesus Church Rd, and Lakeshore Dr were the subject of over 20 comments each.

Residents' comments highlighted frustration and challenges with the corridors listed below.

Corridor Comments By Frequency

More Comments
US 15-501
Martin Luther King Jr. Blvd
Franklin Street
Homestead Road
Estes Drive
Ephesus-Church Road
Lakeshore Neighborhood Roads
Elliot Road
Erwin Road
Raleigh Road
Seawell School Road
Mt Carmel Church Road
Fewer Comments