Broadening the Culture and Mindset

As important as the engineering and planning is in creating a multimodal community, so is cultivating the culture and mindset where residents want transportation options and expect the Town to provide them. Commitment to all modes and all users must also be embraced by municipal staff and officials. Chapel Hill possesses that spirit already which can be seen through vision and objectives of the Chapel Hill 2020 Plan, the Bike Plan, regional transit planning efforts, and development standards. The question now is how to further grow the commitment to walking, biking and transit.

Chapel Hill's peers are making strides to become safer and more accommodating for walking and biking. General trends and overarching themes include dedicated bicycle and pedestrian staffing and funding, bikeshare, and a signature project that generates energy within the community.

These initiatives would not only help encourage residents to try different commute and travel patterns, but also educate officials and staff and inspire community action in the Town to participate in events, and even garner support for local projects.

	Chapel Hill NC	Iowa City IA	Charlottesville VA	Corvallis OR	Bellingham WA
Population	58,000	69,000	44,000	53,000	81,000
Bike Commute Modeshare	2.3%	3.7%	3.2%	12.1%	4.3%
Walk Commute Modeshare	12.5%	15.6%	12.6%	9.6%	7.4%
Transit Commute Modeshare	12.4%	9.9%	8.6%	3.0%	5.7%
Total Modeshare	27.2%	29.2%	24.4%	24.7%	17.4%
Staffing Level (FTE)	--	0.75	1.0	1.5	1.0
Bicycle Friendly Community Rank	Bronze	Silver	Silver	Platinum	Silver
Walkscore	35	43	58	48	48
Spending Target for Bicycling and Walking Infrastructure	--	--	Proposed at 20% of CIP in 2015 Bicycle and Pedestrian Master Plan Update	20% of transportation budget	1/3 of total revenue from Transportation Benefit District (contiguous with city limits) funded from two tenths of 1% sales tax
Bikeshare	--	Joint RFP Issued, City and University, 2016	University Bikeshare Vendor: SoBi	City Bikeshare Vendor: Zagster	University Bikeshare Vendor: BIXI

Snapshot Comparison of Key Indicators for Bike & Pedestrian Modes for Chapel Hill and Peer Cities

Performance Measures

Developing metrics and tracking progress is a part of fully integrating pedestrian and bicycle planning into broader, ongoing performance management efforts. With limited resources, it is critical to identify the projects and investments, track progress, develop effective solutions, and prioritize investments. They should promote informed decision-making by relating community goals to measurable effects.

Recommended Performance Measures for Chapel Hill Community Mobility

The Town should begin to track performance measures to measure the outcomes of the Mobility Plan:

Infrastructure Spending - Chapel Hill should quantify and report on infrastructure spending by mode as compared to targets for bicycle, pedestrian, & transit improvements based on the Town's Capital Improvement Plan and Bond projects for transportation infrastructure. Approximately 70% of the FY2017 infrastructure capital program is dedicated to bike/ped improvements, as is a similar percentage of bond programs for transportation. With a bicycling and walking mode share totaling around 15% and transit users who also depend on pedestrian infrastructure, the current spending is well-above **a reasonable target of 30%**

Public comments indicated that street crossings are a large issue for residents.

Miles of Bicycle and Pedestrian Facilities - Reporting miles added annually allows for tracking progress over time. In conjunction with Powell Bill inventories, the Town should continue to track miles of existing sidewalk, greenway, and bicycle infrastructure and update this information on an annual basis.

Crossing Opportunities - Public outreach for the Mobility Plan indicated that street crossings are a large issue for the Town, especially on higher volume state-maintained arterials where there are limited opportunities. Tracking this metric show annual progress on reducing the average distance between improved crossing locations of roadways of 4 or greater lanes. Improved crossings are defined as two-stage or signalized, and can include Rapid Rectangular Flashing Beacons or HAWK Signals.

It is recommended that Chapel Hill track crossing improvements and set the minimum desired distance between improved crossings on 4+ lane arterials at ¼ mile.

Mode Split - The mode split relates to the overall goal of the Mobility Plan to increase trips by walking, bicycling, and taking transit. When evaluating projects, this metric can be used to determine how a project alternative might impact mode choice to reach the goals set by the Town.

The Town should continue to monitor American Community Survey data and document percent increase in combined bicycling, walking and transit mode share of total commute trips, aiming for the plan goal of 35% commuting by bike, walk or transit in 2025.

Bicycle and Pedestrian Counts - Counting volumes of non-motorized transportation users offers useful information on an agency's performance. Chapel Hill conducts location counts for cycling and walking and has existing data on transit usage. These counts are a better gauge of walking and bicycling usage trends than journey to work data available through the American Community Survey since it includes people who are not traveling solely for work purposes on weekdays. Though counts are highly seasonal in nature, and weather dependent, continuous counts provide a good source for looking at change over time.

The Town should provide an annual report of bicycle and pedestrian counts from the stations and, if possible, allow real-time reporting of data to Town open source data locations.

Wayfinding and Signage

Within the low-stress priority network of bicycle and pedestrian infrastructure within the Town of Chapel Hill, there are connections to many destinations. Therefore it will be important to employ a unified wayfinding package at a human-scale. The concept should be implemented through on-street and sidewalk markings, signage, posts, and sidewalk/greenway kiosks to guide people to destinations and draw awareness to the Greenway Connectors.

Every place in a navigable space has a unique perceptible identity. It functions as point of reference in the larger area.

The key types of wayfinding are:

Turn Signs - The intention of this type of signage is to ensure users stay on the designated corridor. These signs should be added before key decision points, so that there is time to make the decision of where to go next.

Confirmational Signage/Marking - Signs or markings that are actually not used to direct people, but act to verify that the user is on the right path. To create a positive experience, these signs ensure that people have comfort in the fact that they are going in the right direction. Conveying the right mood is a key part of what signage can achieve when implemented correctly. Often these are placed after key decision points to confirm a route.

Decision Signage - These mark the junction of multiple routes. They orient users within the local context and provide directions to one or more key destinations.

Awareness Signage - These signs are intended to draw awareness to a route and encourage new users. These signs build awareness of the system by creating a presence for the priority routes outside of the system.

Decision Sign (top) that would be placed at key points in the network as part of an example signing package.

Confirmational Markings (bottom) can be placed at regular intervals on the pavement or sidewalk to verify that the user is on the right path after the decision is made.

Active Routes Coalition Members

School

- Principal and other administrators
- Parents and students
- Teachers
- PTA/PTO representative
- School nurse
- School district transportation director
- School improvement team or site council member
- Adult school crossing guards

Community

- Community members
- Neighborhood or community association members
- Local businesses
- Local pedestrian, bicycle and safety advocates

Town Government

- Mayor's office or council member
- Transportation or traffic engineer
- Local planner
- Public health professional.
- Public Works representative
- Law enforcement officer
- Mobility coordinator

Active Routes to School

North Carolina's support for Safe Routes to School (SRTS) education and encouragement programs is delivered through the Active Routes to School project which is supported by a partnership between the N.C. Department of Transportation and the N.C. Division of Public Health. The Town has support through the Region 5 coordinator. The project is federally funded and will span through June 2019. The project will focus on providing safe, appealing environment for walking and biking, improve the quality of our children's lives and support national health objectives by increasing physical activity, reducing traffic, fuel consumption, and air pollution in the vicinity of schools.

The Active Routes to School program is an opportunity to make walking and bicycling to Town schools safer for children and to increase the number of children who choose to walk and bicycle. **The Town should continue to support and expand 'Active Schools.' It is recommended that the Town work to ensure an active and broad coalition which has representative members from schools, the community, and local government. It should to grow its representative schools, curriculum, and events to support the next generation in healthy active lifestyles.**

Infrastructure Projects - In North Carolina, the Strategic Mobility Formula aligns bicycle and pedestrian projects with SRTS, Transportation Alternatives Program, or Surface Transportation Program funds. The NCDOT Transportation Planning Branch and eligible MPOs direct the use of Congestion Mitigation and AIr Quality funds for bicycle and pedestrian projects. Highway Safety Improvement Program (HSIP) funds are directed by the NCDOT Transportation Safety and Mobility Unit. New requirements under HSIP require better data-gathering on bicycling and walking crashes and safety.

The NCDOT SRTS office asks that the Town and schools work with its Division office to develop a list of priorities. Proposed projects will be scored based on specific criteria for bicycle and pedestrian projects and will need to score well in order to move forward in the prioritization process. The NCDOT Division staff and/or MPO/RPO offices can assist with this process, as well as the Active Routes to School Regional Coordinator.

Bike and Pedestrian Count Program

There is a difference between counting bicycling and walking volumes for short-term, project specific purposes versus having a count program. Since a permanent count cannot be installed in all locations due to lack of funding, an effective program is composed of two elements – continuous counts and spatial coverage counts. Chapel Hill has experience carrying out a data collection plan through collecting coverage counts for the Mobility Report Cards. It is recommended that the Town of Chapel Hill formalize the continuous and coverage counts in order to implement an Non-Motorized Volume Program.

Why Count?

Nationwide communities collect data on vehicle movements, but rarely is data collected on bicycle and pedestrian use. Due to the lack of basic metrics, this means that what is not counted is not funded. Collecting more data can help to increase funding for and put in place better bicycle and pedestrian infrastructure. This is especially important in identifying areas of the highest need, which are often under-represented in public input.

Applications of count data are numerous:

- Performance Measures
- Project Prioritization
- Evaluating the effects of new infrastructure on bicycle and pedestrian activity
- Conducting risk/exposure analysis
- Estimating annual volumes
- Justifying maintenance expenditures

What doesn't get counted, doesn't count.

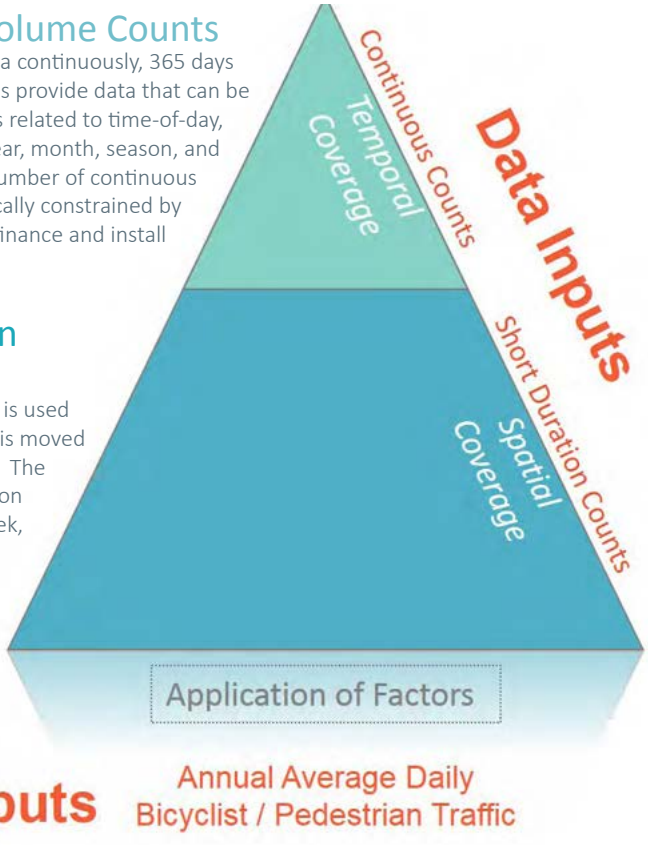
Data gives justification. It allows you to make a case.

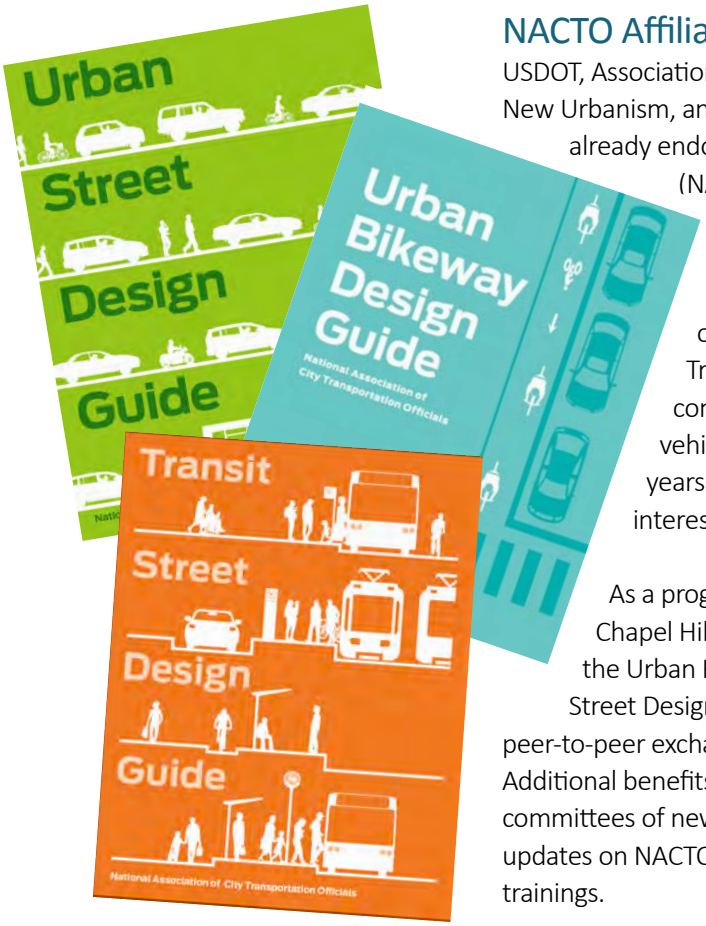
Continuous Volume Counts

Permanent provide data continuously, 365 days per year. These stations provide data that can be used to develop factors related to time-of-day, day-of-year, week-of-year, month, season, and annual volumes. The number of continuous count stations are typically constrained by resources available to finance and install them.

Short Duration Counts

Automated equipment is used for data collection and is moved from station to station. The data is adjusted based on time-of-day, day-of-week, and/or monthly factors that are derived from the continuous count portion of the program.





NACTO Affiliation

USDOT, Association of Bicycling and Pedestrian Professionals, Congress for the New Urbanism, and the Urban Land Institute along with 9 States and 48 cities have already endorsed the National Association of City Transportation Officials (NACTO) Urban Street Design Guide.

Street design standards and practices have long been developed and dictated by state departments of transportation and organizations such as the American Association of State Highway Transportation Officials (AASHTO), and reflect standards more conducive to a rural context where right-of-way is cheap and average vehicular speeds are in excess of 45 mph. It is only in the past few years that we have seen cities and organizations representing their interest as they push for and gain acceptance of urban design standards.

As a progressive town that commonly supports innovative design practices, Chapel Hill could endorse NACTO and incorporate design elements from the Urban Bikeway Design Guide, the Urban Street Design Guide and Transit Street Design Guide into projects. NACTO member and affiliate cities have a peer-to-peer exchange for valuable communication between cities on best practices. Additional benefits of becoming a NACTO Affiliate City are membership on review committees of new and updated guides, travel support for NACTO events, regular updates on NACTO projects, and NACTO staff leadership at Design Guide-based trainings.

Mobility Coordinator

Employing a bicycle and pedestrian staff person as a Mobility Coordinator shows that a community is committed to a comprehensive transportation system; they are critical to integrating and coordinating the Town's plans, projects, and development agreements. Having at least one staff-member focusing on the coordination between bicycle, pedestrian, greenway, and transit accessibility issues is an important step in carrying out the recommendations in the plan. The need for coordination is anticipated to increase over time.

Policy and Program Implementation

While infrastructure improvements take considerable time to design and construct, policy changes and new programs can often take shape shortly after the adoption of a new plan and influence the organizational culture and operations. The table below outlines the implementation schedule for these recommendations that need to be made upon adoption of the plan, with continual ongoing town operations, or within the next two fiscal years.

	Policy/Program	Responsibility
After adoption	Update Design Manual Streets and Sidewalks Standard Details	Public Works Department
	☆Amend LUMO for bike parking requirements	Planning Department
	Reprioritize sidewalk list	
Ongoing/ immediate	Continue to develop a bike/ped count program	Planning Department
	Expand 'Active Schools' Program	
Within year (by or for FY19 budget)	Create a wayfinding and signage package	Planning Department
	☆Update Complete Streets Policy	
	☆Designate an ADA Coordinator	
	Start a bike parking program	
	Track and report performance measures annually	
	Become a NACTO Affiliate	
	Add pedestrian elements to Traffic Calming Policy and Procedures	Public Works Department
	☆Establish sidewalk microgap program	
	☆Initiate an ADA improvement request process	
FY19-20 Fiscal Year	Hire a Mobility Coordinator	Planning Department
	Initiate a Town bikeshare program	
	Plan upgrades for the spot improvements and projects to create accessible routes in the ADA Transition Plan	Public Works Department

5 Priority Programs/Policies + 20 Key Projects - Five priority policy/ program recommendations are starred based on their effect to best incorporate and instill a ped-/bike-focused mentality into the Town's standard operating procedures for development review and capital projects, as well as setting up smaller-scale programs to address access needs across the community. When completed and paired with the 20 key capital projects, residents will find the Town's network and developments easier to walk and bike.

A. Public Involvement Detail Summary

B. Planned Improvement Projects

C. Facility Guidelines

D. Ephesus-Fordham District Plan

Glossary

Americans with Disabilities Act (ADA)	Civil rights law that prohibits discrimination against individuals with disabilities in all areas of public life and all public and private places that are open to the public.
Accessible Pedestrian Signal (APS)	Devices that communicate information about the "walk" and "don't walk" intervals at signalized intersections in nonvisual formats to pedestrians who are blind or have low vision.
Advisory Bike Lanes	Dashed bike lanes on low-volume streets too narrow for dedicated lanes.
Bicycle Signal Actuation	A device at a traffic signal that detects bicyclists and alerts the signal control box of a bicyclist's presence and need to cross.
Bike Box	Designated area positioning cyclists ahead of vehicles in traffic lane at signalized intersection during the red signal phase.
Bike Signal Faces	Bike-specific signal providing priority to cyclists where vehicle or pedestrian movements conflict.
Buffered Bike Lanes	Bike lane buffered from traffic with striping. When bollards or physical separation is used, the facility is often called a Protected Bike Lane.
Bus Rapid Transit (BRT)	Bus rapid transit (BRT, BRTS, busway, transitway) is a bus-based public transport system designed to improve capacity and reliability relative to a conventional bus system. BRT often incorporates dedicated bus lanes and traffic signal priority.
Capital Improvement Plan (CIP)	The Capital Improvement Plan (Program) is a short-range plan which identifies capital projects and equipment purchases, provides a planning schedule, and identifies options for financing the plan. It is the principal planning tool designed to advance the priorities of the Town.
Complete Street	A transportation policy and design approach that requires streets to be planned, designed, operated, and maintained to enable safe, convenient, and comfortable travel and access for users of all ages and abilities regardless of their mode of transportation. Complete Streets allow for safe travel by those walking, cycling, driving automobiles, riding public transportation, or delivering goods.
Curb Ramp	A combined ramp and landing to accomplish a change in level at a curb between the sidewalk and the street. This element provides a transitional access between elevations for pedestrians using wheelchairs, strollers, or other devices with wheels, and must comply with ADA Standards.

Glossary

Cycle Track	One- or two-way bike-only facility separated from traffic by physical barrier and pedestrians by curb or buffer.
Detectable Warning	Standardized surface feature built in, or applied to, walking surfaces to warn pedestrians with vision impairments of their approach to street crossings by delineating the boundary between pedestrian and vehicular routes, and to hazardous drop-offs such as the edge of boarding platforms at transit stations. Detectable warnings must meet ADA Standards. Truncated domes are a type of detectable warning.
Durham-Chapel Hill-Carrboro MPO (DCHC)	See MPOs.
East Coast Greenway	A bicycling and walking route that connects 15 states, 450 cities and towns, and 3,000 miles of people-powered trails from Maine to Florida.
Grade-Separated Crossing	A facility, such as an overpass, underpass, skywalk, or tunnel that allows pedestrians, bicyclists, and motor vehicles to cross each other at different levels to avoid conflicts and improve free flow of each mode.
Greenway Connector	A combination of signing, marking, traffic calming measures, and facilities that allow bicyclists and pedestrians to get safely from point A to point B in a priority corridor.
Hybrid/HAWK Signals	Special signals used for crosswalks/bike crossings on major streets where side streets do not warrant full signal. Photo on page 34.
Intersection Crossing Markings	Pavement markings indicating intended path of cyclists; typically include dashed edge lines with green pavement or sharrows.
Lane Reallocation	A technique to modify the number or width of travel lanes to achieve systemic improvements. Variants of the term reallocation include 4-to-3 lane conversion, lane reduction, and road diet.
Light Rail Transit (LRT)	A transit technology that is lighter than other traditional passenger rail systems like subways or commuter rail. Light rail operates in dedicated tracks with electrical power supplied from an overhead catenary system. The light rail vehicles are designed to operate in mixed traffic or in an exclusive right-of-way, either at grade or on an elevated structure.
Land Use Management Ordinance (LUMO)	Chapel Hill's set of development regulations.

Metropolitan Planning Organization (MPO)	A federally mandated and federally funded transportation policy-making organization in the United States that is made up of representatives from local government and governmental transportation authorities. Chapel Hill is within in the Durham-Chapel Hill-Carrboro MPO.
Midblock Crossing	A marked crosswalk that occurs in a location other than an intersection.
Modeshare	The percentage of commuters who travel to and from work by a certain mode (car, bike, walk, transit, work from home)
Multimodal	A transportation term which refers to planning that considers various modes (walking, cycling, automobile, public transit, etc.) and connections among modes. Multimodal transportation includes the mixing of different modes and supports the needs of all users whether they choose to walk, bike, use transit or drive. It means more connections and more choices.
Multi-Use Path	A facility, which should be designed to meet ADA Standards, that can be used by bicyclists, pedestrians, and other non-motorized users. They are separated from the roadway by an open space or a physical barrier or within an independent-right-of-way. Also known as a “shared use path” or “greenway.”
Non-Motorized	Active transportation which includes walking and bicycling and variants such as small-wheeled transport (skates, skateboards, push scooters and hand carts) and transport by wheelchair. Also known as Human Powered Transport.
NCDOT	North Carolina Department of Transportation
Overpass	A structure or bridge that crosses over a roadway, barrier, or natural feature. Also called a "grade separation."
Pedestrian Refuge Island	A raised island at intersection or mid-block crossing location that helps protect crossing pedestrians from motor vehicles and provides a place of refuge. Also known as a crossing island.
Priority Corridor	A low-stress route prioritized for bicyclist and pedestrian use connecting key destinations in the Town.
Protected Bike Lanes	A bike lane protected from traffic by being raised or physically seperated by a permanent barrier.
Rapid Rectangular Flashing Beacon (RRFB)	A warning beacon activated by a pedestrian at an uncontrolled crossing location which uses an irregular flash pattern to signal drivers of a pedestrian’s presence and desire to cross.
Right-of-Way	A right to make a way over a piece of land, usually to and from another piece of land. It is a type of easement granted or reserved over the land for transportation purposes, this can be for a highway, sidewalk, bike paths, rail transport, canal, as well as electrical transmission lines, oil and gas pipelines.

Glossary

Separated Facility	A bicycle and/or pedestrian facility that is physically separated from motor vehicles and is on, adjacent to the roadway, or in an independent right-of-way. Separated facilities include cycle tracks, protected bike lanes, and multi-use paths.
Shared Lane Markings	A pavement marking symbol used to indicate a shared lane environment for bicycles and motor vehicles. These markings are also called "sharrows."
Traffic Calming	A traffic management approach that is intended to slow cars to speeds that are safer and more compatible to bicycling and walking as they move through commercial and residential neighborhoods. The traffic calming toolbox includes, but is not limited to: diagonal parking, neighborhood traffic circles, narrowing travel lanes, tightening curb radii, median islands, traffic diverters, and speed tables.
Transportation Demand Management (TDM)	The application of strategies and policies to reduce travel demand, or to redistribute this demand in space or in time to result in more efficient use of transportation resources.
Two-Stage Turn Queue Box	A designated area at an intersection intended to provide bicyclists a place to wait for traffic to clear before proceeding in a different direction of travel.
Uphill Climbing Lane	Bike lane marked on uphill portion of road with shared lane marking on downhill side.
Vehicles per Day	A measure of traffic volume and used as the unit for Average Annual Daily Traffic.
Wiki-Mapping	An online engagement tool for planners to identify barriers, problems, or safety concerns and simultaneously collect location information from the public.