

BIPED PLAN UPDATE BACKGROUND AND DEVELOPMENT

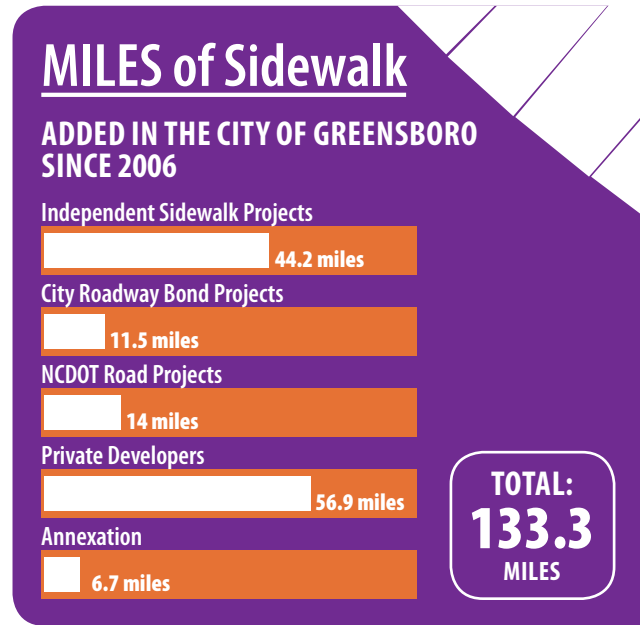
History of Non-Motorized Transportation in the Greensboro Urban Area

Although walking was the primary mode of transportation in Greensboro's earliest years, and Greensboro developed as a walking city through much of the nineteenth century, this started to change in the 1920's as automobile use dramatically increased. Development patterns favored the dispersion of housing and employment, and development density declined. By the late 1940's the community was heading towards a focus on automotive mobility with progressively less emphasis on the provision of walking-related and other non-motorized infrastructure. With the extensive development of lower density neighborhoods and disconnected street networks sidewalks became an increasingly rare investment in Greensboro neighborhoods from the 1940s through the rest of the century. This era of pedestrian neglect created an infrastructure backlog that the City is now working to correct.

Leading up to the 2000 Transportation Bond, the City heard clearly from the community that sidewalk construction and other pedestrian improvements were a high priority. Under the direction of the City Council, the 2000 Transportation Bond package was developed to incorporate sidewalks into roadway system enhancements, as well as to support the retrofitting of existing roadways with sidewalks and the continuing development of a greenway system. The approval by Greensboro voters of the 2000 Transportation Bond represented a new commitment to create a more walkable Greensboro. This commitment was extended through the approval of the 2008 Transportation Bond. The \$134 million 2008 Transportation Bond included \$9 million dedicated to independent sidewalk construction, and every road improvement project includes sidewalks on both sides—a policy which leads to millions of additional dollars for sidewalk construction. The City has implemented notable improvements in cooperation with the MPO and the NCDOT, partly through using bond funds to leverage

federal funds for priority projects. Almost \$20 million in federal funds has been leveraged by local funds for sidewalk and greenway construction and repair since 2006. The top priorities, taken from BiPed, have been to complete sidewalks along busy corridors and transit routes, to expand key greenway connections, and to install bicycle improvements with resurfacings and roadway widenings.

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Sidewalks built privately as required by municipal development and subdivision ordinances have also made a very significant impact on walkability in the Greensboro MPO. Since 2003 the City of Greensboro has had strong ordinances requiring sidewalk installation in the right-of-way or easements adjacent to developing property. This allows for faster sidewalk construction within the city and stretches the resources of the independent sidewalk construction program by making it possible to link up existing sections of sidewalk instead of having to build the entire sidewalk section along a street. Developer sidewalk contribution is also an important factor for the towns. Greensboro DOT analysis has found that since 2006 56.9 miles of sidewalk were added through the development process with another 6.7 by way of annexation.

Bicycle transportation has also received significant attention by the MPO in the past decade, particularly after the development of the first BiPed Plan. 20.3 centerline miles of on-road bicycle facilities and markings have been created in the City of Greensboro, and 36.7 miles of local signed bicycle routes have been designated. Off-road greenway paths such as the Atlantic & Yadkin Greenway also provide additional route options for bicycle and pedestrian transportation and give novice bicycle riders a more comfortable facility for commuting.

Improving walkability and bicycling in Guilford County and the five MPO area towns continues to gain traction since the 2006 BiPed Plan adoption. Oak Ridge completed a Comprehensive Pedestrian Improvement Plan in 2013 and Pleasant Garden completed a Comprehensive Bicycle and Pedestrian Transportation Plan in 2015. The Town of Sedalia is working on completing a bicycle and pedestrian plan as of this writing. The Town of Summerfield is preparing to design a section of the A&Y Greenway through their town. In general, the towns have comprehensive plans encouraging walkable downtown cores and ordinances requiring sidewalk construction with new development.

NCDOT owns and maintains all the roadways within unincorporated Guilford County and the towns, as well as some roadways in Greensboro. The BiPed Plan and local town bicycle and pedestrian plans allow for the municipalities to communicate their needs to NCDOT when it comes time to improve roadways within their jurisdiction. NCDOT also adopted a Complete Streets Policy in 2012, although its implementation is not truly complete, in that the Department requires commitment of local financial participation in sidewalk installation costs set at 20% for the towns and 50% for the City and County. Also, NCDOT sometimes declines to accommodate pedestrian and bicyclists on or below bridges for various reasons.

FACILITY TYPE	MILES ADDED SINCE 2006
Sidewalks – Within the City of Greensboro	133.3
Sidewalks – Outside City of Greensboro	36.3
Bicycle Lanes	11.9
Other On-Street Bicycle Facilities	8.4
Paved Greenways	7
Unpaved Trails	16

TABLE 1.1
Mileage of Biking and Walking Facilities Constructed Since 2006

Accomplishments Since 2006

The development of the 2006 BiPed Plan was a turning point in the Greensboro Urban Area for non-motorized transportation. Construction of new biking and walking facilities has progressed in all areas of the region. Specific facilities and the added mileage since 2006 are included.

The MPO recognizes the growing demand for bicycle and pedestrian facilities that is being experienced by cities across the United States, and these accomplishments prove that considerable progress has been made within the MPO to accommodate non-motorized transportation. It is no small feat that over 130 miles of sidewalk have been built in the City of Greensboro since 2006, bringing the total sidewalk mileage in the city from 373 to 503 in only nine years. The MPO has been a strong partner of the City in this regard, allocating almost \$20 million in federal funds for non-motorized transportation projects within the City, the majority of which are sidewalk projects. The City has been using the \$9 million in sidewalk construction funds from the 2008 Transportation Bond, among other sources, to match these federal funds. Progress on greenways and on-road bicycle facilities has also been gaining momentum with the construction and planning of several high-profile projects, including the Downtown Greenway, A&Y Greenway, and N. Buffalo Creek Greenway; and bicycle facilities on Spring Garden St, Meadowview Rd, Cornwallis Ave, and Phillips Ave. The 2015 BiPed Plan Update highlights these

significant accomplishments and provides direction on the next steps needed to continue the good work spurred by the original plan.

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BiPed Plan Update Development Process

There were several stages to the development of the BiPed Plan Update, including significant technical analysis by MPO staff, coordination with member agencies and staff, public involvement through surveys and public meetings, and a BiPed Update Advisory Committee made up of a diverse group of municipal staff, public health professionals, non-profit organizations, advocates, and interested residents.

TECHNICAL ANALYSIS

An important reason for updating the BiPed Plan was the need to incorporate updated technical data and analyses, and review the recommendations based on existing conditions. Updated data include bicycle and pedestrian crash locations, priority greenway projects, and roadway pavement conditions. Crash data assists in the evaluation of improvements that increase safety. Priority greenway projects show the way for future projects that are on the horizon that must be planned for. Roadway pavement conditions assist in determining on-street bicycle level of service conditions. The bicycle and pedestrian technical analysis used to develop recommendations is explained in detail in each individual modal chapter.

The technical analysis also involves updating the list of bicycle, pedestrian and greenway facilities that since BiPed (2006) adoption are now completed, under construction, under design, or in the planning stage. Compiling this information in one place makes it easier for staff and the public to indentify future priorities.

MPO MEMBER AGENCY COORDINATION AND STAFF WORK

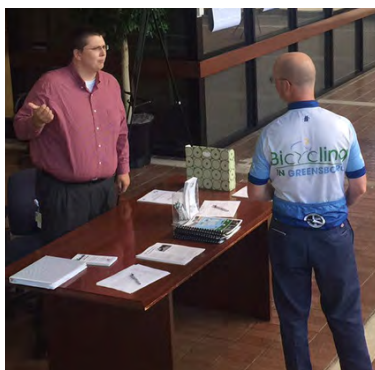
MPO staff updated the plan in-house with support from member agency staff including special help from Greensboro Parks & Recreation on greenway and trail planning. Content from the 2006 BiPed Plan was used as a reference but the majority of the content in the 2015 Update is newly created considering important changes in bicycle and pedestrian planning and roadway conditions since 2006. The 2006 recommendations were used as a base to develop

the infrastructure priorities of this plan, although significant additional analysis was completed that brings these recommendations a step further to set up the implementation of high-priority projects.

MPO staff coordinated with MPO Towns on their particular recommendations, incorporating recently developed bicycle and/or pedestrian plans for Pleasant Garden and Oak Ridge. These recommendations mainly include greenway and trail projects that were identified in the 2006 BiPed Plan, but sidewalks and bicycle facilities, where known, were also added to the plan.

PUBLIC INVOLVEMENT

There was a considerable amount of opportunity for public involvement in developing the BiPed Plan. Over the summer of 2014, a public survey was opened to collect information on the most important elements of the BiPed Plan Update to focus on and where new or improved facilities were needed. More than 150 people responded to this survey. In addition, MPO staff presented the BiPed Plan Update as part of Bike Month events in May 2014, to the Greensboro Community Sustainability Council in July 2014, and to the Greensboro Regional Realtors Association in April 2015. Findings and preliminary recommendations were presented for public review at a meeting also focusing on the Long Range Transportation Plan in February 2015. The presentations included reviews of accomplishments in bicycle and pedestrian infrastructure, projects, and programs since 2006, descriptions of ongoing outreach, and new analysis and potential recommendations for the update.



More than 30 people attended the public open house to review the BiPed Plan Update on August 18, 2015.

To incorporate more detailed input from an interdisciplinary group of stakeholders, the MPO created a BiPed Update Advisory Committee to advise staff on specific perspectives important to the Plan. The Committee's members reside within the MPO region and are associated with relevant interest areas and perspectives such as mountain biking,

public health, bicycling, running, and transit. Many of the BPAC members were also affiliated with organizations that are relevant to the planning process such as the Greensboro Planning Department, Greensboro Police Department, Guilford County Public Health Department, Bicycling in Greensboro (BIG), the Greensboro Fat Tire Society, Greensboro Velo Club, Safe Kids Guilford, Guilford PTA, and the Downtown Greenway. This group met ten times during the development of the plan, from November 2013 to August 2015.

The draft 2015 BiPed Plan Update went out for public review from August 14, 2015 to September 14, 2015. A public open house was held on August 18 at the City Hall in downtown Greensboro for the public and other stakeholders to review the draft plan, speak to staff, and make comments. More than 30 people attended this meeting. In addition, a public survey to collect input was opened during this time, and 46 responses to the survey were received from the public. Including emailed and organizational comments, the MPO received 51 comments on the draft plan. City and county staff and other key stakeholders were also consulted to ensure that the draft plan was comprehensive and accurate. Appendix C (online attachment) includes a summary of public comments and responses from the MPO to those comments.

The BiPed Plan Update was presented to the MPO's Transportation Advisory Committee for adoption in November 2015. The Plan is in effect MPO wide at this point. The Plan will subsequently be presented to Guilford County, the City of Greensboro, and the Towns of Oak Ridge, Pleasant Garden, Sedalia, Stokesdale, and Summerfield for their use. These individual jurisdictions may elect to adopt the plan directly as a way of signifying their interest and commitment in plan implementation.

Relationships to other Plans

2040 METROPOLITAN TRANSPORTATION PLAN (MTP)

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The 2040 Metropolitan Transportation Plan (MTP) addresses surface transportation, including highways, railways, public transportation, aviation, bicycling, and pedestrians. The plan provides an assessment of future area transportation needs, issues, and recommendations. The BiPed Plan Update elaborates on one of the elements in the MTP and provides recommendations and priorities for



sidewalk, bicycle, trail, and greenway facilities when developing the MTP programs and projects. The MTP, with fiscal constraints, includes the projects expected to be funded given current funding estimates in the twenty five year period in MTP. In sum, while BiPed recommendations include an extensive list of pedestrian, bicycle, trail and greenway project needs, the projects in the MTP provide a snapshot of what currently appears to be a more realistic subset of BiPed projects that can be expected to be funded in the next twenty five years.

The Vision of the MTP plan reflects the need for a balanced transportation system and well-integrated transportation networks. Walking and biking are key to MPO objectives to create an integrated, intermodal transportation system that provide traveler with a real travel choice. The MPO and member governments are working to correct infrastructure deficiencies and expand the system. Recommendations in MTP to support and expand bicycle and pedestrian facilities include:

- Implement recommendations of Greensboro Urban Area Bicycle, Pedestrian, and Greenway Master Plan Update (BiPed Plan Update)
- Continue expansion and infill of the sidewalk network,

focusing on high priority links, ADA compliance ramps, and removal of obstructions

- Implement an adequately funded annual sidewalk maintenance program to ensure accessibility
- Increase local resurfacing investment to a level commensurate with the infrastructure needs
- Include sidewalks and bicycle facilities in all new roadway projects except controlled-access facilities
- Improve pedestrian crossing conditions through expanded pedestrian signals and high-visibility crosswalks at high volume locations

2016 – 2025 METROPOLITAN TRANSPORTATION IMPROVEMENT PROGRAM

After being listed in the MTP, the next step for any BiPed projects to receive federal funds and move towards implementation is to be included in the Metropolitan Transportation Improvement Program (MTIP). The 2016-2025 Metropolitan Transportation Improvement Program (MTIP) lists transportation investments within the Greensboro



Urban Area scheduled for federal or state funding in the next ten years. The document includes the highway program, the non-highway program (including transit, rail, bicycle, pedestrian, and aviation), and the Statewide program (umbrella projects which may be used to make investments across the entire state as needed -- not to be confused with Statewide Needs Projects listed in the highway program). Biped projects funded with federal funds are listed in the MTIP.

The FY 2016-2025 MTIP includes substantial investment in the MPO area transportation system. Total funding over the period is \$896,591,000, according to an MPO analysis. **Figure 1.6** displays the project category breakout of the 2016-2025 MTIP. In



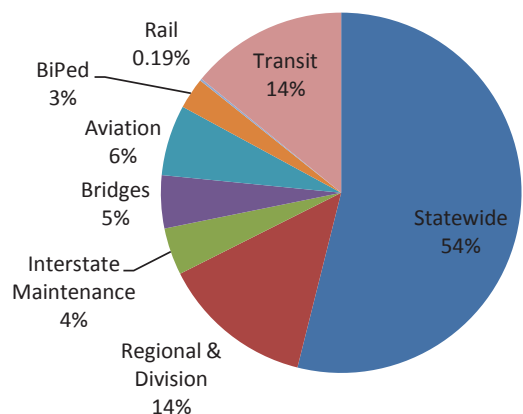


FIGURE 1.6
2016-2025 MTIP Project Category Breakout 2

Figure 1.6, the Statewide, Regional, and Division categories represent roadway projects only. Bicycle and pedestrian projects are shown as a stand alone category, although under the STI such projects are classified in the Division Category. That being said, bicycle and pedestrian projects consume 3% of the programmed funding.

LOCAL GOVERNMENT PLANS

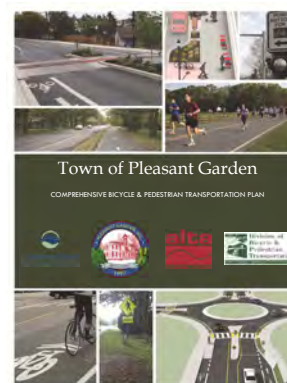
The BiPed Plan is a resource for local governments when updating plans and implementing projects. Local governments can use BiPed recommendations to inform local land use plans, intersection improvements, and corridor studies. Recommendations of local government plans are also included in the BiPed Plan.

Some local governments have stand-alone bicycle and pedestrian plans including the Town of Oak Ridge's Comprehensive Pedestrian Transportation Plan (2013) and Town of Pleasant Garden's Comprehensive Bicycle and Pedestrian Transportation Plan (2015).

Other jurisdictions have incorporated bicycle and pedestrian elements into their Comprehensive and Area Plans, including



the City of Greensboro's Connections 2025 Comprehensive Plan (2003), Summerfield's Comprehensive Plan (2010), and the Downtown Area Consolidated Plan (2010, developed through a collaboration of the City of Greensboro, Guilford County, Action Greensboro, and Downtown Greensboro Incorporated).



NORTH CAROLINA STATEWIDE TRANSPORTATION PLAN (2040 PLAN) AND WALK BIKE NC PLAN (2013)

The 2040 Plan addresses how North Carolina's transportation system should develop over the next thirty years to meet the needs of its users. The plan reviews the current conditions for each mode of transportation. Bicycle and pedestrian performance is reported to be at Level of Service (LOS) D. According to the



plan, the greatest priority for pedestrian and bicycle improvement is addressing walking and biking safety needs. Based on NCDOT estimates, a total of \$1.29 billion is needed to invest in pedestrian and bicycle improvements to increase the LOS to A.

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The North Carolina Statewide Pedestrian and Bicycle Plan (WalkBike NC) outlines a strategy for improving pedestrian and bicycle transportation in North Carolina. The vision and goals of the plan were developed based on input from the Joint



Steering Committee and Advisory Committee, the 2011 Bicycle and Pedestrian Safety Summit report, and public outreach. The vision states “North Carolina is a place that incorporates walking and bicycling into daily life, promoting safe access to destinations, physical activity opportunities for improved health, increased mobility for better transportation efficiency, retention and attraction of economic development, and resource conservation for better environmental stewardship of our state.” Five vision themes were framed to provide detailed current conditions, strategies and actions to achieve the goals of Mobility, Safety, Health, Economy, and Environment. The BiPed Plan Update was developed to concur and be consistent with the vision and goals in the 2040 Plan and the WalkBike NC Plan. The BiPed Plan Update also includes recommendations from WalkBike NC, in particular the newly revised State Bicycle Routes.



OVERVIEW OF PLAN ELEMENTS

The 2015 BiPed Plan Update consists of four chapters. The last section of each of the modal chapters includes a Summary of recommendations and implementation steps from that chapter. In addition, each summary item is tagged with a symbol that identifies what theme the recommendation addresses: mobility, safety, health, economy, or environment. Recommendations may address more than one of these themes.

CHAPTER 1: *Introduction to BiPed and the Greensboro Urban Area*

This chapter introduces the BiPed Plan Update and explains its contents, purpose, goals, and how it was developed. The chapter gives background information on non-motorized transportation planning in the Greensboro Urban Area and describes how BiPed relates to other local plans and planning concepts.

CHAPTER 2: *Bicycle Chapter*

This section provides an overview of the Bicycle Network including a crash analysis, bicycle facility types and applications, bicycle needs, recommendations, and priorities, and a list of bicycle facility improvements.

CHAPTER 3: *Pedestrian Chapter*

This section provides an overview of the Pedestrian Network including pedestrian facility types and applications, crash analysis, and pedestrian facility recommendations and priorities.

CHAPTER 4: *Greenways and Trails Chapter*

This section provides an overview of the Greenways and Trails Network including an explanation of greenway and trail facility types and their applications, Greenway system needs analysis, and future greenway recommendations and priorities.



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