

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study

Final Report
March 2006



in conjunction with



and



Bike and Pedestrian Pathways Plan

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Final Report

March 2006

Submitted to



Submitted by



in association with



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ES. EXECUTIVE SUMMARY

The Bicycle and Pedestrian Pathways Plan examines bicycle and pedestrian related concerns and identifies what actions can be taken to develop best practices, policies, strategies, and tangible bicycle and pedestrian projects, in order to encourage and advance bicycling and walking as viable modal choices in the Columbia Area Transportation Study (COATS) region.

The vision for the plan is: The Central Midlands region will be a place where people choose to make walking and/or bicycling a part of their everyday lives. Residents and visitors will walk and ride with confidence, safety, and security, as bicycling and walking become a routine part of our transportation system. Based on this vision, a number of goals were established for the planning process:

- GOAL 1:** To provide a safe, efficient, and accessible transportation system to all residents and visitors, which allows them to walk and bicycle alongside other modes with independence and comfort.

- GOAL 2:** To foster bicycle and pedestrian access and mobility in all transportation and development projects at local, regional, and state levels of government and in all project phases, including planning, design, construction, and maintenance.

- GOAL 3:** To support and encourage the integration of transportation and land use decisions that result in the promotion of development patterns that allow bicycling and walking to be viable, everyday modes of travel.

- GOAL 4:** To support and enhance healthy lifestyles and good stewardship of the environment by providing safe and convenient opportunities for bicycle and pedestrian travel, thereby increasing active living, while reducing auto emissions and fuel usage.



GOAL 5: To identify opportunities, funding sources, and responsible public and private agencies/entities at the local, regional, and state levels so that bicycle and pedestrian projects and programs can be implemented.



Bike lanes and sidewalks presently exist along Knox Abbott Drive.

The 2005 COATS study area boundary was utilized as the study area for the Bike and Pedestrian Pathways Plan. The COATS study area includes the urban areas of Richland and Lexington counties as well as portions of Kershaw County to the east and Calhoun County to the south to account for urban commuter patterns between Columbia and outlying suburbs.

Public involvement was essential to the success of this project; therefore, communication between the Project Team and the public was ongoing in the form of a Public Involvement Plan (PIP). This PIP

consisted of three major parts: establishing a Study Steering Committee (SSC) to provide overall policy and technical guidance to the plan; coordination with stakeholder groups that will have a strong influence on the implementation of the plan; and informing and soliciting comments/suggestions from the general public primarily through two public meetings held on July 19, 2005 and November 14, 2005.

ES.I Existing Laws, Policies, Programs, and Facilities

A variety of existing laws, policies, programs, and facilities influence bicycle and pedestrian accommodations within the COATS region. These include initiatives at both the state and local levels. A review of the following was conducted:

- Laws that regulate pedestrian and bicycle travel within South Carolina;
- South Carolina Department of Transportation (SCDOT) policies, programs, and projects;
- Local government (i.e., municipalities and counties) policies and programs; and
- Existing bicycle and pedestrian facilities in the COATS region.

ES.2 Bicycle and Pedestrian Trip Generation

Bicycle and pedestrian trips are made between many combinations of origins and destinations in the Central Midlands region. Non-motorized trips often originate from residents homes; therefore, population density is an important indicator of pedestrian and bicycle trip potential. Bicycle and pedestrian trips can also start from a place of employment (e.g., walking to a restaurant for lunch), originate from public transportation (e.g., bringing a bike on a CMRTA bus and then riding the rest of the way to a park), or be included in travel between several activities (e.g. walking between stores in a commercial area or making a side trip to the post office from a friend's house).

The Central Midlands Council of Governments (CMCOG) has gathered a large amount of geographic information system (GIS) data that assisted in the identification of locations in the region where a high potential for bicycle and pedestrian activity exists. The features that were utilized in evaluating the potential for non-motorized travel included: residential areas; employment sites; retail space; colleges and universities; primary and secondary schools; parks; libraries; churches; and bus routes.

It was determined that a number of areas of the Central Midlands region have land use patterns that are especially conducive to non-motorized travel. Traditional downtown areas, neighborhoods adjacent to commercial, religious, and educational uses, and areas near the University of South Carolina and Fort Jackson all have excellent potential for bicycle and pedestrian trips.

ES.3 Bike and Pedestrian Strategies

Bike and pedestrian strategies were developed based on existing conditions and associated opportunities and constraints, vision statement, goals, stakeholder meetings, and public feedback received. The goal of the strategies is to develop a synergy between the recommendations of the plan and the policies and practices of member governments and SCDOT (i.e., those responsible for roadway design, construction, and maintenance).

Over 35 strategies were developed and classified into 8 major groupings. From these, 12 Early Action Strategies were identified as priorities in the successful implementation of the plan. These

strategies are presented below and should be pursued during the first 0-2 years after the plan is adopted.

Early Action Strategies

(See Section 5 of the Bike and Pedestrian Pathways Plan for a detail description of each strategy)

1. Establish a full-time bike and pedestrian coordinator for the COATS region.
2. Draft a model ordinance with language that requires pedestrian facilities in new developments and supports pedestrian and bicycle connectivity.
3. Establish a Safe Routes to School program.
4. Encourage member governments to adopt bicycle and pedestrian design guidelines.
5. Encourage USC to develop a pedestrian and bicycle plan for the campus and surrounding neighborhoods.
6. Encourage the SCDOT to draft an engineering directive for pedestrian accommodations.
7. Evaluate the suitability of roads throughout the region for bicycle and pedestrian travel using Bicycle and Pedestrian Level of Service Models.
8. Develop a bicycle map for the Central Midlands region.
9. Create and maintain a comprehensive database of location, type, and condition of bicycle facilities.
10. Collect and analyze police-reported pedestrian crashes from the past five years.
11. Conduct a bus stop access improvement study.
12. Work with law enforcement agencies to conduct increased enforcement of laws pertaining to bicycle, pedestrian, and automobile travel.

ES.4 Recommendations

Specific components of the plan include pedestrian facility improvements, bicycle facility improvements, and Early Action Projects. An implementation plan was developed that included detailed cost estimates for Early Action Projects and routing and phasing plans for bicycle and pedestrian facility improvements.

The following page lists the 26 Early Action Projects and their geographic locations are depicted in **Figure ES-1**. These projects are the first actions that should be taken to improve bicycling and walking in the Central Midlands region. They have the potential to be implemented relatively quickly (i.e. in the first 0-2 years following adoption of the plan), providing funding can be secured, which will build excitement and momentum for the other future bicycle and pedestrian initiatives outlined in the plan. The Early Action Projects are described in detail in Section 6 of the Bike and Pedestrian Pathways Plan.

Early Action Projects

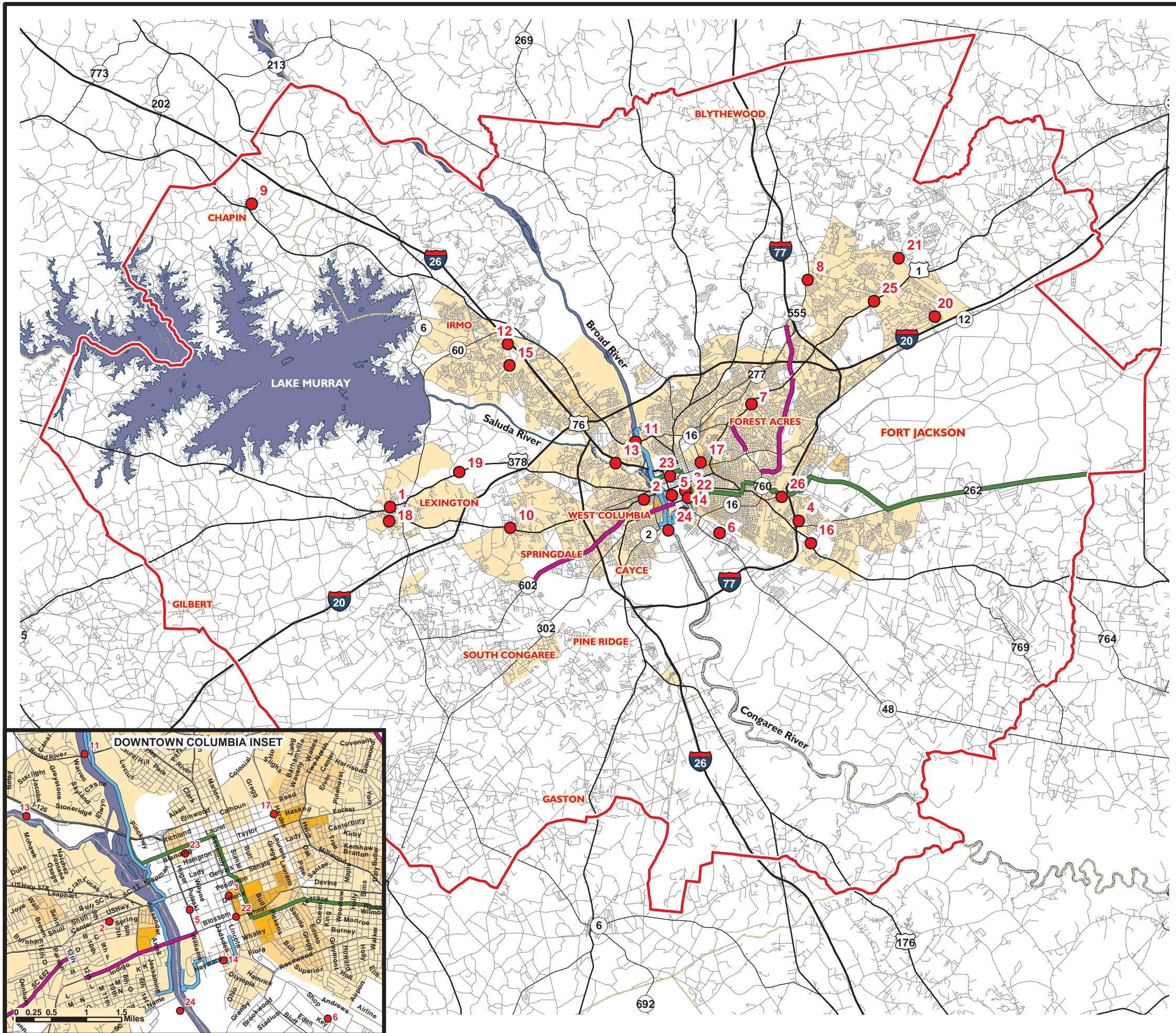
(See Section 6 of the Bike and Pedestrian Pathways Plan for a detailed description of each project)

1. Improve pedestrian crossings at the intersection of North Main Street (US 1) and Columbia Avenue (US 378) in the Town of Lexington.
2. Establish a signed bike route and striped shoulders on Center Street in the City of West Columbia.
3. Stripe bike lanes on Assembly Street in downtown Columbia.
4. Provide signage that shows bicyclists how to get to the Pennington Drive underpass to cross I-77 in Richland County.
5. Improve the signage and connection between the University of South Carolina and Three Rivers Greenway.
6. Construct new sidewalks and bus shelters on both sides of Shop Road on the south side of Columbia.
7. Stripe bike lanes on Two Notch Road between Beltline Boulevard and Parklane Road on the northeast side of Columbia, Forest Acres, and Richland County.
8. Add a paved shoulder on Farrow Road between Hard Scrabble Road and Clemson Road in Richland County.
9. Add sidewalks and bike lanes on Columbia Avenue between downtown Chapin and Chapin High School.
10. Construct sidewalks on both sides of Augusta Road (US 1) in Lexington County.
11. Include wide sidewalks and bike lanes on the new Broad River Road (US 176) Bridge.
12. Add sidewalks on both sides of Columbiana Drive on the south side of Irmo.
13. Develop a design for the Three Rivers Greenway along the Saluda River.
14. Provide a connection between the Three Rivers Greenway in the Granby Park area and Gervais Street in Columbia.
15. Install pedestrian signals and crosswalks at intersections along Harbison Boulevard on the south side of Irmo.
16. Improve pedestrian conditions along Garners Ferry Road (US 76/US 378) between Veteran Road and Benson Road.
17. Provide new pedestrian signals at the intersection of Laurel Street and Harden Street in Columbia.
18. Kick off a new Neighborhood Sidewalk Program in the Town of Lexington.
19. Provide sidewalks on both sides of Sunset Boulevard (US 378) on the east side of the Town of Lexington.
20. Add new sidewalks on both sides of Clemson Road in the commercial area north of Percival Road in Richland County.
21. Improve pedestrian accommodations at the intersection of North Springs Road and Clemson Road in Richland County.
22. Provide new facilities to accommodate pedestrians at the intersection of Blossom Street and Assembly Street in Columbia.
23. Start planning for a new greenway trail in the abandoned rail corridor between Elmwood Park and Downtown Columbia.
24. Plan and design an extension to the Three Rivers Greenway to the south of Cayce along the Congaree River.
25. Add sidewalks on the southeastern side of Two Notch Road in the commercial area between North Brickyard Road and Burmaster Drive in Richland County.
26. Study the Kilbourne Road/Shady Lane/Kings Grant Drive/Fort Jackson Boulevard area and develop a conceptual design for bicycle facility improvements.

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Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study



LEGEND

EARLY ACTION PROJECTS*

- 1 - Improve pedestrian crossings
- 2 - Establish a bike route and striped shoulders
- 3 - Stripe bike lanes
- 4 - Provide signage
- 5 - Improve signage and connection to greenway
- 6 - Construct new sidewalks and bus shelters
- 7 - Stripe bike lanes
- 8 - Add paved shoulder
- 9 - Add sidewalks and bike lanes
- 10 - Construct sidewalks
- 11 - Include wide sidewalks and bike lanes
- 12 - Add new sidewalks
- 13 - Design greenway
- 14 - Provide greenway connection
- 15 - Install pedestrian signals and crosswalks
- 16 - Improve pedestrian conditions along road
- 17 - Provide pedestrian signals
- 18 - Start neighborhood sidewalk program
- 19 - Provide sidewalks
- 20 - Add new sidewalks
- 21 - Improve intersection for pedestrians
- 22 - Provide pedestrian facilities at intersection
- 23 - Plan for new greenway trail
- 24 - Plan and design greenway extension
- 25 - Provide sidewalks
- 26 - Concept design for bicycle improvements

POPULATION (Per Sq. Mi.)**

- Under 1,000
- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 24,999
- 25,000 - 50,000

EXISTING FACILITIES

- Bike Lanes
- Shared-Use Path
- Palmetto Trail

COATS Study Area

*Full descriptions of the Early Action Projects are provided in the text of this document.
 **Population is for year 2000.

Source: PB & TDG 2005
 Map Created: 12/30/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

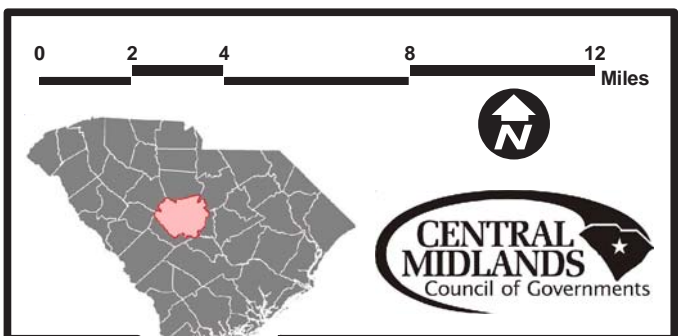


Figure ES-1
 Early Action Projects

I. INTRODUCTION

I.1 Background

Residents of the Central Midlands region walk and bicycle every day. Some of these pedestrian and bicycle trips are for recreation and exercise, while many others are made to reach destinations, such as offices, schools, homes of friends and family, bus stops, and stores. The pedestrians and bicyclists of the region include people walking along the side of the road in rural areas near Gaston and Blythewood and urban pedestrians on the sidewalks of downtown Columbia and the University of South Carolina (USC); they include groups of bicyclists riding on a tour in southern Richland County and bicyclists riding home with groceries on Broad River Road.



Progress has been made toward making non-motorized transportation safer and more convenient over the past 10 years, including the development of the Three Rivers Greenway and Palmetto Trail systems, addition of pedestrian overpasses across SC 277 and on the USC campus, construction of over 15 miles of bicycle lanes, and installation of bicycle racks on CMRTA buses.



While improvements have been made, many barriers still exist to bicycling and walking in the Central Midlands region. These barriers include many roadways without sidewalks and shoulders; wide, high-speed roadways that are difficult to cross; inadequate route signage; uncleared roadway debris; development regulations lacking requirements for sidewalks or other non-motorized facilities; and a lack of bicycle and pedestrian safety education and enforcement. Additionally, although not unique to the Central Midlands region, low-density, “sprawl-like” development has also contributed to making walking and biking less attractive modes of travel. This document presents a plan to improve conditions for pedestrians and bicyclists and thereby encourage the use of these modes for everyday travel.

I.2 Statement of Purpose

The Bicycle and Pedestrian Pathways Plan examines bicycle and pedestrian related concerns and identifies what actions can be

taken to develop best practices, policies, strategies, and tangible bicycle and pedestrian projects, in order to encourage and advance bicycling and walking as viable modal choices in the Columbia Area Transportation Study (COATS) region.

I.3 Report Format

This information presented in this final report is derived from three technical memoranda prepared during the course of the project, and further refined based upon the comments of the general public, stakeholders, and agencies having jurisdiction over bicycle and pedestrian facilities in the Central Midlands region.

This memorandum is divided into seven main sections. Section 1 provides background information, review of previous plans and studies, limits of the study area, an overview of the public involvement plan, and the vision and goals of the plan. Section 2 presents state laws, SCDOT and local government policies and programs, and existing bicycle and pedestrian facilities in the COATS region. Bicycle and pedestrian trip generation is discussed in Section 3. Section 4 outlines opportunities and constraints with regard to implementation of bicycle and pedestrian improvements. Section 5 presents strategies for improving bicycle and pedestrian travel within the Central Midlands region, while Section 6 offers specific plan components including Early Action Projects and regional bike and pedestrian facilities. Finally, a preliminary implementation plan including short-, medium-, and long-term projects, as well as potential responsible entities are presented in Section 7.

I.4 Previous Planning Documents

As a first step in familiarization of the project, two previous planning documents, with direct relation to the development of this Bike and Pedestrian Pathways Plan, were examined as follows:

- *Columbia Area Bikeways and Pedestrian Pathways Study, 1996, Central Midlands Council of Governments (CMCOG); and*
- *Long-Range Intermodal Transportation Plan 2025, September 2003, CMCOG;*

Content was reviewed to minimize redundant data collection, to provide insight into bicycle and pedestrian facilities in the region,

and gain an understanding of previous recommendation rationale. These documents are summarized in Appendix A.

1.5 Study Area

The 2005 COATS study area boundary, as depicted in **Figure 1.5-1**, was utilized as the study area for this Bike and Pedestrian Pathways Plan. The COATS study area includes the urban areas of Richland and Lexington counties as well as portions of Kershaw County to the east and Calhoun County to the south to account for urban commuter patterns between Columbia and outlying suburbs.

1.6 Public Involvement Plan

Public involvement was essential to the success of this project; therefore, communication between the Project Team and the public was ongoing in the form of a Public Involvement Plan (PIP). This PIP consisted of three major parts: establishing a Study Steering Committee (SSC) to provide overall policy and technical guidance to the plan; coordination with interested stakeholders; and informing and soliciting comments/suggestions from the general public.

1.6.1 Study Steering Committee

The SSC was formed to oversee and guide the plan process. The members of the SSC were selected given their particular expertise and involvement in bicycle and pedestrian issues. The following organizations comprised the SSC:

- CMCOG;
- City of Columbia;
- Palmetto Cycling Coalition (PCC);
- Richland County;
- South Carolina Department of Health and Environmental Control (SCDHEC); and
- SCDOT.

Four separate SSC meetings were held. The purpose of these meetings was to focus the major objectives of the project, identify

data needs, review work products, and discuss potential policies, strategies, and implementation plans.

1.6.2 Project Stakeholders

With the assistance of the SSC, a list of key stakeholders for bicycle and pedestrian issues was developed. Emphasis was placed on meeting with stakeholder groups that will have a strong influence on the implementation of the plan. Input from individual citizens and other groups interested in pedestrian and bicycle issues was gathered through public meetings (see Section 1.5.3).

Individual stakeholder meetings were conducted with the following groups (listed in the order they were conducted):

- Representatives from Low- to Moderate-Income Communities;
- City of Columbia;
- South Carolina Department of Transportation (SCDOT);
- Richland County;
- University of South Carolina (USC); and
- Lexington County.

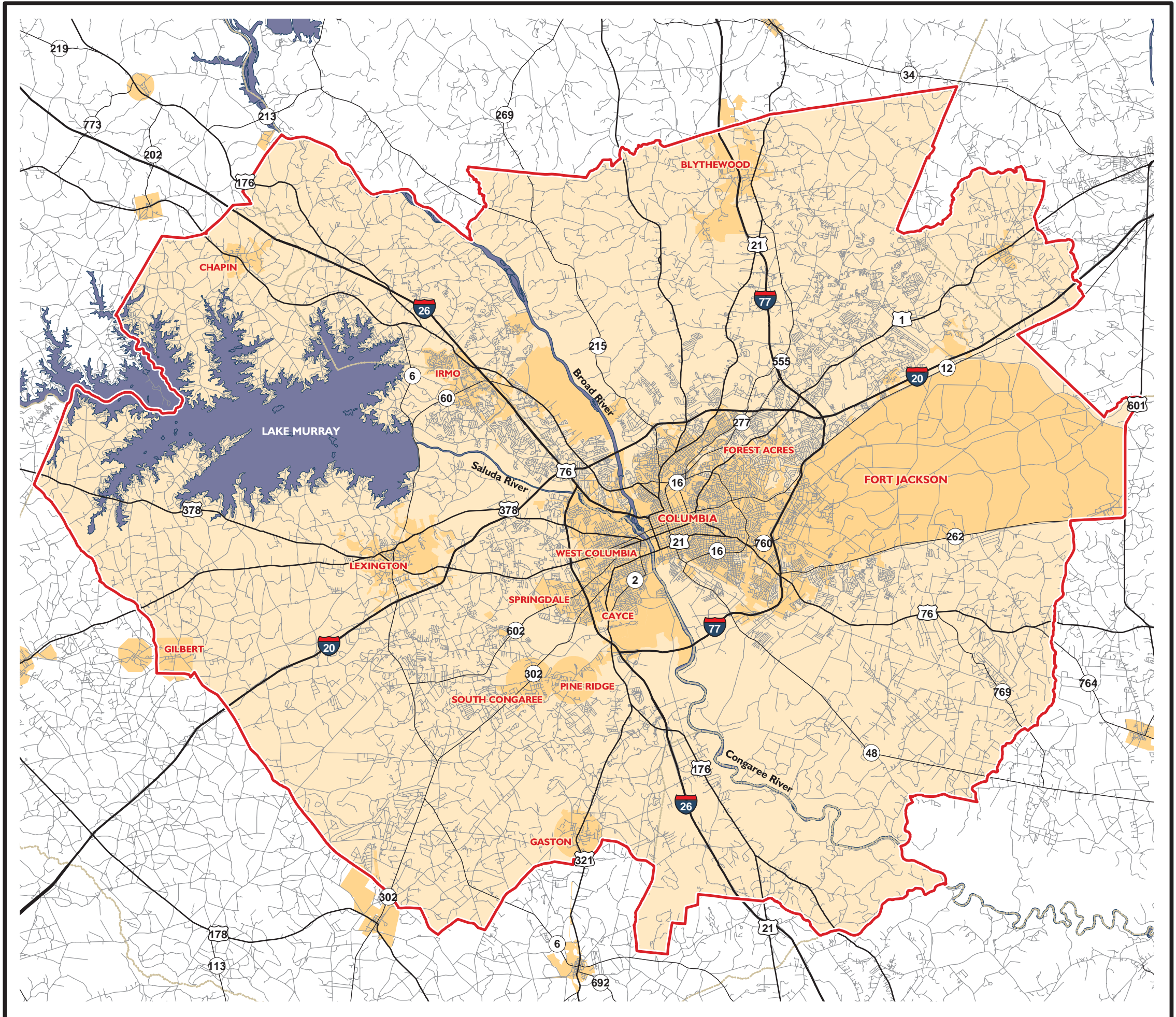
A brief presentation was made at the beginning of each meeting to introduce the project, with the remainder of the meeting dedicated to a roundtable discussion of pedestrian and bicycle issues. A one-page questionnaire/comment form was distributed at the end of each meeting to receive formal feedback. Summaries of these meetings, along with sign-in sheets and comment forms, are included in Appendix B.

1.6.3 Opportunities for Public Comment


In order to solicit comments and to ensure public acceptance of the Bike and Pedestrian Pathways Plan, two public information meetings/workshops were included in the plan process. The first public meeting was held on Tuesday, July 19, 2005 from 5:00 p.m. to 7:00 p.m. in the Vista Community Room of the Suggs and Kelly Law Center at 500 Taylor Street in Columbia. Topics such as potential “piggyback” projects and local and state policies and programs were discussed. In addition, this meeting served to inform the public of existing conditions and data analysis performed to date. A brief presentation highlighted the efforts of

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study




LEGEND


 COATS Study Area

Source: CMCOG 2005
 Map Created: 05/24/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

0 2 4 8 12 Miles








Figure 1.5-1
Study Area

previous planning documents, draft vision and goals, study boundaries, and next steps in the planning process. Additionally, an interactive map was available where participants could use various colored markers to delineate preferable biking and walking/running areas, as well as provide specific suggestions for improving non-motorized facilities within the COATS region.

The second and final public meeting, held on November 14, 2005 (also at the Vista Community Room), served to present a recap of the previously presented information, but mainly centered on presenting specific recommendations, including Early Action Projects, pedestrian and bicycle routing, and implementation plans.

Public meetings were conducted in an open house format to maximize involvement and comment by those who might be intimidated by a formal public meeting. Opportunity was provided at each meeting for the public to give feedback through verbal communication with the Project Team and by submitting written comments via comment sheets. The option was given for comment sheets to be filled out during the meetings, or participants were welcome to take a sheet with them and return it via mail, email, or fax. All completed comment forms and meeting sign-in sheets are on file with CMCOG and available for review upon request.

The draft plan was also posted on the CMCOG website between November 14, 2005 and December 14, 2005 to give members of the public the opportunity to submit comments via e-mail or telephone.

1.7 Vision and Goals

The project team, in conjunction with the SSC, developed a draft vision statement that was presented at the first public meeting. Comments were received and the draft statement was refined to establish a concise and focused vision for the plan:



The public meeting was held in an open house format to facilitate public participation.



Participants were encouraged to document where they like to walk and bicycle and where improvements are needed.

The Central Midlands region will be a place where people choose to make walking and/or bicycling a part of their everyday lives. Residents and visitors will walk and ride with confidence, safety, and security, as bicycling and walking become a routine part of our transportation system.

Based on the vision above, the following goals were formulated by the project team and SSC, and ratified by the public.

- GOAL 1: To provide a safe, efficient, and accessible transportation system to all residents and visitors, which allows them to walk and bicycle alongside other modes with independence and comfort.
- GOAL 2: To foster bicycle and pedestrian access and mobility in all transportation and development projects at local, regional, and state levels of government and in all project phases, including planning, design, construction, and maintenance.
- GOAL 3: To support and encourage the integration of transportation and land use decisions that result in the promotion of development patterns that allow bicycling and walking to be viable, everyday modes of travel.
- GOAL 4: To support and enhance healthy lifestyles and good stewardship of the environment by providing safe and convenient opportunities for bicycle and pedestrian travel, thereby increasing active living, while reducing auto emissions and fuel usage.
- GOAL 5: To identify opportunities, funding sources, and responsible public and private agencies/entities at the local, regional, and state levels so that bicycle and pedestrian projects and programs can be implemented.

2. EXISTING LAWS, POLICIES, PROGRAMS, AND FACILITIES

A variety of existing laws, policies, programs, and facilities influence bicycle and pedestrian accommodations within the COATS region. These include initiatives at both the state and local levels. This section presents an overview of some of the policies, programs, and facilities in the study area.

2.1 South Carolina Law

Chapter 5 of the South Carolina Code of Laws (i.e., Uniform Act Regulating Traffic on Highways) includes not only regulations for automobiles, but also for pedestrian and bicycle travel on roadways within the state (excerpts from the SC Code of Laws pertaining to bicycles and pedestrians are included in Appendix C). Regulations concerning pedestrians are very clear and concise. Some key pedestrian concepts in the SC Code of Laws include:

- Vehicles must yield to pedestrians that are in marked crosswalks on the same half of the road as the vehicle;
- Vehicles turning across sidewalks must yield to pedestrians on the sidewalk;
- Pedestrians must follow all traffic-control devices and traffic regulations, including not darting out into traffic; and
- Drivers must exercise due care to avoid colliding with pedestrians at any location on the roadway.

The SC laws pertaining to bicycle travel are not conclusive.¹

¹ A key area that is not clear is whether or not bicycles are permitted on the shoulders of roadways. The SC Code of Laws specifically gives bicycles the legal right to use roadways (56-5-3420) and states that bicyclists should ride as far to the right as possible (56-5-3430). However, the Code defines a “roadway” as “that portion of a highway improved, designed or ordinarily used for vehicular travel, exclusive of the shoulder or berm” (56-5-460). This clearly defines that the shoulder is not part of the roadway and the Code does make it plain that vehicles are to travel on roadways; although, it does not specifically state that vehicles are prohibited from shoulders. To further confuse the issue, the Code (56-5-3430) states that whenever a “usable path” has been provided adjacent to the roadway, bicyclists must use it. This begs the question, is the shoulder a “usable path” adjacent to the roadway, since it is not part of the roadway? To take that one step further, if the shoulder is a “usable path,” bicyclists would be

In order for bicycle travel to be attractive as a viable modal choice, it is essential that legislation pertaining to such travel be clear and not contradictory. This legislation should allow bicyclists to operate in the safest manner possible in the roadway environment. This includes permitting bicyclists to ride on shoulders, on sidepaths, and in travel lanes in appropriate situations. For example, while bicyclists should usually ride as far to the right on the roadway as possible (as stated in the current law), there are times when moving left into travel lanes is appropriate, such as positioning safely to make turning movements, passing vehicles, or avoiding debris and roadway surface hazards.

2.2 SCDOT Policies, Programs, and Projects

In recent years the SCDOT has made significant strides in advancing biking and walking as viable modes in South Carolina. CMCOG can take advantage of initiatives at the state level to enhance bicycle and pedestrian travel in the COATS study area.

2.2.1 SCDOT Bicycle and Pedestrian Milestones

SCDOT has achieved the following milestones for improving bicycle and pedestrian transportation within the past five years².

- Early in 2002, Executive Director Elizabeth Mabry launched a “new initiative” to establish partnerships to provide more facilities for bicycling and walking in South Carolina. A Bicycle and Pedestrian Infrastructure Advisory Committee was formed in June 2002, composed of representatives of the private sector, the General Assembly, other state agencies, and walking and cycling advocacy groups.
- In December 2002, SCDOT conducted a first-ever Bicycle and Pedestrian Accommodations Conference to bring together the partners and agency personnel who will work together towards improving the quality and number of statewide non-motorized facilities. The fourth annual conference was recently held December 7-9, 2005.
- In February 2003, the SCDOT Commission approved a resolution affirming that bicycling and walking accommodations

prohibited from using travel lanes on roadways with shoulders (i.e., crossing the white line into the travel lane), which is not a good situation either.

² http://www.scdot.org/getting/BikePed/BP_default.shtml

should be a routine part of the Department's planning, design, construction and operating activities, and will be included in the everyday operations of its transportation system (this resolution is included in Appendix D).

- During the October 2003 Commission meeting, it was announced that \$2.5 million from the state's Transportation Enhancement fund would be dedicated to providing paved shoulders on bicycle tour routes.

2.2.2 SCDOT Engineering Directive No. 22

SCDOT's "Engineering Directive No. 22" is a direct product of the Department's February 2003 resolution to include bicycle and pedestrian accommodations in all aspects of transportation projects. This memorandum represented a major step forward for bicycle transportation in South Carolina. Key bicycle facilities that are recommended include (the entire directive is included in Appendix D):

- Wide outside lanes (minimum 14-foot width);
- Paved shoulders/bike lanes (minimum 4-foot width when traffic volumes are >500 ADT);
- Wide shoulders (minimum 6- to 10-foot width on roads with high speeds and heavy truck use); and
- Bridge travel lanes and shoulders that match the approach roadway width, (i.e., the width of the bridge should include bike lanes/paved shoulders).

The directive also states that motor vehicle lane and median widths may be reduced to accommodate bicycle facilities and provides typical roadway cross sections that include bicycle facilities.

Opportunities to improve this directive also exist:

- There should be greater flexibility for selecting appropriate bicycle facilities in both urban and rural areas;
- Bicycle lanes and paved shoulders are not always appropriate under the same conditions, so they should be described separately; and

SCDOT's "Engineering Directive No. 22" represented a major step forward for bicycle transportation in South Carolina.

- Motor vehicle travel lanes in the typical roadway cross sections could be narrowed to 10- or 11-foot-wide for certain conditions.

Finally, SCDOT should issue a similar engineering directive for pedestrian accommodations. Nearly all transportation trips include a pedestrian component, and pedestrian travel is especially common on SCDOT roadways in urban and suburban areas.

2.2.3 SCDOT Projects

SCDOT owns and maintains more than 42,000 miles of roadways in the state of South Carolina. Based on this fact alone, it is apparent that for a comprehensive network of on-road bicycle and pedestrian connections to be realized in the COATS region, the SCDOT and local governments must be in partnership. Bicycle and pedestrians should be accommodated in all SCDOT improvement projects, ranging from new roadways to the daily maintenance of existing facilities. While some roadways are not suitable for bicyclists and pedestrians to travel, like interstate highways, safe and convenient access should be maintained for bicyclists and pedestrians to cross these and other major roadways.

SCDOT has a variety of projects that are programmed in “groups” directly at the state level that may provide opportunities for bicycle and pedestrian connectivity. These types of projects are presented in **Figure 2.2-1** and are outlined below.




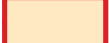
Maintenance Projects

Maintenance projects take on a variety of forms from restriping to paving to signage replacement. A current listing of all maintenance projects is somewhat difficult to attain, as they are highly dynamic. As conditions change, projects are moved to the top of the priority list based on need. SCDOT’s District One Maintenance Office provided a “tentative” listing of resurfacing projects, and they are presented in **Table 2.2-1**. This list is dynamic and subject to change based on a variety of factors; however, it did assist in identifying the potential for bicycle and pedestrian improvements in the COATS study area as part of on-going roadway resurfacing.

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study

LEGEND

-  Bridge Rehab/Replacement
-  CRISOS Projects
-  Maintenance Resurfacing Projects
-  COATS Study Area

Note: All projects depicted here are tentative in nature and subject to change due to funding and other reasons.

Source: SCDOT 2005
Map Created: 12/30/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

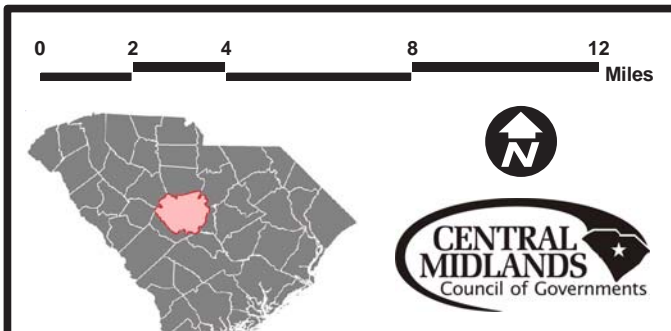


Figure 2.2-1
SCDOT Planned Projects With Potential
Bicycle and Pedestrian Facilities

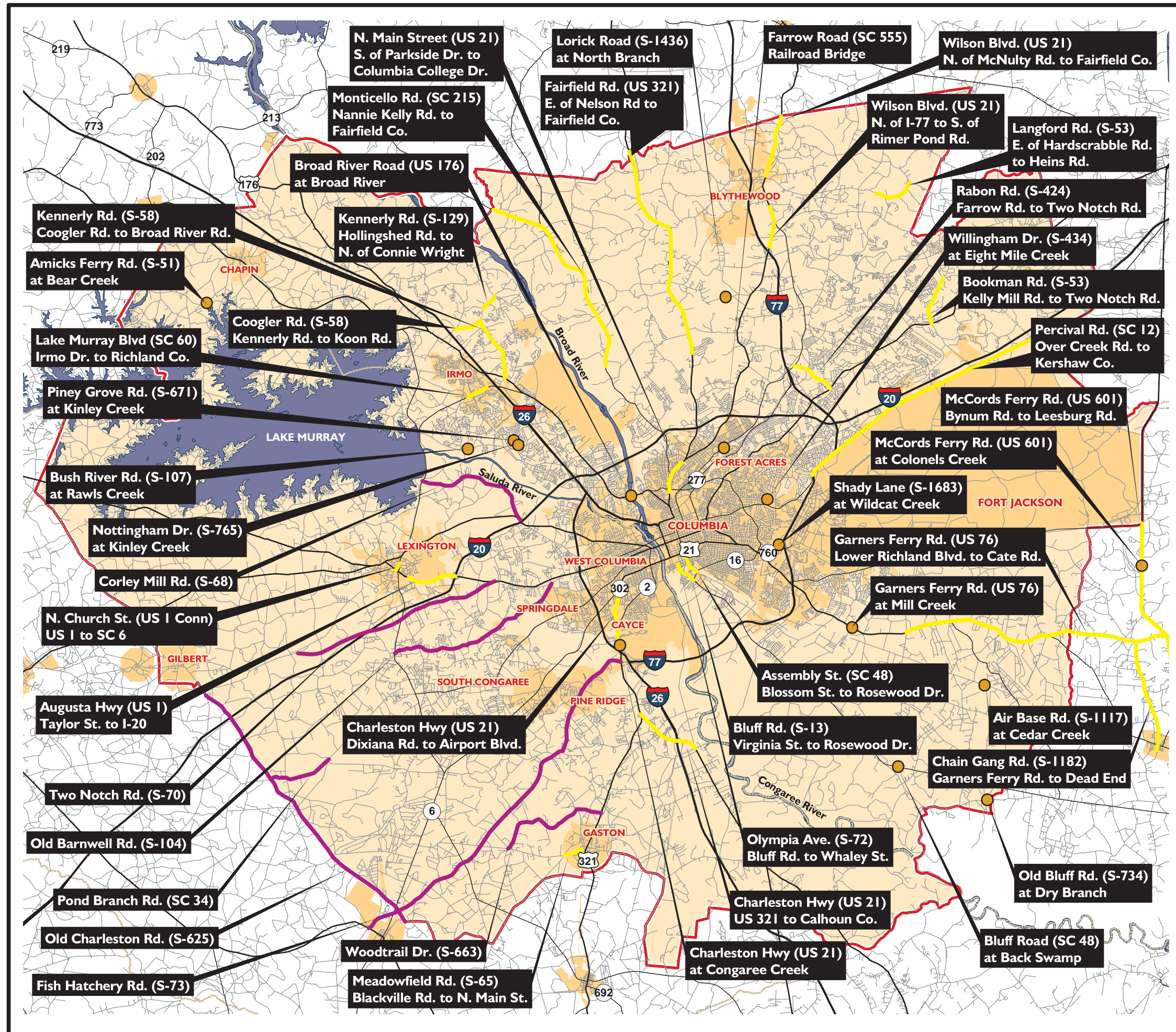


Table 2.2-1
SCDOT District One Resurfacing Projects*

Road	Beginning	End
Assembly Street (SC 48)	Blossom Street	Rosewood Drive
Augusta Highway (US 1)	Taylor Street	I-20
Bluff Road (S-13)	Virginia Street	Rosewood Drive
Bookman Road (S-53)	Kelly Mill Road	Two Notch Road
Chain Gang Road (S-1182)	Garners Ferry Road	Dead End
Charleston Highway (US 21)	US 321	Calhoun County Line
Charleston Highway (US 21)	Dixiana Road	Airport Boulevard
Coogler Road (S-58)	Kennerly Road	Koon Road
Fairfield Road (US 321)	0.19 mile E. of Nelson Road	Fairfield County Line
Garners Ferry Road (US 76)	Lower Richland Boulevard	Cate Road
Kennerly Road (S-129)	Hollingshed Road	0.14 mile N. of Connie Wright
Kennerly Road (S-129)	Coogler Road	Broad River Road
Lake Murray Boulevard (SC 60)	Irmo Drive	Richland County Line
Langford Road (S-53)	1 mile E. of Hardscrabble Road	Heins Road
McCords Ferry Road (US 601)	Bynum Road	Leesburg Road
Meadowfield Road (S-65)	Blackville Road	North Main Street
Monticello Road (SC 215)	Nannie Kelly Road	Fairfield County Line
North Church Street (S-91)	West Main Street	South Lake Drive
North Main Street (US 21)	0.09 mile S. of Parkside Drive	Avondale Drive
North Main Street (US 21)	Avondale Drive	Columbia College Drive
Olympia Avenue (S-72)	Bluff Road	Whaley Street
Percival Road (SC 12)	Over Creek Road	Kershaw County Line
Rabon Road (S-424)	Farrow Road	Two Notch Road
Wilson Boulevard (US 21)	0.3 mile N. of I-77	0.13 mile S. of Rimer Pond Road
Wilson Boulevard (US 21)	N. of McNulty Road	Fairfield County Line

*This is a tentative list that may be subject to changes due to funding or other reasons.

Bridge Projects

As part of the Federal Bridge Replacement and Rehabilitation Program, SCDOT replaces or rehabs bridges throughout the state that are determined to be structurally deficient. In many cases, bridges pose a constraint to the implementation of bicycle and pedestrian facilities due to limited roadway widths at their crossings; therefore, bridge improvement projects present an important opportunity to add additional sidewalk and shoulder facilities for increased bicycle and pedestrian connectivity.

Scheduled bridge rehab/replacement projects in the COATS study area are included in **Table 2.2-2**.

Table 2.2-2
SCDOT Bridge Rehabilitation / Replacement Projects*

Road	Route	Crossing	County
Air Base Road	S-1117	Cedar Creek	Richland
Amicks Ferry Road	S-51	Bear Creek	Lexington
Bluff Road	SC 48	Back Swamp	Richland
Broad River Road	US 176	Broad River	Richland
Bush River Road	S-107	Rawls Creek	Lexington
Charleston Highway	US 21	Congaree Creek	Lexington
Farrow Road	SC 555	Railroad Bridge	Richland
Garners Ferry Road	US 76	Mill Creek	Richland
Lorick Road	S-1436	North Branch	Richland
McCords Ferry Road	US 601	Colonels Creek	Richland
Nottingham Drive	S-765	Kinley Creek	Lexington
Old Bluff Road	S-734	Dry Branch	Richland
Piney Grove Road	S-671	Kinley Creek	Lexington
Shady Lane	S-1683	Wildcat Creek	Richland
Willingham Drive	S-434	Eight Mile Creek	Richland

* Projects included in the Federal Bridge Replacement and Rehabilitation Program. This is a tentative list that may be subject to changes due to funding or other reasons. There may be additional bridges that are being replaced or reconstructed under other funding programs but are not on this list.

CRISOS Projects

SCDOT has taken on a number of initiatives to improve safety on secondary roads in South Carolina, including their current program of Crash Reduction by Improving Safety on Secondaries (CRISOS). The primary focus of this program is short-term, low-cost strategies that benefit safety on secondary roads, including the addition of 2-foot paved shoulders and, where possible, 4-foot earthen shoulders. This additional width of shoulder pavement will improve conditions for bicycling and walking. CRISOS projects are currently in the early stages of design development. In the initial rollout of this program, seven CRISOS projects have been programmed within the COATS study area (see Figure 2.2-1).

2.3 Local Policies and Programs

Policies, programs, and initiatives on the local level were documented through discussions with CMCOG, contact with local governments, and research of land development regulations.

2.3.1 Transportation Improvement Program

CMCOG develops a five-year Transportation Improvement Program (TIP) for the COATS study area on a biannual basis. The TIP programs projects for funding based on a variety of evaluation and ranking criteria. Projects are consistent with the 20-year long range plan and Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) legislation and are continuously monitored to document project progress. As projects are completed they are removed from the TIP and new projects are advanced for inclusion.



Platt Springs Road is a recently completed TIP project that includes sidewalks and bike lanes.

Since funding for projects included on the TIP are managed by SCDOT, these projects should comply with SCDOT's February 2003 resolution concerning bicycle and pedestrian accommodation. As these projects move through planning, design, and construction, the COATS region will gain many additional bicycle and pedestrian facilities.

Major projects (i.e., projects given a proper name) included in the COATS TIP for Fiscal Year 2005 / Fiscal Year 2006 are depicted in **Figure 2.3-1**. These projects should be reviewed to ensure that

they will incorporate appropriate facilities for safe and convenient bicycle and pedestrian access (i.e., including safe bicycle and pedestrian access through new freeway interchanges).

Other more “generic” placeholders included in the TIP, but not in Figure 2.3-1, such as “intersection improvements” and “safety projects,” may also provide opportunities for additional enhancements to biking and walking conditions.

2.3.2 Local Government Initiatives

The project team contacted many of the local governments within the COATS region (both formally through stakeholder and SSC meetings and informally) to gather information about policies, programs, and initiatives to improve bicycle or pedestrian transportation at the county or municipal level. **Table 2.3-1** lists several of the initiatives that have been established to advance bicycle and pedestrian transportation at the local level.

2.3.3 Land Development Regulations

A sampling of local land development regulations was reviewed to determine if encouragement or enforcement mechanisms for improved pedestrian and bicycle mobility exist on the local level. Land development regulations for the City of Columbia, Town of Lexington, and Richland and Lexington Counties were reviewed.

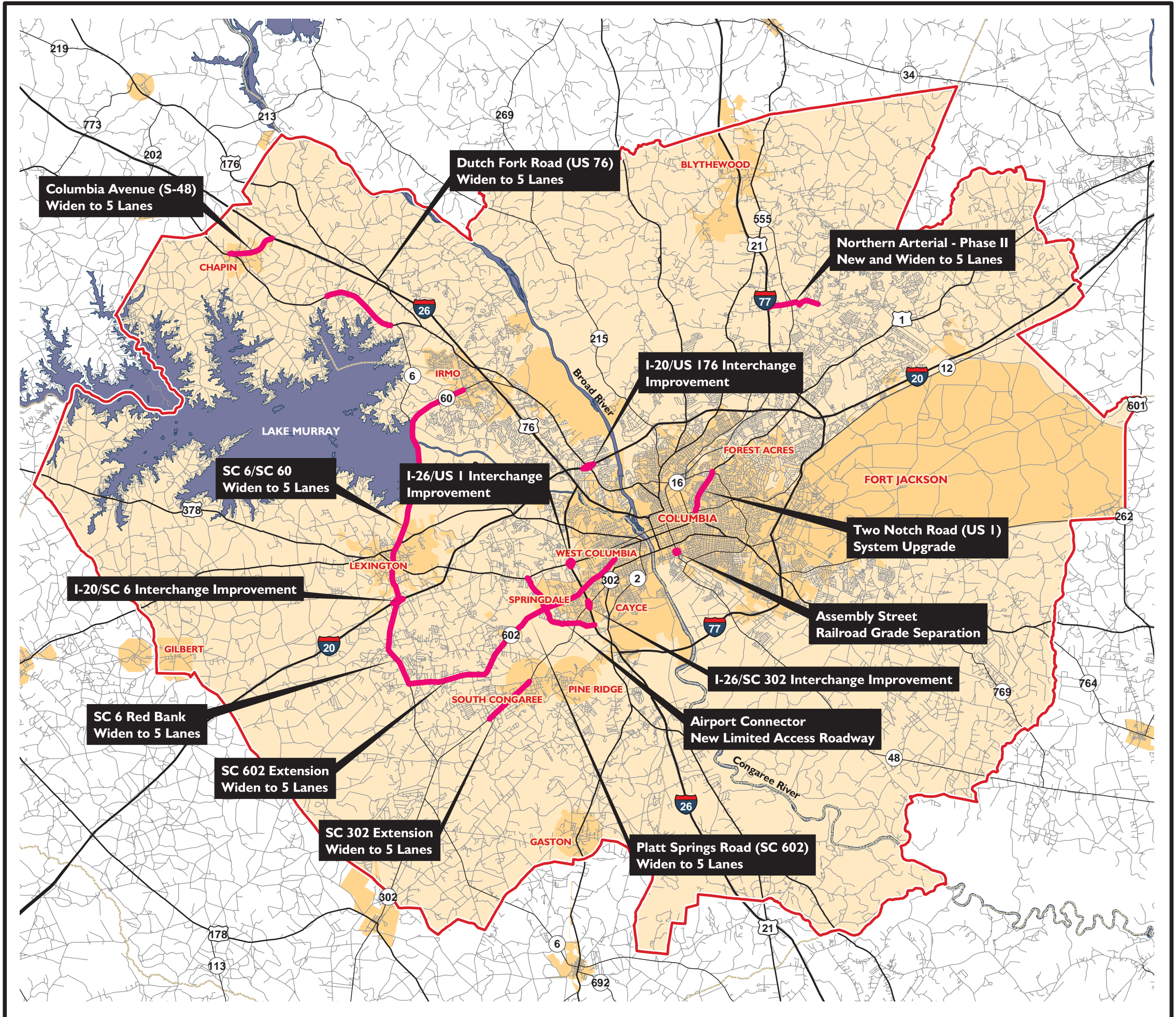


The Town of Lexington requires that sidewalks be installed in all new developments.

Of the local regulations reviewed, the Town of Lexington and Richland County have requirements to include sidewalks in new developments. In addition, Richland County has provisions for the implementation of connections to schools, trails, greenways, and bicycle facilities (including bicycle parking) in new developments. The City of Columbia and Lexington County do not require sidewalks, but the City of Columbia’s minimum design standards include pedestrian connections and street characteristics that are supportive of non-motorized transportation. The land development standards in Lexington County include few requirements for non-motorized facilities.

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study



LEGEND

- COATS TIP Projects
- COATS Study Area

Source: CMCOG 2005
Map Created: 05/27/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

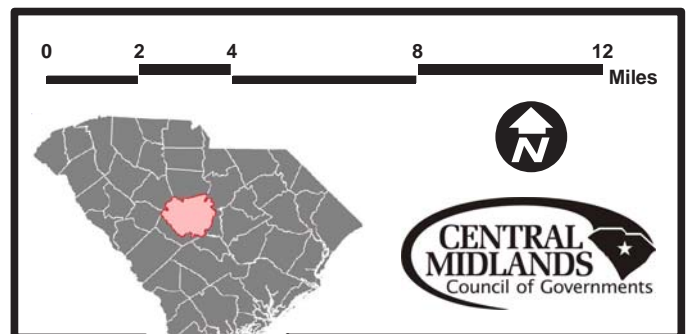


Figure 2.3-1
Transportation Improvement Program
FY 2005 / FY 2006

Table 2.3-1
Local Government Initiatives

Local Government	Initiatives
Cayce	Three Rivers Greenway and Cayce extension
Chapin	Council had goal setting meeting in January 2005 to make more walkable community – failed to produce goals; subdivision on Old Lexington Avenue will have walking trail surrounding cluster-patio homes; Amicks Ferry Road and Lexington Avenue have been signed for shared use
Columbia	Three Rivers Greenway; Mayor announced on May 18, 2005 initiative to be designated as a “Bicycle Friendly City” by 2009 through the League of American Bicyclists; establishing committee/task force to achieve this goal
Gaston	No formal initiatives at this time
Irmo	Concentration on sidewalk program but no formal inventory
Lexington (Town)	Sidewalk program built into land development regulations but no formal inventory
Lexington County	No formal initiatives at this time
Richland County	Greenway study is underway; Town and Country plan encourages non-motorized linkages in new development
South Congaree	No formal initiatives at this time
Springdale	Identified the recently reconstructed Platt Springs Road with bike lanes and sidewalks from West Columbia to Springdale
West Columbia	Three Rivers Greenway and plans for West Columbia extensions

2.4 Existing Facilities

Existing bicycle and pedestrian facilities in the COATS region were documented through discussions with the CMCOG, SCDOT, local governments, and bicycle and pedestrian advocates. These facilities are depicted in **Figure 2.4-1**.

Facilities have been grouped into three categories: bike lanes; pedestrian overpasses; and shared-use paths. It should be noted that sidewalks, wide outside vehicular travel lanes, shoulders, and other types of pedestrian crossing facilities (e.g., crosswalks, pedestrian signals, median refuge islands, etc.) were not inventoried, as this would prove nearly impossible



Beltline Boulevard

in a region as large as the COATS study area. However, most streets in Columbia and surrounding communities that were developed prior to 1950 have sidewalks on both sides of the street. Additionally, most new developments in Lexington and Irmo incorporate sidewalks on one side of the street (if not both sides). The following sections outline existing bicycle and pedestrian facilities in the COATS study area.



Knox Abbott Drive

2.4.1 Bike Lanes

Over 15 miles of bike lanes were identified on five roadways in the COATS study area (see Figure 2.4-1). All of these bike lanes are located along roadways that were specified as either high priority or principal bikeway corridors in the Regional Bikeway System Concept of the 1996 *Columbia Area Bikeways and Pedestrian Pathways Study*. Each of these bike lanes is summarized in **Table 2.4-1** and typical cross sections utilized are presented in **Figure 2.4-2**.

2.4.2 Pedestrian Overpasses

A number of pedestrian overpasses exist within the COATS study area, including the following (see Figure 2.4-1 for all overpasses):

- **James E. Clyburn Pedestrian Overpass** – opened in March 2003, this overpass reconnects a community that was bisected when SC 277 was constructed in 1975. The Bethel Bishop Chappell Apartments and Colony Apartments are located to the east of SC 277 and the Burton Heights community is located to the west.
- **Assembly Street Pedestrian Overpass** – opened in 2004, this overpass was constructed as part of University of South Carolina (USC) capital improvements but is open for use by the general public.
- **Blossom Street Pedestrian Overpass** – opened in conjunction with the Assembly Street Pedestrian Overpass as part of USC capital improvements and is also available for use by the general public.



Western entrance to the James E. Clyburn Pedestrian Overpass

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study

LEGEND

- Pedestrian Overpass (Existing)
 - Pedestrian Tunnel (Existing)
 - Bike Lanes (Existing)
 - Three Rivers Greenway (Existing)
 - - - Three Rivers Greenway (Planned)
 - Palmetto Trail (Existing)
- COATS Study Area

Source: PB 2005
Map Created: 12/30/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

0 2 4 8 12 Miles



Figure 2.4-1
Existing Bicycle and Pedestrian Facilities

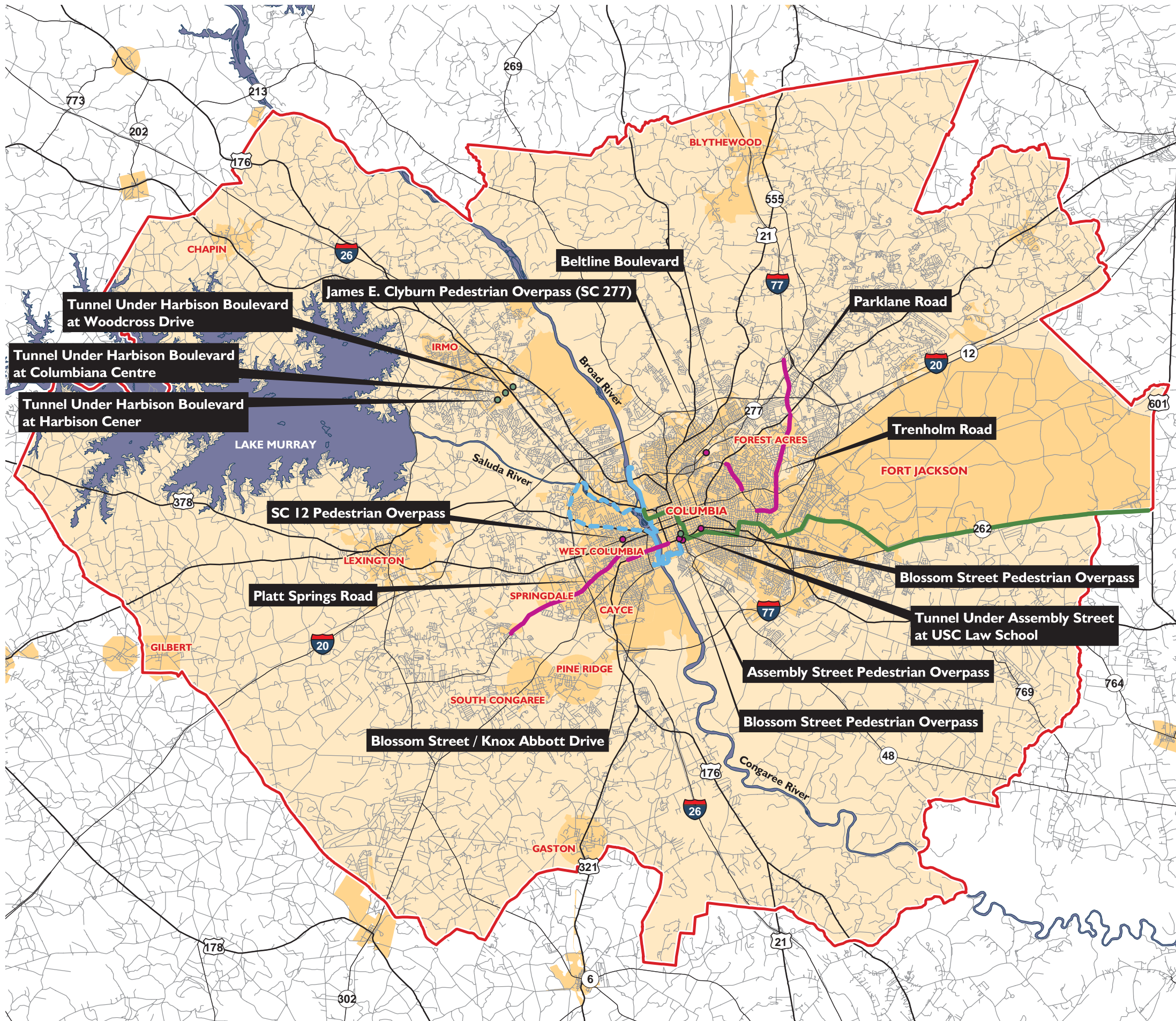


Table 2.4-1
Existing Bike Lanes in the COATS Study Area

Location	Limits	Approximate Length	Section Type	Comments
Beltline Boulevard	Valley Road (i.e., just north of Forest Drive) to Dubard Street (i.e., just south of Two Notch Road)	1.2 miles	A	40 mph posted speed limit
Blossom Street/Knox Abbott Drive	Huger Street to 12 th Street	1.8 miles	B	35 mph posted speed limit; roadway width appears adequate to continue bike lane from 12 th Street to Charleston Highway
Parklane Road	Just north of Two Notch Road to Old Legrand Road (i.e., just south of Farrow Road)	2.0 miles	A	35 mph posted speed limit south of Paces Run Boulevard; 45 mph north of Paces Run Boulevard
Platt Springs Road	Charleston Highway to Divinci Road (i.e., just west of Emmanuel Church Road)	5.7 miles	C	35 mph posted speed limit east of Crest Drive (i.e., just west of I-26); 40 mph between Crest Drive and Silstar Road; 45 mph west of Silstar Road
Trenholm Road	Beltline Boulevard to just south of Decker Boulevard	4.5 miles	A	35 mph posted speed limit; road narrows and bike lane is lost between Brennen Road and Clemson Avenue

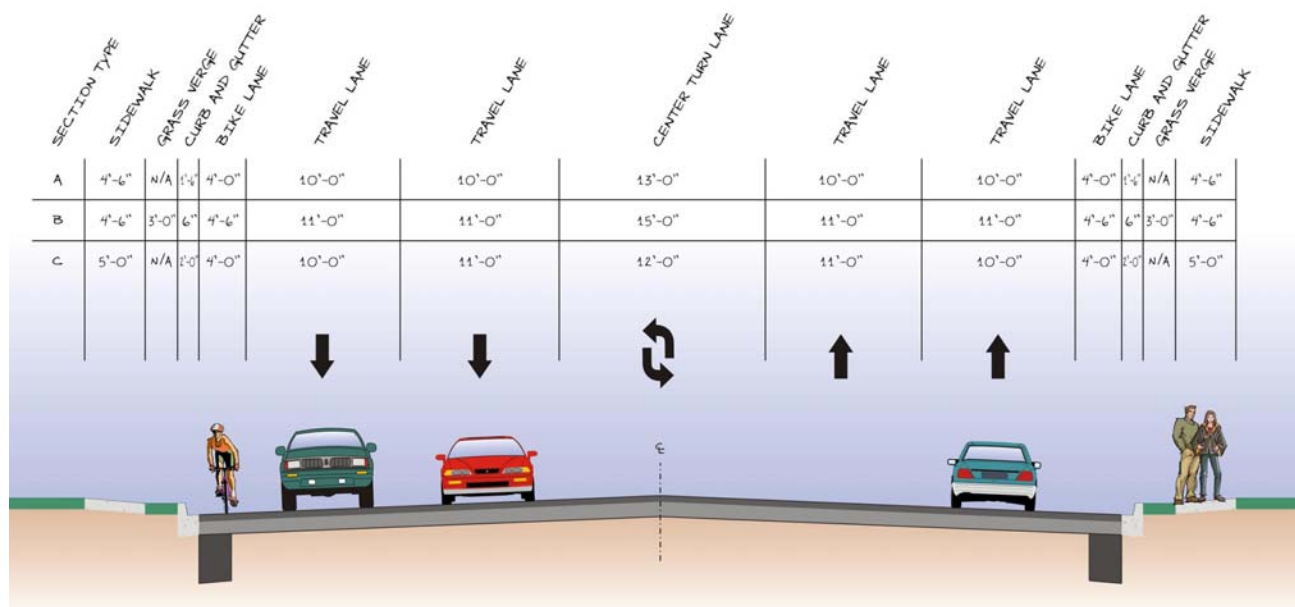


Figure 2.4-2
Typical Road Cross Sections for Bike Lane Locations

2.4.3 Shared-Use Paths

Three shared-use paths were identified in the COATS study area, and they are outlined below.



Three Rivers Greenway along the Columbia Canal passing under and connecting to the Broad River Road Bridge.

Three Rivers Greenway

In 1996, the River Alliance, a non-profit public/private partnership, proposed a 12-mile linear park system to link the citizens of the Midlands region to the confluence of the Broad, Saluda, and Congaree Rivers (i.e., at the border of Richland and Lexington Counties). The Alliance has used tax increment financing (TIF) and taken advantage of approximately \$4 million dollars of ISTEA and TEA-21 funds to meet its \$18 million budget.

The City of Columbia side of the Congaree River offered an opportunity for a pilot project for the Alliance with a 1.5-mile segment that opened in November 1998. This initial phase was complete with an 8-foot wide pathway, lighting, trash receptacles, water fountains, picnic benches, overlooks, fishing access, canoe/kayak access, a public restroom,

and parking. Additional phases were added including the following:

- Granby Park;
- Cayce Riverwalk;
- West Columbia Riverwalk;
- Columbia Canal;
- Mill Villages River Link;
- West Columbia Extension; and
- Congaree Riverwalk.

The project team met with River Alliance personnel to discuss the initial 12-mile system and plans for future expansions along the rivers and linkages into surrounding communities. Expansion plans for the Three Rivers Greenway have been incorporated into the recommendations of this plan and are addressed in Section 6.3.

Palmetto Trail

When completed, the Palmetto Trail will encompass over 425 miles of recreational linkage reaching from the Upstate to the Lowcountry of South Carolina. The trail begins in Oconee State Park and ends north of Charleston along the Atlantic Coast. The system, overseen by the Palmetto Conservation Foundation, consists of more than 15 individual passages.

Begun in 1994 and considered the state's largest bicycle and pedestrian project, the Palmetto Trail is scheduled for completion in 2010. The system will be one of only 13 cross-state trails in the United States. The system ranges from primitive pathways to urban bikeways, greenways, and rail to trail conversions.

In the COATS study area, the Palmetto Trail currently consists of two passages: the Capital City Passage and the Fort Jackson Passage. These two passages connect directly to each other, but their linkages to the north and south are currently incomplete, so they do not formally connect outside the region.

The Capital City Passage was the first urban portion of the Palmetto Trail to open. This 7.5-mile passage connects Riverfront Park and the Three Rivers Greenway to the Fort Jackson Passage by utilizing existing streets and sidewalks through the City of



Columbia’s downtown, directly past the Statehouse, in and around the USC campus, and adjacent to Five Points, ultimately connecting to the Fort Jackson Passage.

The Fort Jackson Passage is a natural-surface trail that runs adjacent to paved roads through the 52,000-acre Fort Jackson military training facility. In contrast to the very urban Capital City Passage, the Fort Jackson Passage is ideal for hiking and mountain biking.

Although the Palmetto Trail is not a single unique facility (i.e., it utilizes existing roadways, sidewalks, and trails), it is important to recognize this significant statewide bicycle and pedestrian linkage in the COATS study area. A conscious effort continues to be made to connect existing roadway, sidewalk, and trail segments to form the continuous Palmetto Trail.



A tunnel connects the Harbison Community Pathways under Harbison Boulevard.

Harbison Community Pathways

Harbison is a master planned community straddling the borders of the City of Columbia and the Town of Irmo. It is a mixed use development that has become a center for residential, office, and retail uses. A system of pathways was included in the original master plan. The majority of the system has been completed and is depicted in **Figure 2.4-3**. Included are neighborhood sidewalks, retail connections, and bridges and tunnels to assist in negotiating major roadways.



Figure 2.4-3
Harbison Community Pathways

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3. BICYCLE AND PEDESTRIAN TRIP GENERATION

Land use patterns have a significant influence on the number of existing and potential bicycle and pedestrian trips in the COATS region. Nationally, more than half of bicycle trips are less than three miles and a majority of pedestrian trips are less than one-half mile.^{3 4} Urban and suburban areas that have a higher density and greater mix of residences and activities, such as stores, offices, churches, and parks increase the convenience of these short bicycle and pedestrian trips. Other factors, such as the age and income of residents, topography, and weather also affect bicycle and pedestrian trip-making.⁵ Local and regional governments in the Central Midlands region can play a significant role in encouraging bicycle and pedestrian trips through land use and transportation decisions. The section below describes the potential demand for bicycle and pedestrian trips given the existing land use characteristics of the Central Midlands region.

Nationally, more than half of bicycle trips are less than three miles and a majority of pedestrian trips are less than one-half mile.

3.1 Bicycle and Pedestrian Trip Origins and Destinations

Bicycle and pedestrian trips are made between many combinations of origins and destinations in the Central Midlands region. Non-motorized trips often originate from residents homes; therefore, population density is an important indicator of pedestrian and bicycle trip potential. Bicycle and pedestrian trips can also start from a place of employment (e.g., walking to a restaurant for lunch), originate from public transportation (e.g., bringing a bike on a CMRTA bus and then riding the rest of the way to a park), or be included in travel between several activities (e.g. walking between

³ Clifton, K. and K. Krizek. *The Utility of the National Household Travel Survey in Understanding Bicycle and Pedestrian Travel*, Presented at the National Household Travel Conference: Understanding Our Nation's Travel, November 1-2, Transportation Research Board, National Academies of Science, Washington, DC. Available online at: <http://trb.org/conferences/nhts/Krizek.pdf>, 2004.

⁴ Pedestrian and Bicycle Information Center (2005). "Predicting Demand." Available online at: <http://www.walkinginfo.org/pp/predicting/index.htm>, 2005.

⁵ United States Department of Transportation, Federal Highway Administration. *A Compendium of Available Bicycle and Pedestrian Trip Generation Data in the United States*, FHWA-PD-95-009, Prepared by University of North Carolina Highway Safety Research Center, October 1994.

stores in a commercial area or making a side trip to the post office from a friend's house).

Bicycle and pedestrian transportation can be used to access a variety of destinations. Residents of the Central Midlands region bicycle and walk for many purposes – non-motorized trips can be taken to work, to school, to church, to the bus, and to other activities, such as shopping and visiting friends. Residents of the Central Midlands region also have opportunities to make non-motorized trips for recreation, including walking and biking for exercise in local neighborhoods, jogging on wooded trails in parks, and bicycling on paved shared-use paths near streams and lakes.

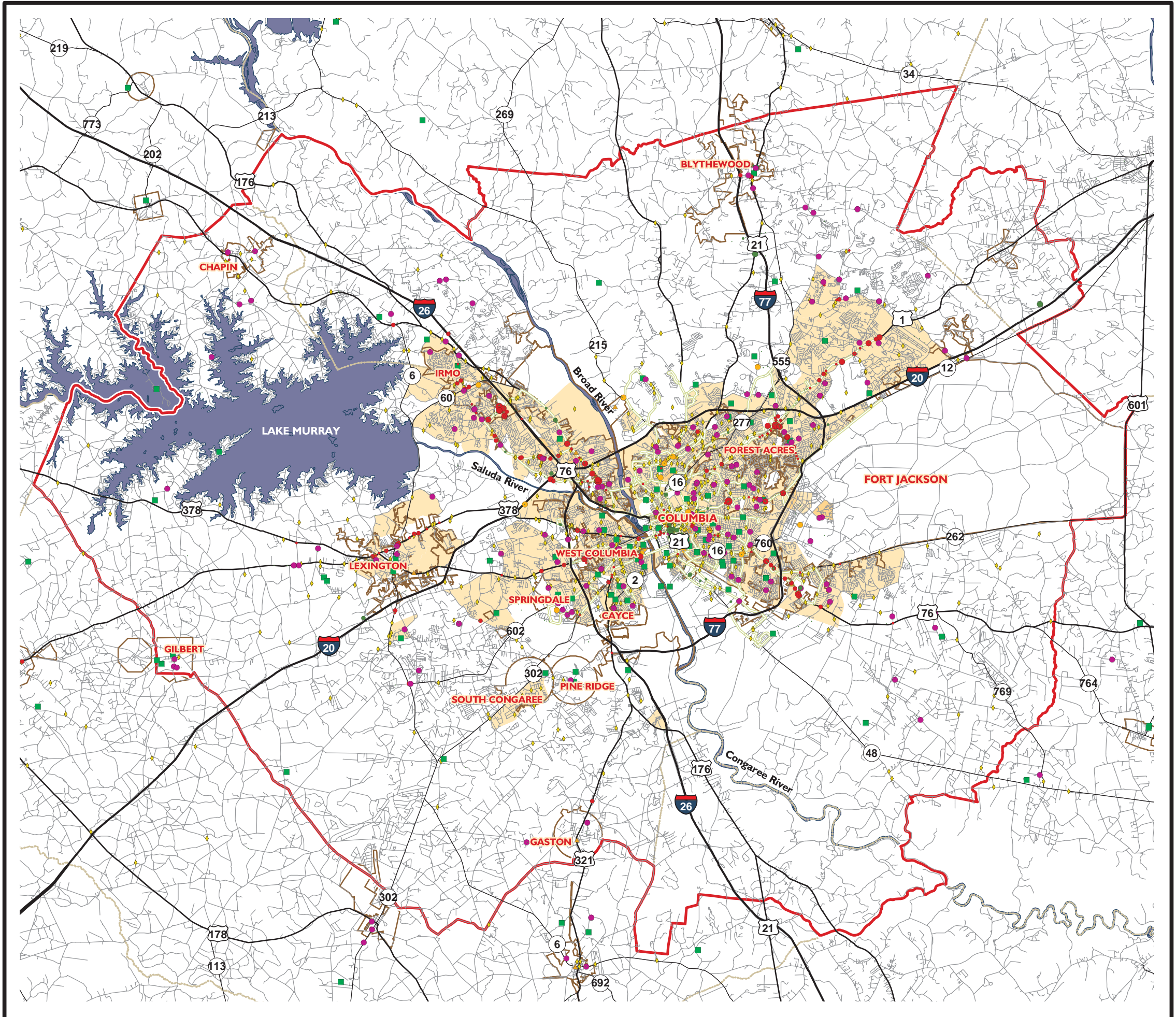
CMCOG has gathered a large amount of GIS data to identify locations in the region where there is high potential for bicycle and pedestrian activity. The features that have been used to evaluate the potential for non-motorized trips are depicted in **Figure 3.1-1** and are as follows:

- Residential areas;
- Employment sites (i.e., aggregated by number of jobs);
- Retail space (i.e., aggregated by gross leased area for shopping);
- Colleges and universities;
- Primary and secondary schools (i.e., public and private elementary, middle, and high schools);
- Parks;
- Libraries;
- Churches; and
- Bus routes.

It should be noted that the intention of Figure 3.1-1 is not to depict individual occurrences of the above features, but rather to depict concentrations and mixes of these features. Higher concentrations and greater mixes of these features indicate areas with greater potential for non-motorized trips.

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study



LEGEND

- POPULATION (Per Sq. Mi.)***
- Under 1,000
 - 1,000 - 4,999
 - 5,000 - 9,999
 - 10,000 - 24,999
 - 25,000 - 50,000
- EMPLOYMENT (Total Jobs)**
- 0 - 999
 - 1,000 - 4,999
 - 5,000 - 9,999
 - 10,000 - 49,999
 - 50,000 - 99,999
- RETAIL SPACE**
Gross Leasable Area (Sq. Ft.)
- 5,000 - 9,999
 - 10,000 - 49,999
 - 50,000 - 99,999
 - 100,000 - 499,999
 - 500,000 - 2,000,000
- SCHOOLS**
- College/University
 - Primary/Secondary
- PARK**
- LIBRARY**
- CHURCH**
- BUS ROUTE**
- OTHER FEATURES**
(Not Pedestrian/Bicycle Trip Generators)
- Municipal Boundary
 - County Boundary
 - Water
- COATS Study Area**

*Population is for year 2000

Source: CMCOG 2005
Map Created: 05/25/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

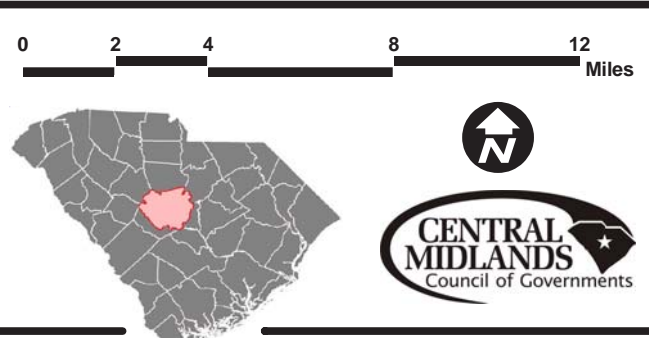


Figure 3.1-1
Bicycle and Pedestrian Trip Generators

3.2 Potential for Non-Motorized Travel in the Central Midlands Region

Bicycle and pedestrian trips are made in all parts of the Central Midlands region. Residents that live in urban, suburban, and rural areas all have destinations within bicycling and walking distance. Yet, Figure 3.1-1 shows that there are several parts of the region that have land use patterns that are especially conducive to non-motorized travel.

For example, Downtown Columbia has a high concentration of workplaces, stores, churches, bus lines, and other attractors within close proximity to some of the highest-density residential neighborhoods in the region. In addition, many of the neighborhoods adjacent to the downtown area in the cities of Columbia, West Columbia, Cayce, and Forest Acres include parks, schools, and churches within bicycling- and walking-distance of residences.



Downtown Columbia has a high concentration of bicycle and pedestrian attractors within close proximity to high-density residential neighborhoods.

There are several older communities outside of Columbia that are also conducive to bicycling and walking. Lexington, Chapin, and Blythewood have historic downtown shopping areas that are close to nearby residents. In addition, several commercial corridors are surrounded by residential neighborhoods and workplaces. These include the Broad River Road, Two Notch Road, Forest Drive, and Devine Street corridors.

The areas near the University of South Carolina and Fort Jackson also have excellent potential for bicycle and pedestrian trips because these institutions are home to many people without motor vehicles.

Adding new bike lanes, installing sidewalks, making roadway crossings safer, and focusing other bicycle and pedestrian facility improvements near these key bicycle and pedestrian origins and destinations can improve the attractiveness of making trips by bicycle and on foot in the Central Midlands region.

The trip generation considerations described above were integral to the identification of pedestrian and bicycle routes and strategy development as included in Sections 5 and 6 of this Bike and Pedestrian Pathways Plan.

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4. OPPORTUNITIES AND CONSTRAINTS

Based on the information presented in Sections 1-3 of this plan, opportunities and constraints were identified in relation to bicycle and pedestrian policies, programs, and projects in the Central Midlands region.

4.1 COATS LRTP

In the review of the COATS LRTP the following opportunities and constraints to improving bicycle and pedestrian mobility in the COATS study area were identified:

Opportunities

- A more multimodal and intermodal approach to the LRTP will assist in meeting the mandates of SAFETEA-LU legislation, the Federal Highway Administration (FHWA), and the SCDOT;
- Developing an integrated LRTP which addresses individual modes as part of a comprehensive transportation network, rather than individual standalone components, will strengthen the LRTP and its credibility as the guiding document for the COATS region's transportation needs;
- Inclusion of a stronger emphasis on pedestrian travel will increase the reach of the LRTP, since everyone in the COATS study area is a pedestrian at some point;
- Policies that mandate bicycle and pedestrian considerations at all levels – planning, design, and construction – will assist in “mainstreaming” bicycle and pedestrian modes, provide additional transportation options to people who have few, and move the region toward a more complete transportation network; and
- Making the transportation and land use connection will enable the COATS region to program transportation projects that support non-motorized modes and take advantage of existing transportation infrastructure and investment, while reigning in the effects of unchecked development.

Constraints

- Developing an integrated LRTP will require an entirely “new” document, rather than just an “update” of the previous LRTP;

- A new, integrated approach to long range planning will require the CMCOG staff, its Board and member governments, and the region as a whole to reconsider and possibly change the way they think about transportation;
- Mandating bicycle and pedestrian considerations at the planning, design, and construction phases may be met with some level of resentment and resistance by those who see these as “lesser” modes of travel; and
- Focusing on efficient use of the existing transportation network by encouraging the regulation of development from continuously spreading out to the fringes of the COATS study area may be seen by some as overly restrictive.

4.2 State Law

In the review of the SC Code of Laws the following opportunities and constraints to improving bicycle and pedestrian mobility in the COATS study area were identified:

Opportunities

Clarification of the Code, as it pertains to bicyclists, could provide a “friendlier” environment for promoting bicycling as a viable mode of travel and increase safety and reduce conflict among all modes.

Constraints

Change to any law can be a difficult and lengthy process.

4.3 SCDOT Policies, Programs, and Projects

In the review of SCDOT policies, programs, and projects the following opportunities and constraints to improving bicycle and pedestrian mobility in the COATS study area were identified:

Opportunities

- Partnering by the CMCOG with the SCDOT in making pedestrian and bicycle travel a routine part of every project will further legitimize the SCDOT’s efforts to date and encourage additional programs and policies at the state level that promote a complete transportation network;

- CMCOG staff and local member government personnel can gain a greater understanding of bicycle and pedestrian issues and improvement strategies by taking advantage of training offered at the SCDOT's Annual Bicycle and Pedestrian Accommodations Conference;
- Language utilized in "Engineering Directive No. 22" could be strengthened to provide more of a "flexible mandate" for bicycle facilities, rather than just "recommendations" or "suggestions";
- Development of an engineering directive specific to pedestrian accommodations would provide standard guidance for new installation and retrofitting of existing roadways and intersections; and
- Capitalizing on programmed SCDOT projects like maintenance, CRISOS, and bridge projects would increase the number of bicycle and pedestrian facilities, while achieving economies of scale by allowing these improvements to "piggyback" on other roadway construction and reconstruction projects, thus eliminating or greatly reducing engineering and contractor mobilization costs.

Constraints

- Adding an engineering directive specific to pedestrian facilities may be considered redundant of existing design standards found in the *SCDOT Highway Design Manual*; and
- "Piggybacking" bicycle and pedestrian facilities onto programmed SCDOT projects may prove to be difficult as exact schedules and budgets are not quantified or guaranteed.

4.4 Local Policies and Programs

In the review of local policies and programs the following opportunities and constraints to improving bicycle and pedestrian mobility in the COATS study area were identified:

Opportunities

- Requiring projects to include bicycle and pedestrian considerations in order to be eligible for inclusion on the TIP would advance non-motorized modes with every project receiving state and federal funding;

- Supporting local government initiatives to improve bicycle and pedestrian mobility, both through recognition and funding, would encourage other local governments to follow suit; and
- Encouraging land development regulations that require non-motorized facilities, support bicycle and pedestrian connectivity, promote the efficient use of the existing transportation network, and foster regional coordination could result in a more balanced regional transportation network.

Constraints

- Limiting TIP projects to those giving consideration to bicycle and pedestrian improvements might be seen as too directive and exclusionary if worthy projects are rejected because such consideration is not feasible; and
- Recommending land development regulation revisions to counties and local municipalities may be viewed as “overstepping” or encroachment on local rights.

4.5 Existing Facilities

In identifying existing facilities the following opportunities and constraints to improving bicycle and pedestrian mobility in the COATS study area were identified:

Opportunities

- Recognizing and showcasing existing pedestrian and bicycle facilities will demonstrate that progress is being made and encourage other areas of the COATS region to implement new bicycle and pedestrian projects.

Constraints

- No constraints were identified.

4.6 Bicycle and Pedestrian Trip Generation

In evaluating bicycle and pedestrian trip generation the following opportunities and constraints to improving bicycle and pedestrian mobility in the COATS study area were identified:

Opportunities

- Targeting bicycle and pedestrian improvements in areas having high population densities and/or large concentrations of activity centers will provide the most benefit and improve the attractiveness of walking and biking as a viable modal option;

Constraints

- By targeting bicycle and pedestrian facilities at certain areas based on population density and activity center mix, other areas may perceive themselves as being neglected or left-out.

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5. BIKE AND PEDESTRIAN STRATEGIES

The bicycle and pedestrian strategies listed in this section will help institutionalize bicycle and pedestrian accommodations in policies and programs, as well as in the planning, design, construction, and maintenance of transportation facilities throughout the Columbia Area.

The strategies in this section are based on existing conditions and associated opportunities and constraints, vision statement, goals, stakeholder meetings, and public feedback summarized in previous sections of this report. The goal of these strategies is to develop a synergy between the recommendations of this plan and the policies and practices of member governments and SCDOT (i.e., those responsible for roadway design, construction, and maintenance).

It should be noted that strategies included here focus on policies and education, enforcement, and encouragement programs, while Section 6 of this document presents physical improvements to the transportation network. Specific strategies are outlined below.

5.1 Revise the Long Range Transportation Plan

- Revise the LRTP by integrating bicycle and pedestrian transportation into all aspects of the plan. This will create a truly multimodal and intermodal approach to the LRTP by integrating various modes in a comprehensive transportation network. This will strengthen the LRTP and its credibility as the guiding document for the COATS region's transportation needs by more decisively meeting the mandates of SAFETEA-LU legislation, FHWA, and SCDOT.
- Incorporate LRTP project ranking criteria that directly address bicycle and pedestrian considerations at all levels of project development (i.e., planning, design, and construction), so as to enable projects that support a more comprehensive transportation network to advance more quickly than those that only support motorized modes.
- Change the LRTP project ranking criteria to give greater weight to projects that utilize existing transportation facilities and serve existing development (such as retrofitting pedestrian roadway crossings or restriping pavement lines to provide

space for bicycle lanes). This will result in lower public costs for infrastructure, while reigning in unchecked development. It will also help acknowledge connection between transportation and land use within the LRTP.

5.2 Adopt Roadway Design Guidelines and Land Development Ordinances

- Encourage local governments to update land development regulations to support bicycle and pedestrian connectivity and the efficient use of the transportation network through the inclusion of pedestrian facilities as a requirement of development and performance standards that promote multimodal access. CMCOG should facilitate this process by drafting a model ordinance. This ordinance can be modified and adopted by member governments. In addition to requiring pedestrian and bicycle accommodations on roadways and in subdivisions, the model ordinance should prescribe the types of development density, street connectivity, and land use mix that create more convenient environments for pedestrian and bicycle travel.
- Encourage member governments to adopt bicycle and pedestrian design guidelines (see “Best Practices” included in Appendix E of this plan). This can be accomplished by jurisdictions through revising their roadway design guidelines, expanding their subdivision ordinance to require sidewalks, shoulders, and other non-motorized transportation facilities, or through other means. At a minimum, jurisdictions should follow the *AASHTO Guide for the Development of Bicycle Facilities* and *AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities*. This will help institutionalize the practice of including pedestrian and bicycle facilities in all transportation and development projects.

5.3 Collect Pedestrian and Bicycle Data to Benchmark Progress

- Create and maintain a comprehensive database of location, type, and condition of bicycle and pedestrian facilities (e.g., bike lanes, sidewalks, shared-use paths, etc.) throughout the Central Midlands region. Once this database is in place, it will be relatively easy to publish the contents of the database to the

CMCOG website or in hardcopy format for use by member governments, residents, and visitors.

- Evaluate the suitability of roads throughout the region for bicycle and pedestrian travel using Bicycle and Pedestrian Level of Service Models. This evaluation should utilize information from existing databases containing roadway characteristics and traffic volumes, as well as the new pedestrian and bicycle facility database described above.
- Coordinate with member governments to collect pedestrian and bicycle counts at 50 different locations in the region each year. To accomplish this task, CMCOG should work with member jurisdictions (and SCDOT) to develop a consistent methodology for taking the pedestrian and bicycle counts. This methodology should keep track of the effects of weather, surrounding roadway and land use characteristics, and time of day (jurisdictions often do three-hour counts that capture a “peak” travel period). This method must also be relatively easy for member governments to implement. Other communities around the U.S. have piggybacked pedestrian and bicycle counts with manual traffic counts at intersections, used automated count methods for shared use paths (such as pneumatic tube counters and infrared sensors), and used interns to collect counts cost-effectively.
- Implement a regional travel survey that includes questions about pedestrian and bicycle trips. This type of survey will provide a statistically valid representation of trip-making behavior around the region, which makes it possible to estimate the pedestrian and bicycle mode split for all types of trips.
- Collect and analyze police-reported pedestrian and bicycle crashes from the past five years. Coordinate with local police departments and the SC Department of Public Safety to obtain the locations and details (such as age and gender, time of day, crash severity, etc.) of pedestrian and bicycle crashes. Enter the data into GIS so that high-crash locations can be identified.
- Produce an annual pedestrian and bicycle performance report to benchmark improvements in pedestrian and bicycle

transportation in the Columbia area. This report should describe:

- Total pedestrian and bicycle crashes, as well as changes in high-crash locations.
 - Pedestrian and bicycle counts (from the 50 locations throughout the region) and pedestrian and bicycle mode split (from the regional travel survey).
 - Pedestrian and bicycle facilities (e.g., miles of bike lanes, linear miles of sidewalks, miles of shared-use paths, percentage of intersections that meet ADA guidelines for curb ramps and pedestrian signals, etc.).
 - Education, enforcement, and encouragement programs (such as the total number of students reached by pedestrian and bicycle safety education programs and the number of people participating in bike to work day).
- Adopt pedestrian and bicycle performance measures. These performance measures should establish quantifiable targets for various aspects of pedestrian and bicycle transportation that should be achieved within a specific time period. The performance measures should correspond to the data in the performance report described above.

5.4 Increase Funding for Pedestrian and Bicycle Transportation

- Coordinate with the SCDOT and FHWA to identify funding sources for inclusion of exclusive pedestrian and bicycle retrofit projects in the TIP to assist in closing gaps in the network in locations where full-scale roadway projects are unwarranted. This includes encouraging the SCDOT and localities to designate new or increase existing funding for the following types of programs:
 - Sidewalk Retrofit Program;
 - Bicycle Lane/Shoulder Retrofit Program;
 - Pedestrian Signal Retrofit Program; and
 - Pedestrian Crossing Evaluation and Improvement Program (at intersections and also at mid-block locations, which can

be evaluated using the FHWA mid-block crossing analysis methodology).

- Encourage SCDOT and member governments to increase their capital budgets for curb ramp and sidewalk maintenance projects, as well as maintenance of bicycle lanes (e.g., trimming trees, removing roadway debris, etc.).

5.5 Offer Assistance with Pedestrian and Bicycle Planning and Coordination

- Establish a full-time bike and pedestrian coordinator for the COATS region. This position can be established by partnering with groups that have a strong influence on the implementation of pedestrian and bicycle facilities (e.g., SCDOT, local governments, River Alliance, USC, etc.). Such a coordinator could be housed “regionally” within CMCOG facilities, while funding for the position should be shared by the various groups that will benefit from the coordinator’s efforts. This coordinator should work with local governments and SCDOT to implement the recommendations of this plan, and should provide assistance to local governments on pedestrian and bicycle plans. Because the timeliness of the establishment of this coordinator position will have direct impact on the effectiveness of other strategies and recommendations, it should be given top priority and be implemented in the very near term.
- Encourage member governments to designate staff bicycle and pedestrian coordinator positions. CMCOG should encourage the City of Columbia to establish a full-time pedestrian and bicycle coordinator, and encourage Richland and Lexington Counties to establish part-time pedestrian and bicycle coordinator positions (i.e., at least 20% of a staff person’s time should be spent on pedestrian/bicycle issues). These coordinators could focus initially on prioritizing intersections where pedestrian signals, curb ramps, and sidewalks should be provided/improved. Like the regional coordinator, local coordinators should be designated in the near term in order to ensure the success of other strategies and recommendations.
- Assist in drafting a Memorandum of Understanding (MOU) between a town, city, or county and the SCDOT. Each MOU

would outline procedures for sharing information about potential projects and desires (e.g., upcoming construction and reconstruction projects, repaving lists, new maintenance initiatives, etc.). This will help facilitate the continued and increased cooperation between the SCDOT and member governments on non-motorized transportation projects. The Bike and Pedestrian Pathways Plan should serve as a guidance document to provide a “master vision.”

- Encourage member governments to develop and adopt local pedestrian and bicycle plans by offering technical assistance and data for their planning processes.
- Investigate the legalities of bicycle and pedestrian travel in South Carolina. This should include determining where, when, and how such travel may occur, and specifically, if bicyclists may use shoulders of roadways or sidewalks for travel. Further, CMCOG should coordinate with other bicycle and pedestrian advocacy groups to work to make legislation more “friendly” toward bicyclists and pedestrians (i.e., if it is currently illegal for bikes to utilize shoulders, help to get this law changed), while maintaining the overall safety of all modes of travel.
- Encourage USC to develop a pedestrian and bicycle plan for the campus and surrounding neighborhoods. This plan should address roadway accommodations for pedestrians and bicyclists, bicycle parking, automobile parking restrictions, bicycle route signage, pedestrian wayfinding, and education/enforcement/encouragement to increase the total number of people bicycling and walking, as well as the safety of pedestrians and bicyclists in the campus area.
- CMCOG should coordinate with representatives of Fort Jackson to investigate the long-term prospects of having the Fort “open” to bicycle and pedestrian through-traffic. While roadways within Fort Jackson could provide a cycling route that is safer and more direct than alternative routes on Old Leesburg and Garners Ferry Roads, it is important to discuss sensitive issues and concerns (i.e., security) with Fort commanders. One potential route that should be considered for bicycle and pedestrian access is the designated Palmetto Trail Route, which uses Fort Jackson Boulevard, Marion

Avenue and Semmes Road. Other roads that should be considered include Newell Road, Lee Road, Imboden Street, and Strom Thurmond Boulevard.

- Encourage the SCDOT to strengthen the language utilized in “Engineering Directive No. 22” to provide more of a “flexible mandate” for bicycle facilities rather than just “recommendations” or “suggestions.”
- Encourage the SCDOT to draft an engineering directive to serve as a “sister” document to “Engineering Directive No. 22” that would specifically address pedestrian accommodations and provide standard guidance for new installation and retrofitting of existing roadways and intersections.

5.6 Prepare Additional Non-Motorized Transportation Documents and Studies

- Use the results of the suitability analysis to develop a bicycle map for the Central Midlands Region. This bike map can encourage more people to bicycle by highlighting key destinations for bicycling, such as parks, schools, universities, and commercial and office centers. It should also show the most comfortable routes to destinations and provide guidance on how to ride safely.
- Partner with Central Midlands Regional Transit Authority (CMRTA) and municipalities to conduct a bus stop access improvement study. This study should make specific recommendations to provide sidewalks and safe road crossings near bus stops and more comfortable facilities for people waiting for the bus.
- Work with SCDOT and local governments to study stop bar placement in relation to crosswalk location, traffic signal timing, congestion, and vehicular turning movements, and then recommend specific intersections throughout the region where they should be adjusted.
- Coordinate with SCDOT and local governments to study traffic signal timing and detection of bicycles at intersections, and then identify specific locations where signal system improvements/adjustments should be made.

- Produce a bicycle parking study. This inventory can recommend locations and types of additional bicycle parking facilities.

5.7 Offer Education, Enforcement, and Encouragement Programs to Increase Levels of Bicycling and Walking

- Host an annual Central Midlands Region bicycle and pedestrian summit for agencies and advocates to share best practice successes, ideas, and challenges for non-motorized transportation. Progress on the recommendations of this plan and strategies for the coming year can be discussed at the summit.
- Support local government initiatives to improve bicycle and pedestrian mobility by presenting yearly award(s) that recognize and showcase the “best examples” of pedestrian and bicycle improvement in the region. These awards can be presented at the annual bicycle and pedestrian summit.
- Join with the Lexington and Richland County school districts to establish a Safe Routes to School program that will encourage local and state entities to provide adequate pedestrian and bicycle facilities linking residential areas and school campuses and encourage students to walk and bicycle to school. Select three to five schools in different parts of the region to do pilot programs in the first year after the plan is adopted.
- Initiate efforts to promote pedestrian and bicycle transportation as a means of obtaining physical activity and improving personal health. CMCOG should continue to work with member governments, health providers, and advocates on events such as Bike and Walk to Work Week and “Pedal with Your Politicians,” and to encourage municipalities to follow the lead of Columbia to be designated as “Bicycle Friendly Communities” in the future.
- Coordinate with law enforcement agencies and schools to educate residents of the region on the rights and responsibilities of pedestrians, bicyclists and motorists. This includes making public service announcements about pedestrian and bicycle safety and driver responsibility, offering

safety education seminars, and produce brochures on non-motorized safety.

- Develop a pilot program to teach pedestrian and bicycle safety education in two or three elementary schools in the region. This program can be based on the programs offered in states like Florida, Maine, Maryland, and Texas.
- Work with law enforcement agencies to conduct increased enforcement of laws pertaining to bicycle, pedestrian, and automobile travel. This includes targeting speeding in areas with high pedestrian volumes and issuing tickets for drivers not yielding to pedestrians in crosswalks.

5.8 Publicize Plan Recommendations and Generate Ideas for Updating the Plan in the Future.

- Encourage local member governments to adopt, publicize, and champion the Bike and Pedestrian Pathways Plan throughout the region.
- Continue regular meetings with the Pedestrian and Bicycle Advisory Committee to gather feedback and ideas from advocates and member agency representatives. This committee should provide input directly to the new bicycle and pedestrian coordinator.

5.9 Early Action Strategies

While all of the strategies presented in the eight subsections above should be pursued over the next 20 years to improve bicycle and pedestrian transportation in the Central Midlands region, immediate action should be taken on several of these strategies. The following Early Action Strategies are intended to be pursued during the first 0-2 years after the plan is adopted:

- Establish a full-time bike and pedestrian coordinator for the COATS region.
- Draft a model ordinance with language that requires pedestrian facilities in new developments and supports pedestrian and bicycle connectivity.

- Establish a Safe Routes to School program.
- Encourage member governments to adopt bicycle and pedestrian design guidelines.
- Encourage USC to develop a pedestrian and bicycle plan for the campus and surrounding neighborhoods.
- Encourage the SCDOT to draft an engineering directive for pedestrian accommodations.
- Evaluate the suitability of roads throughout the region for bicycle and pedestrian travel using Bicycle and Pedestrian Level of Service Models.
- Develop a bicycle map for the Central Midlands region.
- Create and maintain a comprehensive database of location, type, and condition of bicycle facilities.
- Collect and analyze police-reported pedestrian crashes from the past five years.
- Conduct a bus stop access improvement study.
- Work with law enforcement agencies to conduct increased enforcement of laws pertaining to bicycle, pedestrian, and automobile travel.

6. PLAN COMPONENTS

Specific components of the Bike and Pedestrian Pathways Plan are presented in the sections below.

6.1 Early Action Projects

In order to build momentum and support for the Bike and Pedestrian Pathways Plan, it has been determined that a series of “early action projects” should be identified. These projects, although not necessarily the least expensive, are considered to be projects that are most readily implementable or fill critical gaps in the existing network. Therefore, these Early Action Projects should provide the quickest return on investment in the form of noticeable improvement, which will translate into excitement and momentum for future bike and pedestrian initiatives outlined in the plan. Early Action Projects have the potential to be implemented relatively quickly (i.e., in the first 0-2 years following adoption of the plan), provided funding can be secured.

Based on stakeholder input, public feedback, and field observations, twenty-six Early Action Projects have been identified and are outlined below (see **Figure 6.1-1**). Responsible entities, cost estimates, and potential funding sources are included in Section 7 of this document. All Early Action Projects are presented conceptually and should be properly planned and designed prior to implementation (i.e., such efforts are accounted for in the cost estimates). Additionally, it should be noted that numbering has been utilized to simplify reference to projects; it is not intended to present any type of project prioritization. All Early Action Projects should be considered of the highest priority and be implemented in any order, as funding and opportunity present themselves.

I. Improve pedestrian crossings at the intersection of North Main Street (US 1) and Columbia Avenue (US 378) in the Town of Lexington.

The intersection of North Main Street and Columbia Avenue in the Town of Lexington is an important location for pedestrians because there are many nearby commercial businesses that could be accessible to pedestrians if it were safer and more convenient to cross this intersection. Both of the intersecting roadways carry high volumes of traffic, including many large trucks. Large



Project Components

- Crosswalks
- ADA ramps
- Pedestrian countdown signals

numbers of turning vehicles make pedestrian crossings particularly difficult.

Pedestrian conditions should be improved by striping high-visibility crosswalks on all four legs of this intersection. Stop bars should be striped in advance of the crosswalks to deter vehicles from encroaching on the crosswalks, and curb ramps should be constructed at both ends of each crosswalk to provide a more accessible crossing for all types of pedestrians, including those with disabilities. Pedestrian countdown signals should be provided, and they should be timed to give pedestrians with a wide variety of mobility levels enough time to complete crossing the roadway before traffic in the opposing direction is given a green signal.



Project Components

- Signage
- Restriping of edge of travel



Project Components

- Restriping of travel lanes
- Striping of bike lanes
- Evaluate moving stop bars further back from crosswalks

2. Establish a signed bike route and striped shoulders on Center Street in the City of West Columbia.

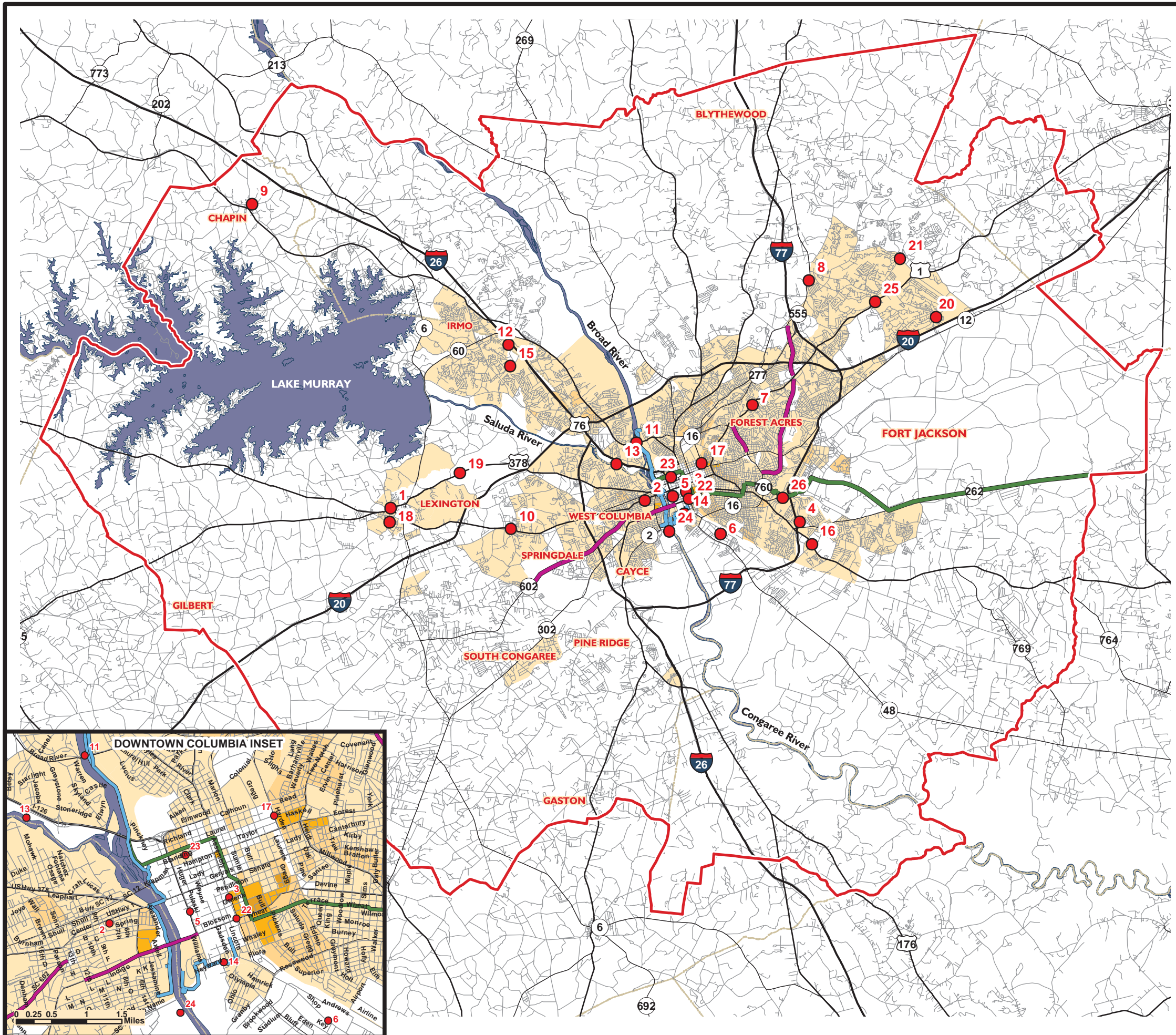
Center Street is an east-west connection through the City of West Columbia that is one block south of Augusta Road (US 1). This street should be designated as a bike route between Augusta Road and State Street to indicate that it can be used as an alternative to Augusta Road. The roadway should also be striped with 10-foot-wide motor vehicle lanes, leaving the remaining paved shoulder space for bicycle and pedestrian use. Currently, residents either park their cars in their driveways or the grass or gravel shoulder areas beside the street, which should not conflict with striping the paved shoulder space.

3. Stripe bike lanes on Assembly Street in downtown Columbia.

Assembly Street is a key connection through Columbia's central business district between the Elmwood Park neighborhood and the University of South Carolina campus. Providing bike lanes on this street between Elmwood Avenue and Blossom Street would make it an excellent route for workers and students to use for short bike trips in the downtown area. The street currently has a wide, six-lane boulevard cross section with on-street parking, and the travel lanes vary between 12- and 14-feet wide. Restriping the motor vehicle travel lanes to 11-foot-wide would leave enough space to stripe a minimum 5-foot-wide bike lane adjacent to the parked cars on the right side of the street. The bike lanes could potentially be even wider on the section between Gervais Street and Blossom Street (this could be the first section to restripe, if it

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study



LEGEND

EARLY ACTION PROJECTS*

- 1 - Improve pedestrian crossings
- 2 - Establish a bike route and striped shoulders
- 3 - Stripe bike lanes
- 4 - Provide signage
- 5 - Improve signage and connection to greenway
- 6 - Construct new sidewalks and bus shelters
- 7 - Stripe bike lanes
- 8 - Add paved shoulder
- 9 - Add sidewalks and bike lanes
- 10 - Construct sidewalks
- 11 - Include wide sidewalks and bike lanes
- 12 - Add new sidewalks
- 13 - Design greenway
- 14 - Provide greenway connection
- 15 - Install pedestrian signals and crosswalks
- 16 - Improve pedestrian conditions along road
- 17 - Provide pedestrian signals
- 18 - Start neighborhood sidewalk program
- 19 - Provide sidewalks
- 20 - Add new sidewalks
- 21 - Improve intersection for pedestrians
- 22 - Provide pedestrian facilities at intersection
- 23 - Plan for new greenway trail
- 24 - Plan and design greenway extension
- 25 - Provide sidewalks
- 26 - Concept design for bicycle improvements

POPULATION (Per Sq. Mi.)**

- Under 1,000
- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 24,999
- 25,000 - 50,000

EXISTING FACILITIES

- Bike Lanes
- Shared-Use Path
- Palmetto Trail

COATS Study Area

*Full descriptions of the Early Action Projects are provided in the text of this document.
 **Population is for year 2000.

Source: PB & TDG 2005
 Map Created: 12/30/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

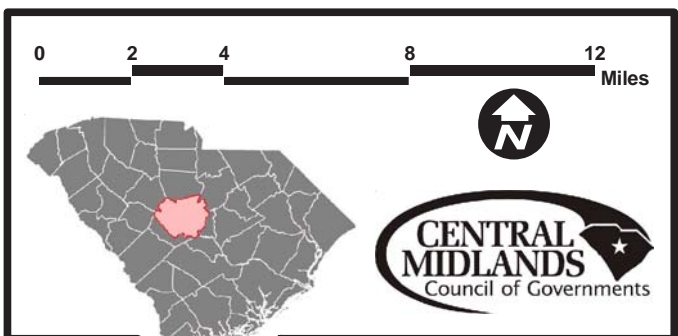


Figure 6.1-1
 Early Action Projects

is done in phases). In addition, to improve pedestrian visibility to motorists, the possibility of moving stop bars further back from crosswalks on all legs of each Assembly Street intersection should be evaluated.

4. Provide signage that shows bicyclists how to get to the Pennington Drive underpass to cross I-77 in Richland County.

The Pennington Drive underpass is a low-traffic alternative to crossing I-77 at the Garners Ferry Road Interchange. Signs should be posted to help bicyclists find this underpass. A bicyclist traveling eastbound on Garners Ferry Road near the USC Medical School can take a left on True Street, then a Right on Old Davidson Road to reach the underpass. Then they can pass under I-77 and continue on Pennington Drive, Towhee Drive, and Garden Springs Drive, and finally take a left on Leesburg Road. If the bicyclist wishes to continue to Garners Ferry Road, they can take a right on Patterson Road. Further, it would be beneficial for CMCOG and the City of Columbia to study and recommend an alignment for a shared-use path between the end of Davidson Road and Fort Jackson Boulevard to provide an important connection that would allow many pedestrians and bicyclists to bypass Garners Ferry Road.



Project Components

- Signage

5. Improve the signage and connection between the University of South Carolina and Three Rivers Greenway.

Access to the Three Rivers Greenway is critical for the convenience of local residents and the success of the greenway. Improving signage directing people between the University of South Carolina campus and the greenway trail along the river would make the trail more accessible to university students and staff, as well as residents living in neighborhoods on the south side of Columbia. There are currently several signs indicating the neighborhood streets to use to make this connection, but the route should be re-evaluated. New signage should also be considered. Signs could be larger, and maps could be included at parks along the connecting route.

Project Components

- Signage
- Map kiosks

**Project Components**

- Sidewalks
- ADA ramps
- Crosswalks
- Bus shelters with benches

6. Construct new sidewalks and bus shelters on both sides of Shop Road on the south side of Columbia.

Shop Road, a two-lane road with no shoulders, serves high-speed traffic exiting from I-77 and going to downtown Columbia. This creates unsafe and very uncomfortable conditions for pedestrians. This problem is especially poignant because the neighborhood along Shop Road has significant pedestrian activity, as documented by the dirt paths along both sides of the road. New sidewalks would make the road much safer and more convenient for all pedestrians, including those with disabilities. The sidewalks would help keep pedestrians from getting muddy when the ground is wet. In addition, a CMRTA bus route serves this road, but other than signage, no associated pedestrian amenities are provided. New bus stop benches and shelters would make it more comfortable for residents to wait for the bus.

7. Stripe bike lanes on Two Notch Road between Beltline Boulevard and Parklane Road on the northeast side of Columbia, Forest Acres, and Richland County.**Project Components**

- Restriping of travel lanes
- Striping of bicycle lanes

Bike lanes should be striped on Two Notch Road in the northeast side of Columbia, Forest Acres, and Richland County to provide safer and more convenient bicycle access between the neighborhoods in this corridor and Columbia Place Mall and other shopping areas near I-20 and I-77. A long section of this 4-lane roadway with a center turn lane is 72-feet-wide from curb to curb, so there is enough space to stripe 11-foot travel lanes, a 15-foot center turn lane, and two six-foot bike lanes. Adding bike lanes to this wide section of roadway would also help narrow the road visually, which could help keep traffic traveling closer to the posted speed limit. Other parts of the roadway are 64-feet-wide from curb to curb. Bicycle conditions can be improved on these sections by restriping the four through-lanes and center turn lane to 10 or 11 feet wide and designating the remaining four-plus feet on each side as bicycle lanes (see Typical Roadway Cross-Sections in Appendix D). In addition, to improve pedestrian visibility to motorists, the possibility of moving stop bars further back from crosswalks on all legs of each Two Notch Road intersection should be evaluated.

8. Add a paved shoulder on Farrow Road between Hard Scrabble Road and Clemson Road in Richland County.

New residential neighborhoods, commercial centers, parks, and other urban amenities are being developed rapidly in the northeast part of Richland County. Residents of the area will have more opportunities to travel relatively short distances to destinations, such as shopping, work, restaurants, and recreation centers. Therefore, more facilities are needed to provide safe places for people to bicycle and walk.

One opportunity to improve conditions for non-motorized travel is to add a paved shoulder to Farrow Road between Hard Scrabble Road and Clemson Road. In the future, Farrow Road, and other nearby roads, may be widened to four lanes. As these changes occur, it will be important to take advantage of opportunities to incorporate pedestrian and bicycle facilities into new developments.



Project Components

- 4-foot paved shoulder
- Striping of edge of travel

9. Add sidewalks and bike lanes on Columbia Avenue between downtown Chapin and Chapin High School.

New sidewalks and bike lanes should be constructed on both sides of Columbia Avenue between Old Lexington Road and the high school. These facilities would make it easier for students and school employees to walk and bicycle to the school. This is especially important before and after school when motor vehicle traffic volumes on Columbia Avenue are higher than other parts of the day.

It should be noted that CMCOG is currently undertaking a corridor study of Columbia Avenue. It would be advantageous to coordinate this early action project with any roadway improvement recommendations of the corridor study.



Project Components

- Sidewalks
- Curb and gutter
- Striping of bicycle lanes

10. Construct sidewalks on both sides of Augusta Road (US 1) in Lexington County.

Businesses are located on both sides of Augusta Road for most of the corridor between the Town of Lexington and the City of West Columbia. New sidewalks will make it possible for pedestrians to walk along this roadway without needing to walk in the road or negotiate signs, utility poles, uneven surfaces, driveway crossings, grates, puddles, or other barriers that currently exist on the side of the road. In addition, when this roadway is resurfaced, it may be



Project Components

- Sidewalks

possible to narrow the center turn lane and motor vehicle travel lanes to provide space on both sides for new bike lanes.

I 1. Include wide sidewalks and bike lanes on the new Broad River Road (US 176) Bridge.

Wide sidewalks and bike lanes should be included as a part of the Broad River Road Bridge replacement project. This bridge provides a critical pedestrian and bicycle link between neighborhoods and shopping areas on the north side of the City of Columbia, since it is the only non-interstate bridge across the Broad River in the Central Midlands region. The bridge also serves an access point for pedestrians and bicyclists to connect to the Three Rivers Greenway.

Project Components

- Sidewalks
- Bike lanes



Project Components

- Sidewalks

I 2. Add sidewalks on both sides of Columbiana Drive on the south side of Irmo.

New sidewalks should be provided on both sides of Columbiana Drive to make it easier for pedestrians in adjacent developments to walk to Columbiana Centre Mall and the businesses on Harbison Boulevard to the south and on Lake Murray Boulevard to the North. New sidewalks will also make it possible for residents to walk and run for recreation near their homes. Currently, both sides of the road appear to have an even grade with few obstacles, so it may be relatively inexpensive to provide sidewalks along this roadway segment.

I 3. Develop a design for the Three Rivers Greenway along the Saluda River.

CMCOG should work with the River Alliance to design a 12-foot-wide shared-use path along the north side of the Saluda River (this is already planned as part of the initial 12-mile greenway system). This section of greenway is planned to be eventually extended south with a bridge across the river and a new greenway path along the east side of I-26. This section of greenway path along the Saluda River would help provide a convenient pedestrian and bicycle connection to downtown Columbia for people living in the area between the Saluda and Broad Rivers. While the existing parts of the Three Rivers Greenway are only 8-foot-wide, they have been very successful and are used by many pedestrians and bicyclists. This new section should be wider to serve a potentially higher number of users.

Project Components

- Greenway design

14. Provide a connection between the Three Rivers Greenway in the Granby Park area and Gervais Street in Columbia.

Constructing a greenway path between Granby Park and Gervais Street would make it easier for people in downtown Columbia and the University of South Carolina area to connect to the Three Rivers Greenway. If possible, it would be ideal to provide such a connection directly adjacent to the Congaree River. If this is not possible, provision of a sidepath should be considered for the west side of Huger Street. Another option is to stripe bike lanes and install sidewalks on both sides of Huger Street, which would make the northbound direction of the greenway on the east side of the street and the southbound direction of the greenway on the west side of the street.



Project Components

- Shared-use path

15. Install pedestrian signals and crosswalks at intersections along Harbison Boulevard on the south side of Irmo.

New high-visibility crosswalks and pedestrian countdown signals should be installed at several intersections along Harbison Boulevard. Harbison Boulevard bisects one of the largest concentrations of retail stores in the Central Midlands region. The road accommodates high traffic volumes, especially on weekends and other shopping days. However, there are currently no crossing facilities for pedestrians.



Project Components

- Crosswalks
- ADA ramps
- Pedestrian countdown signals

New crosswalks and pedestrian signals would provide a visible indication that pedestrian travel is welcome in this shopping area and would show drivers where they have a legal responsibility to yield to pedestrians. These facilities would make conditions safer for people who would like to walk between stores, who arrive by transit and need to walk, or simply do not have a motor vehicle. Sidewalks should also be added on both sides of Harbison Boulevard between Saint Andrews Road and Broad River Road.



Project Components

- Sidewalks
- Crosswalks
- ADA ramps
- Pedestrian countdown signals

16. Improve pedestrian conditions along Garners Ferry Road (US 76/US 378) between Veteran Road and Benson Road.

This section of Garners Ferry Road serves several commercial strip shopping centers and residential neighborhoods. It needs new sidewalks on both sides of the road and improved pedestrian facilities for crossing the road. This improvements will make it easier for people to walk from their homes to work or shop at the

**Project Components**

- Pedestrian countdown signals

Project Components

- New sidewalk program

Project Components

- Sidewalks

stores or to walk between stores when running errands. Several intersections that have large amounts of turning traffic are critical for pedestrian improvements, including striped crosswalks, curb ramps, and pedestrian signals. These are the intersections of Garners Ferry Road and Veteran Road, Greenlawn Drive, Atlas Road, Hazelwood Road, and Pineview Road.

17. Provide new pedestrian signals at the intersection of Laurel Street and Harden Street in Columbia.

This intersection serves large volumes of traffic, but it is surrounded by residential neighborhoods and is close to Downtown Columbia, commercial areas of Harden Street, Benedict College, and Allen University. Because there are long crossing distances across both streets, pedestrian countdown signals should be provided to help pedestrians understand how much time they have to complete crossing the street.

18. Kick off a new Neighborhood Sidewalk Program in the Town of Lexington.

Sidewalks could be added to several roadways to kick off a new Neighborhood Sidewalk Program in the Town of Lexington. The Town of Lexington has already made significant improvements for pedestrians on Main Street. However, there are several two-lane roadways, especially on the west side of Lexington, that do not have shoulders or sidewalks. There are currently dirt paths where pedestrians walk beside the road. By adding sidewalks on at least one side of these roads, neighborhood residents will have a safe place to walk that does not get muddy in the rain and is accessible to all pedestrians, including those with disabilities.

19. Provide sidewalks on both sides of Sunset Boulevard (US 378) on the east side of the Town of Lexington.

While there are some sections of sidewalk on the north side of US 378 on the east side of Lexington, continuous sidewalks should be constructed on both sides of US 378 between SC 6 and Hope Ferry Road. Commercial strip developments are located on both sides of the roadway. Adding sidewalks to both sides of the road will allow pedestrians to travel safely and comfortably between locations on the same side of the road without going back and forth across US 378 to use a sidewalk that is only on one side. Adding these sidewalks will require a collaborative effort between the Town and County of Lexington and SCDOT.

20. Add new sidewalks on both sides of Clemson Road in the commercial area north of Percival Road in Richland County.

New sidewalks should be provided on both sides of Clemson Road to serve pedestrians in the commercial area near Percival Road. These sidewalks will make it convenient for people to walk to nearby stores and restaurants from the residential neighborhoods being developed in the area.

21. Improve pedestrian accommodations at the intersection of North Springs Road and Clemson Road in Richland County.

New pedestrian signals should be added at the intersection of North Springs Road and Clemson Road in Richland County to provide a safer crossing between neighborhoods on the north and south side of Clemson Road and the commercial areas on Clemson Road. Additionally, the intersection should be evaluated to determine if the crosswalks should be restriped to make the pedestrian crossing areas more visible, and if the turning radii should be reduced to provide shorter crosswalks and slow turning vehicles. These physical changes could help make drivers are more aware of pedestrians crossing the intersection.

22. Provide new facilities to accommodate pedestrians at the intersection of Blossom Street and Assembly Street in Columbia.

When Assembly Street is restriped with bike lanes (see early action project no. 3), additional improvements should be made at pedestrian crossings. For example, new crosswalks, curb ramps, and pedestrian signals should be provided at the intersection of Blossom and Assembly Streets. Though the new overpasses in this area have provided a safe crossing for many pedestrians, some still need to cross at street level, and this crossing should be made safer.



Project Components

- Sidewalks



Project Components

- Crosswalks
- Pedestrian countdown signals



Project Components

- Crosswalks
- ADA ramps
- Pedestrian countdown signals



Project Components

- Greenway planning study

23. Start planning for a new greenway trail in the abandoned rail corridor between Elmwood Park and Downtown Columbia.

The abandoned rail corridor between Elmwood Park and downtown Columbia represents an excellent opportunity to create an urban greenway trail that would make a non-motorized transportation connection for residents living on the northwest side of Columbia with the University of South Carolina, the State Capitol, downtown shopping areas, and Finlay Park. A planning study should be conducted to identify opportunities and challenges to constructing a trail in this corridor, including issues such as trail access, security, cost, and property ownership.

Project Components

- Greenway design

24. Plan and design an extension to the Three Rivers Greenway to the south of Cayce along the Congaree River.

Extending the Three Rivers Greenway to the south would allow pedestrians and bicyclist trail users to travel along more rural sections of the Congaree River. This new greenway trail would also connect the Riverland Park Subdivision to the City of Cayce. It may be possible for the new greenway to take advantage of the existing right-of-way of Old State Road, which is used by few motor vehicles. This extension is outlined in the “Three Rivers Greenway Additions” report included in Appendix E.



Project Components

- Sidewalks
- ADA ramps

25. Add sidewalks on the southeastern side of Two Notch Road in the commercial area between North Brickyard Road and Burmaster Drive in Richland County.

New sidewalks should be provided on the southeastern side of Two Notch Road to serve pedestrians in this ever-growing commercial corridor in northeast Richland County. A rail corridor along the northwest side of Two Notch Road limits development in this area, making it unnecessary to provide sidewalks on both sides of the road. It would be advantageous to provide sidewalks on both sides of Two Notch Road between Risdon Way and Burmaster Drive as the rail corridor shifts to the north in this area allowing commercial development on both sides of Two Notch Road. These sidewalks will make it convenient for people to walk to nearby stores and restaurants from the residential neighborhoods being developed in the area.

26. Study the Kilbourne Road/Shady Lane/Kings Grant Drive/Fort Jackson Boulevard area and develop a conceptual design for bicycle facility improvements.

The area on the east side of Columbia near Fort Jackson is of significant importance to recreational bicyclists in the Central Midlands region. However, current conditions are less than ideal for bicycle travel, and there is no simple solution for improving this area. Most likely a series of improvements will be necessary to truly make this a safe bicycle environment. Potential on- and off-road bicycle facilities and roadway crossing improvements should be evaluated along Kilbourne Road, Shady Lane, Fort Jackson Boulevard, and Kings Grant Drive. Therefore, CMCOG, the City of Columbia, and Fort Jackson should work together to study this area and develop a conceptual design for bicycle facility improvements.

Project Components

- Study and conceptual design for bicycle facility improvements

6.2 Preliminary Routing

This plan recommends pedestrian and bicycle facility improvements that will increase safety and provide more convenient access to destinations where people would like and need to bicycle and walk. While these improvements will occur incrementally through individual projects, they will ultimately create a system that serves the entire Central Midlands region. This section describes the locations (or routing) of specific improvements needed to create this comprehensive system. Phasing for individual components recommended to create the system are included as part of the implementation plan in Section 7 of this document.

In addition to the twenty-six specific Early Action Projects identified above, concept-level preliminary routing of pedestrian and bicycle facility improvements was developed based on the findings of efforts previously documented in this report, including:

- Existing policies, programs, and facilities;
- Bicycle and pedestrian trip generation;
- Identified opportunities and constraints;
- Stakeholder input;
- Public feedback; and
- SSC review and comment.

Note that the facility improvements recommended as part of preliminary routing have not been broken into specific projects, as it is impossible to predict the actual limits of individual projects along a single route. For example, sidewalks are recommended along both sides of Augusta Road from the Town of Lexington to the City of West Columbia, but the likelihood that this would be one, two, or more projects is unknown.

6.2.1 Pedestrian Facility Improvements

Preliminary routing for pedestrian facility improvements is depicted in **Figure 6.2-1** and includes:

- **Pedestrian crossing facilities** - improvements at key intersections including crosswalks, ADA ramps, and pedestrian countdown signals;
- **Sidewalks** - 5-foot-wide (minimum) concrete sidewalks specified by one side or both sides of a street;
- **Sidepaths** - wide paths or sidewalks that are located parallel to a roadway (preferably with buffer space between traffic and non-motorized users) (common to both pedestrian and bicycle routing);
- **Paved shoulders** - 4-foot-wide (minimum) paved shoulders on both sides of a rural roadway (common to both pedestrian and bicycle routing); and
- **Greenway trail** – 10-foot-wide (minimum) shared-use path serving as an extension to the existing Three Rivers Greenway (common to both pedestrian and bicycle routing).

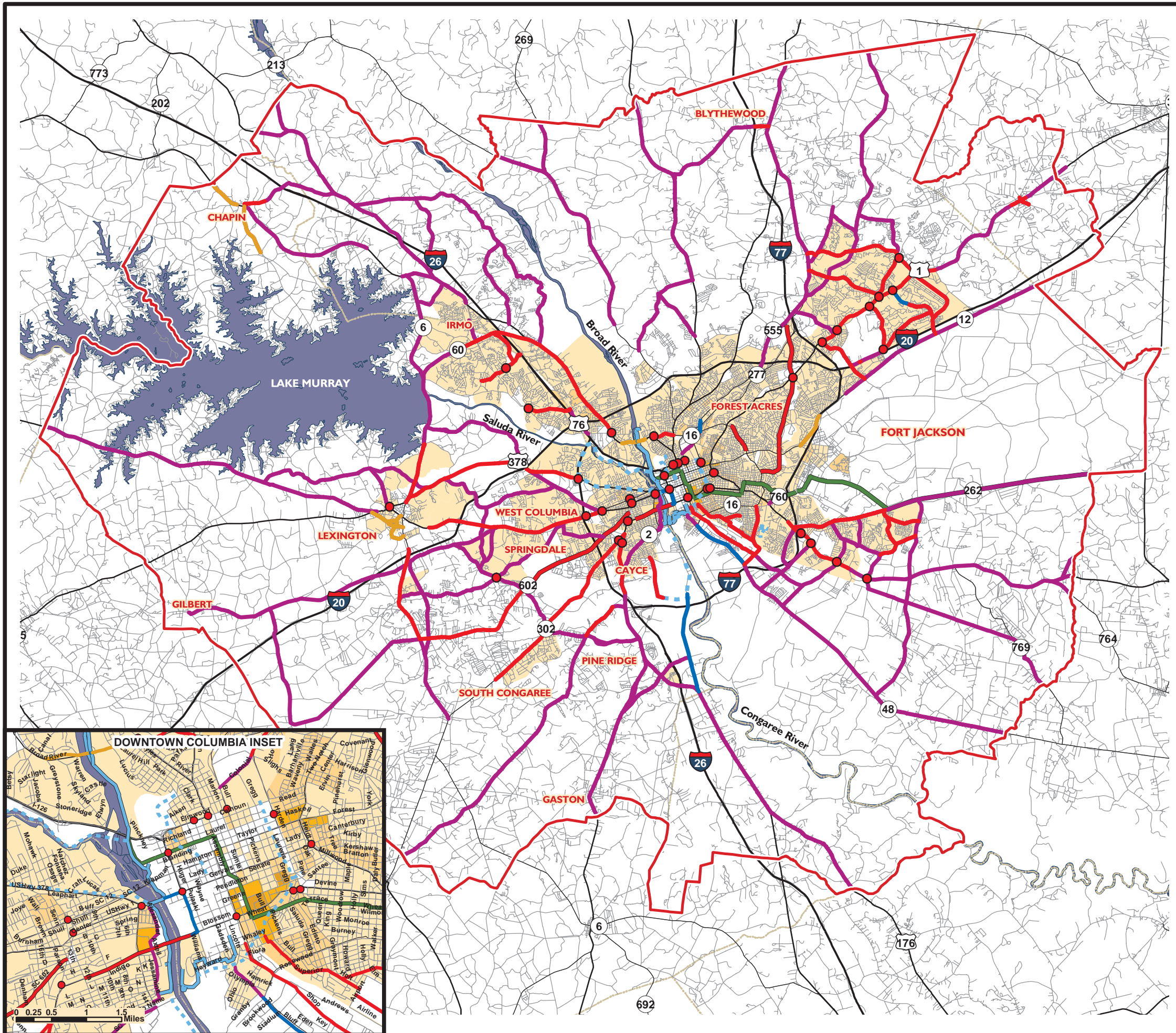
6.2.2 Bicycle Facility Improvements

Preliminary routing for bicycle facility improvements is depicted in **Figure 6.2-2** and includes:

- **Bike lanes** - 5-foot-wide (minimum) striped bicycle lanes along the outside travel lane of a roadway specified by new construction or restriping (bicycle lane width can include the gutter pan, if it is flush with the pavement surface);
- **Sidepaths** - wide paths or sidewalks that are located parallel to a roadway (preferably with buffer space between traffic and

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LEGEND

PROPOSED PEDESTRIAN IMPROVEMENTS

- Pedestrian Crossing Facilities
- Sidewalks
- Sidewalk, One Side
- Sidepaths
- Shoulders
- - - Greenway Trail

POPULATION (Per Sq. Mi.)*

- Under 1,000
- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 24,999
- 25,000 - 50,000

EXISTING FACILITIES

- Bike Lanes
- Shared-Use Path
- Palmetto Trail

COATS Study Area

*Population is for year 2000.

Source: PB & TDG 2005
Map Created: 12/30/05

This map is for conceptual presentation purposes only, and is believed to be fundamentally accurate; however, no guarantees as to its accuracy or completeness are expressed or implied.

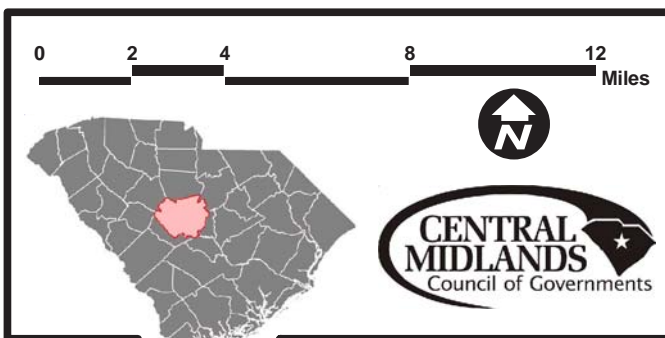
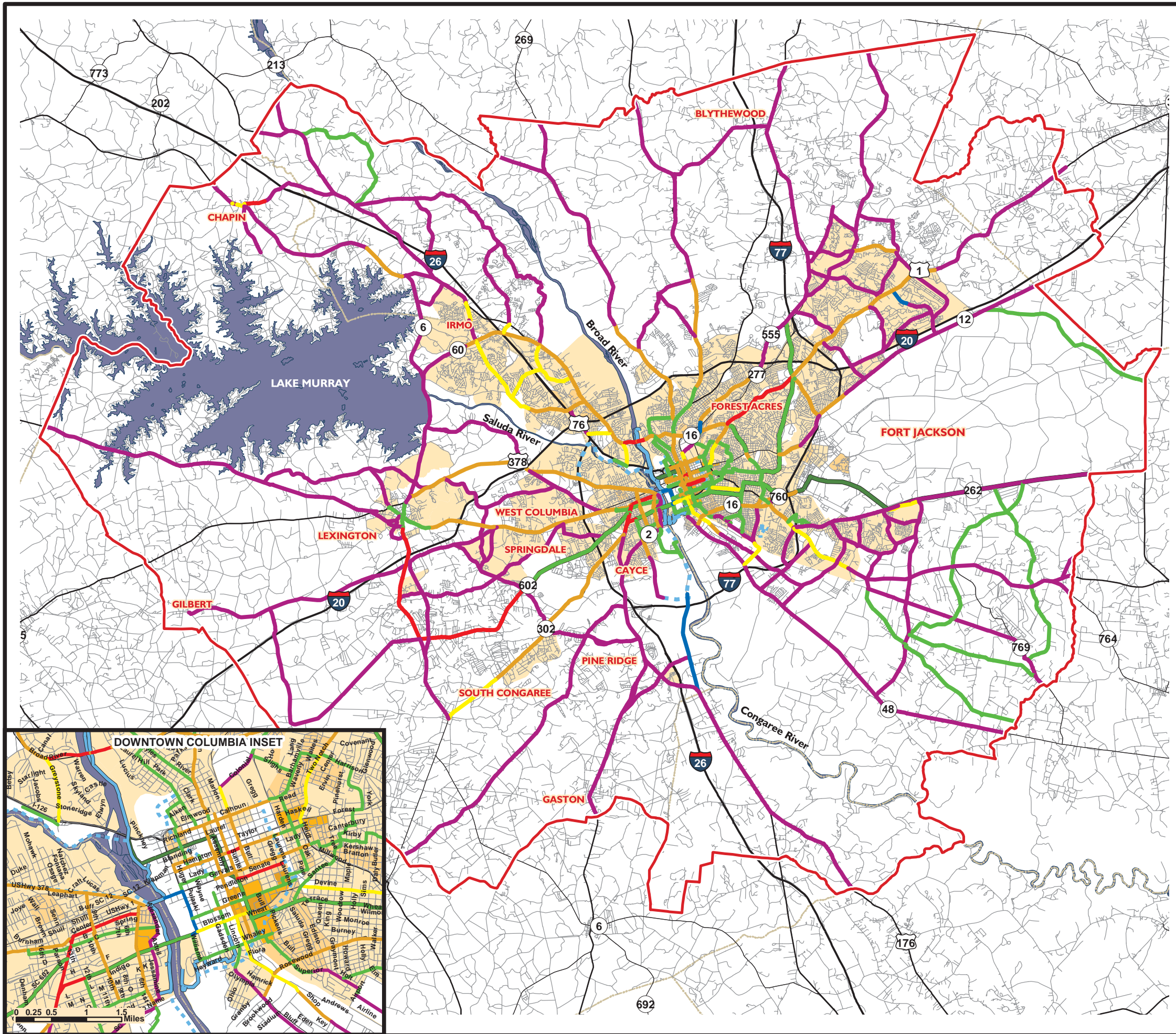


Figure 6.2-1
Pedestrian Facility Improvements

Bike and Pedestrian Pathways Plan

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LEGEND

PROPOSED BICYCLE IMPROVEMENTS

- Bike Lanes
- Bike Lanes, Restripe
- Sidepaths
- Shoulders
- Connector
- Important Linkage Requiring Further Study
- - - Greenway Trail

POPULATION (Per Sq. Mi.)*

- Under 1,000
- 1,000 - 4,999
- 5,000 - 9,999
- 10,000 - 24,999
- 25,000 - 50,000

EXISTING FACILITIES

- Bike Lanes
- Shared-Use Path
- Palmetto Trail

COATS Study Area

*Population is for year 2000.

Source: PB & TDG 2005
Map Created: 12/30/05

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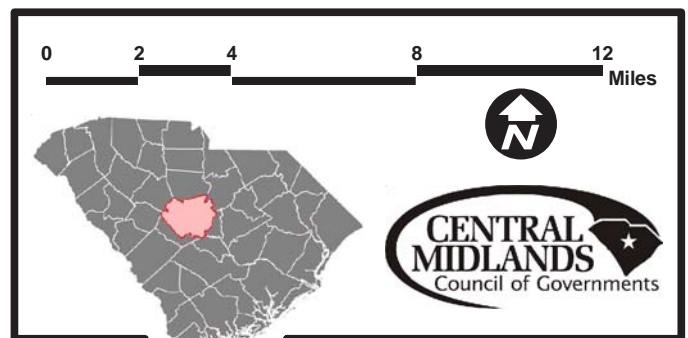


Figure 6.2-2
Bicycle Facility Improvements

non-motorized users) (common to both pedestrian and bicycle routing)⁶;

- **Paved shoulders** - 4-foot-wide (minimum) paved shoulders on both sides of a rural roadway (common to both pedestrian and bicycle routing);
- **Greenway trail** – 10-foot-wide (minimum) shared-use path serving as an extension to the existing Three Rivers Greenway (common to both pedestrian and bicycle routing).
- **Connectors** - roadways that either already have bicycle facilities (such as bike lanes) or have good conditions for bicycle riding without adding bicycle facilities (often low-volume residential streets and rural roads) – these roads provide access between other bike facilities or key destinations; and
- **Linkages requiring further study** - important connections where bicycling conditions should be improved, but high-traffic volumes and right-of-way constraints make it difficult to determine what type of facility is needed without a more detailed corridor study.

6.3 Three Rivers Greenway Additions

In April 2003, the River Alliance made an informational presentation of the “Three Rivers Greenway Additions” report to the CMCOG Board. It outlines 17 specific projects to expand the initial 12-mile greenway along the rivers and into the surrounding urban areas. Mapping, individual elements, and cost estimates were included for each project.

This plan for expansion of the Three Rivers Greenway has been reviewed and the concepts included are ratified as part of this Bike and Pedestrian Pathways Plan. It is incorporated by reference and is located in Appendix F. It should be noted that the exact routing

⁶ Sidepath facilities are recommended only in a few locations in the Central Midlands region. These facilities must be designed with caution because they can put bicyclists at risk for collisions with vehicles at intersections, especially when bicyclists ride in the opposite direction of adjacent traffic. The *AASHTO Guide for the Development of Bicycle Facilities* should be consulted closely when designing sidepath facilities. It is important to note that, based on current South Carolina law, if a sidepath (i.e., per SC Code of Laws 56-5-3430, “usable path” adjacent to the roadway) is available, then bicyclists are prohibited from utilizing the roadway.

and cost estimates included in the “Three Rivers Greenway Additions” report are preliminary and it is recommended that each project receive additional physical and financial planning prior to implementation.

7. IMPLEMENTATION PLAN

Table 7.0-1 presents a preliminary plan of implementation for Early Action Projects discussed in Section 6.1. All Early Action Projects are to be completed within the 0- to 2-year period following adoption of the Bike and Pedestrian Pathways Plan. Also during this period, further review and assessment of funding availability should be conducted for larger-scale improvements.

An estimated order-of-magnitude cost is presented for each early action project in the implementation plan. For planning efforts, the costs were derived examining prior, similarly scoped studies. For capital projects, costs were estimated using unit pricing values from SCDOT reference documents and other nationally published cost-estimating sources. It should be noted that all costs were estimated assuming that each early action project would be a “stand-alone” effort; however, if Early Action Projects could be coordinated with other on-going construction and maintenance efforts (e.g., repaving, restriping, etc.), then cost savings through economies could be achieved.

In addition, **Figures 7.0-1 and 7.0-2** depict logical phasing for pedestrian facility routing and bicycle facility routing respectively. The system of recommended improvements is divided into the following phasing categories:

- Short-term (0 to 5 years after the plan is adopted);
- Medium-term (0 to 10 years after the plan is adopted); and
- Long-term (0 to 20 years after the plan is adopted).

Recommended improvements should be made as soon as opportunities arise (i.e., if a road construction project provides an opportunity to complete a long-term project two years after the plan is adopted, the improvements should be made, regardless of their designation as “long-term”).

Table 7.0-1
Preliminary Implementation Plan

Early Action Projects¹	Estimated Order-of-Magnitude Costs	Potential Responsible Entities
1. Improve pedestrian crossings at the intersection of North Main Street and Columbia Avenue	\$44,000 ²	Town of Lexington; SCDOT
2. Establish a signed bike route and striped shoulder on Center Street	\$30,500 ²	City of West Columbia
3. Stripe bike lanes on Assembly Street	\$110,500 ²	City of Columbia; SCDOT
4. Provide bicycle wayfinding signage to get to the Pennington Drive underpass of I-77	\$12,200 ²	City of Columbia
5. Improve signage and connection between USC and the Three Rivers Greenway	\$6,500 ²	USC; River Alliance; City of Columbia
6. Sidewalks and bus shelters on both sides of Shop Road	\$2,500,000 ²	Richland County; CMRTA; SCDOT
7. Stripe bike lanes on Two Notch Road between Beltline Boulevard and Parklane Road	\$219,500 ²	City of Columbia; City of Forest Acres; Richland County; SCDOT
8. Paved shoulder on Farrow Road between Hard Scrabble Road and Clemson Road	\$350,000 ²	Richland County; SCDOT
9. Sidewalks and bike lanes on Columbia Avenue	\$1,100,000 ²	Town of Chapin; SCDOT
10. Sidewalks on both sides of Augusta Road	\$5,210,500 ²	Lexington County; Town of Lexington; City of West Columbia; SCDOT
11. Sidewalks and bike lanes on the new Broad River Road Bridge	N/A ³	SCDOT
12. Sidewalks on both sides of Columbiana Drive	\$1,256,000 ²	Town of Irmo
13. Design for the Three Rivers Greenway along the Saluda River	\$75,000 - \$100,000	River Alliance; CMCOG
14. Connection between the Three Rivers Greenway in the Granby Park area and Gervais Street in the Huger Street Corridor	\$512,500 ²	River Alliance; City of Columbia
15. Pedestrian signals and crosswalks at intersections along Harbison Boulevard	\$356,000 ²	Town of Irmo; SCDOT

Table 7.0-1
Preliminary Implementation Plan

Early Action Projects¹	Estimated Order-of-Magnitude Costs	Potential Responsible Entities
16. Improve pedestrian conditions along Garners Ferry Road between Veteran Road and Harden Street	\$3,500,000 ²	City of Columbia; SCDOT
17. New pedestrian signals at the intersection of Laurel Street and Harden Street	\$2,500 ²	City of Columbia; SCDOT
18. Kick off to New Town of Lexington Neighborhood Sidewalk Program	\$1,856,000 ²	Town of Lexington
19. Sidewalks on both sides of Sunset Boulevard	\$1,392,000 ²	Town of Lexington; Lexington County; SCDOT
20. Sidewalks on both sides of Clemson Road north of Percival Road	\$795,000 ²	Richland County; SCDOT
21. Improve pedestrian accommodations at the intersection of North Springs Road and Clemson Road	\$42,000 ²	Richland County; SCDOT
22. Pedestrian accommodations at the intersection of Blossom Street and Assembly Street	\$21,000 ²	City of Columbia; SCDOT
23. Planning for a new greenway trail in the abandoned rail corridor between Elmwood Park and downtown Columbia	\$125,000 - \$150,000	City of Columbia; CMCOG
24. Plan and design an extension to the Three Rivers Greenway to the south of Cayce along the Congaree River	\$75,000 - \$100,000	River Alliance; City of Cayce; CMCOG
25. Sidewalks on the southeastern side of Two Notch Road between North Brickyard Road and Burmaster Drive.	\$806,000 ²	Richland County; SCDOT
26. Study/concept for Kilbourne Rd/ Shady Ln/Kings Grant Dr/Ft Jackson Blvd area.	\$75,000 - \$100,00	City of Columbia; CMCOG;

¹ All Early Action Projects are programmed for the 0- to 2-year period directly following the adoption of the Bike and Pedestrian Pathways Plan.

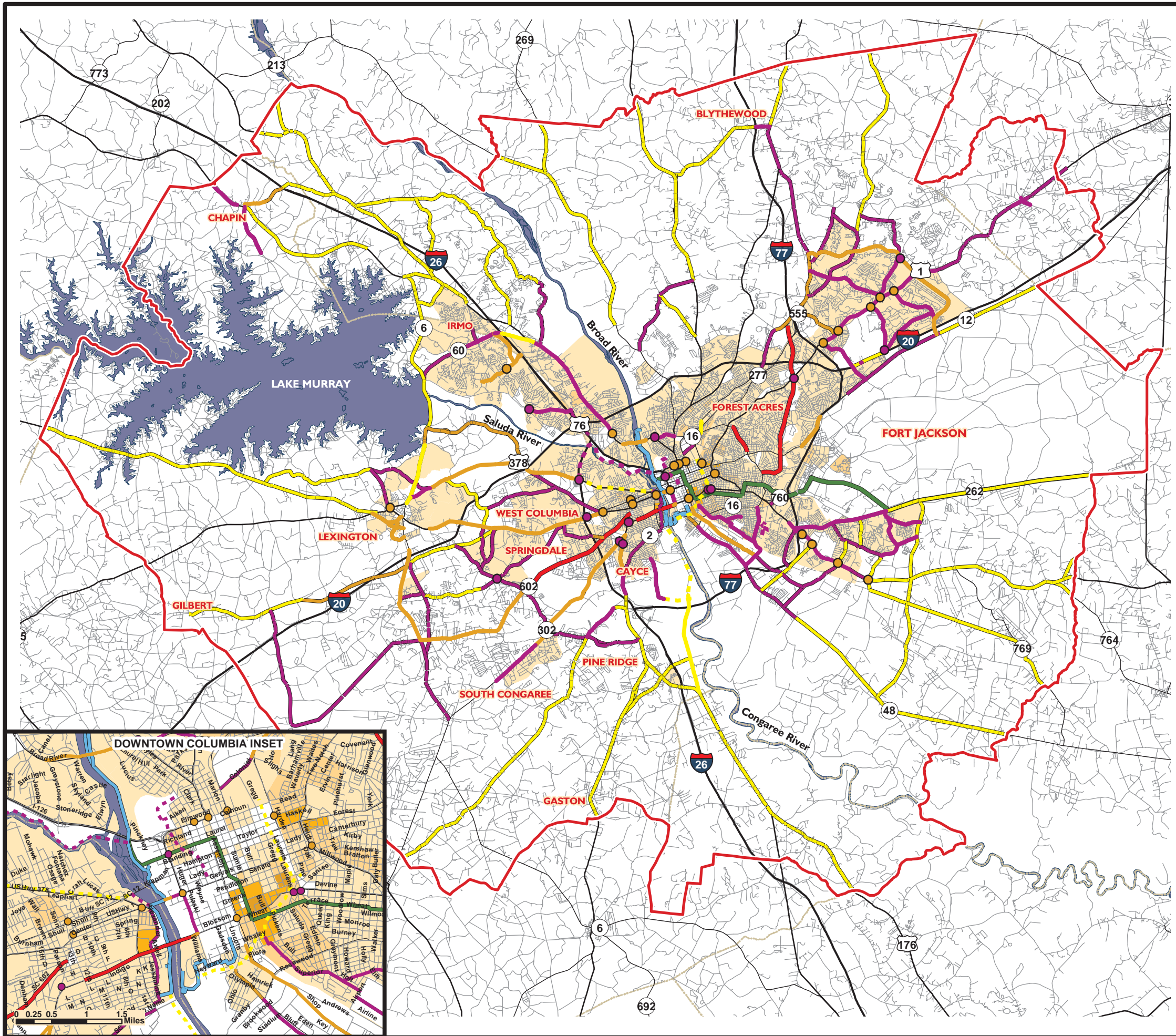
² A detailed order-of-magnitude cost estimate is included in Appendix G.

³ No cost estimate was created for this early action project because the planning and design of the new Broad River Road Bridge is currently underway and already includes sidewalks and bike lanes (the budget for the project will also cover these elements).

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Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study



LEGEND

- | | |
|------------------------------------|----------------------------------|
| PEDESTRIAN PHASING | POPULATION (Per Sq. Mi.)* |
| SHORT-TERM (0 to 5 years) | Under 1,000 |
| — Sidewalks/Sidepaths | 1,000 - 4,999 |
| — Shoulders | 5,000 - 9,999 |
| - - - Greenway Trail | 10,000 - 24,999 |
| ● Crossing Improvements | 25,000 - 50,000 |
| MEDIUM-TERM (0 to 10 years) | EXISTING FACILITIES |
| — Sidewalks/Sidepaths | — Bike Lanes |
| — Shoulders | — Shared-Use Path |
| - - - Greenway Trail | — Palmetto Trail |
| ● Crossing Improvements | COATS Study Area |
| LONG-TERM (0 to 20 years) | |
| — Sidewalks/Sidepaths | |
| — Shoulders | |
| - - - Greenway Trail | |
| ● Crossing Improvements | |

*Population is for year 2000.

Source: PB & TDG 2005
Map Created: 12/30/05

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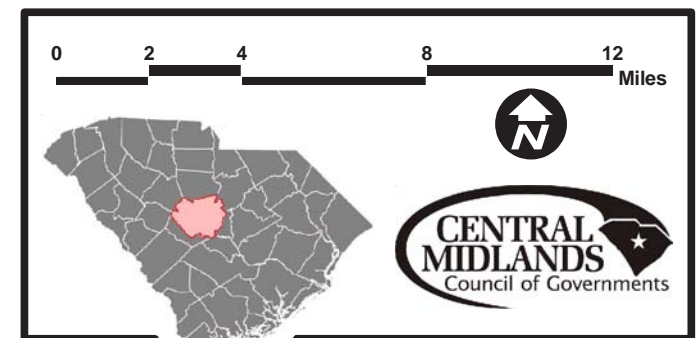


Figure 7.0-1
Pedestrian Facility Phasing

Bike and Pedestrian Pathways Plan

for the Columbia Area Transportation Study



LEGEND

BICYCLE PHASING		POPULATION (Per Sq. Mi.)*		
SHORT-TERM (0 to 5 years)		Under 1,000		
	Bike Lanes/Sidepaths		1,000 - 4,999	
	Shoulders		5,000 - 9,999	
	Greenway Trail		10,000 - 24,999	
MEDIUM-TERM (0 to 10 years)				25,000 - 50,000
	Bike Lanes/Sidepaths	EXISTING FACILITIES		
	Shoulders		Bike Lanes	
	Greenway Trail		Shared-Use Path	
LONG-TERM (0 to 20 years)			Palmetto Trail	
	Bike Lanes/Sidepaths		COATS Study Area	
	Shoulders			
	Greenway Trail			

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Source: PB & TDG 2005
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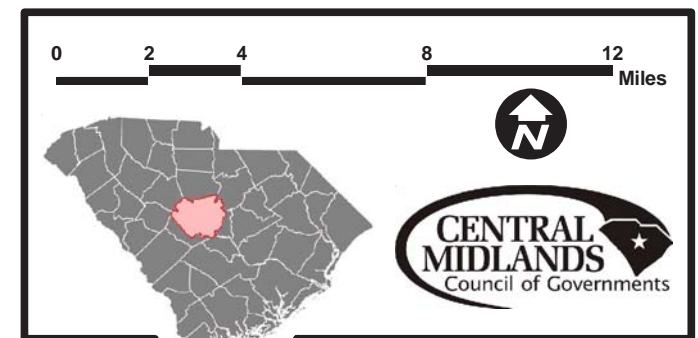


Figure 7.0-2
Bicycle Facility Phasing