



Appendix B: Public Involvement

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OVERVIEW

Public engagement involved numerous components to spread awareness of the Goldsboro Bicycle, Pedestrian, and Greenway Plan and to ensure a variety of local perspectives containing essential insight were appropriately incorporated into the plan. Various mediums and resources were constructed so that all members of Goldsboro, Walnut Creek, Pikeville, Wayne County, and the surrounding areas had the opportunity to participate. Some people prefer or only have the resources to communicate in person, in writing, and/or electronically. Special effort was made to reach out to underserved populations. The public engagement component included the following:

1. Steering Committee Meetings (4)
2. Stakeholder Interviews/Community Meetings (16)
3. Public Input Events (7)
4. Project Information Resources (Website, Comment Forms, Etc.)

STEERING COMMITTEE MEETINGS

The Project Steering Committee for the plan consisted of a mixture of representatives from state/local/county government, health/wellness groups, and also included representatives from Duke Energy, Wayne Memorial Hospital, and local businesses. The Project Steering Committee was involved throughout the process and met four times with project consultants from Alta/Greenways and Sage Design, focusing on project vision and goals (February 2014), existing conditions (May 2014), the draft plan (July 2014), and the final plan (September

May 2014 Steering Committee Meeting



2014). During the February 2014 meeting, the consultant gave a presentation on the planning process while the group established a mission statement and goals for the plan. In both February and May 2014 meetings, members of the Steering Committee worked with the consultant team to mark up local and regional maps to identify gaps in the current network and high priority areas. The final two meetings involved making revisions and addenda to the plan document. Input from the Steering Committee is reflected throughout the recommendations of this plan.

STAKEHOLDER INTERVIEWS/COMMUNITY MEETINGS

The Project Consultant met with multiple stakeholders throughout the information-gathering portion of the planning process. Stakeholders provided valuable input towards the development of the Plan. Stakeholders included Wayne Community College, Goldsboro YMCA, City of Goldsboro Engineering, City of Goldsboro Parks & Recreation, City of Goldsboro Public Works, Chamber of Commerce, Duke Energy, Wayne County Schools, Downtown Goldsboro Development Corporation, business leaders, Town of Pikeville, Village of Walnut Creek, Goldsboro Housing Authority, and GOWAYNEGO. For meeting minutes, please see the end of this appendix.

PUBLIC OUTREACH EVENTS

The Project Consultant attended multiple events in order to reach more Goldsboro area residents. These are described below.

Pig in the Park Festival

Project consultants set up an informational booth at the Pig in the Park Festival on Saturday April 12, 2014. People were invited to learn about the plan and provide input via a public comment form about where they would like to see improvements for bicycling and walking. A public input map, information cards, and posters were provided for review and two project consultants answered questions and took comments. More than 50 people stopped by to learn about the plan and directly provide input. Nearly 60 comment forms were completed. The general feedback was highly positive, with many people interested in seeing Goldsboro become a more bike and pedestrian-friendly community.

Pig in the Park Project Information Booth and Bicycle Photo Booth





Project Launch

The project team, alongside the Metropolitan Transportation Plan (MTP) Update Team, held a standalone workshop at the Boys & Girls Club on April 17, 2014. Project consultants had several stations for participants including project information boards, public input maps, and comment forms. A rolling video that described the planning process ran in the background as well. In addition, the team collected input from employees and visitors of the Boys & Girls Club. About a dozen citizens came to the event to provide input.



*Project Launch
at the Boys &
Girls Club*





*Goldsboro YMCA Project
Information Booth*



*Center Street Jam
Information Booth*

YMCA/Health Clinic

Project consultants set up an informational booth at the YMCA entrance on June 12, 2014 from 1-4pm. Bicycle World, a local Goldsboro business, provided water bottles to hand out for those who completed comment forms. People stopped by to provide input on the regional map and completed over 50 comment forms. Generally, people were enthusiastic about providing more walking and bicycling options in the community.

Center Street Jam

Project consultants set up an informational booth at the Center Street Jam on June 12, 2014 from 6-8pm. Bicycle World, a local Goldsboro business, provided water bottles to hand out for those who completed comment forms. Dozens of people stopped by to provide input on the regional map and completed over 40 comment forms. Many had walked or bicycled to the event and a common concern of citizens was having a safe place to walk and bicycle in Goldsboro.



Summerfest (Fairview Park)

Project consultants set up an informational booth at the Summerfest event on June 21, 2014 during the afternoon. The Team chose this event located in the Fairview public housing area in an effort to reach more underserved populations. A public input map and hardcopy comment forms were provided. Dozens of people stopped by the booth to provide comments and ideas for making Goldsboro safer for walking and bicycling.

*Input at
Summerfest*



Cruise the Neuse

Project consultants joined the completion of the Cruise the Neuse event on June 21, 2014 during the morning. This was an opportunity to communicate our planning process and receive input. A couple dozen completed comment forms at this event.

NCDOT Division 4 Meeting

In June 2014, City of Goldsboro staff and project consultants met with NCDOT Division 4 representatives to discuss project goals, planning process, and preliminary bicycle network recommendations. The primary goal was to determine opportunity for implementation of recommendations during scheduled roadway resurfacing projects. Each project located on NCDOT-owned roadways were reviewed and implementation strategies were discussed.

Draft Plan Input Session

Upon completion of the Draft Plan, the project team held an event to present key recommendations. Participants were invited to respond to the network map recommendations.

PROJECT RESOURCES

A number of resources were developed to enhance project awareness and participation. These tools also played a significant role in ensuring all members of the general public would have the opportunity to participate.

Wayne Goldsboro Television

The project team was interviewed on a local government channel in April 2014. The team discussed the project and planning process and announced the importance of receiving public input. The Plan Launch event and Pig in the Park event were announced.

Project Website

A project website was developed to provide further project information, maps, contact information, and additional resources. The website also featured a link to the online public comment form page, offering an additional medium for the Goldsboro community to become engaged and participate in the planning process. The website also featured an interactive map that allowed participants to place points at locations of bicycle and pedestrian need. A companion website in Spanish was provided as well.

Project Website:

goldsborogreenway.weebly.com/



GOLDSBORO BICYCLE, PEDESTRIAN, AND GREENWAY PLAN COMMENT FORM

Please take a few moments to fill out this short questionnaire. Your response will help build a better understanding of community needs and priorities. For more information go to: www.goldsborogreenway.weebly.com/

1. Where do you live?
 City of Goldsboro | Town of Pikeville | Village of Walnut Creek | Wayne County

2. How do you rate present bicycling conditions in greater Goldsboro?
 Excellent | Fair | Poor

3. How important to you is improving bicycling conditions in greater Goldsboro?
 Very important | Somewhat important | Not important

4. When you ride your bicycle in greater Goldsboro, what is the primary purpose of your trip? (circle all that apply)
 Transportation | Recreation | Exercise | To enjoy nature | Socialize | I do not bike
 Other: _____

5. Where do you ride your bicycle?
 Off-road (greenway path) | On-road | Both

6. How do you rate present walking conditions in greater Goldsboro?
 Excellent | Fair | Poor

7. How important to you is improving walking conditions in greater Goldsboro?
 Very Important | Somewhat important | Not important

8. When you walk in greater Goldsboro, what is the primary purpose of your trip? (circle all that apply)
 Transportation | Recreation | Exercise | To enjoy nature | Walk the dog | Socialize | I do not walk
 Other: _____

9. How often do you leave the Goldsboro area to use other trails (such as those in Clayton, Smithfield, and Raleigh)?
 Never
 Daily
 Weekly
 Monthly
 Annually (once a year)

Public Comment Form

A comment form was developed and was made available in both hard copy and online formats. The comment form was available online throughout the duration of the project. To maximize responses to the online form, the web address was distributed at public meetings, advertised in press releases, sent out to local interest groups, posted on Facebook pages, and included on project information cards that were distributed around town. 514 residents completed the comment form. In addition, a comment form was provided in Spanish with one resident completing it.

Combined results of the comment form (both English and Spanish versions) were collected and tabulated by the Consultant to provide insight into local residents' values and opinions about the project. The form can be seen later in this Appendix and the results are included in this Appendix as well.

Facebook

Project information with a link to the project website and online comment form was posted on multiple area Facebook pages including the following:

- » City of Goldsboro
- » City of Goldsboro Parks and Recreation
- » Arts Council of Wayne County
- » Goldsboro News-Argus
- » Downtown Goldsboro
- » Goldsboro High School
- » Goldsboro Daily News
- » Goldsboro Disc Golf Club
- » United Way of Wayne County
- » Relay for Life of Wayne County
- » Wayne County Humane Society

Goldsboro MPO - Plan de Bicicletas, Peatones y Caminos Verdes

Gracias por su interés en el Plan de Bicicletas, Peatones y Caminos Verdes para el MPO de Goldsboro! A través de este plan, esperamos incrementar la seguridad de peatones y ciclistas, tener un mejor acceso a los destinos de la comunidad, y crear oportunidades para estilos de vida activos y saludables. Los temas de esta encuesta incluyen:

- El estado actual de su actividad como peatón o ciclista
- Barreras que le impiden al andar o ir en bicicleta en su comunidad
- Oportunidades
- Prioridades para futuras mejoras
- Comentarios generales

Por favor tómese unos minutos para llenar este breve cuestionario. Su respuesta nos ayudará a comprender mejor las necesidades y prioridades de la comunidad. Incluye su edad, su nivel de educación, su nivel de ingresos, sus comentarios serán útiles. Todas las respuestas serán anónimas. Haga clic en "Siguiente" para comenzar. Gracias por su tiempo!

*Nota: Para la mayoría de las preguntas, "Goldsboro" se refiere a la estación geográfica del MPO de Goldsboro, al cual incluye porciones del Condado de Wayne, la Ciudad de Pikeville, y pueblos del Walnut Creek.

1. ¿Dónde vives?

La ciudad de Goldsboro

El pueblo de Pikeville

El pueblo de Walnut Creek

El condado de Wayne

Project Comment Forms in English and Spanish

Project Information Cards

The information card shown on the following page was designed to spread awareness of the project as well as to direct interested citizens to the website and to project contacts for further information. By providing the general public with access to different avenues of public input, these public engagement components provided a variety of opportunities for the voices of the Goldsboro community to be heard. A project information card was also distributed in Spanish.

Project Information Cards in English and Spanish

GOLDSBORO BICYCLE PEDESTRIAN & GREENWAY PLAN

How can Goldsboro and nearby communities become safer and more enjoyable for walking and bicycling? Please share your ideas at:

www.GoldsboroGreenway.weebly.com

GOLDSBORO PLAN DE BICICLETAS, PEATONES Y CAMINOS VERDES

¿Cómo cree usted que Goldsboro y las comunidades cercanas podrían ser más seguras y más agradables para caminar y andar en bicicleta? Por favor comparta sus ideas en:

www.GoldsboroGreenway.weebly.com/en-espanildeol.html



Public Housing Authority Newsletter

Information about the project and how residents and provide their input was included in the Spring 2014 public housing newsletter. The newsletter was distributed to all residents of public housing areas in Goldsboro.

Latino Community Leaders

Community leaders Gabriel and Alejandra Tinajero, owners of El Mercado on Parkway Drive, assisted in engaging the Spanish-speaking populations of the Goldsboro area. Comment forms and information cards in Spanish were delivered to El Mercado store in June 2014 with xx people in the Hispanic community contributing.

Draft Plan Information Boards

A series of project information boards were created to showcase and invite feedback on the draft plan. These boards presented existing bicycle and pedestrian conditions in the Goldsboro region, visions/goals, types of bicycle and pedestrian facilities, benefits of greenways, and project recommendations. The boards were displayed at committee meetings and local events. Feedback received on the boards was incorporated into the final plan.

PROJECT GOALS / BENEFITS of WALKABLE & BIKE-FRIENDLY COMMUNITIES

ENVIRONMENTAL BENEFITS

"Integrate land use and transportation policies to limit impacts to sensitive land, focus development in prime locations, encourage trips by modes other than personal automobiles, and enhance the region's quality of life."

Sidewalks, bike lanes, paths, and greenway trails help to reduce vehicle emissions, fuel consumption, and congestion.

The natural buffer zones that occur along greenways protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.

ECONOMIC BENEFITS

Property values are higher by \$4,000 to \$34,000 in walkable areas.

An initial investment of \$6.7M in walking and bicycling facilities has generated \$60M in annual bicycle-related tourism revenue in the Outer Banks.

Businesses, residents, and visitors consider quality of life factors like walkability and bikability when choosing locations to settle. Goldsboro needs to better position itself to take advantage of this economic opportunity.

HEALTH BENEFITS

Walking and bicycling facilities promote an active, healthy lifestyle.

A Charlotte, NC, study found that residents who switched to walking to and using light rail for their commute weighed an average of 6.5 pounds less than those who continued to drive to work.

MOBILITY BENEFITS

Walking and Bicycling facilities provide efficient commuting options.

Seventeen percent of occupied households in Goldsboro do not have access to a vehicle.

If bicycling and walking accommodations were improved, more than 70% of North Carolinians said they would walk and bike more for their daily needs.

SAFETY BENEFITS

Walking and biking infrastructure is among the most cost-effective forms of transportation investment.

NC is ranked the 10th worst state for walking and 7th most dangerous for bicycling.

ENVIRONMENTAL BENEFITS

Increases residential property values by \$64 Million across the state

Generates \$174 Million for the state economy

Increases water spending by \$88 Million annually

Reduces health care costs by \$76 Million annually

Generates 28,000 new jobs

100 jobs per 1,000 miles of Greenway

60% 1 walk, bike tourism

HEALTH BENEFITS

65% Sixty-five percent of adults in North Carolina are either overweight or obese. The state is also ranked 5th worst in the nation for childhood obesity.

70% Seventy percent of North Carolinians said they would walk or bike more if connected with a safe bicycle and pedestrian network.

#1 The #1 goal of the Wayne County Health Department is to reduce the burden of chronic disease among County residents.

SAFETY BENEFITS

188 Number of known crashes involving a pedestrian or a bicyclist in Goldsboro between 2007-2011

Infrastructure Improvements and Safety	% Crash Reduction Rate
Install sidewalk along roadway	85% pedestrian crash reduction
Install refuge islands	56% pedestrian crash reduction
Convert unsignalized intersection to roundabout	2.7% pedestrian crash reduction
Install countdown signals	2.5% pedestrian crash reduction
Provide protected bicycle lanes	36-40% bicyclist crash reduction

Project Information Board



TYPES OF BICYCLISTS

It is important to consider bicyclists of all skill levels when creating a non-motorized plan or project. Bicyclist skill level greatly influences expected speeds and behavior, both in separated bikeways and on shared roadways. Bicycle infrastructure should accommodate as many user types as possible, with decisions for separate or parallel facilities based on providing a comfortable experience for the greatest number of people. A framework for understanding the characteristics, attitudes, and infrastructure preferences of different bicyclists in the US population as a whole is illustrated below.



HIGHLY EXPERIENCED (approximately 1% of population)
 Characterized by bicyclists that will typically ride anywhere regardless of roadway conditions or weather. These bicyclists can ride faster than other user types, prefer direct routes and will typically choose roadway connections – even if shared with vehicles – over separate bicycle facilities such as shared use paths.



ENTHUSED AND CONFIDENT (approximately 5-10% of population)
 This user group encompasses bicyclists who are fairly comfortable riding on all types of bikeways but usually choose low traffic streets or multi-use paths when available. These bicyclists may deviate from a more direct route in favor of a preferred facility type. This group includes all kinds of bicyclists such as commuters, recreationalists, racers and utilitarian bicyclists.



INTERESTED BUT CONCERNED (approximately 60% of population)
 This user type comprises the bulk of the cycling population and represents bicyclists who typically only ride a bicycle on low traffic streets or multi-use trails under favorable weather conditions. These bicyclists perceive significant barriers to their increased use of cycling, specifically traffic and other safety issues. These people may become "Enthusied & Confident" with encouragement, education and experience.



NO WAY, NO HOW (approximately 30% of population)
 Persons in this category are not bicyclists, and perceive severe safety issues with riding in traffic. Some people in this group may eventually become more regular cyclists with time and education. A significant portion of these people will not ride a bicycle under any circumstances.

Source: Four Types of Cyclists. (2009). Roger Geller, City of Portland Bureau of Transportation. Supported by data collected nationally since 2005.

WHICH TYPE OF BICYCLIST ARE YOU?

WHICH TYPE SHOULD THE CITY AND MPO PLAN FOR?

Project Information Boards

PROJECT OVERVIEW

KEY INPUTS FOR PLAN DEVELOPMENT:



PROJECT TIMELINE:

- Project Kick-Off February 2014
- Public Workshop #1 April 2014
- Draft Plan Spring/Summer 2014
- Public Workshop #2 Summer/Fall 2014
- Final Plan Winter 2014

DRAFT VISION STATEMENT:

Goldsboro is an attractive regional destination where a convenient network of sidewalks, bikeways, and greenways:

- » Brings people of all ages and abilities together;
- » Safely connects them to where they want to go;
- » Promotes an active lifestyle and good health;
- » Highlights the local history, culture, and environment; and
- » Drives the local economy by drawing residents, visitors, and businesses to the area.

What do you think? Changes? Additions?

This Vision Statement combines input from the project Steering Committee and Stakeholders, outlining the overall vision for the outcomes of this plan:

WALKING & BICYCLING TOOLBOX

CYCLE TRACKS



BICYCLE LANES/BUFFERED BICYCLE LANES



SHARED LANE MARKINGS (SHARROWS)



PAVED SHOULDERS



BICYCLE BOULEVARDS



BICYCLE-FRIENDLY INTERSECTIONS



MULTI-USE PATHS AND BOARDWALK



MULTI-USE SIDE PATHS



RAISED MEDIANS/CROSSING ISLANDS



MARKED CROSSWALKS AND SIDEWALK



PEDESTRIAN-ACTIVATED SIGNALS AND CROSSINGS



CURB RAMPS, EXTENSIONS AND RADIUS REDUCTIONS

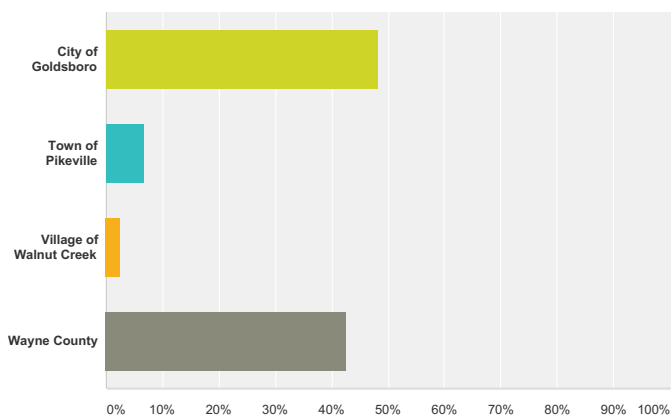




PUBLIC COMMENT FORM RESPONSES

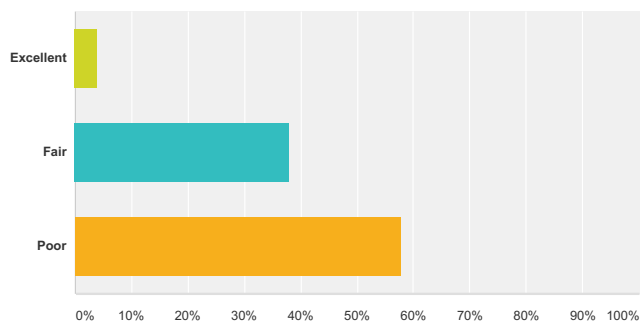
Q1 Where do you live?

Answered: 475 Skipped: 39



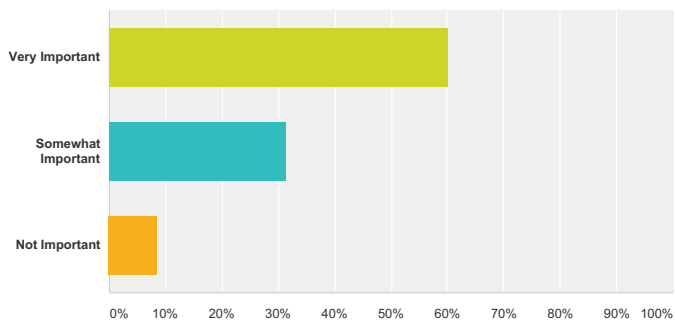
Q2 How do you rate present bicycling conditions in greater Goldsboro?

Answered: 473 Skipped: 41



Q3 How important to you is improving bicycling conditions in Greater Goldsboro?

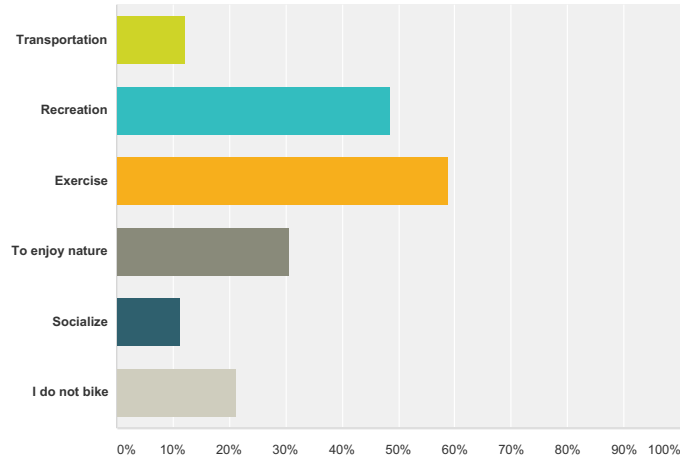
Answered: 482 Skipped: 32





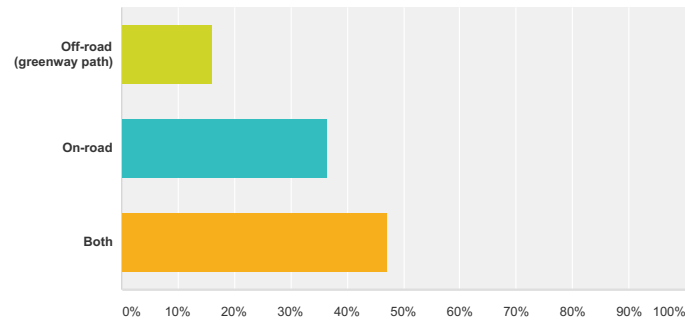
Q4 When you ride your bicycle in greater Goldsboro, what is the primary purpose of your trip? (check all that apply)

Answered: 476 Skipped: 38



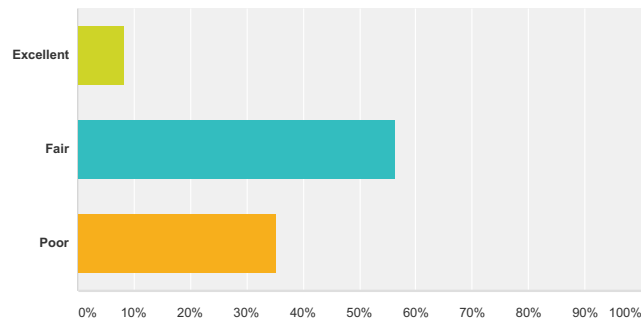
Q5 Where do you ride your bicycle?

Answered: 404 Skipped: 110



Q6 How do you rate present walking conditions in greater Goldsboro?

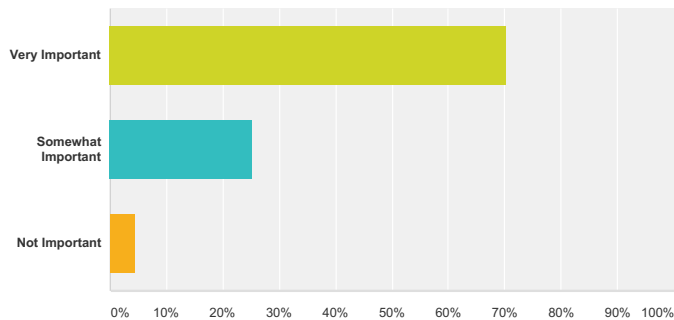
Answered: 479 Skipped: 35





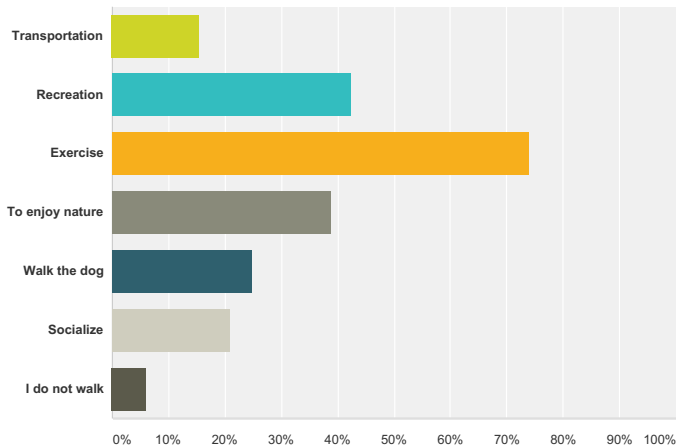
Q7 How important is improving walking conditions in greater Goldsboro?

Answered: 479 Skipped: 35



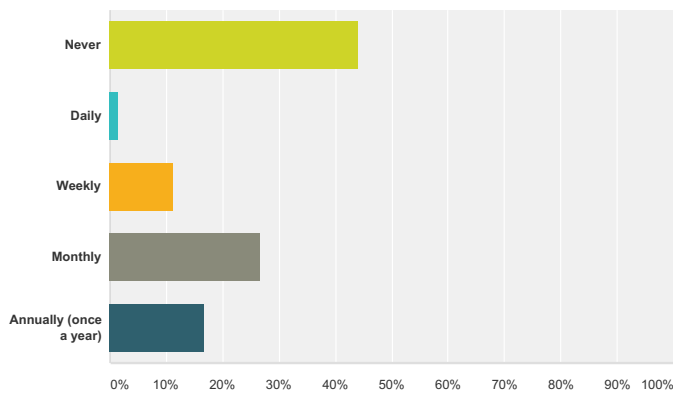
Q8 When you walk in greater Goldsboro, what is the primary purpose of your trip? (check all that apply)

Answered: 477 Skipped: 37



Q9 How often do you leave the Goldsboro area to use other trails (such as those in Clayton, Smithfield, and Raleigh)?

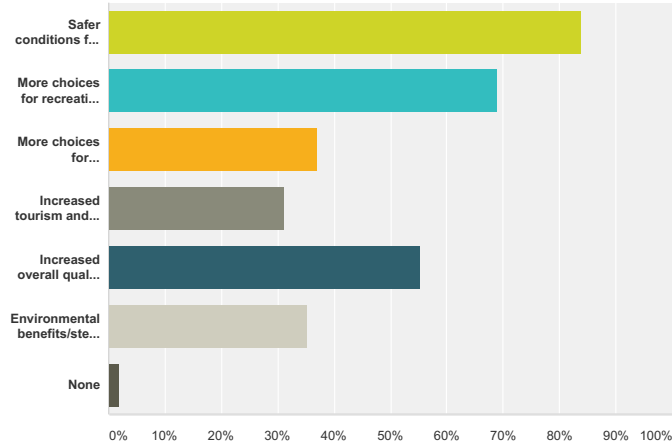
Answered: 480 Skipped: 34





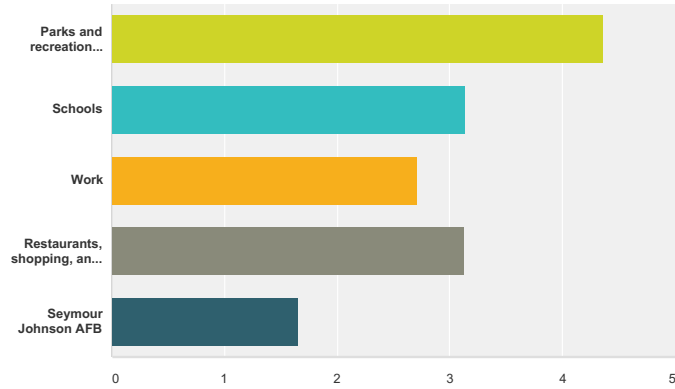
Q10 What should be the most important goals and outcomes of this plan? (check all the apply)

Answered: 468 Skipped: 46



Q11 What destinations would you most like to be able to reach by bicycling or walking? Please rank (1 = most like to reach, 5 = least like to reach)

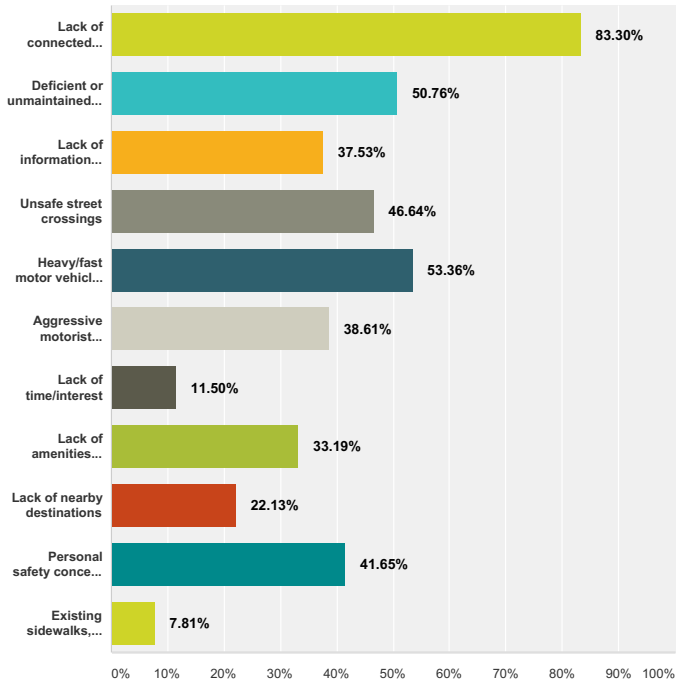
Answered: 443 Skipped: 71





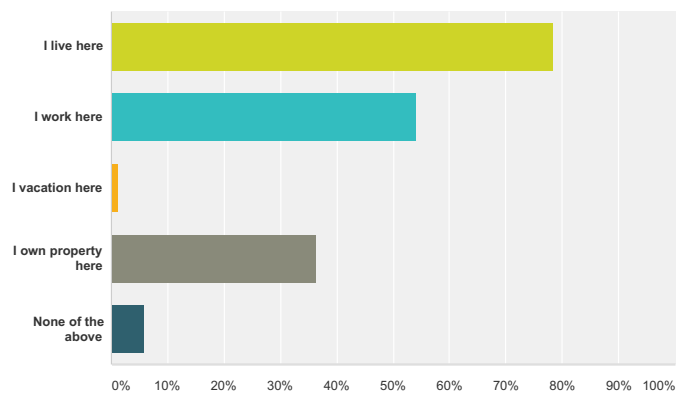
Q12 What do you think are the factors that most DISCOURAGE bicycling or walking in greater Goldsboro? Please select up to five factors.

Answered: 461 Skipped: 53



Q14 What is your relationship to greater Goldsboro?

Answered: 446 Skipped: 68





QUESTION 13: What are the top three locations for improving conditions for walking and bicycling in greater Goldsboro? Examples include locations where we need a new or improved sidewalk, trail, bicycle lane or intersection/street crossing.

Roadway/Location	Number of Votes	Most Requested from Public Input Events
Berkeley	79	#2
Ash	72	
Wayne Memorial	55	#3
Spence	46	#4
Downtown (generally)	41	
Herman Park	26	
New Hope	26	
Pikeville (generally)	18	
Royall	16	#1
Stoney Creek Park	16	
Hospital/Comm. College	15	
SJAFB	12	
Rosewood	9	
Elm	7	#5
William	7	
Center	5	
Slocumb	4	#6
Beech	4	





Appendix C: Benefits of This Plan

Appendix Contents:

Overview

Safety

Health

Economics

Mobility

Stewardship

OVERVIEW

When considering the amount of dedication, time, and valuable resources that it takes to create a walk- and bicycle-friendly community, it is also important to assess the immense value of active transportation. Better walking and bicycling facilities improve safety and encourage more people to walk and ride, which in turn improves health, provides a boost to the local economy, creates a cleaner environment, reduces congestion and fuel costs, and contributes to a better quality of life and sense of community.

Communities across the country have experienced and documented the benefits of providing a supportive environment for walking and bicycling. With a better active transportation network, Goldsboro can create a stronger, more vibrant community and take advantage of the many types of benefits described below.

The following sections discuss the many benefits of planning for and creating a walkable and bikeable community. Resources to more comprehensive research on each topic are provided at the end of each section.

Key Benefits of this Plan





Safety

Trends and Challenges

According to a survey of 16,000 North Carolina residents for the 2011 North Carolina Bicycle and Pedestrian Safety Summit, the most commonly reported safety issue for walking and bicycling in North Carolina is **inadequate infrastructure** (75%). A lack of pedestrian and bicycle facilities, such as sidewalks, bike lanes, trails, and safe crossings, lead to unsafe walking and bicycling conditions:

- » Each year on average (2007-2011), 162 pedestrians and 19 bicyclists are killed in collisions with motor vehicles on North Carolina roads, with many more seriously injured.
- » North Carolina is ranked as one of the **least safe states** for walking (41st) and bicycling (44th).
- » **13% of all traffic fatalities** in North Carolina are bicyclists and pedestrians.
- » During the five-year period from 2007 to 2011, a total of 12,286 pedestrian-motor vehicle crashes and 4,700 bicycle-motor vehicle crashes were reported to North Carolina authorities.
- » In Goldsboro from 2007-2011, there were **188 known crashes** involving a bicyclist or pedestrian.



A cyclist attempts to cross Ash Street across from Stoney Creek Park.

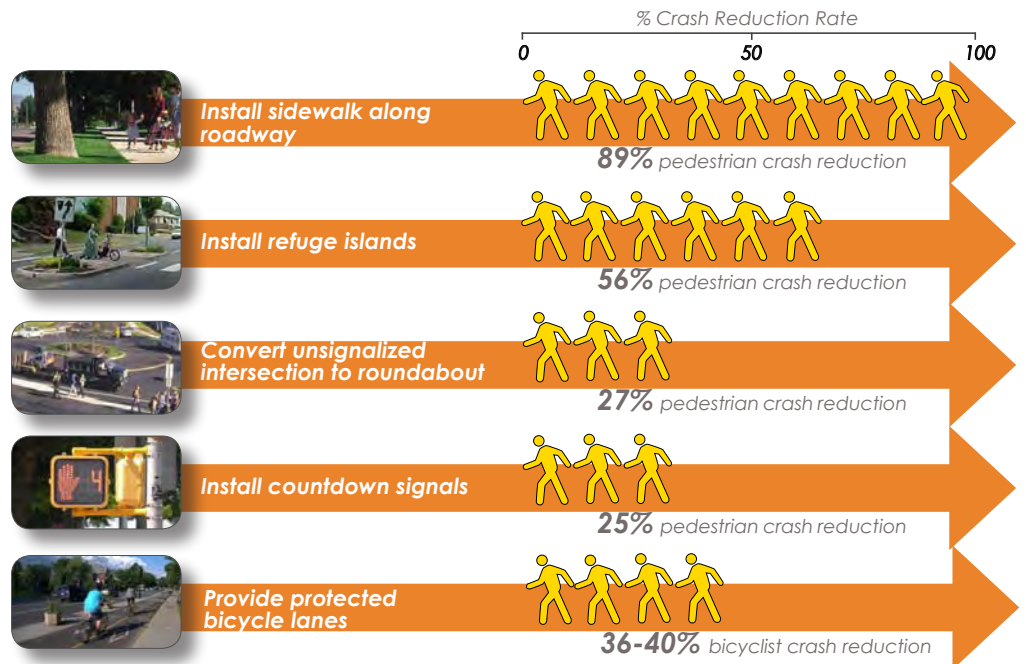


Infrastructure Improvements and Safety

Separate studies conducted by the Federal Highway Administration and the University of North Carolina Highway Safety Research Center demonstrate that installing pedestrian and bicycle facilities directly improves safety by reducing the risk and severity of pedestrian-automobile and bicycle-automobile crashes. For example, installing a sidewalk along a roadway reduces the risk of a pedestrian “walking along roadway” crash by 89 percent. The graphic below shows how pedestrian and bicycle facility improvements have a direct, positive impact on safety.

The following web addresses link to more comprehensive research on active transportation and safety.

- » www.ncdot.gov/bikeped/planning/walkbikenc/
- » www.pedbikeinfo.org/data/factsheet_crash.cfm



Federal Highway Administration. Desktop Reference for Crash Reduction Factors.
<http://safety.fhwa.dot.gov/>

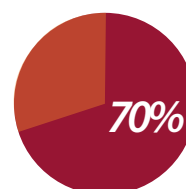
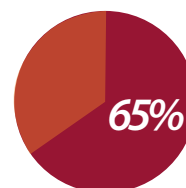


Health

Trends and Challenges

North Carolina's transportation system is one of the most important elements of our public environment, and it currently poses barriers to healthy living through active transportation. A growing number of studies show that the design of our communities—including neighborhoods, towns, transportation systems, parks, trails and other public recreational facilities—affects our level of physical activity. Regular physical activity is recognized as an important contributor to good health; the Centers for Disease Control and Prevention (CDC) recommend 30 minutes of moderate physical activity each day for adults and 60 minutes each day for children. Unfortunately, many people do not meet these recommendations because they lack environments where they can be physically active. Below are some key findings and challenges related to health, physical activity, and transportation in North Carolina.

- » **Sixty-five percent** of adults in North Carolina are either overweight or obese. The state is also ranked **5th worst** in the nation for childhood obesity.
- » Recent reports have estimated the annual direct medical cost of physical inactivity in North Carolina at \$3.67 billion, plus an additional \$4.71 billion in lost productivity. However, every dollar invested in pedestrian and bicycle trails can result in a savings of nearly \$3 in direct medical expenses.
- » **Seventy percent** of North Carolinians surveyed said they would walk or bike more if connected with a safe bicycle and pedestrian network.
- » A Charlotte study found that residents who stopped driving to work, and started walking to the light rail station and taking light rail to work, weighed an average of 6.5 pounds less than those who continued to drive to work.
- » Every **one dollar** invested in pedestrian and bicycle facilities saves as much as **three dollars** in direct medical expenses.





#1

The #1 goal of the Wayne County Health Department is to reduce the burden of chronic disease among County Residents

Goldsboro Comprehensive Plan

Better Health Through Active Transportation

In 2012, NCDOT’s Board of Transportation revised its mission statement to include “health and well-being” and passed a “Healthy Transportation Policy,” which declares the importance of a transportation system that supports positive health outcomes. Using active transportation to and from school, work, parks, restaurants, and other routine destinations is one of the best ways that children and adults can lead measurably healthier lives. Increasing one’s level of physical activity through walking and bicycling reduces the risk and impact of cardiovascular disease, diabetes, chronic disease, and some cancers. It also helps to control weight, improves mood, and reduces the risk of premature death.

The American Public Health Association also recognizes the health benefits of walk- and bike-friendly communities. According to its 2010 report, “Investments in transit, walking and bicycling facilities support transit use, walking and bicycling directly; they also support the formation of compact, walkable, transit-oriented neighborhoods that in turn support more walking, bicycling and transit and less driving. These built environments have repeatedly been associated with more walking, bicycling and transit use, more overall physical activity, and lower body weights; lower rates of traffic injuries and fatalities, particularly for pedestrians; lower rates of air pollution and greenhouse gas emissions; and better mobility for non-driving populations.”

The CDC determined that creating and improving places to be active could result in a **25 percent increase in the number of people who exercise** at least three times a week. This is significant considering that for people who are inactive, even small increases in physical activity can bring measurable health benefits. The establishment of a safe and reliable network of sidewalks, bikeways, and trails can have a positive impact on the health of nearby residents. The Rails-to-Trails Conservancy puts it simply: “Individuals must choose to exercise, but communities can make that choice easier.”

Active Transportation: Pathway to Health

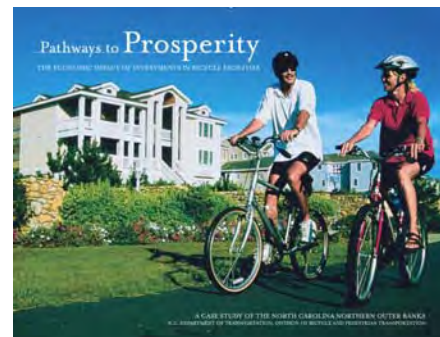


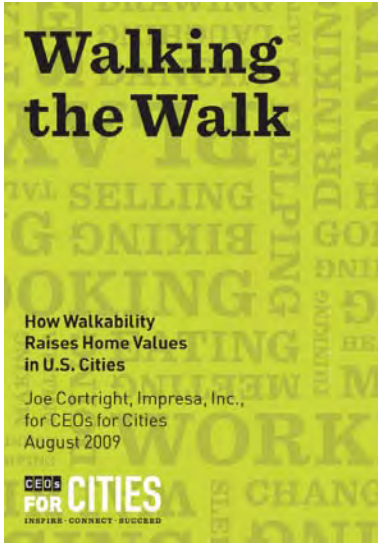
Economics

Facilities for pedestrians and bicyclists generate economic returns for local businesses, raise property values, and reduce individual transportation costs. Making investments in walking and bicycling can help to attract residents, businesses, and visitors and will allow Goldsboro to better capitalize on the economic advantages of a walk- and bicycle-friendly community.

Benefits to Local Businesses

Tourism is a major economic driver for North Carolina. The 6th most visited state in the United States, visitors spent as much as **\$18 billion a year**, many of whom partake in activities related to walking, hiking, or biking. Cities and towns receive an economic boost from visitors each year. In North Carolina's Outer Banks alone, the attraction of bicycling on vacation is estimated to have an **annual economic impact of \$60 million** and supports 1,407 jobs. The **annual return** to local businesses and state and local governments on bicycle facility development in the Outer Banks is approximately **nine times higher than the initial investment**.





Increased Property Values

Pedestrian and bicycle facilities such as sidewalks, bike lanes, and greenway trails are popular community amenities that add value to properties nearby. According to a 2002 survey by the National Association of Realtors and the National Association of Homebuilders, homebuyers rank trails as the second-most important community amenity out of 18 choices, above golf courses, ball fields, parks, security, and others. This preference for trails is reflected in property values around the country:

The report, “Walking the Walk: How Walkability Raises Housing Values in U.S. Cities”, analyzed data from 94,000 real estate transactions in 15 major markets provided by ZipRealty and found that in **13 of the 15 markets**, higher levels of walkability, as measured by Walk Score, were directly linked to higher home values.

- » In the Shepard’s Vineyard residential development in Apex, North Carolina, homes along the regional greenway were priced \$5,000 higher than other residences in the development – and these homes were still the first to sell.
- » A study of home values along the Little Miami Scenic Trail in Ohio found that single-family home values increased by \$7.05 for every foot closer a home is to the trail.



These higher prices reflect how trails and greenways add to the desirability of a community, attracting homebuyers and visitors alike.

Transportation Savings

When it comes to transportation costs, walking and bicycling are the most affordable forms of transportation available. According to the American Automobile Association, the cost of owning and operating a medium-sized sedan for one year, assuming one drives 10,000 miles per year, is approximately **\$7,804**. This includes the cost of the car itself, plus operating costs such as gas, maintenance, and tires, as well as operating costs such as depreciation, insurance, license and registration costs, taxes, and finance charges. Owning and operating a bicycle costs just **\$120 per year**, according to the League of American Bicyclists, for an average **annual savings of \$7,684 per vehicle**. The Pedestrian and Bicycle Information Center explains how these lower costs help individuals and communities as a whole: “When safe facilities are provided for pedestrians and bicyclists, more people are able to be productive, active members of society. Car ownership is expensive, and consumes a major portion of many Americans’ income.”

Annual Cost Per Mile

costs	yearly totals
operating costs	
gas per mile	_____
total miles driven	× _____
total gas	= _____
maintenance	+ _____
tires	+ _____
total operating costs	+ = _____
ownership costs	
depreciation	_____
insurance	+ _____
taxes	+ _____
license and registration	+ _____
finance charges	+ _____
total ownership costs	+ = _____
other costs (washing, accessories, etc.)	+ _____
total driving costs	= _____
total miles driven	÷ _____
cost per mile	= _____

Driving Costs Worksheet. American Automobile Association, Your Driving Costs Report: 2013 Edition.



Mobility & Access

Opportunity to Increase Walking and Bicycling Rates

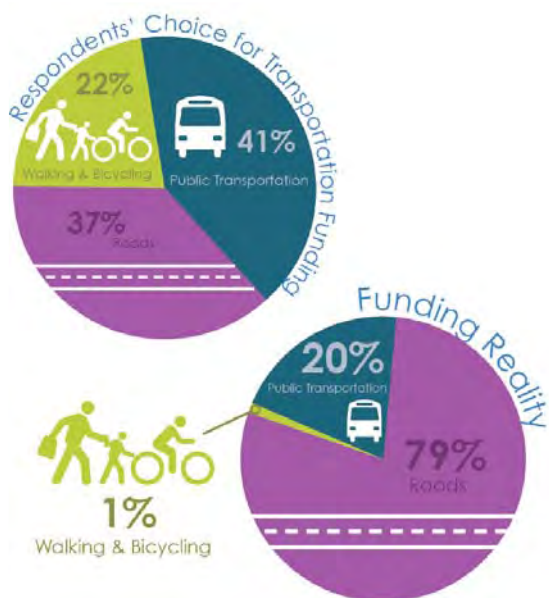
According to the 2011 Bicycle and Pedestrian Safety Survey, at least 70 percent of North Carolinians would walk or bike more for daily trips if walking and bicycling conditions were improved. Moreover, a national transportation poll found that Americans would like to see **22 percent** of transportation funding invested in walking and bicycling facilities, but current budget allocation sets aside only **one percent** of all transportation funding to walking and bicycling. With improved accommodations, walking and bicycling can provide alternatives to driving for commuting to work, running errands, or making other short trips.

More than one quarter of all trips (commute and non-commute) taken by Americans each and every day are **less than one mile**, equivalent to a walking trip of 15 minutes or a 6-minute bike ride; however, just 13 percent of all trips are made by walking or bicycling nationwide. To put these numbers into perspective, 34 percent of all trips are made by walking or bicycling in Denmark and Germany, and 51 percent of all trips in the Netherlands are by foot or by bike. Germany, Denmark, and the Netherlands are wealthy countries with high rates of automobile ownership, just like the United States. Yet an emphasis has been placed on providing quality walking and bicycling environments, which has alleviated the reliance on motor vehicles for short trips.

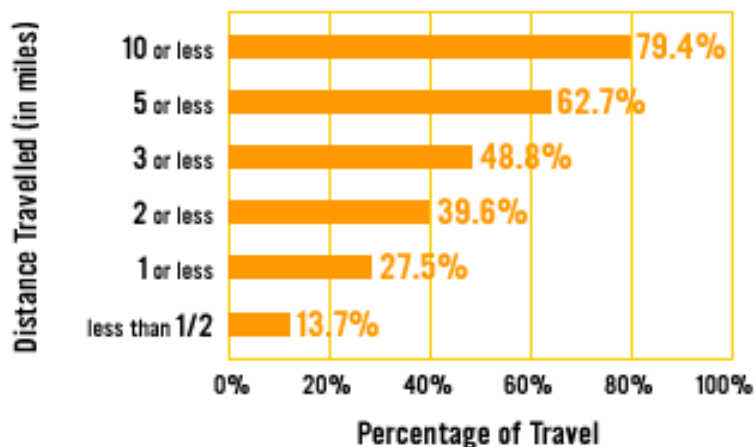
70%

of North Carolinians said they would walk and bike more for their daily needs if walking and bicycling conditions were improved.

NC Bicycle and Pedestrian Safety Summit 2011



Daily Trip Distances



According to a national transportation poll, Americans think differently about transportation funding than the reality of current budget allocation. (Transportation for America, design by Collective Strength, and fielded by Harris Interactive, 2007)

Nearly 50 percent of all trips in the United States are 3 miles or less, or less than a 20 minute bike ride.. Chart from the Bicycle and Pedestrian Information Center website, www.pedbikeinfo.org



17%

*of occupied households
in Goldsboro do not have
access to a vehicle.*

*US Census Bureau, American Community
Survey 5-Year Data 2008-2012*

Improved Access to Destinations

Many North Carolinians do not have access to a vehicle or are unable to drive. According to the 2009 National Household Travel Survey, 13 percent of persons age 15 or older do not drive, and 8.7 percent of U.S. households do not have access to an automobile. In Goldsboro, this number is much higher; 17 percent of all households in Goldsboro do not have access to an automobile. A well-connected pedestrian and bicycle network provides safe, convenient transportation options for those who are unable or unwilling to drive and helps to minimize the disadvantage of not having access to a motor vehicle. These improvements can increase access to important destinations for the young, the elderly, low-income families, and others who would otherwise have limited and less convenient travel options.

Reduced Vehicle Miles Traveled (VMT) & Congestion

Taking short trips by foot or by bike can help to greatly reduce motor vehicle miles driven and traffic congestion. Under the Nonmotorized Transportation Pilot Program, walking and bicycling investments **averted an estimated 32 million driving miles** in four pilot communities between 2007 and 2010. These individual changes in travel behavior can add up to produce significant societal benefits. Traffic on arterials and other streets can be mitigated as people use sidewalks, trails, and other alternatives to get around. Parking lots can also be made less congested by reducing crowding, circling, and waiting for open spots.

The following web addresses link to more comprehensive research on transportation efficiency.

- » www.ncdot.gov/bikeped/planning/walkbikenc/
- » www.pedbikeinfo.org/data/factsheet_general.cfm



Stewardship

Stewardship addresses the impact that transportation decisions (both at the government/policy level and individual level) can have on the land, water and air that Goldsboro residents and visitors enjoy.

Providing safe accommodations for walking and bicycling can help to reduce automobile dependency, which in turn leads to a reduction in vehicle emissions – a benefit for residents and visitors and the surrounding environment. As of 2003, **27 percent** of U.S. greenhouse gas emissions are attributed to the transportation sector, and **personal vehicles account for almost two-thirds** (62 percent) of all transportation emissions. Primary emissions that pose potential health and environmental risks are carbon dioxide, carbon monoxide, volatile organic compounds, (VOCs), nitrous oxides (NOx), and benzene.

Children and senior citizens are particularly sensitive to the harmful affects of air pollution, as are individuals with heart or other respiratory illnesses. Increased health risks such as asthma and heart problems are associated with vehicle emissions. Even a modest increase in walking and bicycling trips (in place of motor vehicle trips) can have significant positive impacts. For example, replacing two miles of driving each day with walking or bicycling will, in one year, prevent 730 pounds of carbon dioxide from entering the atmosphere.

Sidewalks, bike lanes, paths, and greenway trails help to reduce vehicle emissions, fuel consumption, and congestion.

**Replace 2 miles of driving
with walking or biking x 365 days =**





The natural buffer zones that occur along greenways protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.

Below are some key findings related to stewardship and transportation in North Carolina:

- » Better pedestrian and bicycle facilities allow people to replace short driving trips with walking and bicycling, thus reducing fuel consumption. According to the National Association of Realtors and Transportation for America, **89 percent of Americans** believe that transportation investments should support the goal of reducing energy use.
- » North Carolina’s 2009-2013 Statewide Comprehensive Outdoor Recreation Plan (SCORP) found **“walking for pleasure” to be the most common outdoor recreational activity**, enjoyed by 82 percent of respondents, and bicycling by 31 percent of respondents.
- » The natural buffer zones that occur along greenways protect streams, rivers, and lakes, preventing soil erosion and filtering pollution caused by agricultural and roadway runoff.

The following web addresses link to more comprehensive research on active transportation and stewardship.

- » www.ncdot.gov/bikeped/planning/walkbikenc/
- » www.pedbikeinfo.org/data/factsheet_environmental.cfm

“Integrate land use and transportation policies to limit impacts to sensitive land, focus development in prime locations, encourage trips by modes other than personal automobiles, and enhance the region’s quality of life.”

Goldsboro Long-Range Transportation Plan, p. 2-15



Before and after diagrams of a transformed suburban community from the Sprawl Repair Manual.





Appendix D: Funding Resources

Appendix Contents:

Overview

*Federal
Funding Sources*

*State
Funding Sources*

*Local Government
Funding Sources*

*Private and Non-Profit
Funding Sources*

OVERVIEW

When considering possible funding sources for bicycle, pedestrian, and trail projects in the Goldsboro region, it is important to remember that not all construction activities or programs will be accomplished with a single funding source. It will be necessary to consider several sources of funding, that when combined, will support full project completion. Funding sources can be used for a variety of activities, including: programs, planning, design, implementation, and maintenance. This appendix outlines the most likely sources of funding from the federal, state, and local government levels as well as from the private and non-profit sectors. A summary table of funding sources is included at the end of this appendix. It should be noted that this section reflects the funding available at the time of writing. Funding amounts, fund cycles, and even the programs themselves may change over time.

FEDERAL FUNDING SOURCES

Federal funding is typically directed through state agencies to local governments either in the form of grants or direct appropriations. Federal funding typically requires a local match of five percent to 50 percent, but there are sometimes exceptions; the recent American Recovery and Reinvestment Act stimulus funds did not require a match. The following is a list of possible Federal funding sources that could be used to support construction of pedestrian and bicycle improvements.

Moving Ahead for Progress in the Twenty-First Century (MAP-21)

The largest source of federal funding for pedestrian and bicycle projects is the USDOT's Federal-Aid Highway Program, which Congress has reauthorized roughly every six years since the passage of the Federal-Aid Road Act of 1916. The latest act, Moving Ahead for Progress in the Twenty-First Century (MAP-21) was enacted in July 2012 as Public Law 112-141. The Act replaces the Safe, Accountable, Flexible, Efficient Transportation Equity Act – a Legacy for Users (SAFETEA-LU), which was valid from August 2005 – June 2012.

MAP-21 authorizes funding for federal surface transportation programs including highways and transit for the 27-month period between July 2012 and September 2014. It is not possible to guarantee the continued availability of any listed MAP-21 programs, or to predict their future funding levels or policy guidance. Nevertheless, many of these programs have been included in some form since the passage of the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, and thus may continue to provide capital for active transportation projects and programs.



FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
FEDERAL FUNDING			
Transportation Alternatives	x	x	x
Surface Transportation Program			x
Highway Safety Improvement Program		x	x
Congestion Mitigation/Air Quality		x	x
FTA Metropolitan Planning Program	x		
FTA Enhanced Mobility of Seniors and Individuals with Disabilities		x	x
Partnership for Sustainable Communities	x	x	x
Land and Water Conservation Fund	x		x
Rivers, Trails, and Conservation Assistance Program	x		
National Scenic Byways Discretionary Grant Program			x
Federal Lands Transportation Program	x		x
Energy Efficiency and Conservation Block Grants	x		x
STATE FUNDING			
NCDOT State Transportation Improvement Program			x
Incidental Projects			x
Spot Safety Program			x
High Hazard Elimination Program			x
Governor's Highway Safety Program			x
Bicycle and Pedestrian Planning Grant Initiative	x	x	
Eat Smart, Move More North Carolina Community Grants		x	x
The North Carolina Division of Parks and Recreation			x
The North Carolina Parks and Recreation Trust Fund (PARTF)			x
Adopt-a-Trail Program			x
Powell Bill Funds			x
Community Development Block Grant	x	x	x
Clean Water Management Trust Fund	x	x	x
Safe Routes to School Program	x	x	x
Urban and Community Forestry Grant	x		x



FUNDING SOURCE	PLANNING	PROGRAMMING	DESIGN/CONSTRUCTION
LOCAL FUNDING			
Capital Reserve Fund			x
Capital Project Ordinance			x
Local Improvement District			x
Municipal Service District			x
Tax Increment Financing			x
Bonds and Loans			x
Revenue Bonds			x
General Obligation Bonds (cities, counties, and service districts)			x
Special Assessment Bonds			x
State Revolving Fund Loans			x
Sales Tax	x		x
Property Tax	x		x
Excise Tax			x
Occupancy Tax			x
Stormwater Utility Fees			x
Streetscape Utility Fees			x
Impact Fees			x
Exactions			x
Installment Purchase Financing			x
In-Lieu-of Fees			x
PRIVATE/NON-PROFIT FUNDING			
The Robert Wood Johnson Foundation	x	x	
North Carolina Community Foundation	x	x	
Walmart State Giving Program	x	x	x
The Rite Aid Foundation Grant		x	x
Z. Smith Reynolds Foundation			x
Bank of America Charitable Foundation	x	x	
Duke Energy Foundation		x	
American Greenways Eastman Kodak Awards	x	x	x
National Trails Fund		x	x
The Conservation Alliance	x	x	
National Fish and Wildlife Foundation	x	x	x
The Trust for Public Land	x	x	
Blue Cross Blue Shield of North Carolina Foundation		x	x
Alliance for Biking and Walking Advocacy Advance Grants			x
Local Trail Sponsors			x
Corporate Donations	x	x	x
Private Individual Donations	x	x	x
Fundraising/Campaign Drives	x	x	x
Volunteer Work	x	x	x



In North Carolina, federal monies are administered through the North Carolina Department of Transportation (NCDOT) and Metropolitan Planning Organizations (MPOs). Most, but not all, of these programs are oriented toward transportation versus recreation, with an emphasis on reducing auto trips and providing inter-modal connections. Federal funding is intended for capital improvements and safety and education programs, and projects must relate to the surface transportation system.

There are a number of programs identified within MAP-21 that are applicable to pedestrian and bicycle projects. These programs are discussed below.

For more information, visit: <http://www.fhwa.dot.gov/map21/summaryinfo.cfm>

Transportation Alternatives

Transportation Alternatives (TA) is a new funding source under MAP-21 that consolidates three formerly separate programs under SAFETEA-LU: Transportation Enhancements (TE), Safe Routes to School (SRTS), and the Recreational Trails Program (RTP). These funds may be used for a variety of pedestrian, bicycle, and streetscape projects including sidewalks, bikeways, multi-use paths, and rail-trails. TA funds may also be used for selected education and encouragement programming such as Safe Routes to School, despite the fact that TA does not provide a guaranteed set-aside for this activity as SAFETEA-LU did.

Average annual funds available through TA over the life of MAP-21 equal \$814 million nationally, which is based on a two percent set-aside of total MAP-21 allocations. Note that state DOT's may elect to transfer up to 50 percent of TA funds to other highway programs, so the amount listed on the website represents the maximum potential funding. Remaining TA funds (those monies not re-directed to other highway programs) are disbursed through a separate competitive grant program administered by NCDOT. Local governments, school districts, tribal governments, and public lands agencies are permitted to compete for these funds.

Each state governor is given the opportunity to "opt out" of the Recreational Trails Program. However, as of the writing of this plan, only Florida and Kansas have "opted out" of the RTP. For all other states, dedicated funds for recreational trails continue to be provided as a subset of TA. MAP-21 provides \$85 million nationally for the RTP.

For the complete list of eligible activities, visit:
http://www.fhwa.dot.gov/environment/transportation_enhancements/legislation/map21.cfm

For funding levels, visit: <http://www.fhwa.dot.gov/MAP21/funding.cfm>



Surface Transportation Program

The Surface Transportation Program (STP) provides states with flexible funds which may be used for a variety of highway, road, bridge, and transit projects. A wide variety of pedestrian improvements are eligible, including trails, sidewalks, crosswalks, pedestrian signals, and other ancillary facilities. Modification of sidewalks to comply with the requirements of the Americans with Disabilities Act (ADA) is also an eligible activity. Unlike most highway projects, STP-funded pedestrian facilities may be located on local and collector roads which are not part of the Federal-aid Highway System. 50 percent of each state's STP funds are allocated by population to the MPOs; the remaining 50 percent may be spent in any area of the state.

For more information: <http://www.fhwa.dot.gov/map21/stp.cfm>

Highway Safety Improvement Program

MAP-21 doubles the amount of funding available through the Highway Safety Improvement Program (HSIP) relative to SAFETEA-LU. HSIP provides \$2.4 billion nationally for projects and programs that help communities achieve significant reductions in traffic fatalities and serious injuries on all public roads, bikeways, and walkways. MAP-21 preserves the Railway-Highway Crossings Program within HSIP but discontinues the High-Risk Rural roads set-aside unless safety statistics demonstrate that fatalities are increasing on these roads. Bicycle and pedestrian safety improvements, enforcement activities, traffic calming projects, and crossing treatments for non-motorized users in school zones are eligible for these funds.

For more information: <http://www.fhwa.dot.gov/map21/hsip.cfm>

Congestion Mitigation/Air Quality Program

The Congestion Mitigation/Air Quality Improvement Program (CMAQ) provides funding for projects and programs in air quality non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter which reduce transportation related emissions. States with no non-attainment areas may use their CMAQ funds for any CMAQ or STP eligible project. These federal dollars can be used to build bicycle and pedestrian facilities that reduce travel by automobile. Purely recreational facilities generally are not eligible. Communities located in attainment areas who do not receive CMAQ funding apportionments may apply for CMAQ funding to implement projects that will reduce travel by automobile.

For more information: <http://www.fhwa.dot.gov/map21/cmaq.cfm>

Federal Transit Administration Enhanced Mobility of Seniors and Individuals with Disabilities

This program can be used for capital expenses that support transportation to meet the special needs of older adults and persons with disabilities, including providing access to an eligible public transportation facility when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs.



For more information: http://www.fta.dot.gov/documents/MAP-21_Fact_Sheet_-_Enhanced_Mobility_of_Seniors_and_Individuals_with_Disabilities.pdf

Partnership for Sustainable Communities

Founded in 2009, the Partnership for Sustainable Communities is a joint project of the Environmental Protection Agency (EPA), the U.S. Department of Housing and Urban Development (HUD), and the U.S. Department of Transportation (USDOT). The partnership aims to “improve access to affordable housing, more transportation options, and lower transportation costs while protecting the environment in communities nationwide.” The Partnership is based on five Livability Principles, one of which explicitly addresses the need for bicycle and pedestrian infrastructure (“Provide more transportation choices: Develop safe, reliable, and economical transportation choices to decrease household transportation costs, reduce our nation’s dependence on foreign oil, improve air quality, reduce greenhouse gas emissions, and promote public health”).

The Partnership is not a formal agency with a regular annual grant program. Nevertheless, it is an important effort that has already led to some new grant opportunities (including both TIGER I and TIGER II grants). North Carolina jurisdictions should track Partnership communications and be prepared to respond proactively to announcements of new grant programs. Initiatives that speak to multiple livability goals are more likely to score well than initiatives that are narrowly limited in scope to pedestrian improvement efforts.

For more information: <http://www.sustainablecommunities.gov/>

<http://www.epa.gov/smartgrowth/partnership/>

Resource for Rural Communities: http://www.sustainablecommunities.gov/pdf/Supporting_Sustainable_Rural_Communities_FINAL.PDF

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) provides grants for planning and acquiring outdoor recreation areas and facilities, including trails. Funds can be used for right-of-way acquisition and construction. The program is administered by the Department of Environment and Natural Resources as a grant program for states and local governments. Maximum annual grant awards for county governments, incorporated municipalities, public authorities, and federally recognized Indian tribes are \$250,000. The local match may be provided with in-kind services or cash.

For more information: http://www.ncparks.gov/About/grants/lwcf_main.php

Rivers, Trails, and Conservation Assistance Program

The Rivers, Trails, and Conservation Assistance Program (RTCA) is a National Parks Service (NPS) program providing technical assistance via direct NPS staff involvement to establish and restore greenways, rivers, trails, watersheds and



open space. The RTCA program provides only for planning assistance—there are no implementation funds available. Projects are prioritized for assistance based on criteria including conserving significant community resources, fostering cooperation between agencies, serving a large number of users, encouraging public involvement in planning and implementation, and focusing on lasting accomplishments. This program may benefit trail development in North Carolina locales indirectly through technical assistance, particularly for community organizations, but is not a capital funding source.

For more information: <http://www.nps.gov/ncrc/programs/rtca/> or contact the Southeast Region RTCA Program Manager Deirdre “Dee” Hewitt at (404) 507-5691

National Scenic Byways Discretionary Grant Program

The National Scenic Byways Discretionary Grants program provides merit-based funding for byway-related projects each year, utilizing one or more of eight specific activities for roads designated as National Scenic Byways, All-American Roads, State scenic byways, or Indian tribe scenic byways. The activities are described in 23 USC 162(c). This is a discretionary program; all projects are selected by the US Secretary of Transportation.

Eligible projects include construction along a scenic byway of a facility for pedestrians and bicyclists and improvements to a scenic byway that will enhance access to an area for the purpose of recreation. Construction includes the development of the environmental documents, design, engineering, purchase of right-of-way, land, or property, as well as supervising, inspecting, and actual construction.

For more information: <http://www.bywaysonline.org/grants/>

Federal Lands Transportation Program (FLTP)

The FLTP funds projects that improve access within federal lands (including national forests, national parks, national wildlife refuges, national recreation areas, and other Federal public lands) on federally owned and maintained transportation facilities. \$300 million per fiscal year has been allocated to the program for 2013 and 2014.

For more information: <http://www.fhwa.dot.gov/map21/fltp.cfm>

Energy Efficiency and Conservation Block Grants

The Department of Energy’s Energy Efficiency and Conservation Block Grants (EECBG) may be used to reduce energy consumptions and fossil fuel emissions and for improvements in energy efficiency. Section 7 of the funding announcement states that these grants provide opportunities for the development and implementation of transportation programs to conserve energy used in transportation including development of infrastructure such as bike lanes and pathways and pedestrian walkways. Although the current grant period has passed, more opportunities may arise in the future.

For more information: <http://www1.eere.energy.gov/wip/ecb.html>



STATE FUNDING SOURCES

The funding sources covered in this section were updated in the Fall of 2013 and reviewed for accuracy by NCDOT staff. However, at the time of development of this plan, the Strategic Transportation Investment initiative was being reviewed by the Joint Legislative Transportation Oversight Committee. Therefore, the status of future funding sources is subject to change. The availability of these funding resources should be confirmed during the implementation of a project.

North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program

The NCDOT's State Transportation Improvement Program is based on the Strategic Transportation Investments bill, signed into law in 2013. The Strategic Transportation Investments (STI) initiative introduces the Strategic Mobility Formula, a new way to fund and prioritize transportation projects to ensure they provide the maximum benefit to our state. It allows NCDOT to use its existing revenues more efficiently to fund more investments that improve North Carolina's transportation infrastructure, create jobs and help boost the economy.

The new Strategic Transportation Investments initiative is scheduled to be fully implemented by July 1, 2015. Projects funded for construction before then will proceed as scheduled under the current Equity Formula; projects slated for after that time will be ranked and programmed according to the new formula. The new Strategic Mobility Formula assigns projects for all modes into one of three categories: Statewide Mobility, Regional Impact, and Division Needs. All independent bicycle and pedestrian projects are placed in the "Division Needs" category, and are ranked on the following five criteria:

- » Safety
- » Access
- » Demand or density
- » Constructability
- » Benefit/cost ratio

This ranking largely determines which projects will be included in the department's State Transportation Improvement Program (STIP). The STIP is a federally mandated transportation planning document that details transportation improvements prioritized by stakeholders for inclusion in the Work Program over the next ten years. The STIP is updated every two years.

The STIP contains funding information for various transportation divisions of NCDOT including highways, aviation, public transportation, rail, bicycle and pedestrian, and the Governor's Highway Safety Program. Access to many federal funds require that projects be incorporated into the STIP. The STIP is the primary method for allocating state and federal transportation funds. However, beginning July 1, 2015, state funds cannot be used to match federally-funded projects. Only Powell Bill or local funds can be used as a match for federally-funded bicycle and pedestrian projects.



For more information on STIP:
www.ncdot.gov/strategictransportationinvestments/

To access the STIP: <https://connect.ncdot.gov/projects/planning>

For more about the STIP process: <http://www.ncdot.org/performance/reform/>

Incidental Projects

Incidental Projects are often constructed as part of a larger transportation project, when they are justified by local plans that show these improvements as part of a larger, multi-modal system. Bicycle and pedestrian accommodations such as bike lanes, sidewalks, intersection improvements, widened paved shoulders, and bicycle- and pedestrian-safe bridge design are frequently included as incidental features of highway projects. Most bicycle and pedestrian safety accommodations built by NCDOT are funded with a combination of federal and state roadway construction funds or with a local fund match.

For more information: <http://www.ncdot.gov/bikeped/funding/process/>

SPOT Safety Program

The Spot Safety Program is a state funded public safety investment and improvement program that provides highly effective low cost safety improvements for intersections, and sections of North Carolina's 79,000 miles of state maintained roads in all 100 counties of North Carolina. The Spot Safety Program is used to develop smaller improvement projects to address safety, potential safety, and operational issues. The program is funded with state funds and currently receives approximately \$9 million per state fiscal year. Other monetary sources (such as Small Construction or Contingency funds) can assist in funding Spot Safety projects, however, the maximum allowable contribution of Spot Safety funds per project is \$250,000.

The Spot Safety Program targets hazardous locations for expedited low cost safety improvements such as traffic signals, turn lanes, improved shoulders, intersection upgrades, positive guidance enhancements (rumble strips, improved channelization, raised pavement markers, long life highly visible pavement markings), improved warning and regulatory signing, roadside safety improvements, school safety improvements, and safety appurtenances (like guardrail and crash attenuators).

A Safety Oversight Committee (SOC) reviews and recommends Spot Safety projects to the Board of Transportation (BOT) for approval and funding. Criteria used by the SOC to select projects for recommendation to the BOT include, but are not limited to, the frequency of correctable crashes, severity of crashes, delay, congestion, number of signal warrants met, effect on pedestrians and schools, division and region priorities, and public interest.

For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>



Powell Bill Funds

Annually, State street-aid (Powell Bill) allocations are made to incorporated municipalities which establish their eligibility and qualify as provided by G.S. 136-41.1 through 136-41.4. Powell Bill funds shall be expended only for the purposes of maintaining, repairing, constructing, reconstructing or widening of local streets that are the responsibility of the municipalities or for planning, construction, and maintenance of bikeways or sidewalks along public streets and highways. Beginning July 1, 2015 under the Strategic Transportation Investments initiative, Powell Bill funds may no longer be used to provide a match for federal transportation funds such as Transportation Alternatives.

More information: <https://connect.ncdot.gov/municipalities/state-street-aid/Pages/default.aspx>

Highway Hazard Elimination Program

The Hazard Elimination Program is used to develop larger improvement projects to address safety and potential safety issues. The program is funded with 90 percent federal funds and 10 percent state funds. The cost of Hazard Elimination Program projects typically ranges between \$400,000 and \$1 million. A Safety Oversight Committee (SOC) reviews and recommends Hazard Elimination projects to the Board of Transportation (BOT) for approval and funding. These projects are prioritized for funding according to a safety benefit to cost (B/C) ratio, with the safety benefit being based on crash reduction. Once approved and funded by the BOT, these projects become part of the department's State Transportation Improvement Program (STIP).

For more information: <https://connect.ncdot.gov/resources/safety/Pages/NC-Highway-Safety-Program-and-Projects.aspx>

Governor's Highway Safety Program

The Governor's Highway Safety Program (GHSP) funds safety improvement projects on state highways throughout North Carolina. All funding is performance-based. Substantial progress in reducing crashes, injuries, and fatalities is required as a condition of continued funding. This funding source is considered to be "seed money" to get programs started. The grantee is expected to provide a portion of the project costs and is expected to continue the program after GHSP funding ends. State Highway Applicants must use the web-based grant system to submit applications.

For more information: <http://www.ncdot.org/programs/ghsp/>

Eat Smart, Move More North Carolina Community Grants

The Eat Smart, Move More (ESMM) NC Community Grants program provides funding to local communities to support their efforts to develop community-based interventions that encourage, promote, and facilitate physical activity. The current focus of the funds is for projects addressing youth physical activity. Funds have been used to construct trails and conduct educational programs.



For more information:

<http://www.eatsmartmovemorenc.com/Funding/CommunityGrants.html>

The North Carolina Division of Parks and Recreation

The North Carolina Division of Parks and Recreation and the State Trails Program offer funds to help citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking, and horseback riding to river trails and off-highway vehicle trails.

For more information: <http://www.ncparks.gov/About/grants/main.php>

NC Parks and Recreation Trust Fund (PARTF)

The Parks and Recreation Trust Fund (PARTF) provide dollar-for-dollar matching grants to local governments for parks and recreational projects to serve the general public. Counties, incorporated municipalities, and public authorities, as defined by G.S. 159-7, are eligible applicants.

A local government can request a maximum of \$500,000 with each application. An applicant must match the grant dollar-for-dollar, 50 percent of the total cost of the project, and may contribute more than 50 percent. The appraised value of land to be donated to the applicant can be used as part of the match. The value of in-kind services, such as volunteer work, cannot be used as part of the match.

For more information: http://www.ncparks.gov/About/grants/partf_main.php

NC Department of Environment and Natural Resources - Recreational Trails and Adopt-a-Trail Grants

The State Trails Program is a section of the N.C. Division of Parks and Recreation. The program originated in 1973 with the North Carolina Trails System Act and is dedicated to helping citizens, organizations and agencies plan, develop and manage all types of trails ranging from greenways and trails for hiking, biking and horseback riding to river trails and off-highway vehicle trails. The Recreation Trails Program awards grants up to \$75,000 per project. The Adopt-A-Trail Program awards grants up to \$5,000 per project.

Community Development Block Grant Funds

Community Development Block Grant (CDBG) funds are available to local municipal or county governments that qualify for projects to enhance the viability of communities by providing decent housing and suitable living environments and by expanding economic opportunities, principally for persons of low and moderate income. State CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) to the state of North Carolina. Some urban counties and cities in North Carolina receive CDBG funding directly from HUD. Each year, CDBG provides funding to local governments for hundreds of critically-needed community improvement projects throughout the state. These community improvement projects are administered by the Division of Community Assistance and the Commerce Finance Center under eight grant categories. Two categories might be of support to pedestrian and bicycle projects in 'entitlement communities': Infrastructure and Community Revitalization.



Clean Water Management Trust Fund (CWMTF)

This fund was established in 1996 and has become one of the largest sources of money in North Carolina for land and water protection, eligible for application by a state agency, local government, or non-profit. At the end of each year, a minimum of \$30 million is placed in the CWMTF. The revenue of this fund is allocated as grants to local governments, state agencies, and conservation non-profits to help finance projects that specifically address water pollution problems. Funds may be used for planning and land acquisition to establish a network of riparian buffers and greenways for environmental, educational, and recreational benefits.

For more information: <http://www.cwmtf.net/#appmain.htm>

Safe Routes to School Program (Managed by NCDOT, DBPT)

The NCDOT Safe Routes to School Program is a federally funded program that was initiated by the passing of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005, which establishes a national SRTS program to distribute funding and institutional support to implement SRTS programs in states and communities across the country. SRTS programs facilitate the planning, development, and implementation of projects and activities that will improve safety and reduce traffic, fuel consumption, and air pollution in the vicinity of schools. The Division of Bicycle and Pedestrian Transportation at NCDOT is charged with disseminating SRTS funding.

The State of North Carolina was allocated \$15 million in Safe Routes to School funding for fiscal years 2005 through 2009 for infrastructure or non-infrastructure projects. In 2009, more than \$3.6 million went to 22 municipalities and local agencies for infrastructure and non-infrastructure projects. All proposed projects must relate to increasing walking or biking to and from an elementary or middle school. An example of a non-infrastructure project is an education or encouragement program to improve rates of walking and biking to school. An example of an infrastructure project is construction of sidewalks around a school. Infrastructure improvements under this program must be made within two miles of an elementary or middle school. The state requires the completion of a competitive application to apply for funding.

For more information: <https://connect.ncdot.gov/projects/BikePed/Pages/Safe-Routes-To-School.aspx>

<http://www.ncdot.gov/download/programs/srts/SRTS.pdf>

Or contact DBPT/NCDOT at (919) 807-0774.

Urban and Community Forestry Grant

The North Carolina Division of Forest Resources Urban and Community Forestry grant can provide funding for a variety of projects that will help toward planning and establishing street trees as well as trees for urban open space. The goal is to improve public understanding of the benefits of preserving existing tree



cover in communities and assist local governments with projects which will lead to a more effective and efficient management of urban and community forests. Grant requests should range between \$1,000 and \$15,000 and must be matched equally with non-federal funds. Grant funds may be awarded to any unit of local or state government, public educational institutions, approved non-profit 501(c)(3) organizations, and other tax-exempt organizations. First-time municipal applicant and municipalities seeking Tree City USA status are given priority for funding.

For more about Tree City USA status, including application instructions, visit: http://ncforests.service.gov/Urban/urban_grant_overview.htm

LOCAL GOVERNMENT FUNDING SOURCES

Municipalities often plan for the funding of pedestrian and bicycle facilities or improvements through development of Capital Improvement Programs (CIP). In Raleigh, for example, the greenways system has been developed over many years through a dedicated source of annual funding that has ranged from \$100,000 to \$500,000, administered through the Recreation and Parks Department. CIPs should include all types of capital improvements (water, sewer, buildings, streets, etc.) versus programs for single purposes. This allows municipal decision-makers to balance all capital needs. Typical capital funding mechanisms include the capital reserve fund, capital protection ordinances, municipal service district, tax increment financing, taxes, fees, and bonds. Each category is described below. A variety of possible funding options available to North Carolina jurisdictions for implementing pedestrian and bicycle projects are also described below. However, many will require specific local action as a means of establishing a program, if not already in place.

Capital Reserve Fund

Municipalities have statutory authority to create capital reserve funds for any capital purpose, including pedestrian facilities. The reserve fund must be created through ordinance or resolution that states the purpose of the fund, the duration of the fund, the approximate amount of the fund, and the source of revenue for the fund. Sources of revenue can include general fund allocations, fund balance allocations, grants, and donations for the specified use.

Capital Project Ordinances

Municipalities can pass Capital Project Ordinances that are project specific. The ordinance identifies and makes appropriations for the project.

Local Improvement District (LID)

Local Improvement Districts (LIDs) are most often used by cities to construct localized projects such as streets, sidewalks, or bikeways. Through the LID process, the costs of local improvements are generally spread out among a group of property owners within a specified area. The cost can be allocated based on property frontage or other methods such as traffic trip generation.



Municipal Service District

Municipalities have statutory authority to establish municipal service districts, to levy a property tax in the district additional to the town-wide property tax, and to use the proceeds to provide services in the district. Downtown revitalization projects are one of the eligible uses of service districts, and can include projects such as street, sidewalk, or bikeway improvements within the downtown taxing district.

Tax Increment Financing

Project Development Financing bonds, also known as Tax Increment Financing (TIF) is a relatively new tool in North Carolina, allowing localities to use future gains in taxes to finance the current improvements that will create those gains. When a public project (e.g., sidewalk improvements) is constructed, surrounding property values generally increase and encourage surrounding development or redevelopment. The increased tax revenues are then dedicated to finance the debt created by the original public improvement project. Streets, streetscapes, and sidewalk improvements are specifically authorized for TIF funding in North Carolina. Tax Increment Financing typically occurs within designated development financing districts that meet certain economic criteria that are approved by a local governing body. TIF funds are generally spent inside the boundaries of the TIF district, but they can also be spent outside the district if necessary to encourage development within it.

Other Local Funding Options

- » Bonds/Loans
- » Taxes
- » Impact fees
- » Exactions
- » Installment purchase financing
- » In-lieu-of fees
- » Partnerships

PRIVATE AND NON-PROFIT FUNDING SOURCES

Many communities have solicited greenway funding assistance from private foundations and other conservation-minded benefactors. Below are several examples of private funding opportunities available.

Land for Tomorrow Campaign

Land for Tomorrow is a diverse partnership of businesses, conservationists, farmers, environmental groups, health professionals, and community groups committed to securing support from the public and General Assembly for protecting land, water, and historic places. The campaign was successful in 2013 in asking the North Carolina General Assembly to continue to support conservation efforts in the state. The state budget bill includes about \$50 million in funds for key conservation efforts in North Carolina. Land for Tomorrow works to enable North Carolina to reach a goal of ensuring that working farms and forests, sanctuaries for wildlife, land bordering streams, parks, and greenways,



land that helps strengthen communities and promotes job growth, and historic downtowns and neighborhoods will be there to enhance the quality of life for generations to come.

For more information: <http://www.land4tomorrow.org/>

The Robert Wood Johnson Foundation

The Robert Wood Johnson Foundation was established as a national philanthropy in 1972 and today it is the largest U.S. foundation devoted to improving the health and health care of all Americans. Grant making is concentrated in four areas:

- » To ensure that all Americans have access to basic health care at a reasonable cost
- » To improve care and support for people with chronic health conditions
- » To promote healthy communities and lifestyles
- » To reduce the personal, social and economic harm caused by substance abuse: tobacco, alcohol, and illicit drugs

For more specific information about what types of projects are funded and how to apply, visit www.rwjf.org/applications/

North Carolina Community Foundation

The North Carolina Community Foundation, established in 1988, is a statewide foundation seeking gifts from individuals, corporations, and other foundations to build endowments and ensure financial security for non-profit organizations and institutions throughout the state. Based in Raleigh, the foundation also manages a number of community affiliates throughout North Carolina, that make grants in the areas of human services, education, health, arts, religion, civic affairs, and the conservation and preservation of historical, cultural, and environmental resources. The foundation also manages various scholarship programs statewide.

For more information: <http://nccommunityfoundation.org/>

Walmart State Giving Program

The Walmart Foundation financially supports projects that create opportunities for better living. Grants are awarded for projects that support and promote education, workforce development/economic opportunity, health and wellness, and environmental sustainability. Both programmatic and infrastructure projects are eligible for funding. State Giving Program grants start at \$25,000, and there is no maximum award amount. The program accepts grant applications on an annual, state by state basis January 2nd through March 2nd.

Online resource: <http://foundation.walmart.com/apply-for-grants/state-giving>

Rite Aid Foundation Grants

The Rite Aid Foundation is a foundation that supports projects that promote health and wellness in the communities that Rite Aid serves. Award amounts



vary and grants are awarded on a one year basis to communities in which Rite Aid operates. A wide array of activities are eligible for funding, including infrastructural and programmatic projects.

Online resource: <https://www.riteaid.com/about-us/rite-aid-foundation>

Z. Smith Reynolds Foundation

This Winston-Salem-based Foundation has been assisting the environmental projects of local governments and non-profits in North Carolina for many years. They have two grant cycles per year and generally do not fund land acquisition. However, they may be able to offer support in other areas of open space and greenways development.

For more information: www.zsr.org

Bank of America Charitable Foundation, Inc.

The Bank of America Charitable Foundation is one of the largest in the nation. The primary grants program is called Neighborhood Excellence, which seeks to identify critical issues in local communities. Another program that applies to greenways is the Community Development Programs, and specifically the Program Related Investments. This program targets low and moderate income communities and serves to encourage entrepreneurial business development.

For more information: www.bankofamerica.com/foundation

Duke Energy Foundation

Funded by Duke Energy shareholders, this non-profit organization makes charitable grants to selected non-profits or governmental subdivisions. Each annual grant must have:

- » An internal Duke Energy business “sponsor”
- » A clear business reason for making the contribution

The grant program has three focus areas: Environment and Energy Efficiency, Economic Development, and Community Vitality. Related to this project, the Foundation would support programs that support conservation, training, and research around environmental and energy efficiency initiatives.

For more information:

<http://www.duke-energy.com/community/foundation.asp>

American Greenways Eastman Kodak Awards

The Conservation Fund’s American Greenways Program has teamed with the Eastman Kodak Corporation and the National Geographic Society to award small grants (\$250 to \$2,000) to stimulate the planning, design, and development of greenways. These grants can be used for activities such as mapping, conducting ecological assessments, surveying land, holding conferences, developing brochures, producing interpretive displays, incorporating land trusts, and



building trails. Grants cannot be used for academic research, institutional support, lobbying, or political activities.

For more information: www.conservationfund.org

National Trails Fund

American Hiking Society created the National Trails Fund in 1998, the only privately supported national grants program providing funding to grassroots organizations working toward establishing, protecting and maintaining foot trails in America. 73 million people enjoy foot trails annually, yet many of our favorite trails need major repairs due to a \$200 million backlog of badly needed maintenance. National Trails Fund grants help give local organizations the resources they need to secure access, volunteers, tools and materials to protect America's cherished public trails. To date, American Hiking has granted more than \$240,000 to 56 different trail projects across the U.S. for land acquisition, constituency building campaigns, and traditional trail work projects. Awards range from \$500 to \$10,000 per project.

Projects the American Hiking Society will consider include:

- » Securing trail lands, including acquisition of trails and trail corridors, and the costs associated with acquiring conservation easements.
- » Building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage.
- » Constituency building surrounding specific trail projects - including volunteer recruitment and support.

For more information: <http://www.americanhiking.org/national-trails-fund/>

The Conservation Alliance

The Conservation Alliance is a non-profit organization of outdoor businesses whose collective annual membership dues support grassroots citizen-action groups and their efforts to protect wild and natural areas. Grants are typically about \$35,000 each. Since its inception in 1989, The Conservation Alliance has contributed \$4,775,059 to environmental groups across the nation, saving over 34 million acres of wild lands.

The Conservation Alliance Funding Criteria:

- » The Project should be focused primarily on direct citizen action to protect and enhance our natural resources for recreation.
- » The Alliance does not look for mainstream education or scientific research projects, but rather for active campaigns.
- » All projects should be quantifiable, with specific goals, objectives, and action plans and should include a measure for evaluating success.
- » The project should have a good chance for closure or significant measurable results over a fairly short term (one to two years).
- » Funding emphasis may not be on general operating expenses or staff payroll.



For more information: <http://www.conservationalliance.com/grants>

National Fish and Wildlife Foundation (NFWF)

The National Fish and Wildlife Foundation (NFWF) is a private, non-profit, tax-exempt organization chartered by Congress in 1984. The National Fish and Wildlife Foundation sustains, restores, and enhances the Nation's fish, wildlife, plants, and habitats. Through leadership conservation investments with public and private partners, the Foundation is dedicated to achieving maximum conservation impact by developing and applying best practices and innovative methods for measurable outcomes.

The Foundation awards matching grants under its Keystone Initiatives to achieve measurable outcomes in the conservation of fish, wildlife, plants, and the habitats on which they depend. Awards are made on a competitive basis to eligible grant recipients, including federal, tribal, state, and local governments, educational institutions, and non-profit conservation organizations. Project proposals are received on a year-round, revolving basis with two decision cycles per year. Grants generally range from \$50,000-\$300,000 and typically require a minimum 2:1 non-federal match.

Funding priorities include bird, fish, marine/coastal, and wildlife and habitat conservation. Other projects that are considered include controlling invasive species, enhancing delivery of ecosystem services in agricultural systems, minimizing the impact on wildlife of emerging energy sources, and developing future conservation leaders and professionals.

For more information: <http://www.nfwf.org/pages/grants/home.aspx>

The Trust for Public Land

Land conservation is central to the mission of the Trust for Public Land (TPL). Founded in 1972, the TPL is the only national non-profit working exclusively to protect land for human enjoyment and well-being. TPL helps conserve land for recreation and spiritual nourishment and to improve the health and quality of life of American communities.

For more information: <http://www.tpl.org>

Blue Cross Blue Shield of North Carolina Foundation (BCBS)

Blue Cross Blue Shield (BCBS) focuses on programs that use an outcome approach to improve the health and well-being of residents. The Health of Vulnerable Populations grants program focuses on improving health outcomes for at-risk populations. The Healthy Active Communities grant concentrates on increased physical activity and healthy eating habits. Eligible grant applicants must be located in North Carolina, be able to provide recent tax forms and, depending on the size of the non-profit, provide an audit.

For more information: <http://www.bcbsncfoundation.org/>



Alliance for Biking & Walking: Advocacy Advance Grants

Bicycle and pedestrian advocacy organizations play the most important role in improving and increasing biking and walking in local communities. Advocacy Advance Grants enable state and local bicycle and pedestrian advocacy organizations to develop, transform, and provide innovative strategies in their communities. With sponsor support, the Alliance for Biking & Walking has awarded more than \$500,000 in direct grants, technical assistance, and scholarships to advocacy organizations across North America since the Advocacy Advance Grant program's inception. In 2009 and 2010, these one-year grants were awarded twice annually to startup organizations and innovative campaigns to dramatically increase biking and walking. The Advocacy Advance Partnership with the League of American Bicyclists also provides necessary technical assistance, coaching, and training to supplement the grants.

For more information, visit www.peoplepoweredmovement.org

Local Trail Sponsors

A sponsorship program for trail amenities allows smaller donations to be received from both individuals and businesses. Cash donations could be placed into a trust fund to be accessed for certain construction or acquisition projects associated with the greenways and open space system. Some recognition of the donors is appropriate and can be accomplished through the placement of a plaque, the naming of a trail segment, and/or special recognition at an opening ceremony. Types of gifts other than cash could include donations of services, equipment, labor, or reduced costs for supplies.

Corporate Donations

Corporate donations are often received in the form of liquid investments (i.e. cash, stock, bonds) and in the form of land. Municipalities typically create funds to facilitate and simplify a transaction from a corporation's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

Private Individual Donations

Private individual donations can come in the form of liquid investments (i.e. cash, stock, bonds) or land. Municipalities typically create funds to facilitate and simplify a transaction from an individual's donation to the given municipality. Donations are mainly received when a widely supported capital improvement program is implemented.

Fundraising/Campaign Drives

Organizations and individuals can participate in a fundraiser or a campaign drive. It is essential to market the purpose of a fundraiser to rally support and financial backing. Often times fundraising satisfies the need for public awareness, public education, and financial support.



Volunteer Work

It is expected that many citizens will be excited about the development of a greenway corridor. Individual volunteers from the community can be brought together with groups of volunteers from church groups, civic groups, scout troops and environmental groups to work on greenway development on special community workdays. Volunteers can also be used for fund-raising, maintenance, and programming needs.



Appendix E: Existing Plans Review

Appendix Contents:

Envision 2035 - City of Goldsboro Urbanized Area Comprehensive Plan (2013)

Goldsboro Downtown Master Plan (2007)

City of Goldsboro Parks and Recreation Comprehensive Plan Update (2012)

Goldsboro Urban Area 2035 Long Range Transportation Plan (LRTP) Update (2009)

Wayne County Comprehensive Plan (2009)

Wayne Community College Fitness & Walking Trail Phasing Plan

Wayne County Public Health Department Strategic Action Plan 2009 - 2012

ENVISION 2035 - CITY OF GOLDSBORO URBANIZED AREA COMPREHENSIVE PLAN (2013)

Envision 2035 was developed as a creative and dynamic guide for the future long-term growth and development of the Goldsboro urban area. The plan analyzed existing demographic and environmental characteristics, projected future demands on land use and transportation, and included a comprehensive goals and implementing actions section.

Strategies and actions for improved multi-modal mobility are found in multiple sub-sections that include transportation, land use, economic development, health and wellness, and environment. Key, related action steps pulled from the Plan include:

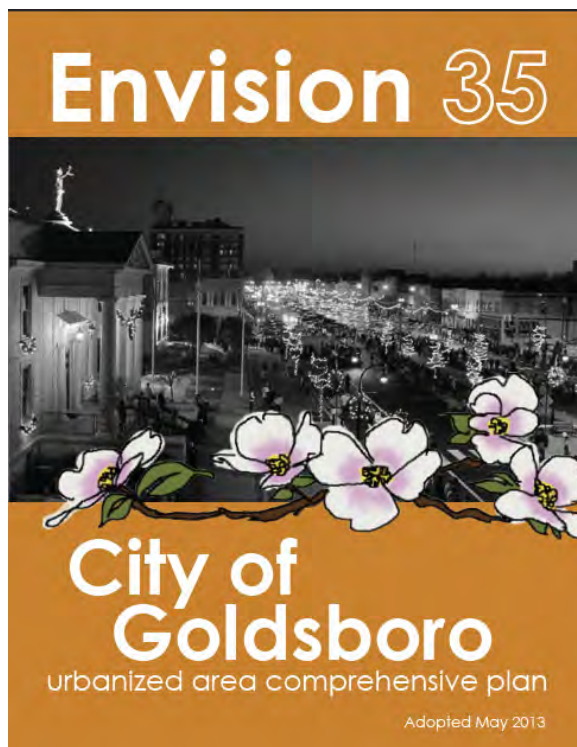
Economic Development

- » The City may actively recruit and retain a younger workforce to the City by enhancing cultural and recreational opportunities and diverse affordable workforce housing.
- » The City and County may market its natural assets, such as the Neuse River natural areas, as regional attractions which will support ecotourism.
- » The City and County should coordinate the development of recreational facilities with the Wayne County school system.
- » The City and County may consider the multiple objectives of natural area conservation, visual enhancement, promotion of cultural and historic preservation, watershed and floodprone area protection in determining future sites for park/recreation facilities.

Health and Wellness

- » The City and County may consider incentivizing the development of neighborhood based retail and service outlets aimed at addressing the daily needs for residents of adjacent neighborhoods. The City and County should aim to ensure that facilities are developed in a manner that:
 - » Promotes compatibility with neighborhood character.
 - » Helps reduce vehicle trip lengths and frequency.
 - » Encourages convenient and ready access, particularly for pedestrians and bicyclist.

- » Serves as a gathering and meeting place within the community.
 - » Maintains a compact size.
 - » Established in a manner that limits minimum parking requirements.
- » Portions of the Urbanized Area with single land use districts that are conducive to automobile travel should be redeveloped over time into compact areas or nodes, in which many businesses can be easily accessed by pedestrians, bicyclists, and transit.
 - » The City and County may amend their ordinances to include Active Health Design guidelines that require buildings to have: an obvious pedestrian entrance, pedestrian level entrance, pedestrian level windows, and weather protection; are oriented to the street; have architectural details and pedestrian style signage on the street; and emphasize alternative means of transportation.
 - » The City may consider the development and adoption of a complete streets policy. This policy should focus on providing a wide range of transportation options including: access to transit, bicycling lanes and sharrows, and pedestrian access facilities. Increased attention should be given to streets programmed for resurfacing and/or expansion.
 - » The City and County may consider approaching the Goldsboro MPO in order to initiate a process that will result in the creation of a Bicycle and Pedestrian Master Plan.



Envision 2035 plan cover.



- » The City and County should consider street and sidewalk improvements adjacent to existing school sites. This effort shall involve the installation of raised crosswalks to help reduce vehicle speeds and improved pedestrian visibility. Curb extensions may also be considered to shorten pedestrian crossing distance, eliminate parking on or near the crosswalk, and improve sight distance for pedestrians.
- » The City and County should consider amending the zoning and subdivision regulations to require the establishment of bicycle parking for new and redeveloped commercial, industrial, and institutional uses. In order to promote alternative means of transportation, the City and County may engage in the following:
 - » Conduct clinics to teach safe cycling to school age children.
 - » Strategically place signs and provide maps outlining existing and proposed pedestrian and bicycle routes.
- » Develop a map of citywide bicycle routes, once installed, and make it available to citizens in hard copy format, as well as on the City's web page.
- » The City of Goldsboro in conjunction with the Wayne County Public Health Department and the Wayne County Parks and Recreation Department may consider establishing new recreation programs and wellness initiatives. These efforts should address a wide range of demographics; however, special attention should be focused in geographic areas with populations vulnerable to chronic disease (Map 26). A summary of example health and wellness programs and initiatives has been provided in Section 6.H.
- » The City and County should partner to create a Community Garden Produce and Education Organization to establish, maintain, and educate residents in areas in need of physical activity and healthy foods.
- » The City may work to promote and encourage the development of a mix of housing choices and land uses to support all income levels in and adjacent to the City center and Webtown to increase the vitality of the area during the morning, daytime, and evening hours. This effort should aim to retain grocery stores, pharmacies, and other convenience retail businesses and services to support the areas residential uses.
- » The City should consider factoring issues relating to the promotion of public safety into the normal review process for development proposals. Themes associated with Crime Prevention through Environmental Design (CPTED) should be utilized to improve upon overall community safety and appearance. This effort should address a range of issues including lighting, building deterioration, increasing "eyes on the street", and open space design.



- » The City and County should consider the development of neighborhood pocket parks in underserved portions of the Urbanized Area.

Transportation

- » The City and County should support the use of Union Station as a multimodal transportation center. The center will be the hub for GATEWAY's fixed route service, provide Greyhound service, and serve as the station for future passenger and commuter rail service.
- » The City and County may consider funding to complete an "Access Management Guidelines & Implementation Strategy" for the Urbanized Area, focusing on arterial roads and streets.
- » The City and County may identify roadways that promote only vehicular travel and those that are more suited for multi-modal travel.
- » The City may consider conducting a public awareness campaign through radio and the City's website to increase the safety of bicyclists and pedestrians.
- » The City should set measurable goals for increasing pedestrian and bicycle travel mode share. This will involve an initial inventory of bicycle and pedestrian traffic counts at specific locations. The City may utilize the National Bicycle & Pedestrian Documentation Program, developed by the Institute of Transportation Engineers and Alta Planning and Design, to conduct the counts. Based on the traffic count findings, goals should be set to increase the percentage of bicycle and pedestrians at inventoried roadway locations.
- » The City and County may consider incentivizing mixed use and high density residential uses in coordination with GATEWAY Transit stops to promote transit-oriented development.
- » The City should support and implement action items contained in the 2012 Goldsboro Parks and Recreation Plan Update that outline the need for increased trails and non-motorized facilities.
- » The City may consider the development and adoption of a complete streets policy. This policy should focus on providing a wide range of transportation options including: access to transit, bicycling lanes and sharrows, and pedestrian access facilities. Increased attention should be given to streets programmed for resurfacing and/or expansion.
- » The City and County may consider approaching the Goldsboro MPO in order to initiate a process that will result in the creation of a Bicycle and Pedestrian Master Plan.



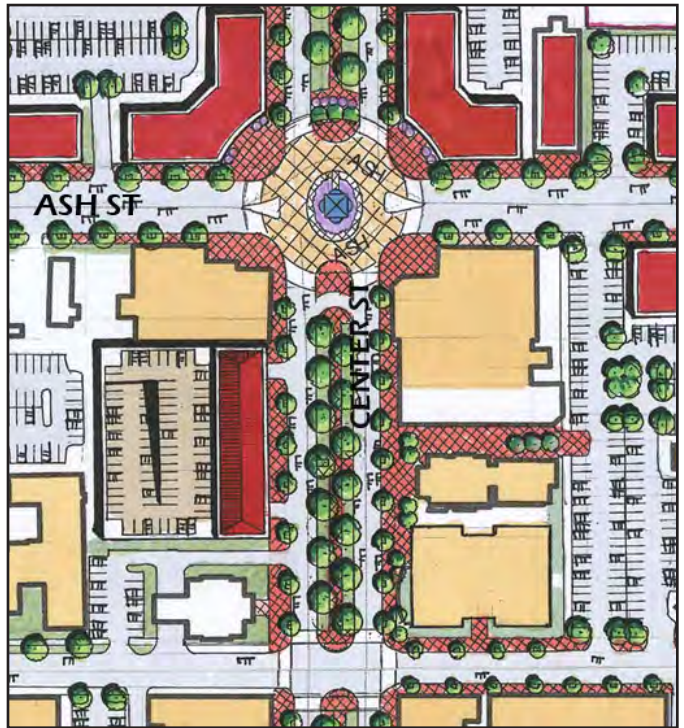
- » The City and County should consider street and sidewalk improvements adjacent to existing school sites. This effort shall involve the installation of raised crosswalks to help reduce vehicle speeds and improved pedestrian visibility. Curb extensions may also be considered to shorten pedestrian crossing distance, eliminate parking on or near the crosswalk, and improve sight distance for pedestrians.
- » The City and County should consider amending the zoning and subdivision regulations to require the establishment of bicycle parking for new and redeveloped commercial, industrial, and institutional uses.
- » In order to promote alternative means of transportation, the City and County may engage in the following:
 - » Conduct clinics to teach safe cycling to school age children.
 - » Strategically place signs and provide maps outlining existing and proposed pedestrian and bicycle routes.
- » Develop a map of citywide bicycle routes, once installed, and make it available to citizens in hard copy format, as well as on the City's web page.

Environment

- » The City may consider amending its UDO to require a 30' vegetated buffer along all "blueline" streams.
- » The City will discourage improvements of any kind in undisturbed conservation areas (as shown on Map 39) within the 100-year floodplain; designate these areas for open space corridors, greenways, and other low-intensity uses.
- » The City and County may utilize existing information sources to identify and map potential wetlands. Existing wetlands information will be utilized when evaluating rezoning and other development requests; in planning for greenway corridors; and in developing long range land use plans.
- » The City may make wetlands acquisition a priority in future expansion of City parks and recreation areas.
- » The City may amend its UDO to require that site plans and subdivision plats identify natural areas such as wetlands and woodlands.
- » The City may focus planning for open space corridors, greenways, and other low-intensity uses on areas within the 100-year floodplain.

GOLDSBORO DOWNTOWN MASTER PLAN (2007)

The Downtown Master Plan provides a framework for the revitalization of the downtown and surrounding residential neighborhoods. Economic analyses were performed to test feasibility. Related to this planning effort, strategies included streetscape improvements that calm traffic, increase aesthetic beauty, and improve walkability through and away from downtown. Specific improvements recommended include the Center Street improvement (which is being implemented at the time of this planning effort) which includes a rotary at Center and Walnut. The Plan also addresses improvements to the Train Depot area.

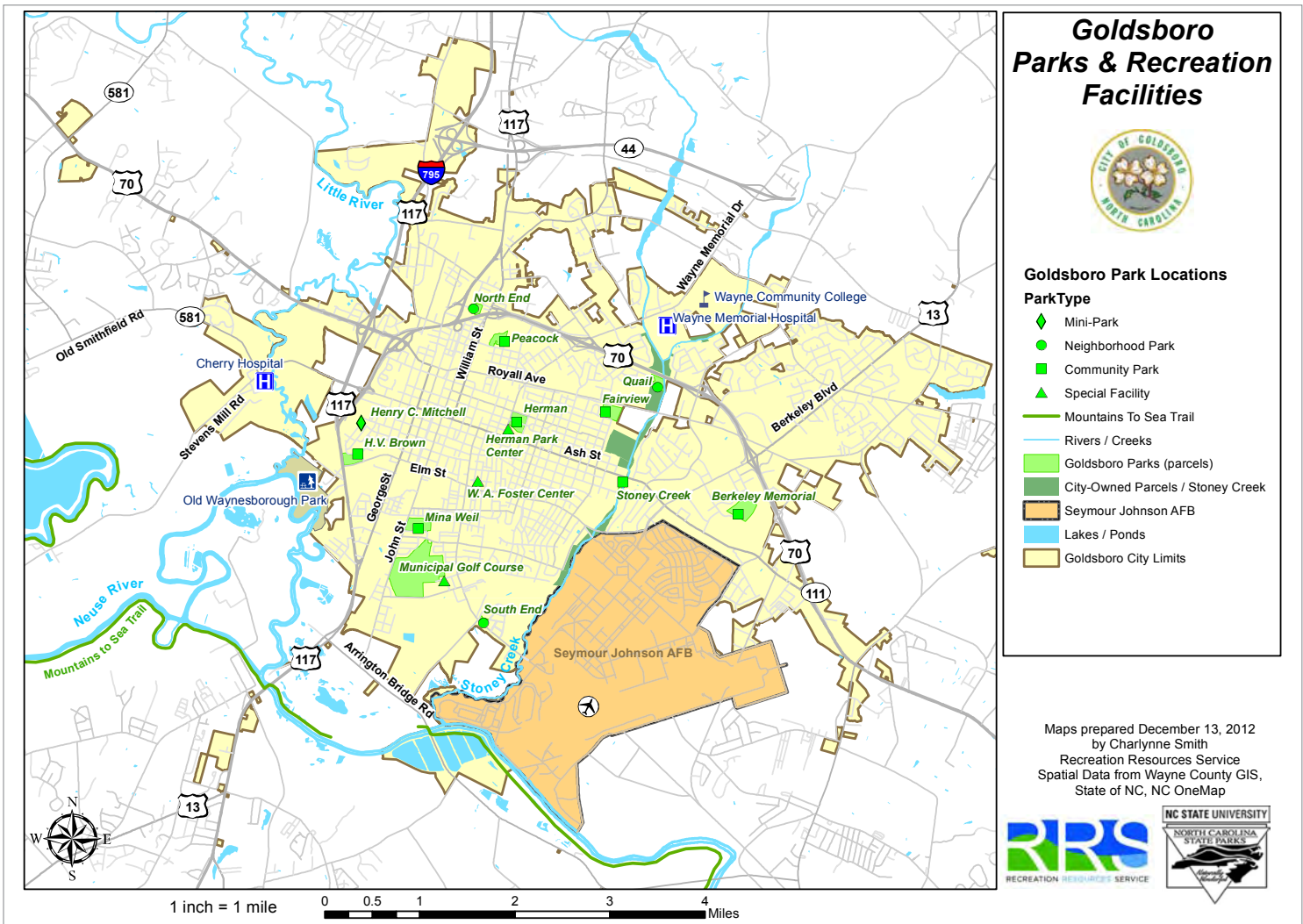


Images from the Goldsboro Downtown Master Plan plan cover.



CITY OF GOLDSBORO PARKS AND RECREATION COMPREHENSIVE PLAN UPDATE (2012)

The Parks and Recreation Comprehensive Plan addresses future park needs, park maintenance issues, and greenway concepts. The Plan highlights the need for a comprehensive greenway plan that will further promote the Stoney Creek Greenway and the Mountains to Sea Trail. During public engagement, residents desired a greenway along the length of the Stoney Creek.



City of Goldsboro Parks and Recreation Comprehensive Plan Map.

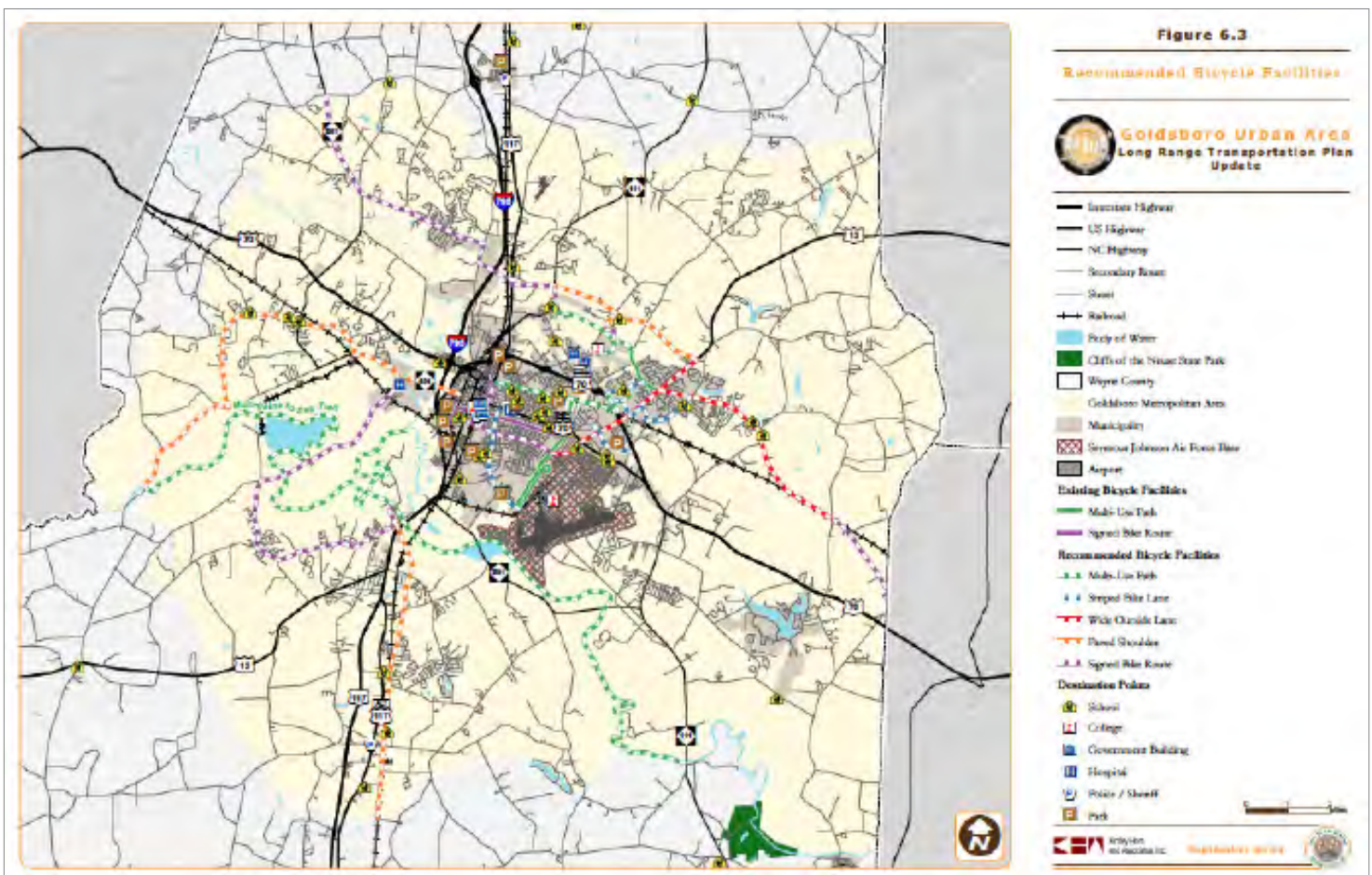
GOLDSBORO URBAN AREA 2035 LONG RANGE TRANSPORTATION PLAN (LRTP) UPDATE (2009)

The 2035 LRTP focuses on the development of a multimodal transportation system to help the City's continued growth while preserving its appeal and charm. The Plan features tools that attempt to merge smart growth concepts with the demands of roadway users.

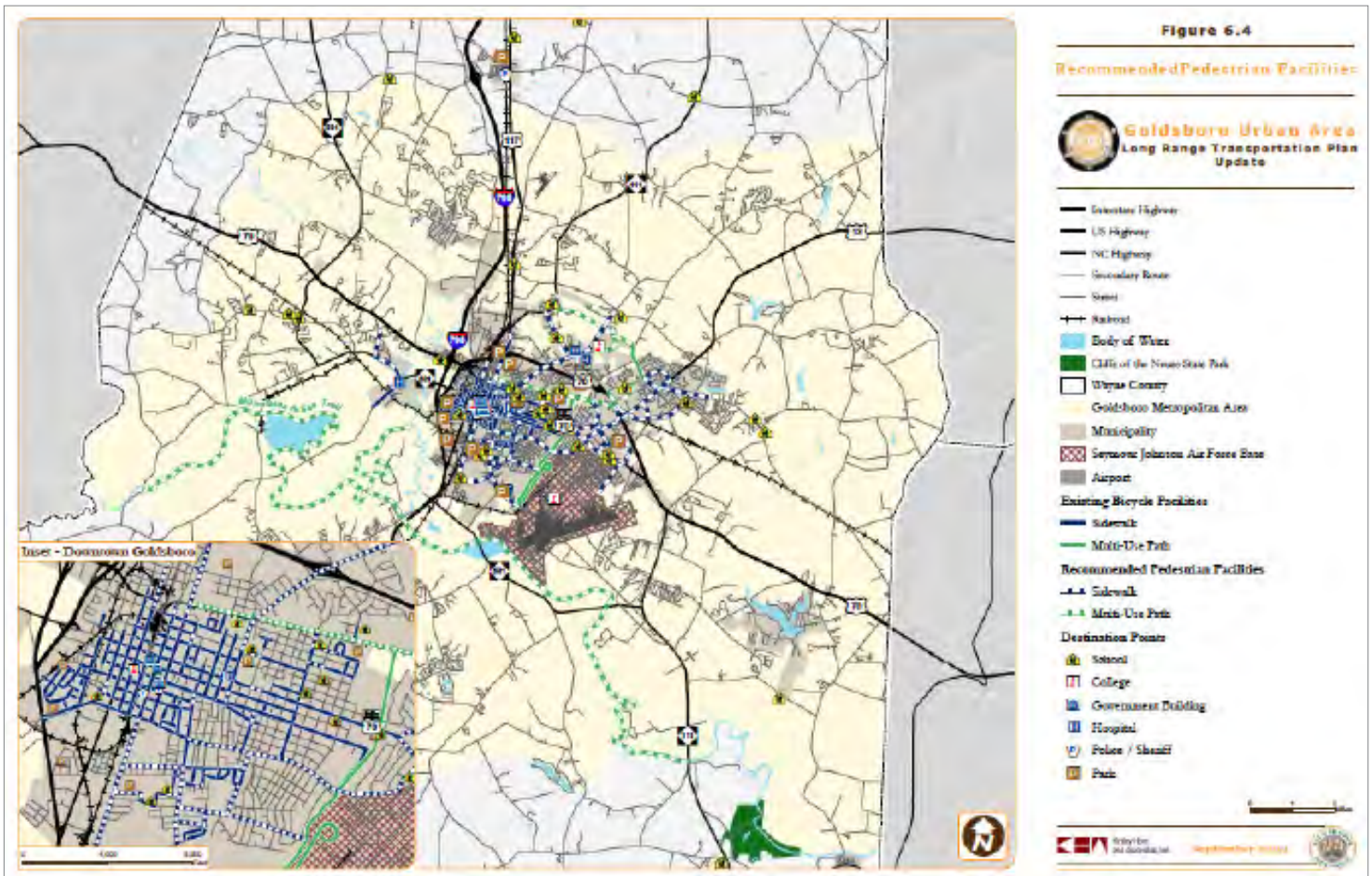
The Plan features a bicycle element and a pedestrian element. Public engagement efforts found that 70% of City respondents felt that bike and pedestrian facilities were fair to poor in the region. The LRTP calls for improvements to the citywide network with a priority in developing walkable neighborhoods and commercial centers. The Plan calls for 25 miles of signed on-street bike routes, 23 miles of paved shoulder, 9.7 miles of wide outside lanes, and 7.4 miles of striped bike lanes. Specifically, bike lanes were proposed for Cashwell Drive, Slocumb Street, South Harding Drive, and Parkway Drive (Since this Plan was adopted, bike lanes were added on Harding and Parkway). It recommends 29 miles of new sidewalk including key improvements along Royall Avenue, Spence Avenue, and Elm Street. It also includes 38.3 miles of greenway recommendations located along



LRTP plan cover.



Goldsboro Urban Area 2035 Long Range Transportation Plan (LRTP) Bicycle Facility Recommendations



Goldsboro Urban Area 2035 Long Range Transportation Plan (LRTP) Pedestrian Facility Recommendations

the Neuse River, New Hope Road, and Stoney Creek. The Plan also recommends a streetscape plan for Ash Street from George to Berkeley.

The Plan provides policy action recommendations for the City and Wayne County. Policy recommendations include access to school, streetscape, development standards, and funding sources.

WAYNE COUNTY COMPREHENSIVE PLAN (2009)

The Comprehensive Plan contains policy guidance for public decisions at the County level aimed at managing growth and development. The Plan is divided into categories of transportation, economic development, funding, agricultural preservation, water and sewer services, schools, housing/neighborhoods, public safety, Downtown revitalization, parks and recreation, community appearance, and intergovernmental cooperation. Actions recommended in the Comprehensive Plan most strongly related to this Plan include:

Transportation

Policy 1.3: **Pedestrian and bikeway facilities** shall be encouraged as energy-efficient, healthful, and environmentally sound alternatives to the automobile. All future road construction and expansion within the county shall consider opportunities for bikeways and pedestrian ways within the project.



Policy 1.4: The mobility needs of all citizens shall be recognized through the provision of **transportation alternatives to the automobile**. Wayne County should work with state and federal governments to create pedestrian, bikeway and transit improvements proportionate to the large number of people benefited.

Action 1.3: Consider expanding Goldsboro's **bikeway master plan** into parts of the unincorporated county. Consider **bike lanes as part of street construction standards** for new developments in locations identified by the plan. **Consider areas adjoining extra-territorial jurisdiction as places to expand bike lanes.**

Action 1.4: Reexamine the County's development standards to evaluate the need for improved **pedestrian systems** (sidewalks, greenways, streetlights etc.) in new residential developments.

Action 1.5: **Seek funding** sources, such as Enhancement Grants, to provide sidewalks and street furniture, streetlights, etc. **to improve pedestrian-oriented areas.**

Economic Development

Policy 2.9: Local economic development efforts shall protect, enhance and encourage a high **quality of life, image and cultural amenities** as critical factors in business retention, recruitment and economic growth.

Policy 2.12: Activities that bring new people and businesses to the county, including special events, sports tournaments, eco-tourism (e.g. neuse river), heritage tourism, and convention activities shall be encouraged and supported.

Schools

Policy 6.2: Advanced planning for the location of new public schools shall be supported. School locations should serve to reinforce desirable growth patterns rather than promoting sprawl. New elementary school locations shall be viewed as a cornerstone of the neighborhoods they are intended to serve.

Policy 6.4: School campuses shall be designed to allow safe, secure **pedestrian access from adjacent neighborhoods**. Travel corridors within 1.5 miles of all public schools shall be a priority for construction of sidewalks, bike paths and pedestrian trails.

Action 6.4: In cooperation with the Wayne County Board of Education, prepare site criteria for the placement and development of community-oriented schools, to include priorities for safe pedestrian and bicycle access, transit use, neighborhood connectivity, infrastructure availability, and environmental compatibility.

Action 6.5: Apply for a Safe Routes to School Grant through the North Carolina Department of Transportation. These Federal funds, administered by the State, may be used to construct new bike lanes, pathways, and sidewalks, as well as to launch Safe Routes education and promotion campaigns in elementary and middle schools.



Neighborhoods

Policy 7.12: **Compact, full service neighborhoods** offering a compatible mixture of appropriately scaled and designed structures (homes, schools, churches, parks, shopping and services, etc.) and less dependency on the automobile, shall be encouraged.

Downtowns

Policy 9.8: **Pedestrian oriented streetscape improvements** including, but not limited to sidewalks, street trees, landscaping, street lights, street furniture, and signs shall be supported as a means to create and maintain a downtown environment attractive to investment.

Policy 9.10: Efforts to maximize the use of the **public space of the sidewalk** so as to enliven the downtown street space are generally supported. Such use shall be balanced against public safety and other issues as may affect pedestrian movement and other proper uses of the street right of way.

Parks and Recreation

Policy 10.5: Efforts to develop a system of open space **greenways and hiking trails** in the County shall be encouraged. Natural corridors such as streams and floodplains, and man-made corridors such as utility and transportation rights-of-way and easements may be strategically employed as appropriate.

Policy 10.6: The underutilized value of the **Neuse river and its tributaries** shall be developed through the provision of more and better access to the river and its shores for active and passive recreation.

Action 10.2: Prepare a **Greenways, Trails and Open Space Master Plan** for the entire county. Make a **Neuse River Corridor Conservation and Development Plan** a central feature of the master plan. Include major tributaries of the Neuse in the plan. Include boating as well as pedestrian facilities. Seek federal and state funding.

Action 10.3: Develop guidelines to **preserve and protect natural and man-made corridors** for future greenways, trails and open space.

Action 10.4: Amend the County's subdivision regulations or other appropriate ordinances to allow for **parkland dedication or a proportionate fee in lieu of land dedication**.

Community Appearance

Policy 11.1: The important economic, tourism, and community image benefits of attractive **major travel corridors** through the county shall be recognized. Such entryway corridors shall receive priority attention for improved appearance and development standards, including landscaping, signage, tree preservation, underground utilities and, in some instances, streetlights, and sidewalks.

Policy 11.7: The significance of **street trees** in providing visual relief, summer cooling, improved air quality and livability shall be recognized through public policies to encourage their planting and maintenance. Highest priority shall be given to gateway travel corridors and urbanized areas. Programs urging

voluntary efforts by property owners shall be preferred. Power companies shall be encouraged not to butcher trees under or near power lines.

Action 11.2: Authorize and approve **design and streetscape standards for gateway corridors** in close cooperation with gateway corridor property owners. Do this in the order of each corridor's priority. Look at successful examples from other communities.

Action 11.3: Initiate voluntary gateway enhancement programs in close cooperation with gateway corridor property owners. Do this in the order of each corridor's priority. Emphasize maintenance.

Action 11.4: Amend the zoning ordinance to **require street trees** or other appropriate vegetation, in association with new development along designated gateway corridors.

Action 11.5: Prepare a **landscape ordinance and design guidelines** setting forth rules for tree removal and tree preservation, planting and maintenance. Set forth rules to address clear cutting in different land use activities.

Action 11.7: Prepare a street tree and landscape planting and maintenance booklet.

WAYNE COMMUNITY COLLEGE FITNESS & WALKING TRAIL PHASING PLAN



LEGEND

SYMBOL

	PROPOSED MULTI USE PATH - PHASE 1
	FUTURE MULTI USE PATH
	PARCEL LINE

*Wayne Community College
Fitness & Walking Trail Map*

WAYNE COUNTY PUBLIC HEALTH DEPARTMENT STRATEGIC ACTION PLAN 2009 - 2012

The number one goal of the Health Department is to reduce the burden of chronic disease among Wayne County residents. Some strategic activities include public education and awareness, local walks, the Obesity Task Force, and work in schools.



Appendix F: Blueways

Appendix Contents:

Overview

Existing Blueway Resources

Recommended Blueway Facilities

Recommended Blueway Programs

Blueway Design Guidelines

Additional Resources

OVERVIEW

A blueway or paddle trail is a river, creek, or body of water that is designated as a water-based trail, featuring launch points, camping locations and points of interest for kayakers, canoeists, and paddle boarders. Blueways are typically developed by state, county or local municipalities to encourage recreation, ecological education and preservation of wildlife resources. Goldsboro's creeks, rivers, and wetland areas offer a variety of blueway opportunities for varying levels of paddling skills. This appendix contains recommendations for new water access points, paddle campgrounds, program recommendations and best practices for designing blueway amenities such as wayfinding, safety information and related environmental education.

The Paddle Tourism Study for North Carolina

According to a survey of more than a thousand North Carolinians conducted for the 2008 *Paddle Tourism Study* by the North Carolina State Trails Program:

- » North Carolina is a destination for paddlers from surrounding states.
- » Over two-thirds of respondents (70%) feel that paddle trail development is a viable form of economic development for North Carolina.
- » Respondents spent almost one million dollars per year on paddle trips outside their local area, and nearly \$300,000 per year on trips within their local area.
- » The Neuse River was identified as the most popular river to paddle in North Carolina (named by 306 respondents as the body of water they most frequently paddle), followed by the Cape Fear River (255 respondents) and the Nantahala (254 respondents).
- » Respondents were asked about their top concerns when on a paddle trip. Almost three-fourths of respondents reported being concerned with the quality and safety of access sites (73%)

Improving Paddling Experience

When asked about how to improve the paddling experience, the most frequent topic that emerged, cited by nearly 450 respondents, was related to improving and increasing the number of paddle trails and access areas for existing paddle trails. A number of respondents indicated the need for more paddle access and parking at DOT bridges and right-of-ways. Suggestions for paddle access improvements included rest room facilities, signage, and camping opportunities. Many felt that more campsites including platforms for camping along paddle trails would improve their experience.

EXISTING BLUEWAY RESOURCES

The N.C. Paddle Trails Association (NCPTA)

Goldsboro and Wayne County should continue working with the NCPTA on the promotion of blueways in the Goldsboro Region. The mission of the NCPTA is to empower communities in the local development, maintenance and restoration of paddle trails in North Carolina thereby nurturing economically and environmentally sustainable communities. The success of hiking and biking trails in attracting new users motivates NCPTA to mirror that approach in growing paddlesports in pursuit of its goals:

- » Work with the state of North Carolina to provide infrastructure for local paddling initiatives to develop, maintain, restore and promote paddle trails.
- » Support continued development of electronic and hard copy trail maps.
- » Help meet informational needs of paddlers and paddling organizations.
- » Coordinate use and access to public water.
- » Provide statewide representation on issues related to the development, use and management of paddle trails.
- » Improve economic and environmentally sustainable communities through paddle trails.
- » Provide state-wide support for paddle trail development at the local level.

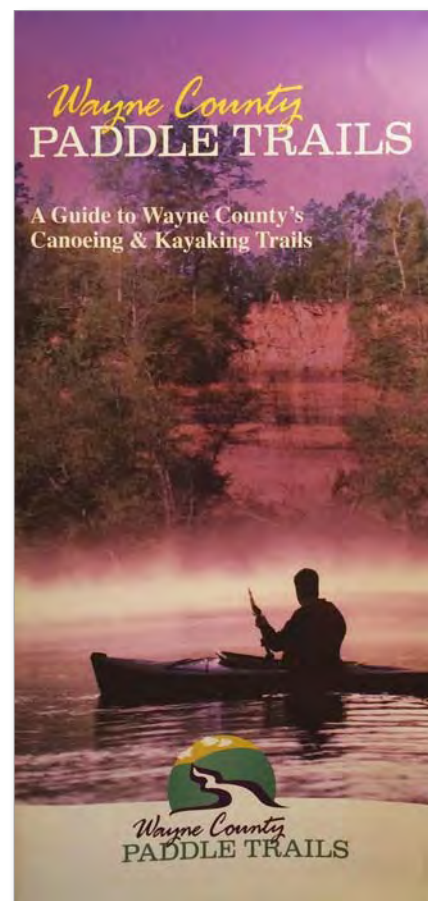
Wayne County Paddle Trails

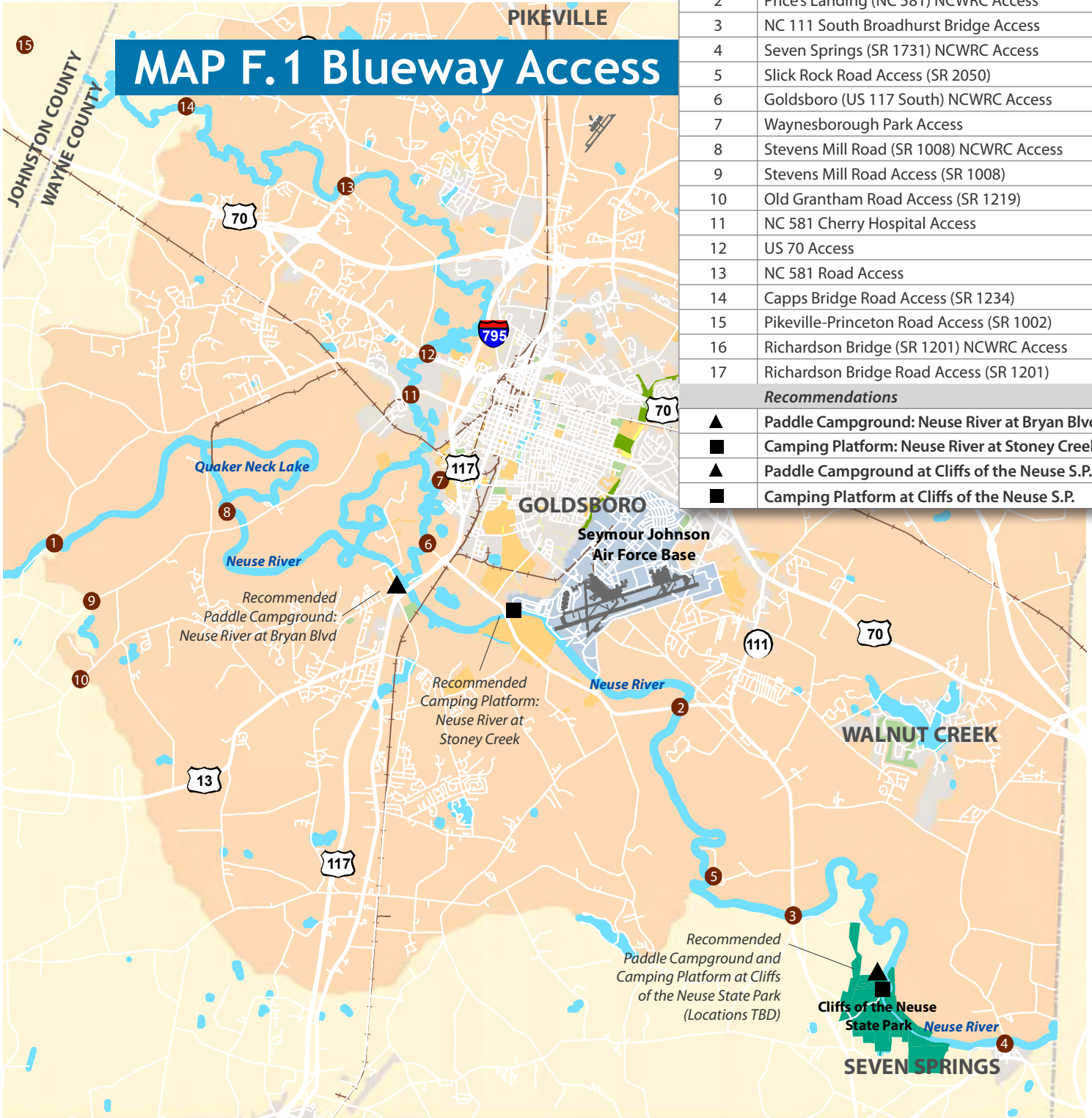
Wayne County Paddle Trails is part of the Statewide System of Paddle Trails being promoted by the NCPTA. The Wayne County Paddle Trails consist of over 70 miles of interconnected rivers, streams, and tributaries that twist and wind through Wayne County. See the map and table on the following page for existing and recommended water access and camping locations near Goldsboro.

The map and brochure, 'Wayne County Paddle Trails: A Guide to Wayne County's Canoeing & Kayaking Trails' has a wealth of information on existing resources in the area and should be consulted in full for details about blueways in this region. The map includes information on:

- » Safety Tips
- » Mill Creek Trail
- » Falling Creek Trail
- » Little River Trail
- » Neuse River Trail
- » Points of Interest along these trails, including:
 - Cherry Research Farm
 - Cherry Hospital Museum
 - Waynesborough Historical Village
 - Goldsborough Bridge Battlefield
 - Seven Springs
 - Cliffs of the Neuse State Park

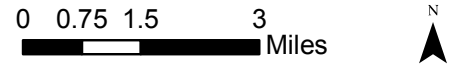
The Wayne County Paddle Trails brochure and map can be found through Goldsboro-Wayne County Travel & Tourism: www.greatergoldsboro.com





Map ID	Name
1	Ferry Bridge Road (SR 1224) NCWRC Access
2	Price's Landing (NC 581) NCWRC Access
3	NC 111 South Broadhurst Bridge Access
4	Seven Springs (SR 1731) NCWRC Access
5	Slick Rock Road Access (SR 2050)
6	Goldsboro (US 117 South) NCWRC Access
7	Waynesborough Park Access
8	Stevens Mill Road (SR 1008) NCWRC Access
9	Stevens Mill Road Access (SR 1008)
10	Old Grantham Road Access (SR 1219)
11	NC 581 Cherry Hospital Access
12	US 70 Access
13	NC 581 Road Access
14	Capps Bridge Road Access (SR 1234)
15	Pikeville-Princeton Road Access (SR 1002)
16	Richardson Bridge (SR 1201) NCWRC Access
17	Richardson Bridge Road Access (SR 1201)
Recommendations	
▲	Paddle Campground: Neuse River at Bryan Blvd
■	Camping Platform: Neuse River at Stoney Creek
▲	Paddle Campground at Cliffs of the Neuse S.P.
■	Camping Platform at Cliffs of the Neuse S.P.

Recommended Blueway Facilities



Legend

Recommended Blueway Facilities

- ▲ Paddle Campground
- Camping Platform

Existing Infrastructure

- Paddle Access Point
- Roadway
- Railroad

Lands of Interest

- City Greenway Lands
- Park
- State Park
- City Easements
- Other City/County Property

Additional Context

- Seymour Johnson Air Force Base
- City Limits
- MPO Limits
- Wayne County Border



RECOMMENDED BLUEWAY FACILITIES

For this plan, recommended blueway facilities include new water access sites for non-motorized boat launches and camping facilities for paddlers. These should be constructed in a manner that utilizes best practices and minimizes environmental impact. Key facility recommendations are outlined below (refer to the last section of this appendix for Blueway Design Guidelines related to these recommendations).

Paddle Campground along the Neuse River at Bryan Boulevard

This proposed paddle campground would be located on a former FEMA floodplain property. The site is optimal for use as a paddle campground for several key reasons. First, there is an existing concrete boat ramp and an existing stair access to the Neuse River that could be utilized for canoe and kayak access. Second, the site also has a fireplace structure and water utilities in place that could be retrofitted for use by campers. Finally, the location of the property is situated at the junction of the Little River and the Neuse River, offering views of both waterways, providing a unique opportunity for a regional attraction. Next steps for this site could include:

- » Identify and meet with key stakeholders for this project.
- » Research the potential constraints on use of this property as a campsite (given its history as a former FEMA floodplain buy-out) and identify necessary steps to make the site viable for camping as a Level 5 access site (see page F-12).
- » Obtain necessary easements, permits, purchase and/or transfer of ownership to make the site viable.
- » Develop a site master plan that fits within above constraints and outline an operations and maintenance plan.
- » Fund and develop the site.

Below: Existing and proposed conditions at the Neuse River near Bryan Blvd, including the recommended MST Trail.

For all new Blueway facilities, consider these steps:

1. Look for partners and input from the target user groups.
2. Keep the design as simple as possible while protecting resources with floating docks and boardwalks where necessary.
3. Utilize designers experienced with non-motorized boat users.
4. Contact regulatory agencies before developing plans; regulations will shape design features.
5. Incorporate permits into timelines (3-18 months).

Source: Florida Fish and Wildlife Conservation Commission





Camping Platform along the Neuse River at Stoney Creek

This proposed camping platform was identified by project stakeholders in interviews conducted as part of this planning process. Next steps for this site could include:

- » Identify and meet with key stakeholders for this project.
- » Research the potential constraints for camping in this area associated with the 'explosive arc' at the southwest corner of the Seymour Johnson Air Force Base.
- » Identify specific locations that could work for this facility.
- » Obtain necessary easements, permits, purchase and/or transfer of ownership to make the site viable.
- » Design the platform(s) and outline an operations and maintenance plan.
- » Fund and develop the site.

Paddle Campground and Camping Platform along the Neuse River at Cliffs of the Neuse State Park

This section of this region's blueway system is identified by Goldsboro and Wayne County as one of the top attractions for paddlers. There is currently no option for camping for paddlers at the Cliffs of the Neuse State Park. Next steps for this site could include:

- » Identify and meet with key stakeholders for this project, including North Carolina State Parks officials and park managers.
- » Identify specific locations that could work for these facilities and determine the level of access desired (see page F-12).
- » Design the campground and platform(s) and outline an operations and maintenance plan.
- » Fund and develop the site.

The Neuse River at Cliffs of the Neuse State Park.



RECOMMENDED BLUEWAY PROGRAMS

Coordinate with the Neuse River Keeper Foundation

The vision of the Neuse River Keeper Foundation (NRF) is to be the leading resource and advocate for the entire Neuse River Basin and to develop innovative programs which will foster and sustain education, stewardship and watershed management initiatives and practices. They also envision:

- » A Neuse River that is noted for its clean water which supports healthy fish, wildlife and native plants and is safe for swimming, fishing and recreation.
- » A greater public participation and understanding of all major river and land use issues in the watershed.
- » Groups of volunteers and an expanded membership base ready to actively support and celebrate the river on a continuing basis.
- » Parts of the Neuse River classified as Scenic Waterways to better promote tourism.
- » Communities, businesses and individuals throughout the Basin who recognize its waterways as valuable but vulnerable resources for drinking water, improved tourism and recreation.
- » State and local officials and agencies that care about the river, understand its threats and who are prepared to enact and enforce regulations and legislation to restore and protect the river.
- » Recognition of the NRF as one of the most successful Riverkeeper programs in the country due to the organization, planning and implementation of its key initiatives.

By closely coordinating with the NRF, Goldsboro and Wayne County can help ensure they are developing and enhancing their blueway system in a way that best preserves and promotes the Neuse River as a strong environmental asset of the community. Website: www.neuseriver.org

Develop an Ongoing Adopt-a-Blueway Program

An Adopt-a-Blueway program is similar to 'adopt-a-highway' or 'adopt-a-trail' programs that rely on the coordinated efforts of local organizations and groups of people to regularly clean-up litter and debris found along such corridors. Each adopter focuses on a particular stream or river - maybe even a favorite section. Most people adopt a stream or river near their home or on a river that they regularly paddle or otherwise visit. Most programs take a two-pronged approach - river protection and river enhancement. River adopters watch that waters are in good shape and report problems that arise, such as pollution incidents that can be corrected. They also help to improve rivers through actions such as cleanups and stabilizing eroding streambanks. Adopters may also be trained to conduct one or more stream surveys (including invertebrate samples or water quality samples) each year.



Photo source:
<http://www.neuseriver.org/>



Improve Web Interface for Planning Trips

Project partners should develop an online counterpart to Wayne County's Paddle Trails map and brochure (also building upon any existing online blueway mapping data). This website should allow for web interface and trip planning. The online guide should include information on:

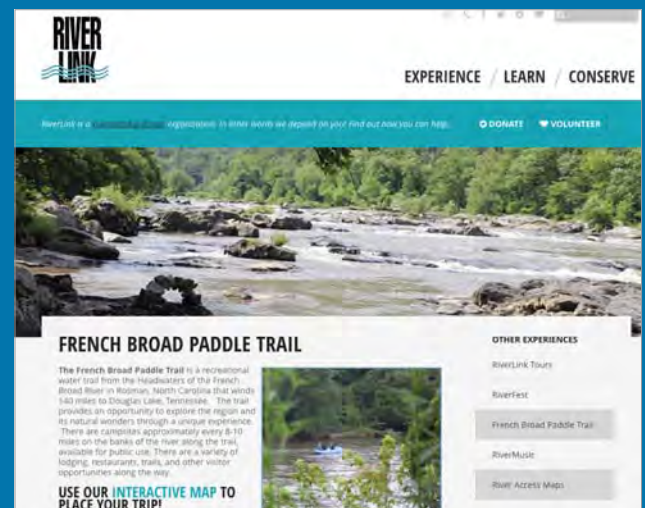
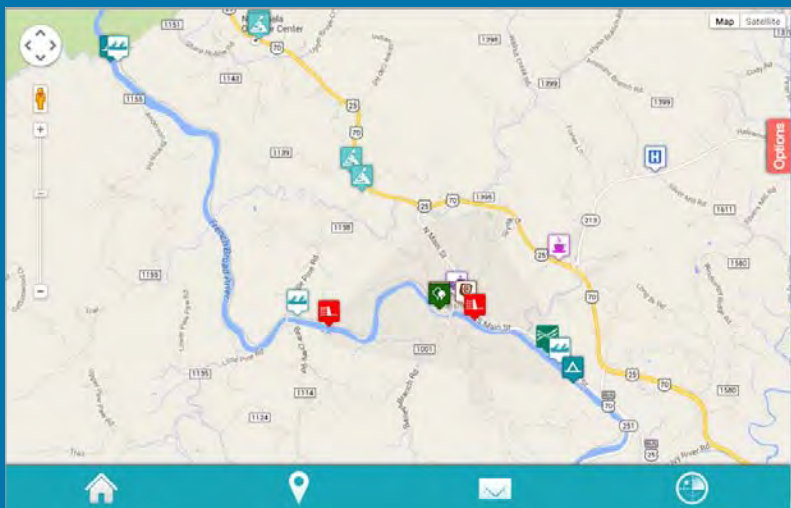
- » Access sites and streamside campsites
- » Routes and approximate travel times
- » Navigation hazards and portages
- » Local trail support facilities
- » Local historical and cultural information
- » Natural features and information on wildlife

Case Study: The French Broad Paddle Trail

The French Broad Paddle Trail is a recreational water trail from the Headwaters of the French Broad River in Rosman, North Carolina that winds 140 miles to Douglas Lake, Tennessee. The online resources for this trail are exemplary, featuring everything from paddling etiquette to interactive online maps and map apps.

Visit the website for details and ideas: <http://riverlink.org/experience/french-broad-paddle-trail/>

Screenshots of the case study web site.



Build and Maintain Blueway Partnerships

Blueway planners and designers should coordinate with a variety of interests and stakeholders in the region. These may include, but are not limited to:

- » Private businesses and business groups, such as private canoe and kayak vendors, local chambers of commerce, and large employers, to maximize positive economic impact and build public-private partnerships.
- » Environmental and water protection groups, to catalyze related volunteer efforts and river clean-up efforts.
- » Non-profits to address liability. Roanoke River Partners is an example of a nonprofit that leases blueway property to landowners to take liability then shares some of the camping proceeds to landowners.
- » State, regional, and local government agencies, such as NC State Parks and local parks and recreation departments.
- » Blueway-specific groups such as the N.C. Paddle Trails Association and the Neuse River Keeper Foundation.

BLUEWAY DESIGN GUIDELINES

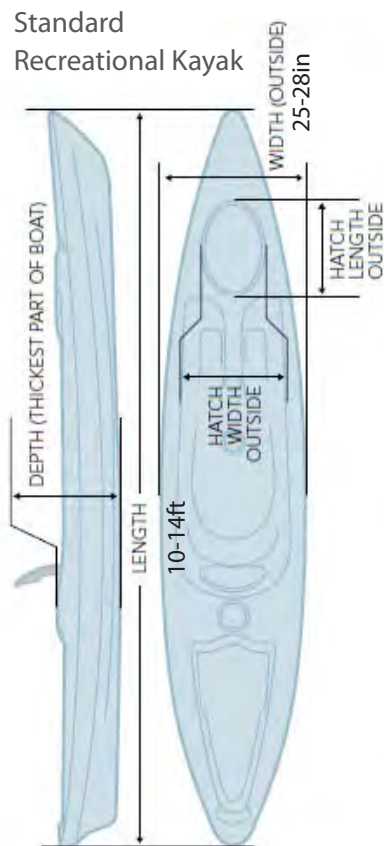
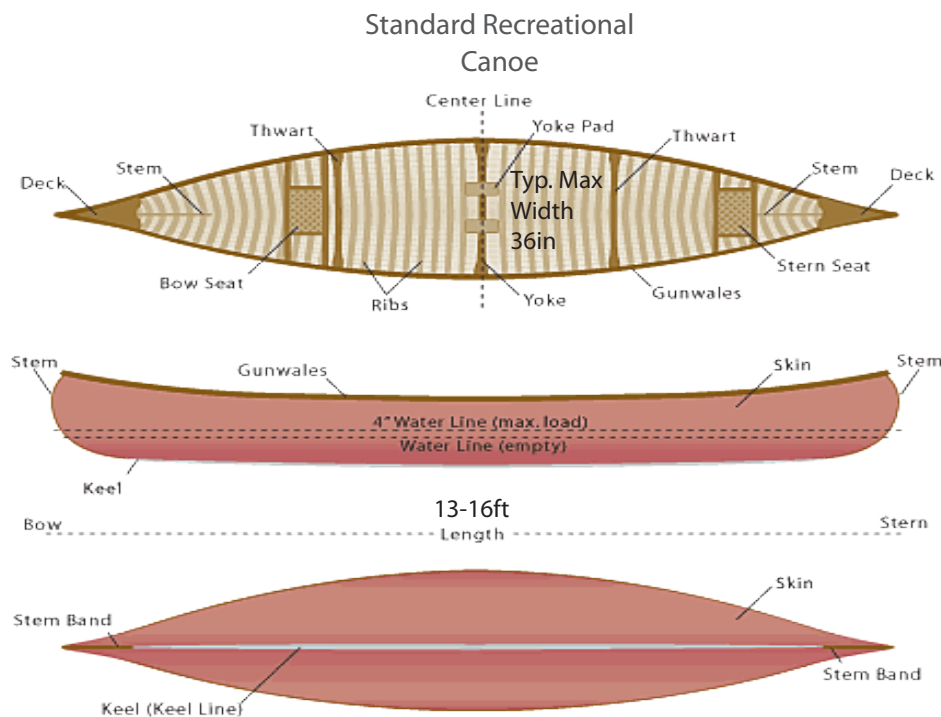
Design Needs of Paddlers

The purpose of this section is to provide the facility designer with an understanding of how paddlers operate and how a canoe or kayak influences that operation. Paddlers can be more acutely affected by poor trail/facility design and other man-made and natural obstacles than motorized boaters. Paddlers generally lack the protection from the elements and other waterway hazards provided by a motorized boat's larger structure and safety features. By understanding the unique characteristics and needs of paddlers, a facility designer can provide quality facilities and minimize user risk.

Canoe and Kayak Design Vehicles

Similar to motor boats, canoes and kayaks exist in a variety of sizes and configurations. These variations occur in the types of canoe or kayak (such as expedition, whitewater) and behavioral characteristics (such as the comfort level of the paddler). The design of a blueway should consider reasonably expected canoe/kayak types on the trail and utilize the appropriate design.

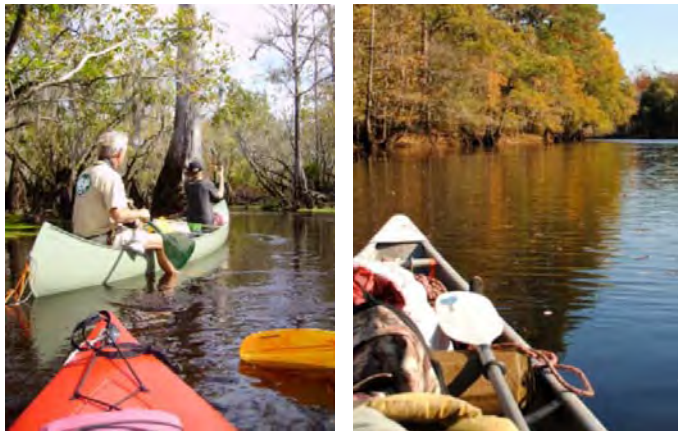
The figure below illustrates physical components of a typical recreational canoe and kayak, which are the basis for typical trail selection and design. In addition to the reach of an oar/paddle, paddlers require clear space to operate within a facility. This is why the minimum operating width will be greater than the physical reach of the paddler.



Sources: www.canoeing.com and www.wildernesssystems.com



Variations of a typical canoe and kayak also require consideration when planning and designing paddling facilities. Other types of canoes and/or kayaks include expedition/touring, whitewater, and racing. The pictures and tables below summarize these types.



Photos: www.capefearriveradventures.com

Canoe Design Vehicle - Typical Dimensions

Canoe Type	Features	Common Dimensions
Recreational Canoe	Length Max Width	13-16ft 36in+
Expedition/ Touring Canoe	Length Max Width	18-20ft 35-39in
Whitewater Canoe	Length Max Width	12-16ft 25-33in
Racing Canoe	Length Max Width	18-20ft 28-33in

Kayak Design Vehicle - Typical Dimensions

Kayak Type	Features	Common Dimensions
Recreational Kayak	Length Width	10-14ft 25-28in
Expedition/ Touring Kayak	Length Width	13-20ft 20-24in
Whitewater Kayak	Length Width	6-12ft 25-40in



Canoe and Kayak as Design Vehicles - Design Speed Expectations

Type	Typical Speed
Canoe	1-3mph
Kayak	3-5mph

Design Speed Expectations

The expected speed that different types of canoes and kayaks can maintain under various conditions also influences the design of facilities such as distances between launch sites. The table to the right provides typical canoe and kayak speeds.

**These numbers are variable; many factors can affect speed including - wind, currents/tides, boat type, paddler ability level, etc.*

Sources: Search and Rescue British Columbia; Coast and Kayak Magazine

Blueway Signage

Signage is important in creating a safe, efficient, marketable, and low-impact blueway trail system. Key considerations include:

- » Selecting the appropriate amount, size, color, style, location, and material in balancing the need to be visible with the desire to minimize visual intrusion
- » Other practical factors include cost and availability, weather resistance, installation, and susceptibility to vandalism and theft

Types of signs include:

- » Road signs leading to a launch site - websites, guides, and maps can be useful as well
- » Trailhead signs - kiosks, displays, and bulletin boards are strategic locations to post information because most water trail users will spend some amount of time preparing for their trip here. Displaying the following information can be helpful:
 - Blueway map
 - Safety measures and water trail specific warnings
 - Leave No Trace guidelines
 - Parking locations and rules
 - Interpretation
 - Amenities
- » Campsites and day-use site signs - can be helpful in directing boaters to the appropriate location; trailhead signs can accomplish this as well
- » Wayfinding signs along the trail - these are helpful in directing paddlers to proper channels and streams; they can also be used to identify distances to other launch sites and points of interest, as well as identifying hazards.



Kayak safety signage and mobile phone wayfinding/educational information in Charleston, SC.

Positive language should be used in sign wording to encourage appropriate responses from users. For example, say “Camping by written permission only, please” and point users to further information instead of saying “No camping”.*



Above: Educational signage on the Beaver Pond Paddling Trail in TX, and directional signage on the Great Calusa Blueway Paddling Trail in PA and the Weedon Island Preserve in FL.

*Source: American Rivers. Promote a Blue Trail: Create Blue Trail Signs. Accessed from: www.bluetrailsguide.org/promote



Paddle Trail Access Sites

Non-motorized canoe and kayak access sites should be simple, low maintenance, and inexpensive. A stable riverbank or shoreline is typically adequate as long as there is a path that is flat and hard enough to carry boats. The following dimensions are recommended for access:

- » 12' wide at the water line
- » Tapered to 9' wide at the top entrance area
- » 15' in length
- » 3:1 slope at the stream bank*
- » Recommend distances between access sites varies according to user skill levels. Ideally, the blueway system in Goldsboro would accommodate a range of skill levels, requiring at least one section at 1-3 miles apart (for a one-hour beginner-level outing), up to 20 or more miles (for a day-long trip for more experienced paddlers).

The availability of parking at a launch site will depend upon the specific site's accessibility. Remote sites will require less parking while sites located in areas with higher use will require more. Canoe and kayak slips can also be provided at trailheads, allowing more convenient access for frequent visitors.

For ecologically sensitive sites, low-impact access points (sometimes only requiring a sign or marker) may be explored to reduce erosion and degradation at multiple sites, caused by a lack of designated access.

*Source: Openlands. All About Canoe and Kayak Launches. 2012. Accessed from: <http://openlands.org/greenways/how-to-guides/all-about-canoe-and-kayak-launches.html>.



On-site canoe/kayak storage for rent.

Canoe/kayak pier for high bank access (examples from Charleston, SC).

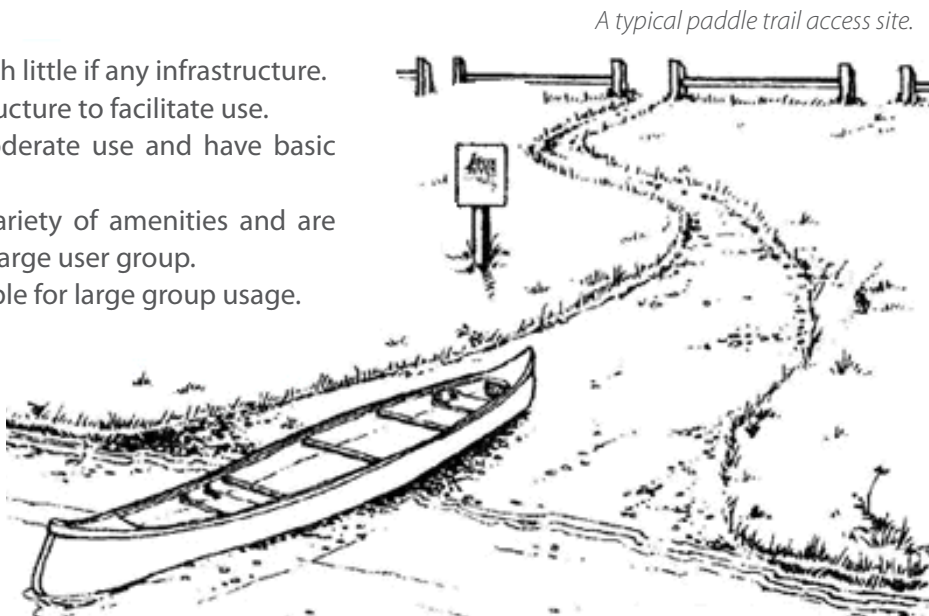


NCDENR State Trails Program Standards for Paddle Trail Access Sites

All access sites designated by the NCDENR State Trails Program must follow certain guidelines and standards. Standards for different types of access sites are highlighted below.

- » A Level I Access site is rustic in nature with little if any infrastructure.
- » A Level II access site has minimal infrastructure to facilitate use.
- » Level III Access sites are geared for moderate use and have basic amenities.
- » Level IV access sites provide a wider variety of amenities and are suitable for moderate to heavy use by a large user group.
- » Level V access sites have amenities suitable for large group usage.

For more information on NCDENR State Trails Program Standards for Paddle Trail Access Sites: www.ncsu.edu/ncblueways/ncblueways_standards.html



A typical paddle trail access site.

Blueway Camping Sites and Platforms

New blueway camping sites and/or platforms in the Goldsboro region should be located at approximately a day-long journey's distance apart (15-20 miles). This would allow more experienced paddlers to camp at successive sites on a multi-day trip. The following campsite guidance is from a national best-practice manual, *Iowa Water Trails: Connecting People with Water and Resources*:

- » Campsites should be located in areas that are difficult to reach except by water and not near dwellings, or be within boundaries of an actively managed public recreation area such as a state or county park.
- » Campsites should be located ¼ mile or more from all roads, or on opposite side of river to discourage non water trail use.
- » Traits of desirable sites:
 - A short hike up a ridge via a sustainably designed trail can provide a drier site with breezes, fewer insects, and a nice view.
 - Low terraces outside of the active floodplain can offer spots for large clusters.
 - View and sound of water
 - Floods infrequently
- » Amenity level should correspond to desired experience type, although often infrequent maintenance and lack of rest rooms may limit the site to more experienced paddlers only.
- » Use care not to disturb sensitive native species



Flat docks with no roof or wall structure. Source: *Seaside Water Trail Camping Platform Feasibility*.

The images that follow show a variety of camping platform types. These images are from the *Seaside Water Trail Camping Platform Feasibility* report from the Virginia Coastal Zone Management Program.



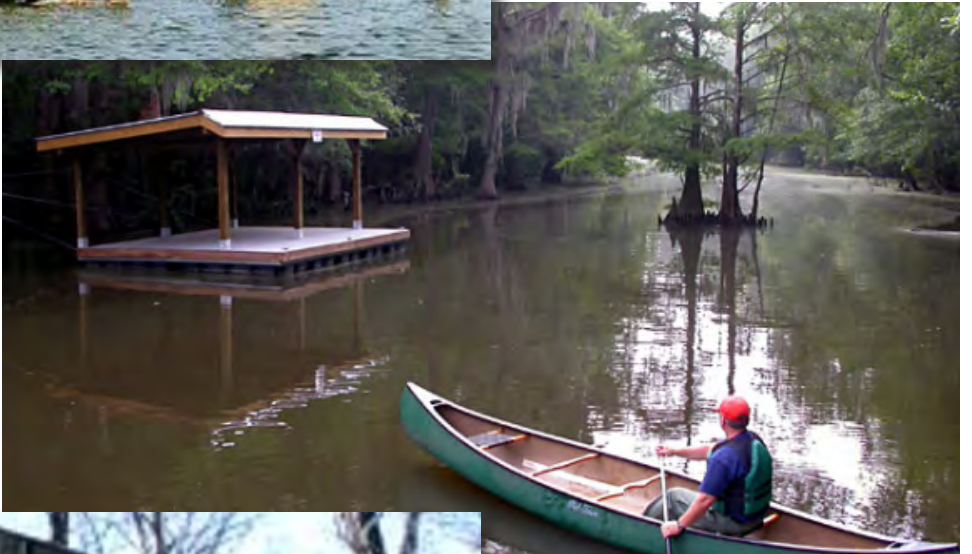
A Chickee Camp Site in Everglades National Park. Source: Seaside Water Trail Camping Platform Feasibility.



Docks with a shallow sloped roof supported by vertical posts with no wall structure. Source: Seaside Water Trail Camping Platform Feasibility.



Approaching a Floating Camping Platform in Alabama. Source: Seaside Water Trail Camping Platform Feasibility.



Example of Land Camping Structure. Source: Seaside Water Trail Camping Platform Feasibility.

ADDITIONAL RESOURCES

National Trails Training Partnership

This webpage has nearly 100 links related to blueways, covering topics such as planning, facilities, training, management, programs, and links to exemplary water trail systems.

Website: www.americantrails.org/resources/water/index.html



Iowa Water Trails: Connecting People with Water and Resources

This report is regarded by the national trail advocacy non-profit, *American Trails*, as an exemplary blueway development guide.

Available online:

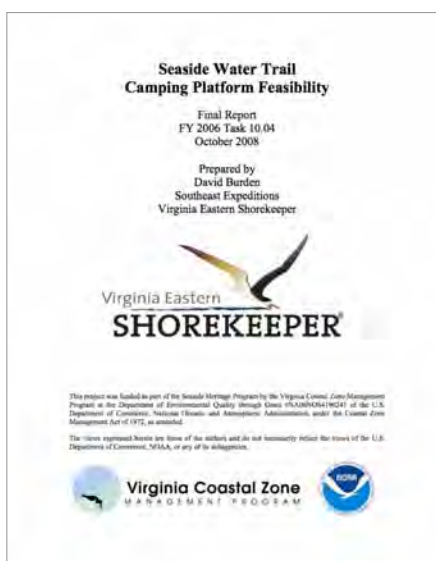
www.iowadnr.gov/Recreation/CanoeingKayaking/WaterTrailDevelopmentTools/WaterTrailsToolkit.aspx



Seaside Water Trail Camping Platform Feasibility

This report from the Virginia Coastal Zone Management Program determines the feasibility of creating a water trail system that includes facilities to allow paddlers to start at one end of the study area, and continue uninterrupted through to the other end. The main applicability for Goldsboro is in the report's recommendations and analysis for a variety of camping platforms.

Available online: www.deq.state.va.us/Portals/0/DEQ/CoastalZoneManagement/task10-04-06b.pdf





Appendix G: Access to Healthy Food and Recreation Analysis

Appendix Contents:

Overview

Analysis

Evaluation

Coordination between
Agencies

**The #1 goal of the
Wayne County
Health Department
is to reduce the
burden of chronic
disease among
County Residents**

Goldsboro Comprehensive Plan

OVERVIEW

Increasingly, communities are recognizing and addressing the significant effects that the built environment has on the public health of a community. The design of our roadways and neighborhoods, the availability of active transportation options such as walking and biking, and the ability to safely access opportunities for healthy living are all factors affecting residents' health and well-being.

According to the *Goldsboro Comprehensive Plan*, the #1 goal of the Wayne County Health Department is to reduce the burden of chronic disease among County residents. Obesity is a leading contributing factor to chronic disease and increases the risk of a variety of chronic diseases, including heart disease, stroke, diabetes, and some types of cancer. An improved diet, regular exercise, and an overall healthier lifestyle from these changed habits helps to reduce the risk of obesity and associated chronic diseases. Unfortunately many citizens do not have access to fresh, healthy food options and recreation opportunities to engage in physical activity.

This analysis builds off of the Health and Wellness Assessment in the Goldsboro Comprehensive Plan to evaluate how well the existing bicycle and pedestrian networks connect residents to healthy food and recreation opportunities, and where gaps exist in the network. The analysis concludes by showing how the proposed bicycle and pedestrian network in this plan will help to fill these gaps, better connect Goldsboro residents to healthy food and recreation options, and contribute to the goal of reducing obesity and chronic disease rates among County residents.



ANALYSIS

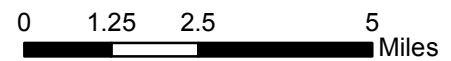
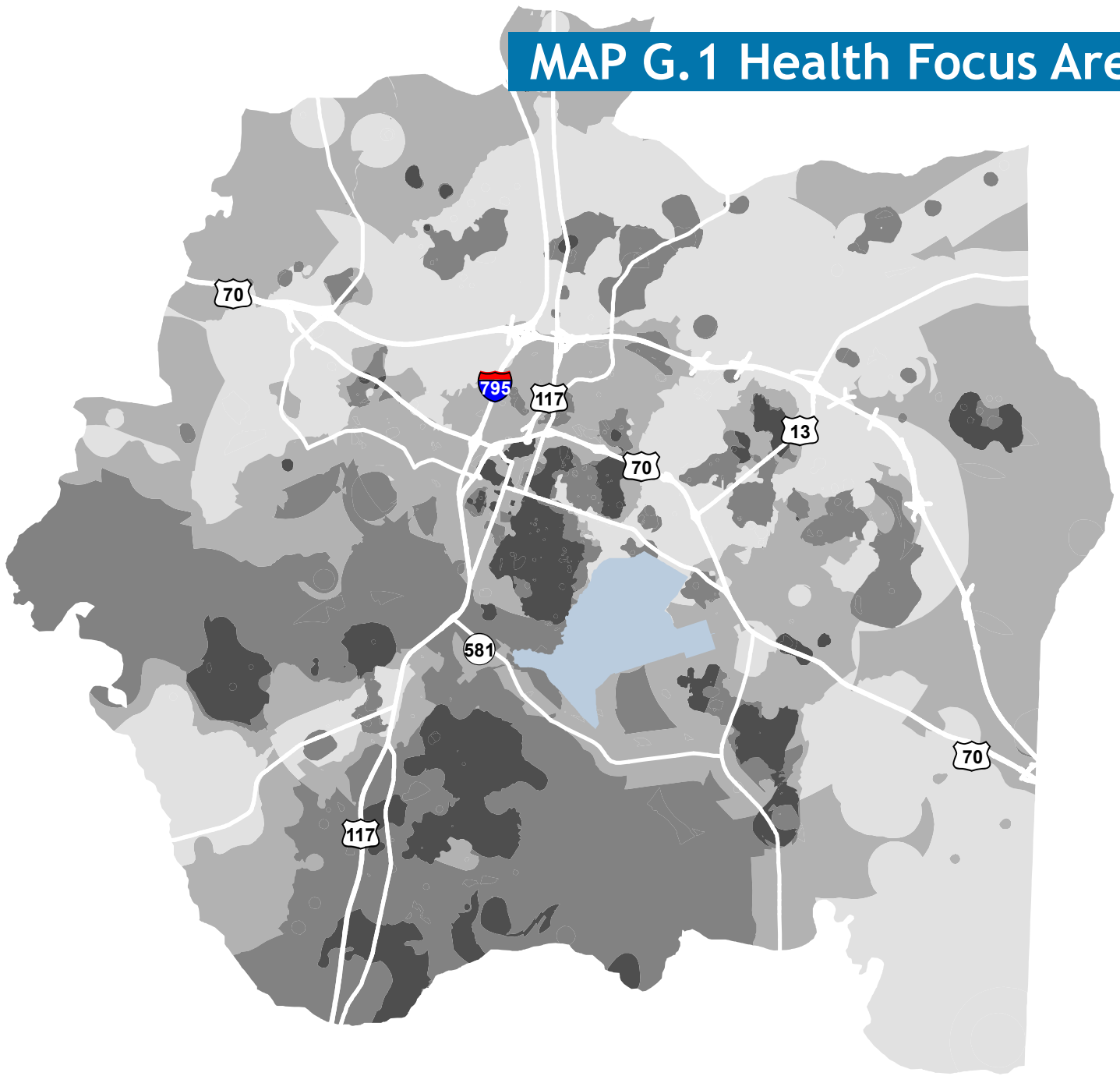
High-Priority Health Focus Areas

In its Health and Wellness Assessment, the Goldsboro Comprehensive Plan identified a series of high-priority Health Focus Areas in the Goldsboro MPO that are most vulnerable to wellness issues, using spatial data on populations vulnerable to chronic disease, criminal offenses, nutritionally disparate areas, active transportation availability, parks and recreation facility access, socioeconomic status, and population density. Local health officials identified these factors as barriers to a healthy and active lifestyle for Goldsboro area residents. These are the areas where there is the greatest need for public health and wellness investment.

This analysis examines the connections between these high-priority Health Focus Areas and recreation and healthy food options, particularly evaluating residents' ability to access these daily needs by walking or biking. This is especially important in central Goldsboro, identified here as the area east of Interstate 795, west of Seymour-Johnson Air Force Base, and north of NC 581. In this area, as much as 31 percent of the population does not have access to a motor vehicle and must rely on walking, biking, and transit for daily trips. A connected bicycle and pedestrian network that provides access to healthy food and recreation options is therefore a critical aspect of promoting better health and well-being in these areas, in other high-priority Health Focus Areas, and throughout the Goldsboro MPO.



MAP G.1 Health Focus Areas



Health Focus Areas

Legend

- Health Focus Areas**
- Highest Priority
- Medium Priority
- Low Medium Priority
- Lowest Priority
- Seymour Johnson AFB





Access to Healthy Food Locations

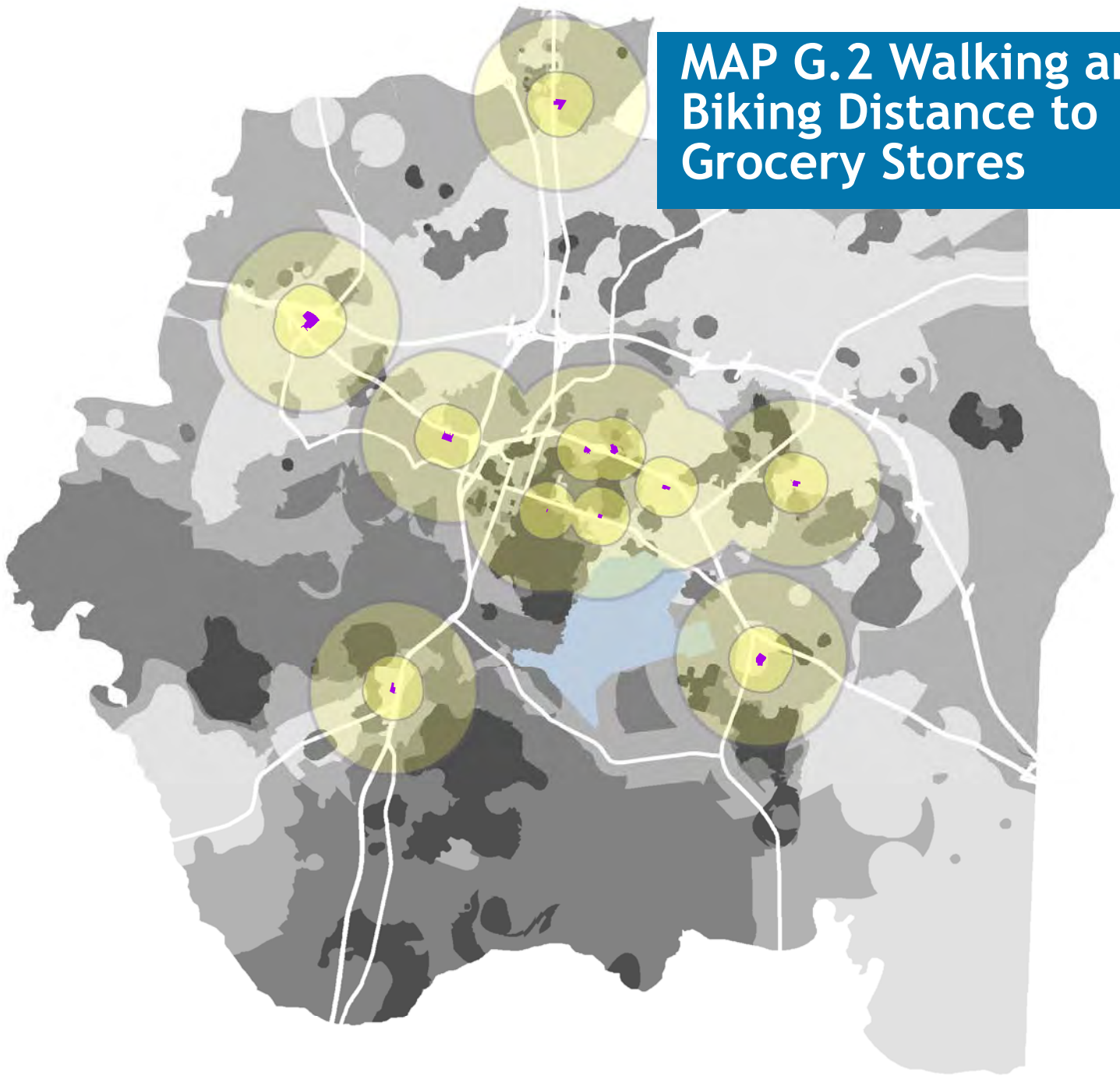
One critical function of a connected bicycle and pedestrian network is to provide access from neighborhoods to grocery stores so that all residents may have access to healthy food options. Many residents of Goldsboro walk or bike to the grocery store by necessity, but do not currently have complete infrastructure on which to safely and comfortably walk or bike. Furthermore, not every grocery store offers healthy food choices, so those that can access stores along sidewalks still may not have access to healthy food options.

Map G.2 shows the locations of all full-service grocery stores in the Goldsboro MPO that sell fresh fruits and vegetables, as opposed to convenience stores and smaller food marts that may offer some food but do not sell fresh fruits and vegetables. Farmers markets and food stand locations were left out of this analysis because their availability varies widely by season, day of week, time of day, weather conditions, and other factors that make them a less regularly reliable source of fresh foods than full-service grocery stores. Map G.2 displays the areas around each full-service grocery store that are within a 1/2-mile walking distance (darker yellow) and 1 1/2-mile biking distance (lighter yellow). Most of the highest priority Health Focus Areas are located within walking or biking distance of at least one grocery store; however, almost all of the full-service grocery stores in Goldsboro are located along a major highway, making them difficult to reach on foot or by bike. A list of full-service grocery stores is shown below.

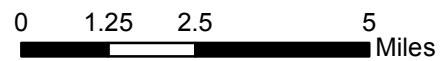
<i>Full-Service Grocery</i>	<i>Address</i>	<i>City/Town</i>
Carlie C's IGA	1805 Wayne Memorial Drive	Goldsboro
Food Lion	118 Five Points Road	Goldsboro
Food Lion	219 NC 111 Highway S	Goldsboro
Food Lion	553 E New Hope Road	Goldsboro
Food Lion	1809 E Ash Street	Goldsboro
Food Lion	1322 W Grantham Street	Goldsboro
Food Lion	4700 US 117 N	Pikeville
Harris Teeter	2120 Wayne Memorial Drive	Goldsboro
Piggly Wiggly	100 Lionel Street	Goldsboro
Wal-Mart Supercenter	1002 N Spence Avenue	Goldsboro
Wal-Mart Supercenter	2098 US 70	Goldsboro











MAP G.2 Walking and Biking Distance to Grocery Stores



Healthy Food Locations



Legend

Health Focus Areas	 Full Service Grocery Store
 Highest Priority	 1/2-Mile Walk
	 1 1/2-Mile Bike
	 Seymour Johnson AFB
 Lowest Priority	





Access to Park Locations

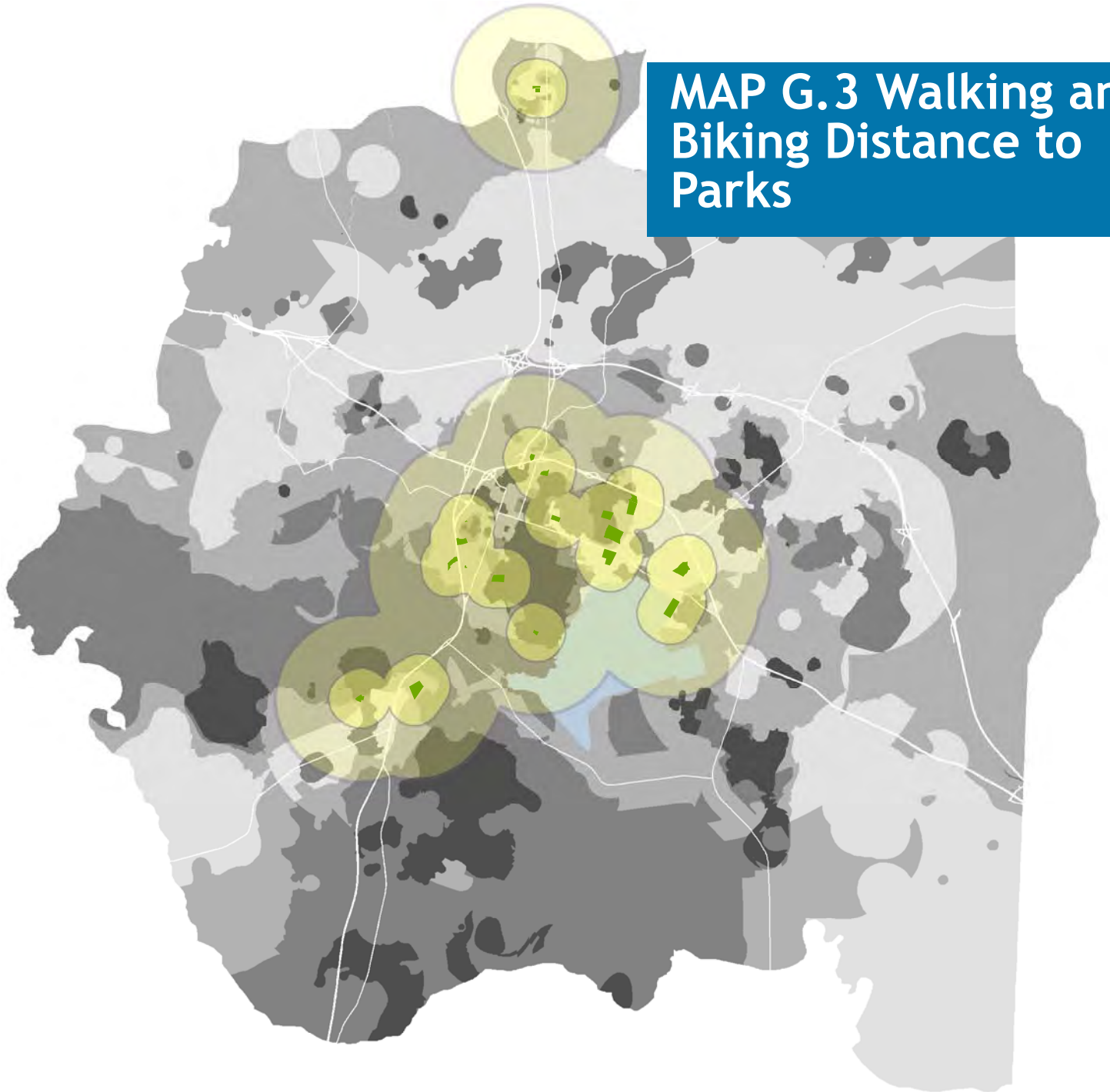
According to the survey developed for this Plan, parks and recreational facilities were the number one desired destination to reach by walking and bicycling. Public parks provide residents with opportunities to be active, socialize, engage in the community, and enjoy the outdoors. They make urban areas more inviting for living, working, and relaxing. Parks include small neighborhood and pocket parks as well as larger planned spaces and regional parks that contain greenways and trails. The pedestrian and bicycle network plays an important role in connecting residents to nearby park facilities so that they can take advantage of local recreation options.

Map G.3 shows the locations of 16 public parks in the Goldsboro MPO and the areas that can access them within a 1/2-mile walk or 1 1/2-mile bike ride. The complete list of public parks in the Goldsboro study area is included below. Most of the highest priority Health Focus Areas are located within walking or biking distance of at least one public park.

<i>Park</i>	<i>City/Town</i>
Battlefield Memorial Park	Goldsboro
Berkeley Memorial Park	Goldsboro
City Soccer Park (Future)	Goldsboro
Dees Memorial Park	Pikeville
Fairview Park	Goldsboro
H.V. Brown Park	Goldsboro
Henry C. Mitchell Park	Goldsboro
Herman Park	Goldsboro
Mar Mac Community Park	Goldsboro
Mina Weil Park	Goldsboro
North End Community Park	Goldsboro
Peacock Park	Goldsboro
Quail Park	Goldsboro
South End Neighborhood Park	Goldsboro
Washington Park	Goldsboro
Waynesborough Park	Goldsboro



MAP G.3 Walking and Biking Distance to Parks



Park Locations

Legend

Health Focus Areas

- Highest Priority
-
-
- Lowest Priority

- Park
- 1/2-Mile Walking Distance
- 1 1/2-Mile Biking Distance
- Seymour Johnson Air Force Base





Existing Connections to Healthy Food

The analysis of existing bicycle and pedestrian connections to healthy food options shows that many of these destinations cannot be safely or comfortably reached by foot or by bike. Map G.4 presents the existing bicycle and pedestrian network within Goldsboro and full-service grocery stores that are near this network. Many of the highest-priority Health Focus Areas in central Goldsboro are located within a 1/2-mile walking distance or 1 1/2-mile biking distance of a full-service grocery store. However, the existing bicycle and pedestrian network does not adequately connect many of these areas to grocery stores. The lack of sidewalks, trails, on-road bike routes, and safe crossings makes it difficult for residents to access healthy food selections.

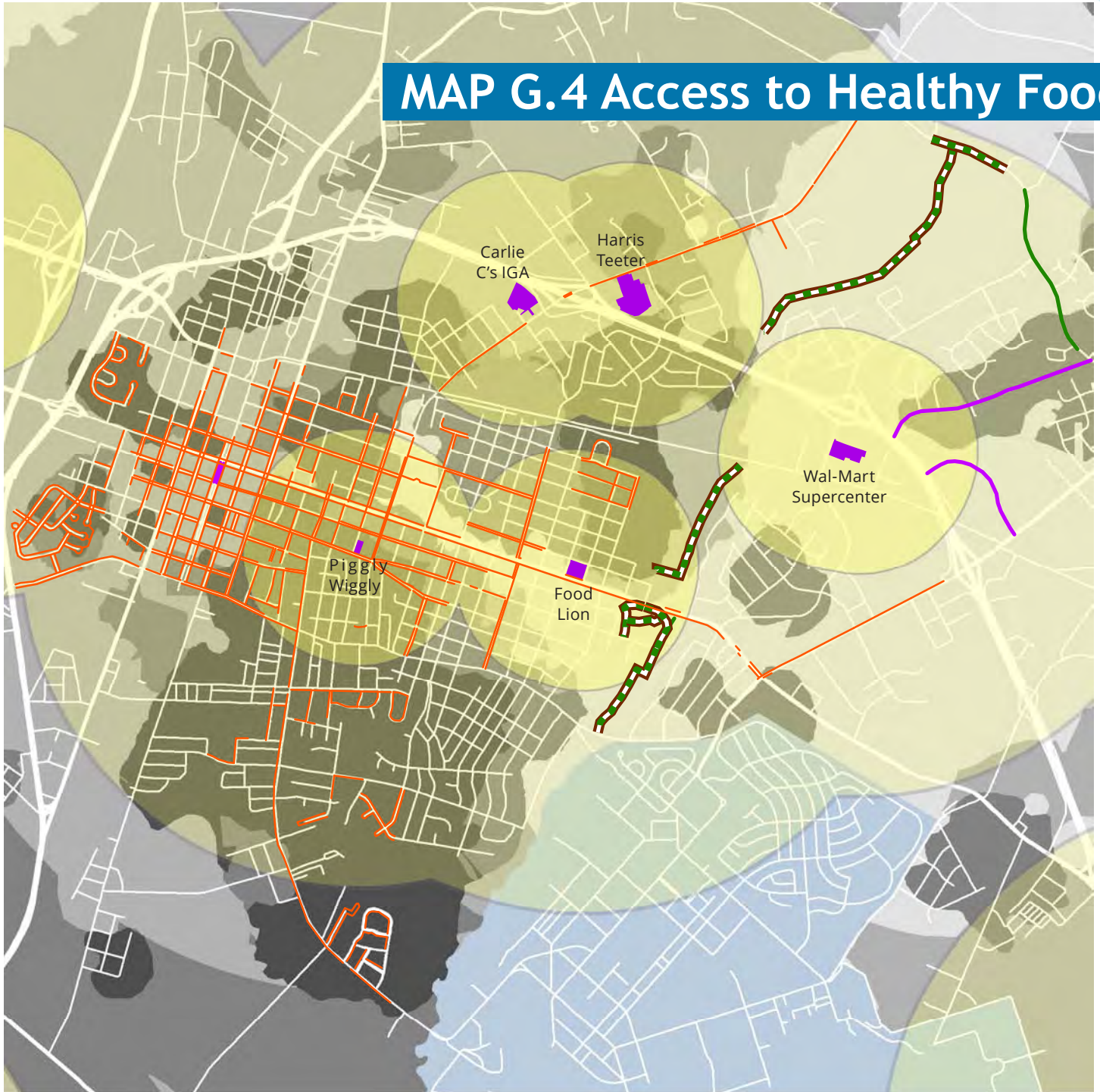
Of the eleven full-service grocery stores in the Goldsboro MPO, only one is currently accessible by walking or bicycling; the Piggly Wiggly on Lionel Street, near downtown, has a sidewalk connecting to the surrounding neighborhood and high-priority Health Focus Area. The ten other full-service grocery stores either do not have a sidewalk connecting to the surrounding neighborhood, do not have a sidewalk that enters the grocery store site, or both. No grocery stores are currently accessible by trail or on-road bicycle facility.

A lack of safe crossings is also a barrier to reaching grocery stores on foot or by bike. While there is a sidewalk on the south side of Ash Street across from the Food Lion, there is no marked crosswalk or pedestrian countdown signal for pedestrians trying to cross Ash to reach the store. The Harris Teeter and Carlie C's IGA on Wayne Memorial Drive are also missing sidewalk connections and safe crossings. The Wal-Mart on Spence Avenue is missing pedestrian facilities altogether, even though it is already a popular walking and bicycling destination and has a transit stop. The lack of facilities has taken its toll on the community; between 2007 and 2011, 1 bicyclist and 6 pedestrians were injured in crashes with motor vehicles in and around the Wal-Mart parking lot.

Only one of the eleven full-service grocery stores is accessible by sidewalk. None can be reached by trail or on-road bicycle facilities.



MAP G.4 Access to Healthy Foods



Existing Access to Healthy Foods

Legend

Health Focus Areas		Existing Facilities			
	Highest Priority		Existing Sidewalk		Full Service Grocery Store
			Existing Bike Lane		1/2-Mile Walk
			Existing Multi-Use Path		1 1/2-Mile Bike
	Lowest Priority		Funded Multi-Use Path		Seymour Johnson AFB





Existing Connections to Parks

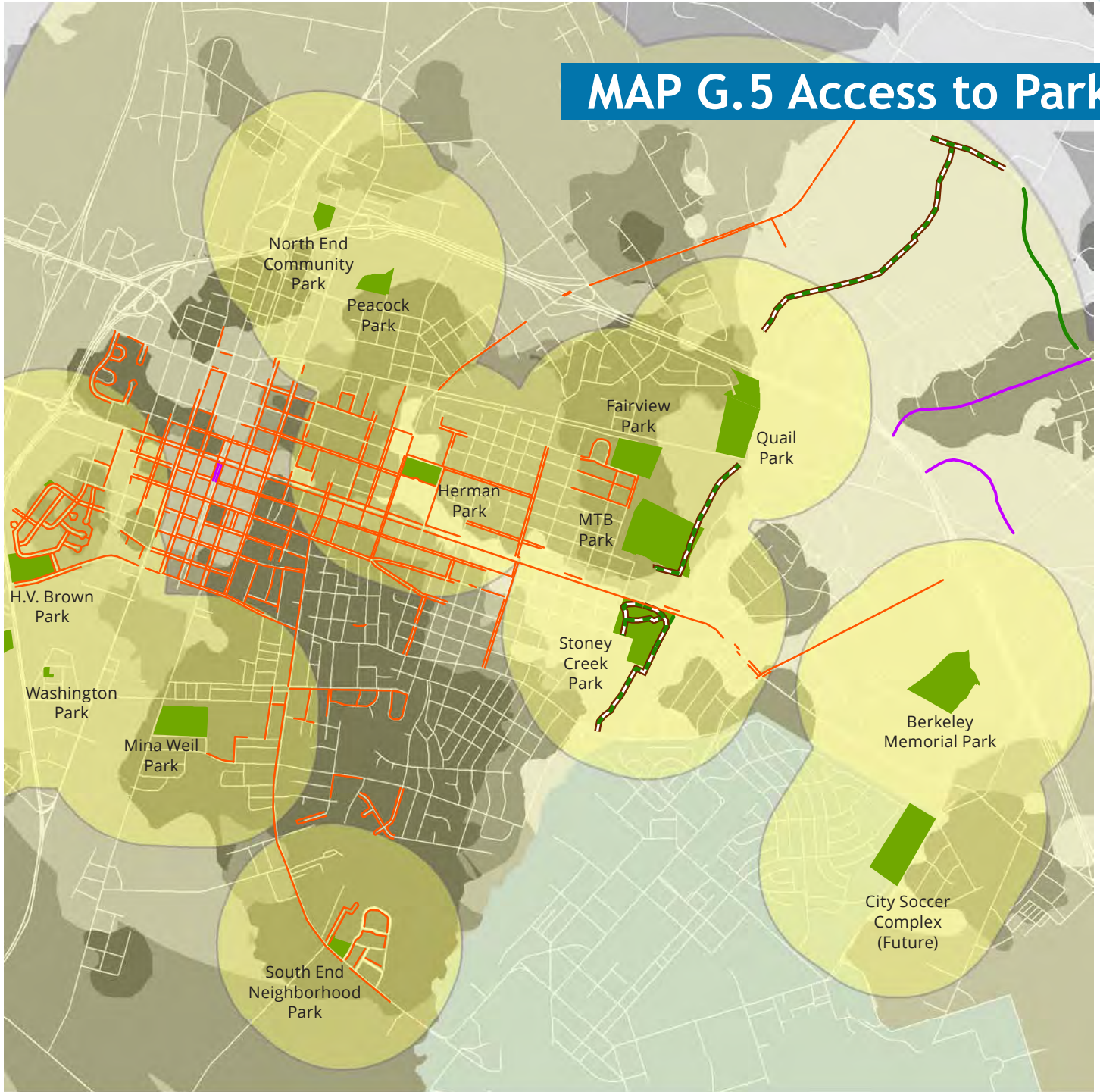
Map G.5 shows Goldsboro's existing pedestrian and bicycle network and areas of Goldsboro that are within a short 1/2-mile walking distance or 1 1/2-mile bicycling distance of at least one public recreation facility. Even though most of central Goldsboro is within walking or bicycling distance of at least one park, many of these locations lack sidewalk, trail, or on-road bicycle connections to surrounding neighborhoods. There is also a lack of safe crossings to help pedestrian and bicyclists across major barriers, such as highways, other major roads with high speeds and traffic volumes, and railroad tracks.

Only seven of the sixteen public parks in the Goldsboro MPO have sidewalk or trail connections to surrounding areas, and none of the parks are connected by on-road bicycle facilities. Even in central Goldsboro where the sidewalk network is mostly complete in some places, there are significant gap areas that prevent residents from walking or bicycling to nearby parks. The lack of sidewalks around several of the parks is apparent in Map G.5. Mina Weil Park is nearly connected to the surrounding high priority Health Focus Area, but is missing a few short sidewalk links to provide safe walking routes. North End Community Park, Peacock Park, Quail Park, Berkeley Memorial Park, and the future site of the city soccer complex are all missing sidewalk connections to surrounding neighborhoods.

The majority of parks in the Goldsboro MPO cannot be reached by sidewalk, trail, or on-road bicycle facilities.



MAP G.5 Access to Parks



Existing Access to Parks

Legend

Health Focus Areas

- Highest Priority
-
-
- Lowest Priority

Existing Facilities

- Existing Sidewalk
- Existing Bike Lane
- Existing Multi-Use Path
- Funded Multi-Use Path

Park

- Park
- 1/2-Mile Walking Distance
- 1 1/2-Mile Biking Distance
- Seymour Johnson Air Force Base





Proposed Connections to Healthy Food and Parks

The bicycle and pedestrian improvements recommended in this plan would greatly increase safe access to healthy foods and opportunities for recreation for Goldsboro residents. In many locations, small gaps prevent a connection that is nearly complete. This is especially notable in central Goldsboro; multiple full-service grocery stores and parks are located in the central city and several neighborhoods are within walking or bicycling distance of grocery stores and parks, but gaps in the bicycle and pedestrian network prevent a complete connection.

Map G.6 and G.7 show how the proposed bicycle and pedestrian improvements will increase connectivity and access to full-service grocery stores within Goldsboro. The recommended network - including new sidewalks, on-road bike facilities, paved trails, and crossing improvements - will greatly improve residents' ability to walk and bike to full-service grocery stores in Goldsboro, particularly in central Goldsboro. With these improvements, seven of the eleven grocery stores will be directly accessible by sidewalk and safe crossings, compared to one with current sidewalk access. Six grocery stores will be newly linked by on-road bicycle facilities and one by trail. These connections will provide significant improvements to healthy food access for residents in high priority Health Focus Areas and throughout Goldsboro, making it easier, safer, and more comfortable to walk and bike for errands close to home.

Maps G.8 and G.9 present the new connections to recreation areas that will be possible with the proposed bicycle and pedestrian network in place. Currently, only seven of sixteen parks have sidewalk access, one has trail access, and none have on-road bicycle facilities. The recommended improvements will link all parks in the Goldsboro MPO to a connected pedestrian and bicycle network. In central Goldsboro, several parks will be linked by a combination of sidewalks, trails, and bike lanes. Outlying parks are connected to the network by paved shoulders.

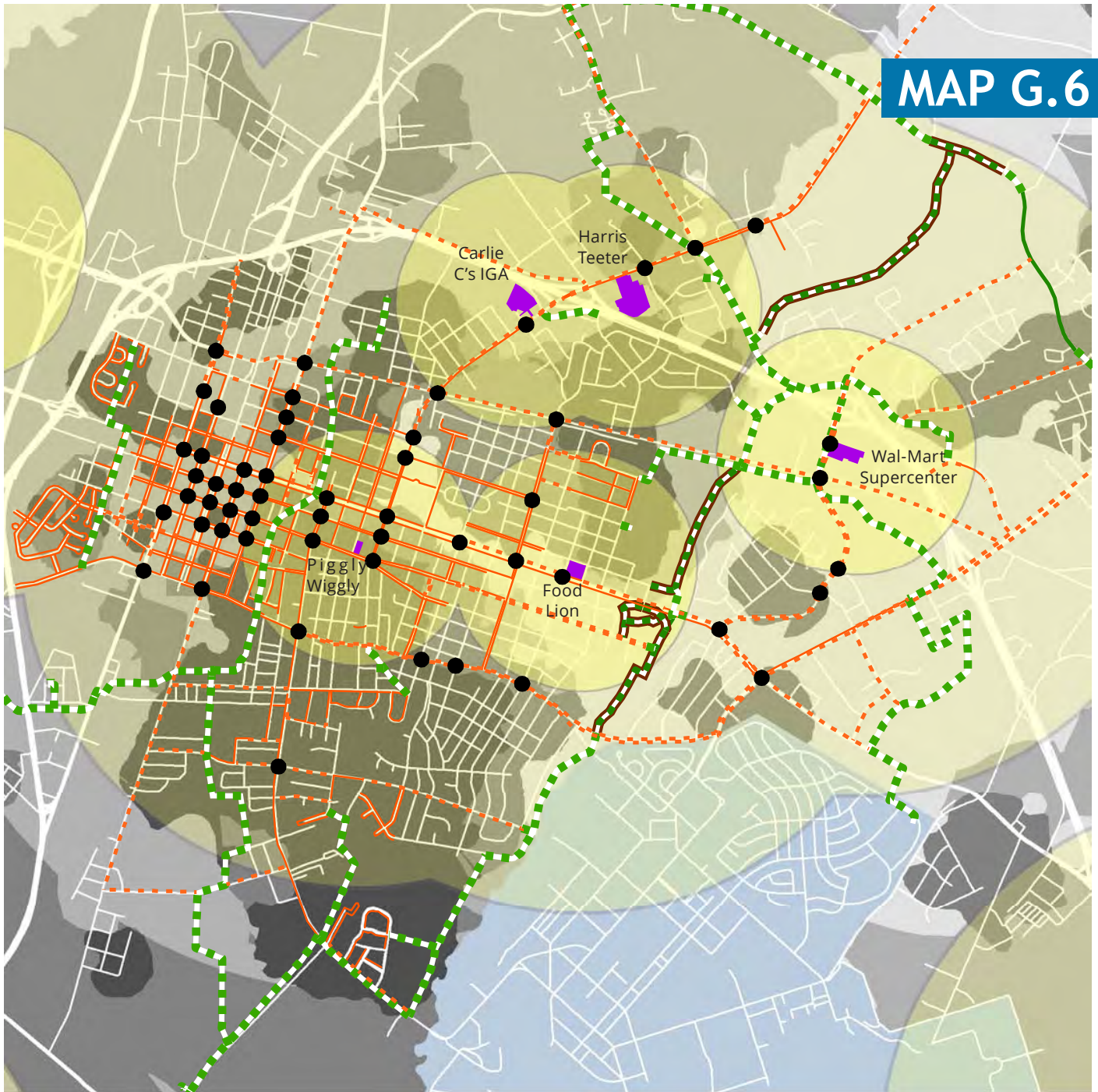
These improvements will allow many more Goldsboro residents to access healthy foods and recreation opportunities without relying on access to a car. This is especially important in central Goldsboro, where as many as 31 percent of residents do not have access to a motor vehicle. Connections to healthy food options and opportunities for active living should be available to all Goldsboro residents. Implementing the improvements recommended in this plan will significantly increase walking and bicycling access to basic needs in Goldsboro.

The proposed bicycle and pedestrian network will make it possible to walk or bike to the majority of grocery stores in the Goldsboro MPO.

All parks in the Goldsboro MPO will be linked to walking and bicycling facilities with the proposed network.



MAP G.6



Proposed Access to Healthy Foods Sidewalks, Crossings & Trails

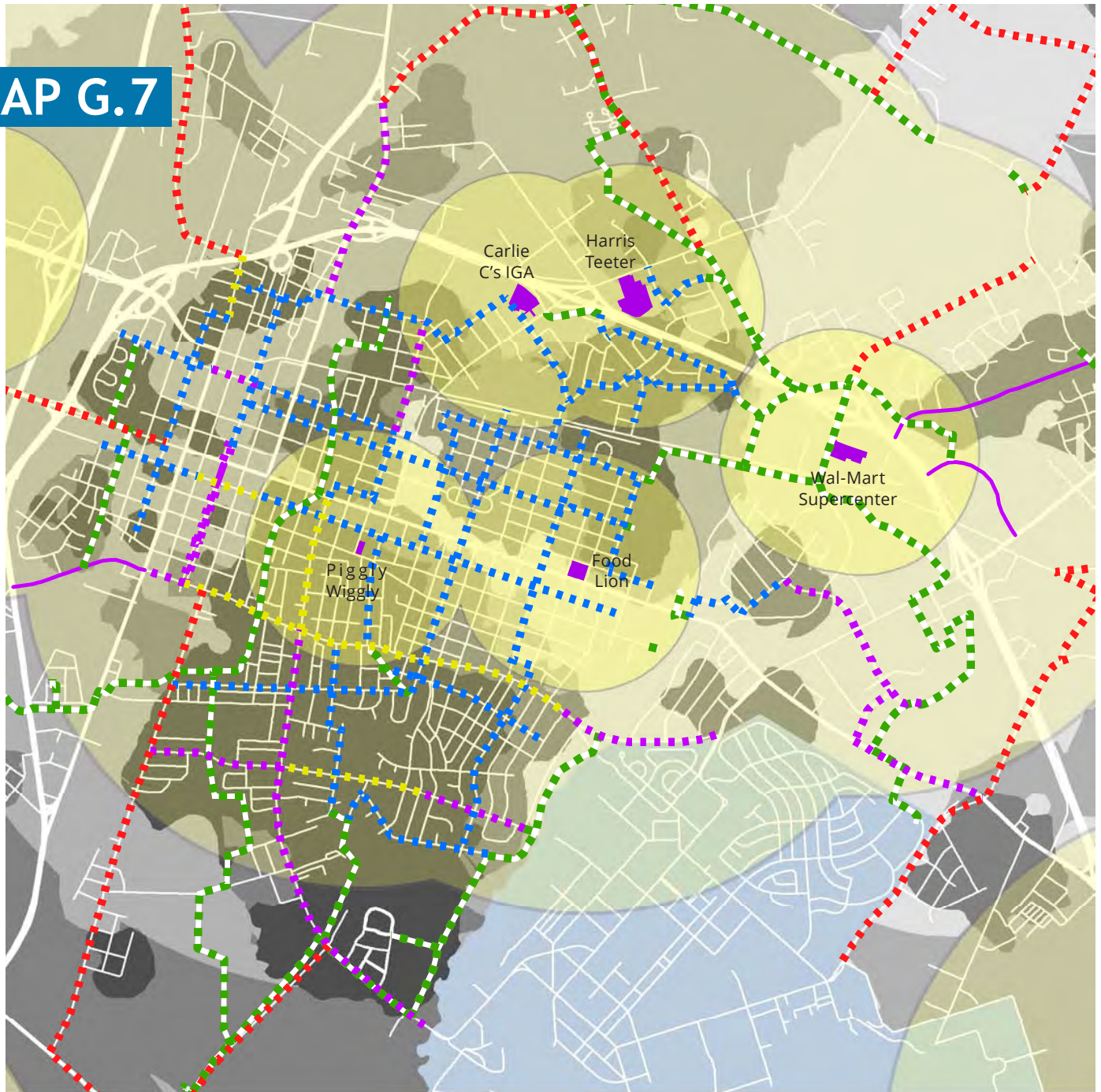


Legend

Health Focus Areas	Proposed Facilities	Full Service Grocery Store
Highest Priority	Sidewalk	1/2-Mile Walk
	Multi-Use Path	1 1/2-Mile Bike
	Crossing Improvement	Seymour Johnson AFB
Lowest Priority	Existing Facilities	
	Existing Sidewalk	
	Existing Multi-Use Path	
	Funded Multi-Use Path	



MAP G.7



Proposed Access to Healthy Foods
On-Road Bike Facilities



Legend

Health Focus Areas

- Highest Priority
-
- Lowest Priority

Proposed Facilities

- Bike Lane
- Bike Boulevard
- Paved Shoulder
- Shared Lane Marking (Sharrow)
- Bike Route Signage
- Multi-Use Path

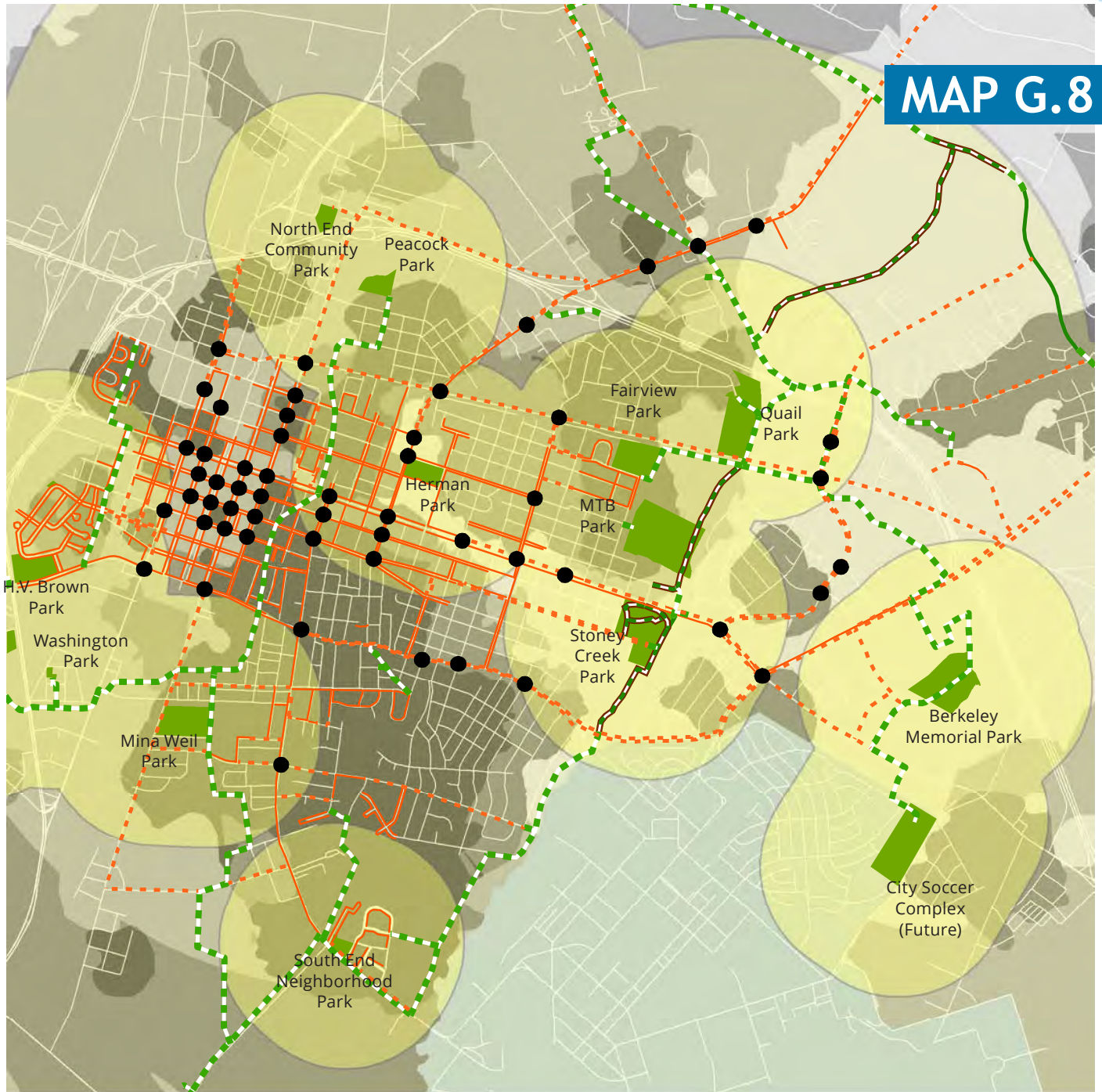
Existing Facilities

- Existing Bike Lane
- Full Service Grocery Store
- 1/2-Mile Walk
- 1 1/2-Mile Bike
- Seymour Johnson AFB





MAP G.8



Proposed Access to Parks Sidewalks, Crossings & Trails



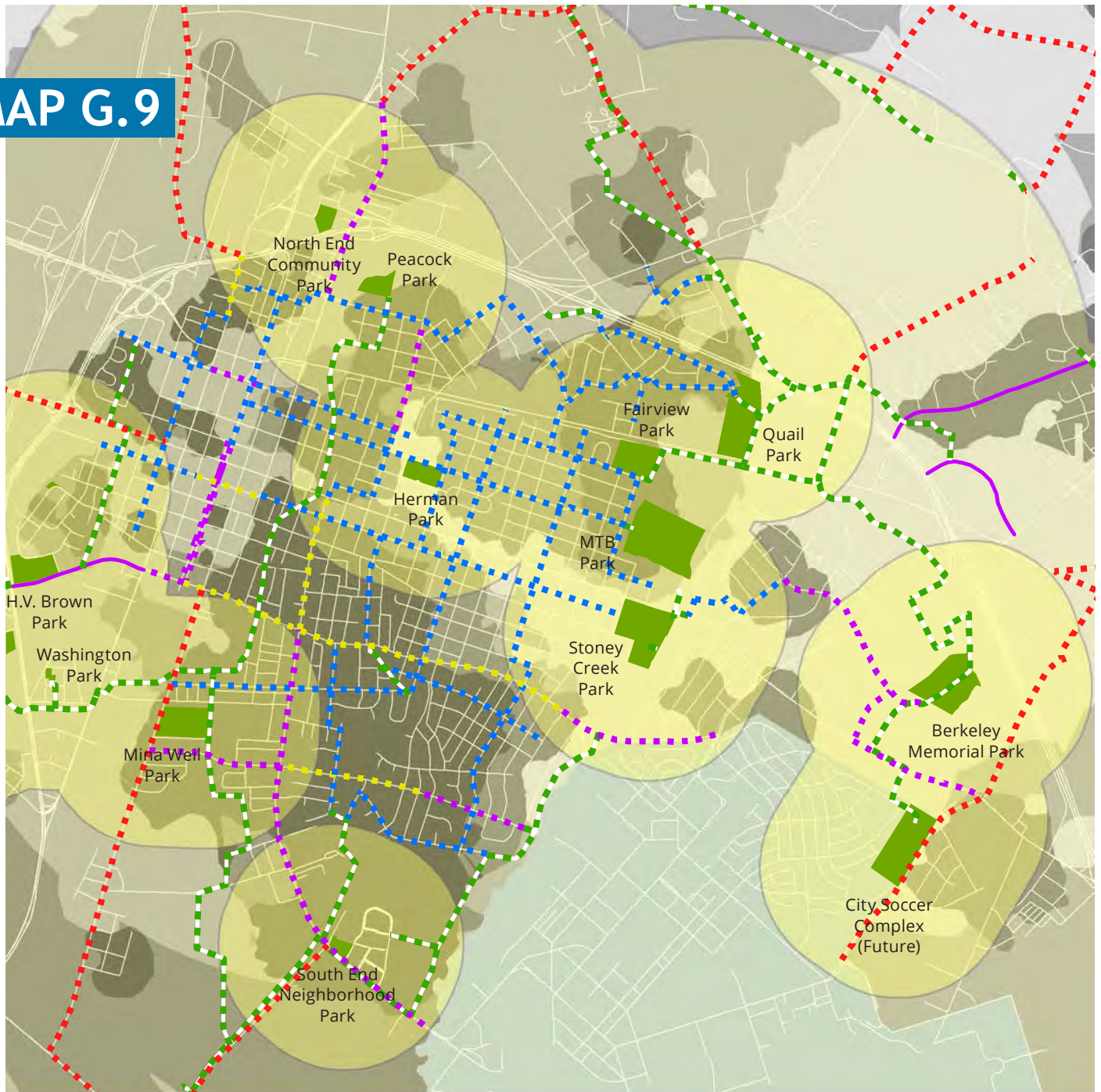
Legend

Health Focus Areas	Proposed Facilities	Park
Highest Priority	Sidewalk	1/2-Mile Walking Distance
	Multi-Use Path	1 1/2-Mile Biking Distance
Lowest Priority	Existing Facilities	Seymour Johnson AFB
	Existing Sidewalk	
	Existing Multi-Use Path	
	Funded Multi-Use Path	





MAP G.9



Proposed Access to Parks On-Road Bike Facilities



Legend

Health Focus Areas

- Highest Priority
-
-
- Lowest Priority

Proposed Facilities

- Bike Lane
- Bike Boulevard
- Paved Shoulder
- Shared Lane Marking (Sharrows)
- Bike Route Signage
- Multi-Use Path

Existing Facilities

- Existing Bike Lane
- Park
- 1/2-Mile Walking Distance
- 1 1/2-Mile Biking Distance
- Seymour Johnson AFB



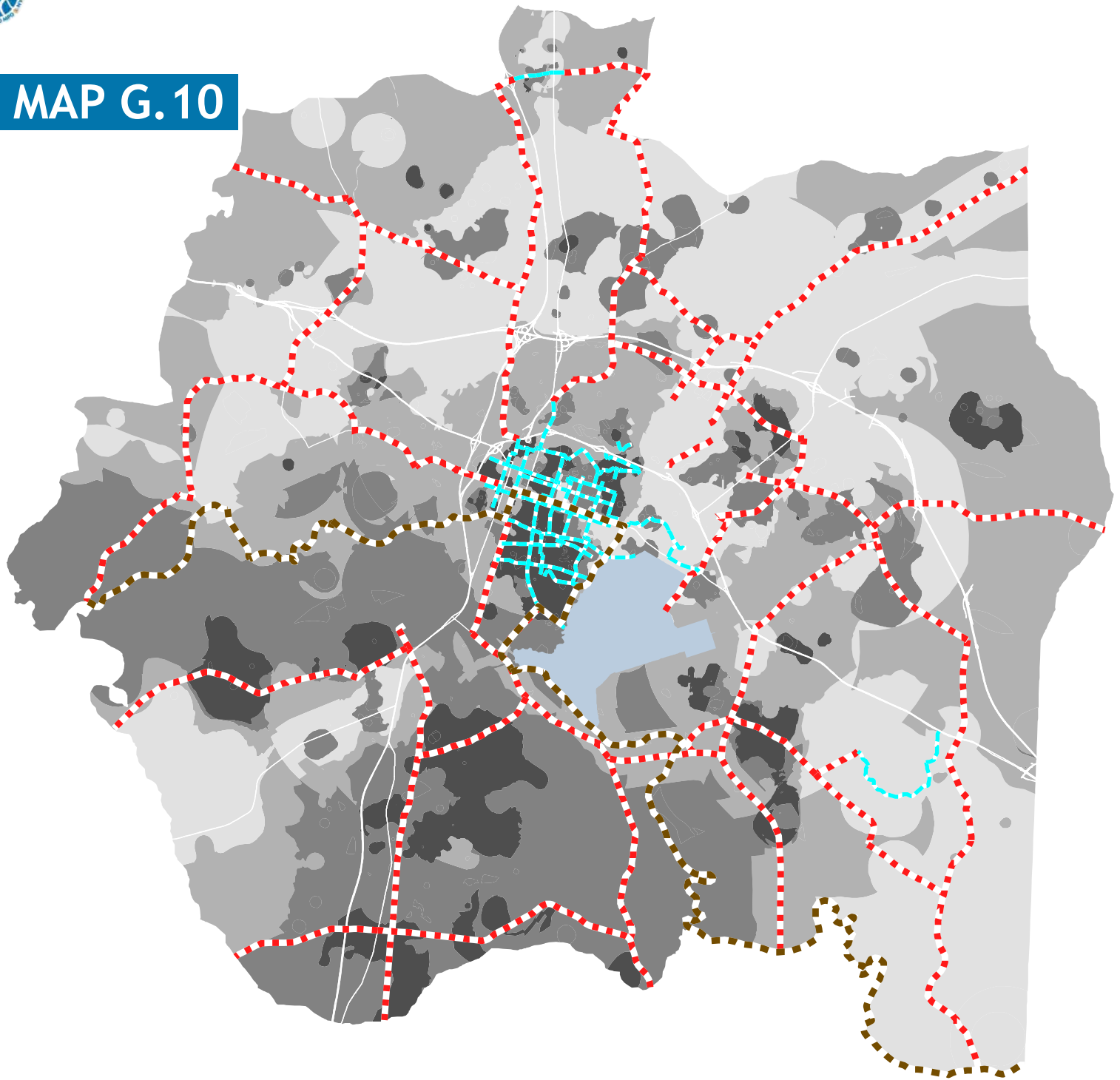


Project Prioritization

High-priority Health Focus Areas, as identified in the Goldsboro Comprehensive Plan, serve as an important factor for choosing where to invest in bicycle and pedestrian facilities. These areas have been identified as the locations that are most vulnerable to health and wellness issues, and should therefore be considered as a priority criterion when forming the bicycle and pedestrian network. Not only can bicycle and pedestrian facilities serve as vital connections to healthy foods and recreation opportunities, as this analysis shows, but they can also promote healthy lifestyles themselves by encouraging people to use active transportation for daily errands and other trips. Map G.10 shows the proposed regional bicycle network of paved shoulders for the Goldsboro MPO and Map G.11 displays the proposed bicycle and pedestrian network for central Goldsboro, overlaid onto Health Focus Areas. These areas were used to help inform the development of the proposed bicycle and pedestrian network. Projects that connect to high-priority Health Focus Areas were scored for priority in project prioritization. See Chapters 3-5 for a complete description of the project prioritization factors and process.










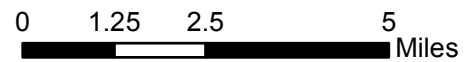
MAP G.10



Proposed Regional Bicycle Network

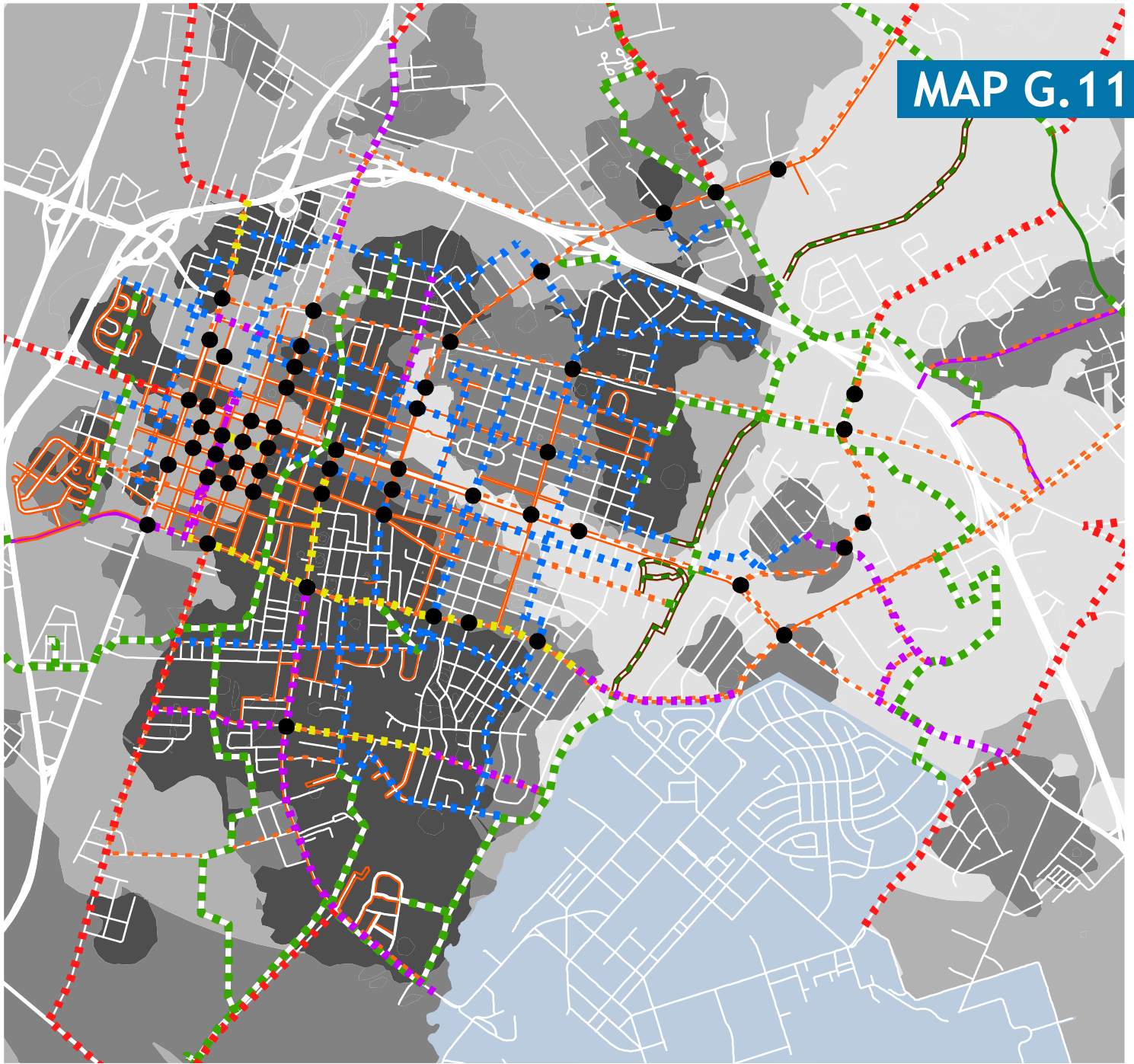
Legend

- | | |
|--|---|
| Proposed Facilities |  Seymour Johnson AFB |
|  Paved Shoulder | Health Focus Areas |
|  MST |  Highest Priority |
|  Other Bike Facilities |  Medium Priority |
| |  Lowest Priority |





MAP G.11



Proposed Bicycle and Pedestrian Network



Legend

Health Focus Areas

- Highest Priority
-
- Lowest Priority

Proposed Facilities

- Bike Lane
- Bike Boulevard
- Paved Shoulder
- Shared Lane Marking (Sharrow)
- Bike Route Signage
- Sidewalk
- Multi-Use Path

Existing Facilities

- Existing Bike Lane
- Existing Multi-Use Path
- Funded Multi-Use Path
- Existing Sidewalk
- Seymour Johnson AFB





EVALUATION (BENCHMARKING)

Benchmarks help track progress towards attaining goals and objectives. They also help provide information to support decisions, assess the effectiveness of policies and implementation efforts, and improve transparency. Providing more bicycle and pedestrian transportation options, as recommended in this Plan, inherently produces a positive impact on healthy, active living. 70% of users surveyed indicated that they walk and bicycle for exercise (among other reasons) and 70% said improving walking conditions in Goldsboro was “very important.” Looking statewide in North Carolina, 60% said they would increase their level of physical activity if they had better access to trails.

Evaluation and performance measures for this Plan are discussed in Chapter 8: Implementation. All of these measures will indirectly measure an impact to active living. Additional performance measures, more specific to health-related goals, are listed below. These should build upon ongoing efforts by the GoWayneGo Initiative and its partners and be tracked through a partnership between the City of Goldsboro, Goldsboro MPO, Wayne County Health Department, and GoWayneGo.

- GoWayneGo Commitment (diet and physical activity) - Pounds lost (GoWayneGo goal is to lose 1 million pounds by May 2015). Track how many residents made commitment and how much weight lost.
- Number of parks connected by pedestrian or bicycle facility
- Number of grocery stores with fresh foods connected by pedestrian facility
- Number of education and encouragement programs that focus on bicycling and walking
- Number of minutes per day residents spend doing pedestrian and bicycle activity (through GoWayneGo Initiative commitment)
- Physical inactivity rates (North Carolina Behavioral Risk Factor Surveillance System)
- Obesity and diabetes rates (North Carolina Behavioral Risk Factor Surveillance System)

GoWayneGo Commitment

Great Health for Wayne County

Health is important to me and my family!

Our daily goals:

- 5** fruits & vegetables
- 3** balanced meals
- 2** hours of TV/electronics max
- 1** hour of physical activity
- 0** sugary drinks, except on occasion



COORDINATION BETWEEN AGENCIES

Coordination between public, private, and non-profit agencies will be essential to meet health goals of this Plan (partnerships, education, promotion, outreach) described in Chapter 1. While the Goldsboro MPO, City of Goldsboro, and NCDOT will lead the development of bicycle and pedestrian infrastructure, groups and agencies like GoWayneGo, the Wayne County Health Department, Wayne Memorial Hospital, and the YMCA should lead education and encouragement programming related to active living. There will be opportunities to collaborate and jointly fund projects as well. A comprehensive listing of programs geared towards encouraging safe walking and bicycling can be found in Chapter 7: Programs.

Partners



Wayne Health
www.waynehealth.org



County Health Department
www.waynegov.com



Goldsboro YMCA -
www.goldsboroymca.org



Goldsboro Pediatrics P.A.
 Goldsboro Pediatrics
goldsboropediatrics.com



Goldsboro Parks and Recreation
www.goldsboroparksandrec.com



United Way of Wayne County
unitedwaync.org/



NC Cooperative



Wayne Co Public Schools



Goshen Medical C



Above graphic taken from www.gowaynego.org.





Appendix H: Active Transportation Demand and Benefits Analysis

Appendix Contents:

Overview

*Estimating Bicycling and
Walking Demand*

*Estimating Bicycling and
Walking Benefits*

*Estimating Increased
Property Values from Trails*

OVERVIEW

Many of the greatest strengths of active transportation projects, such as creating attractive, livable streetscapes and increasing community health through exercise, are not accounted for when evaluating transportation project alternatives. Similarly, many of the external social costs of driving, such as traffic congestion, crashes, and climate change from greenhouse gas emissions, are not sufficiently factored into these calculations. Quantifying the benefits of walking and bicycling for transportation demonstrates the value that these modes provide to the community and to Goldsboro residents. Making trips by bike or on foot helps to mitigate air pollution, congestion, roadway costs, individual travel costs, and individual health costs from lack of physical activity. As walking and bicycling rates increase, so does the collective value that active transportation provides to the community.

For each additional mile traveled by bicycle or by foot instead of by car, about a pound of carbon dioxide emissions are prevented, less money is spent on gas and other driving costs, and more time is spent being physically active. When bicycling and walking become part of people's daily lives, these benefits add up to create a healthier, more livable community. To calculate the current benefits of active transportation in Goldsboro, the first step is to estimate existing bicycling and walking levels.



ESTIMATING BICYCLING AND WALKING DEMAND

User counts and user surveys are the two most commonly used tools for measuring bicycling and walking activity. The following section describes the strengths and weaknesses of each of these tools, and presents a methodology for estimating activity across an entire community.

User Counts

User counts are typically conducted during peak travel hours and capture levels of bicycling and walking activity at a point along a street or path during a short time period. While user counts are helpful for comparing relative levels of use between one street and another, they do not fully capture the spectrum of bicycling and walking activity happening across the community over the length of the year. Counts are well suited to studying where people bike, but do not provide answers to other important questions, such as:

- What destinations are people bicycling or walking to, and where are they coming from?
- How far are they traveling?
- What is the purpose of their trip?
- How often do they make similar bicycling or walking trips?
- How often do they make different kinds of bicycling or walking trips?
- Do other residents also make similar types of trips by bicycling or walking, or do they typically travel by another mode?

Therefore, while user counts are a good tool for measuring bicycling and walking at points of interest, user surveys are needed to estimate the overall role of bicycling and walking in the transportation patterns of residents across the community.

User Surveys

Transportation user surveys ask respondents about their recent or typical travel behavior, and sometimes ask about their perceptions of travel, e.g., their feeling of safety on a street. The American Community Survey (ACS), an ongoing survey conducted by the US Census Bureau, collects social, economic, and demographic information from respondents, including a question on respondents' commute to work. Sampling over 250,000 households per month, the ACS is the largest survey that asks Americans about their transportation habits and the most widely available source of bicycling and walking data in communities. According to the 2006-2010 ACS, about 0.5% of workers in Goldsboro bicycle to work and 2.2% walk to work. This rate is known as commute mode share: the number of people traveling to work by a certain mode of transportation as a percentage of all people commuting to work.

Although commute mode share data is able to capture wider information about bicycling and walking than user counts alone, work commutes are just one type of trip. Goldsboro residents make many other types of trips, such as going to



school, visiting the doctor, or going shopping, by a variety of modes. Detailed household travel surveys can provide more information on travel patterns and help estimate the full spectrum of bicycling and walking trips happening in the community.

Household travel surveys typically interview respondents by phone to complete a travel diary to record all trips made by the respondent during a recent 24-hour period. The survey also collects detailed information on the qualities of each trip, including trip purpose, time of day, duration, length, mode, and more. By collecting this data from a large sample of people across the population, household travel surveys can provide information on where, why, and how far people are bicycling and walking for transportation. Though a recent local household travel survey is not available in Goldsboro, national data from the 2009 National Household Travel Survey (NHTS 2009) are available to stand in to help estimate the number of other types of bicycling and walking trips made in the area in addition to work trips.

Estimating Overall Activity

Overall bicycling and walking activity can be estimated by combining available local data such as ACS commute mode share with national trip purpose information from NHTS 2009. On average, 1.6 utilitarian bicycle trips are made for every bicycle-to-work trip in the United States, and 4.3 utilitarian walking trips are made for every walk-to-work trip. Trips that serve a necessary purpose are considered to be utilitarian trips, and do not include discretionary trips such as social trips, recreation, or exercise.

Student commute trips to school and college are estimated independently of ACS data, because the populations making those trips are substantially different from the employed workforce surveyed by ACS. Because local college travel survey data is not available, national data on bicycling and walking college trip mode share was used (see tables on the following page). National baseline K-8 school trip data from Safe Routes to School (SRTS) was used to estimate mode share for K-12 school trips.

For each type of trip, average trip distance and vehicle trip replacement multipliers are applied to estimate the total distance traveled by bicycling or walking and the resulting vehicle miles traveled (VMT) reduced. National average trip distance multipliers are sourced from NHTS and SRTS, ranging from 0.36 miles for a K-12 walk to school trip to 3.54 miles per adult bike commute trip. Vehicle trip replacement multipliers assume that for each bicycling or walking trip, the chance of bicycling or walking replacing another mode for that trip is equal to the mode share of that other mode. Vehicle trip replacement multipliers are calculated independently using the mode split for each trip purpose available. For example, commute trip mode split is used for commute vehicle trip replacement, and college trip mode split is used for college vehicle trip replacement. Single-occupancy vehicle trip equivalents are used to estimate VMT reduction; replaced carpool trips are weighted at 50% of replaced single-occupancy vehicle trips.



	Commute Trip Mode Share	College Trip Mode Share	K-12 Trip Mode Share	Utilitarian Trip Multiplier
Bike	0.5%	1.7%	2.0%	1.6
Walk	2.2%	6.8%	13.0%	4.3
<i>Source</i>	<i>ACS 2008-2012 (Goldsboro)</i>	<i>NHTS 2009 (national data)</i>	<i>SRTS Baseline, 2010 (national data)</i>	<i>NHTS 2009 (national data)</i>

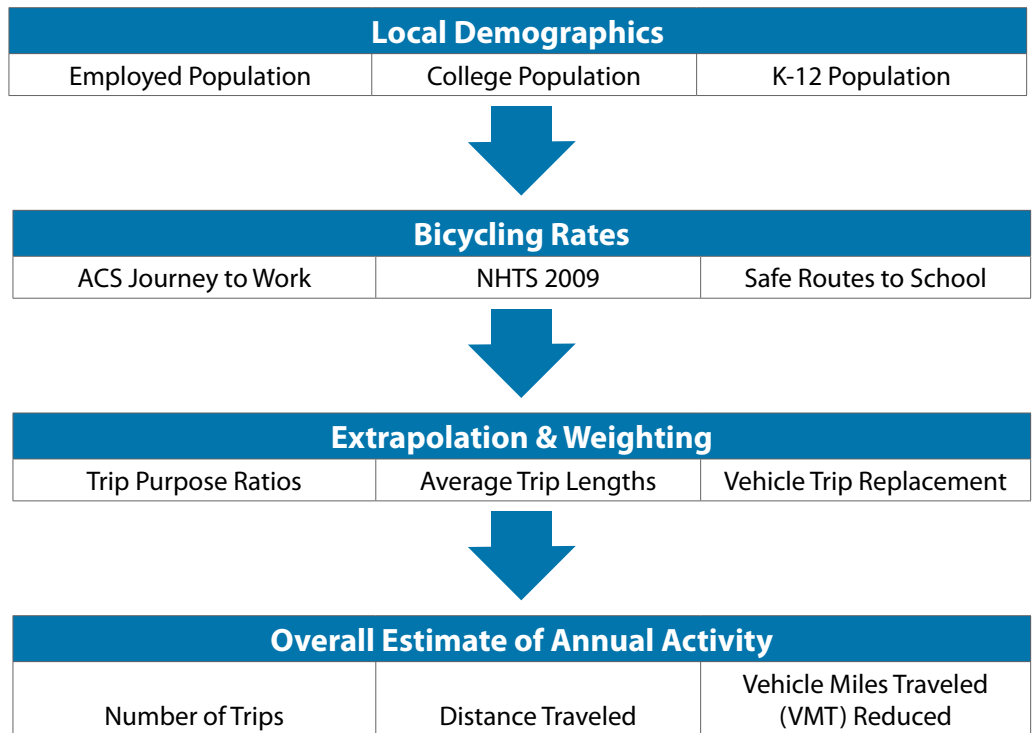
	Annual Work Days	Annual College Class Days	Annual K-12 School Days
Days	251	170	185
<i>Source</i>	<i>261 weekdays - 10 Federal holidays</i>	<i>Wayne County Community College 2013-2014 calendar</i>	<i>North Carolina State Minimum</i>

	Commute Vehicle Trip Replacement	College Vehicle Trip Replacement	K-12 Vehicle Trip Replacement	Utilitarian Vehicle Trip Replacement
Bike	78.3%	80.1%	40.0%	87.2%
Walk	78.3%	80.1%	40.0%	87.2%
<i>Source</i>	<i>ACS 2008-2012 (Goldsboro)</i>	<i>NHTS 2009 (national)</i>	<i>SRTS Baseline, 2010 (national)</i>	<i>ACS 2008-2012 (Goldsboro)</i>

	Commute Trip Distance	College Trip Distance	K-12 Trip Distance	Utilitarian Trip Distance
Bike	3.54	2.09	0.77	1.90
Walk	0.67	0.48	0.36	0.68
<i>Source</i>	<i>NHTS 2009</i>	<i>NHTS 2009</i>	<i>SRTS Baseline, 2010</i>	<i>NHTS 2009</i>



The figure below provides a visual depiction of the steps used to translate local and national transportation data into an annual estimate of the bicycling and walking activity currently happening in Goldsboro.



Key Findings Related to Existing Demand

Census tract level ACS data was the primary source for estimating existing levels of bicycling and walking activity around Goldsboro. Using ACS, NHTS, and Safe Routes to School data sources, **it is estimated that approximately 435,000 miles of trips are being made by walking and bicycling in Goldsboro each year that otherwise would be made by car.**



ESTIMATING BICYCLING AND WALKING BENEFITS

Benefits of bicycling and walking are based on the number of regular active transportation users and miles traveled developed in the overall demand estimate. Numerous studies have estimated the dollar value of the benefits of bicycling and walking such as reduced pollution from the reduction of motor vehicle travel, improved health from increased physical activity, and other benefits (see tables below). Using figures from these studies, overall levels of active transportation activity can be expressed in terms of their dollar value to local residents and the social benefits to the community at large.

Key Findings Related to Existing Benefits

Active transportation returns significant benefits to Goldsboro and local residents in the form of improved air quality, reduced transportation costs, and improved health. **Existing rates of active transportation generate an estimated \$1.3 million in annual benefits to Goldsboro and its citizens** (see table on following page).

In addition to making utilitarian trips by bicycling and walking, Goldsboro area residents make many bicycling and walking trips for social and recreational purposes. While these trips may not necessarily replace vehicle trips and therefore are not included in the transportation benefits tables above, social and recreational bicycling and walking activity contributes to healthy living and the livability of the area. **Goldsboro residents make an estimated 400,000 social or recreational bicycling and walking trips annually.**

Reduced Emissions	Lb/VMT	Reduced Emissions Costs	\$/Ton	Reduced Externalities	\$/VMT
Hydrocarbons	0.00300	Volatile Organic Compounds	\$1,839	Traffic Congestion	\$0.07
Particulate Matter	0.00002	Particulate Matter	\$331,617	Vehicle Crashes	\$0.49
Nitrous Oxides	0.00209	Nitrous Oxides	\$7,249	AAA, 2013	
Carbon Monoxide	0.02734	Carbon Monoxide	n/a		
Carbon Dioxide	0.81351	Carbon Dioxide	\$49.20	Road Maintenance	\$0.15
EPA, 2007		EPA, 2007, adjusted to 2013 dollars		Kitamura, Zhao, & Gubby, 1989, adjusted to 2013 dollars	

Physical Inactivity Rate	%	Reduced Healthcare Costs	\$/Year	Vehicle Operating Costs	\$/VMT
North Carolina	24.5%	Savings/Newly Active Person	\$1,119.62	Operational Standard Mileage Rate	\$0.63
BRFSS, 2010 (CDC)		Chenoweth, D., 2005		AAA, 2013	



Category	Total Monetized Benefit
Annual VMT Reduced	435,486
Air Quality	
CO ₂ Emissions Cost Reduced	\$8,715
Other Vehicle Emissions Cost Reduced	\$5,944
Total Vehicle Emissions Cost Reduced	\$14,659
Social Benefits	
Reduced Traffic Congestion Costs	\$30,484
Reduced Vehicle Crash Costs	\$213,388
Reduced Road Maintenance Costs	\$65,323
Individual Benefits	
Household Vehicle Operation Cost Savings	\$274,356
Health Care Cost Savings from Active Transportation	\$727,081
TOTAL BENEFITS	\$1,325,292

Potential Future Benefits of Bicycling and Walking

Goldsboro is taking steps to improve the accessibility, safety, and quality of the bicycling and walking environment. The implementation of this plan will lay the groundwork for higher levels of active transportation and greater recognition in the future. Analysis of current bicycling and walking benefits show how active transportation is already a boon to the health and economy of the region. Investing in improvements to active transportation networks could generate even greater annual benefits.

Future growth in bicycling and walking rates in Goldsboro would generate economic, environmental, and health benefits greater than the current estimate of \$1.3 million in annual benefits to the region. **If bicycle- and walk-to-work rates double to 1.0% and 4.4%, respectively, local benefits from bicycling could reach \$1.9 million per year. If these rates were triple their current levels, with 1.5% of workers commuting by bike and 6.6% walking to work, the benefits would equal nearly \$2.5 million per year in benefits** from improved air quality, social benefits, and individual vehicle cost savings and health care cost savings. The table on the following page shows the monetized annual benefits of bicycling and walking for transportation in the Goldsboro at these increased rates.

The potential benefits of increased bicycling and walking rates in Goldsboro make a strong case for increased investment in active transportation infrastructure. The new bicycling and walking facilities proposed in this plan will become valuable assets that will increase the health, affordability, and livability of the Goldsboro area.



Category	Benefits at Current Mode Shares	Benefits if Mode Share Doubles	Benefits if Mode Share Triples
Annual VMT Reduced	435,486	776,205	1,116,925
Air Quality			
CO ₂ Emissions Cost Reduced	\$8,715	\$15,534	\$22,352
Other Vehicle Emissions Cost Reduced	\$5,944	\$10,595	\$15,246
Total Vehicle Emissions Cost Reduced	\$14,659	\$26,129	\$37,598
Social Benefits			
Reduced Traffic Congestion Costs	\$30,484	\$54,334	\$78,185
Reduced Vehicle Crash Costs	\$213,388	\$380,341	\$547,293
Reduced Road Maintenance Costs	\$65,323	\$116,431	\$167,539
Individual Benefits			
Household Vehicle Operation Cost Savings	\$274,356	\$489,009	\$703,663
Health Care Cost Savings from Active Transportation	\$727,081	\$832,806	\$938,531
TOTAL BENEFITS	\$1,325,292	\$1,899,050	\$2,472,808

ESTIMATING INCREASED PROPERTY VALUES FROM TRAILS

In addition to the environmental, social, and individual benefits of walking and bicycling, new trails can contribute to the local economy by increasing property values. According to the National Association of Homebuilders, trails are consistently ranked one of the most important community amenities by prospective homebuyers, above golf courses, parks, security, and others.¹ Seventy percent of Americans say that having bike lanes or paths in their community is important to them,² and two-thirds of homebuyers consider the walkability of an area in their purchase decision.³

This preference for communities that accommodate walking and bicycling is reflected in property values across the country.⁴ A study of over 90,000 U.S. home sales found that better walking conditions were correlated with higher housing prices in 13 of the 15 housing markets studied, controlling for other factors that influence housing value. The results showed that houses in walkable neighborhoods have property values \$4,000 to \$34,000 higher than houses in areas with average walkability.⁵ In Apex, North Carolina, the Shepard's Vineyard housing development added \$5,000 to the price of 40 homes adjacent to the regional greenway – and those homes were still the first to sell.⁶ A similar study in Ohio found that the Little Miami Scenic Trail increases single-family home property values by \$7.05 for every foot closer a property is located to the trail.⁷ These cases show the tangible economic benefits that walking and bicycling projects have for homeowners, and the premium that people are willing to pay to live in places that accommodate walking and bicycling.



The economic benefit of investing in trails, from a property value standpoint, is twofold. First, these investments tend to increase nearby property values, thereby generating household wealth. Second, to the extent that these increased property values are properly accounted for in property assessments, they then result in additional annual property tax revenues to municipalities and school districts. **The literature on trails and property values, including the cases above and others, suggests that the property value increase generated by new trails on nearby residential properties is about 4 to 7 percent of the current property value.**^{8,9,10,11} In addition, another non-quantifiable benefit is the retention of current Goldsboro residents and attractiveness for new residents and businesses.

Calculating Property Value Increases from New Trails in Goldsboro

To estimate the economic impact that the trails proposed in this plan will have on Goldsboro's economy, this analysis assumes that the trails will result in a one-time 4 percent increase in the value of properties located within a one-quarter mile of the new infrastructure.¹² Only residential properties within City of Goldsboro were included in this estimate, since the existing literature does not confirm whether these same increases would be seen in commercial properties. With the proposed 20.4 miles of trail and 3.5 funded miles of trail, the value of approximately 5,500 residential properties in Goldsboro will be affected, generating a total aggregate property value increase of \$21.9 million (see table below). If we assume a 7 percent increase in property values, representing the high end of estimates from existing literature, the total aggregate property value increase for Goldsboro residential properties would be \$38.4 million.

Proposed Trail Miles	Funded Trail Miles	Total Trail Miles	Total Residential Properties Affected	Estimated 4% Property Value Increase	Estimated 7% Property Value Increase
20.4	3.5	23.9	5,564	\$21,924,834	\$38,368,459

When considering return-on-investment (ROI), the benefit of building greenways (at estimated \$500,000/mile) for property value increase alone is nearly 2:1 (at 4% property value increase) and 3.5:1 (at 7%). Given the other positive economic impacts of greenways, these numbers are convincing.

Conclusion

This appendix has discussed the many types of economic benefits that can result from an increase in walking and bicycling rates and new investments in active transportation in Goldsboro. The actual benefits realized will depend on whether, where, and to what degree active transportation infrastructure is implemented throughout Goldsboro and surrounding areas, and how people and organizations respond to the existence of these amenities. Nevertheless, this analysis provides an initial approximation of the type and magnitude of economic impact that Goldsboro can expect to see from increased walking and bicycling infrastructure investments and activity. The results suggest that active transportation can provide very real and very large economic returns to the Goldsboro area and its residents.



Endnotes

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3. National Association of Realtors. (2011). The 2011 Community Preference Survey: What Americans are looking for when deciding where to live. Retrieved from <http://www.stablecommunities.org/sites/all/files/library/1608/smartgrowthcommsurveyresults2011.pdf>
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5. Cortright, J. (2009). Walking the Walk: How walkability raises housing values in U.S. cities. CEOs for Cities.
6. Rails to Trails Conservancy. (2005). Economic benefits of trails and greenways.
7. Karadeniz, D. (2008). The impact of the Little Miami Scenic Trail on single family residential property values. College of Design, Architecture, Art and Planning, University of Cincinnati. Retrieved from http://etd.ohiolink.edu/view.cgi?acc_num=ucin1211479716
8. Econsult Corporation. (2010). Quantifying the Economic Value of Protected Open Space in Southeastern Pennsylvania.
9. Campbell, and Monroe, . (2004). The Economic Impact of the Catawba Regional Trail.
10. Econsult Corporation. (2007). The Potential Economic Impacts of the Proposed Carolina Thread Trail.
11. Econsult Corporation. (2010). Valuing the Conversion of Urban Green Space.
12. What is meant by this assumption is that, all else equal, properties located within a quarter-mile of the new facilities will increase in value by 4 percent more than other, similar properties not located within a quarter-mile of the trail. Thus, if properties in the area increase in value by 3 percent, then properties located within a quarter-mile of the trail will increase by 7 percent (3 percent + 4 percent), while if properties in the area decrease in value by 3 percent, then properties located within a quarter-mile of the trail will increase by 1 percent (-3 percent + 4 percent). This may turn out to be conservative on one or more of three fronts. First, the one-time property value increase may be larger than 4 percent, as is suggested by the body of literature. Second, there may be a difference in the ongoing appreciation rate over time between properties located within a quarter-mile of the infrastructure and properties not located within a quarter-mile of the trail, such that the property value increase resulting from the implementation of the trail is not just the upfront 4 percent difference but also some ongoing difference that grows over time. Third, some upfront and/or ongoing difference in property value may apply to properties that are not located within a quarter-mile of the infrastructure but are still reasonably close to the trail; for example, properties located between a quarter-mile and a half-mile of the trail may sell for a premium, since such a distance from the trail may still be considered easily covered on foot.