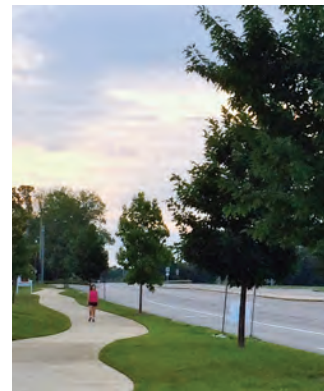
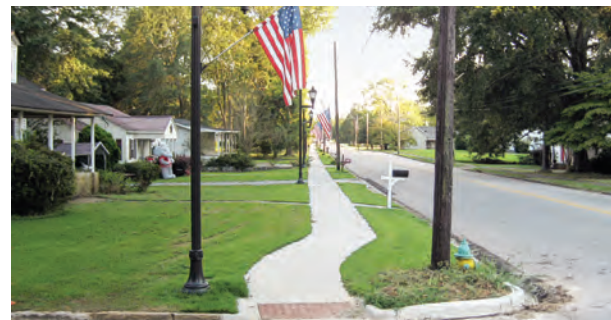


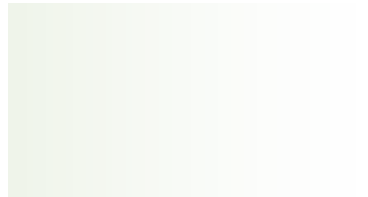
# Alabama Statewide Bicycle and Pedestrian Plan

2017



Prepared by Gresham, Smith and Partners  
for the Alabama Department of Transportation







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# Executive Summary







# Executive Summary

## 1.0 Introduction

Walking and bicycling are important elements of every transportation system, allowing people of all ages and abilities to access everyday needs, including work, education, health care, and shopping. The purpose of the *Alabama Statewide Bicycle and Pedestrian Plan* is to establish a vision that supports walking and bicycling as modes of transportation in Alabama. Developed by the Alabama Department of Transportation (ALDOT) and stakeholders from across the state, the statewide plan aims to guide investments in bicycle and pedestrian facilities and programs that achieve the greatest improvements within limited available funding.

Providing safe bicycle and pedestrian facilities is the overriding focus of the statewide plan and underpins its recommendations. As walking and bicycling have increased across Alabama and the nation, a broad range of policies, plans, guidelines, and standards have been developed to integrate the two modes safely into the overall transportation system. Many of these policies, plans, guidelines, and standards serve as the foundation for the statewide plan and help shape the plan's key recommendations on pedestrian and bicycle safety, access, and economic development.

## 2.0 National and State Policies and Practices

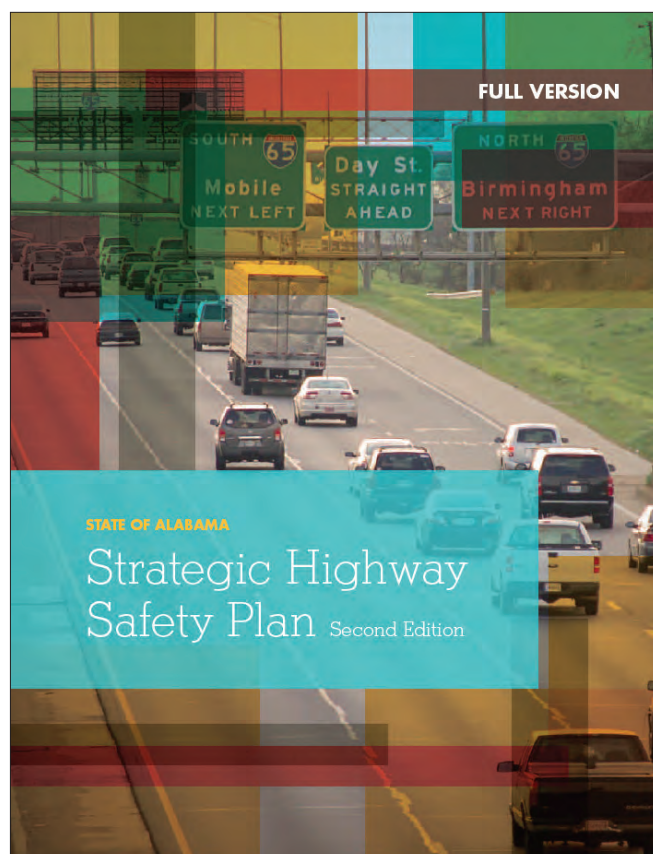
Since passage of the federal *Intermodal Surface Transportation Efficiency Act* (ISTEA) in 1991, federal, state, and regional transportation agencies have expanded their efforts to improve walking and bicycling conditions throughout the United States and across Alabama. Key trends and changes at the federal level include:

- Since 2010, USDOT and the Federal Highway Administration (FHWA) have introduced or issued multiple policy statements and guidance on pedestrian and bicycle safety, design flexibility, and performance measures; and
- Nationally, after more than a decade of declining crashes, pedestrian and bicycle injuries and fatalities have steadily increased since 2009, resulting in new technical assistance, planning, and design initiatives to improve safety.

At the state level, the *Alabama Statewide Transportation Plan* and *Alabama Strategic Highway Safety Plan* provide the policy foundation for bicycle and pedestrian transportation in the state, emphasizing an improved traffic safety culture and an efficient, interconnected transportation system that supports economic development, preserves the quality of the environment, and enhances quality of life.

At the regional and local levels, all 14 Metropolitan Planning Organizations in Alabama and six individual cities have standalone bicycle and pedestrian plans as of January 2016. Another 43 cities and counties have bicycle and pedestrian elements in their respective comprehensive or community master plans. Complementing the state, regional, and local

- Annual federal funding for pedestrian and bicycle transportation has increased more than fourfold over the past 20 years to \$850 million;
- Federal funding for pedestrian and bicycle transportation is available through 13 programs, including the core federal highway programs as well as federal transit programs;
- In 2010, the United States Department of Transportation (USDOT) reaffirmed its policy statement on bicycle and pedestrian accommodation, calling for the incorporation of safe and convenient walking and bicycling facilities into transportation projects;



Source: State of Alabama

Source: Gresham, Smith and Partners



agency initiatives are many statewide, regional, and local advocacy organizations promoting bicycling safety, access, and education and advocating for a safer road environment for all users.

## 3.0 Existing Conditions and Trends

Public and stakeholder outreach served as a key component of the planning process for the *Statewide Bicycle and Pedestrian Plan*. To learn more about the opportunities and challenges facing pedestrians and bicyclists, the planning process relied on multiple outreach tools including a project advisory committee, online surveys, and regional workshops.

### 3.1 Vision Statement, Goals, and Objectives

#### *Vision Statement*

Alabama is a state where walking and bicycling are safe, comfortable, and convenient modes of transportation in communities across the state for people of all ages and abilities.

#### *Goals and Objectives*

##### **Goal A:** Improve safety for bicyclists and pedestrians of all ages and abilities

1. Identify and address high priority safety locations and corridors
2. Educate users on safe interactions among motorists, bicyclists, and pedestrians
3. Implement laws and regulations consistently

##### **Goal B:** Develop complete and connected bicycle and pedestrian systems

1. Expand and improve bicycle and pedestrian networks along state highway corridors
2. Incorporate bicycle and pedestrian needs in all phases of project development, routine maintenance, and system preservation
3. Coordinate state improvements with local and regional goals and objectives

##### **Goal C:** Support state, regional, and local economic development

1. Link bicycle and pedestrian systems with other modes of transportation
2. Promote bicycle and pedestrian connectivity in major employment and activity centers

##### **Goal D:** Increase travel options for all transportation system users and protect the natural environment

1. Expand and improve bicycle and pedestrian access to basic goods and services such as food, education, health care, parks, and transit
2. Encourage walking and bicycling for shorter everyday trips (e.g., school, shopping, social)
3. Preserve and protect the natural environment



### 3.2 Trends

Achieving stated goals and objectives requires an evaluation of existing trends. Chief among the trends characterizing walking and bicycling in Alabama are safety, mode share, access and equity, and economic development.

#### Safety

Similar to national trends, pedestrian and bicycle crashes have experienced a general increase in Alabama since 2009. Moreover, as walking and bicycling travel expands, greater exposure may result in constant or elevated crashes despite overall improvements in traffic safety.

In Alabama, the average number of pedestrian and bicycle crashes during the most recent three-year period (2011-2013) increased by approximately 20 percent for both modes over the prior three-year period (Figures ES-1 and ES-2). Compared to other southeastern states, Alabama has the lowest number of pedestrian and bicycle fatalities as a percentage of total traffic fatalities, 6.9 percent and 0.7 percent, respectively.

#### Mode Share

According to the most recent National Household Travel Survey (2009), approximately one in nine trips is made by walking or bicycling nationally, 10.4 percent and 1.0 percent of total trips, respectively. Those figures do not count walking and bicycling as complementary modes in auto and

transit-based trips. Due to limited available data, another measure to gauge walking and bicycling activity is the mode share for commuter trips.

Although pedestrian and bicycle commuting shares have been traditionally lower in the southeast United States, bicycling commuting shares in the region are experiencing some of the fastest growth in the nation.<sup>1</sup> The increase in bicycling commuting tracks other regional trends including population growth and new investments in bicycling and walking infrastructure.

#### Access and Equity

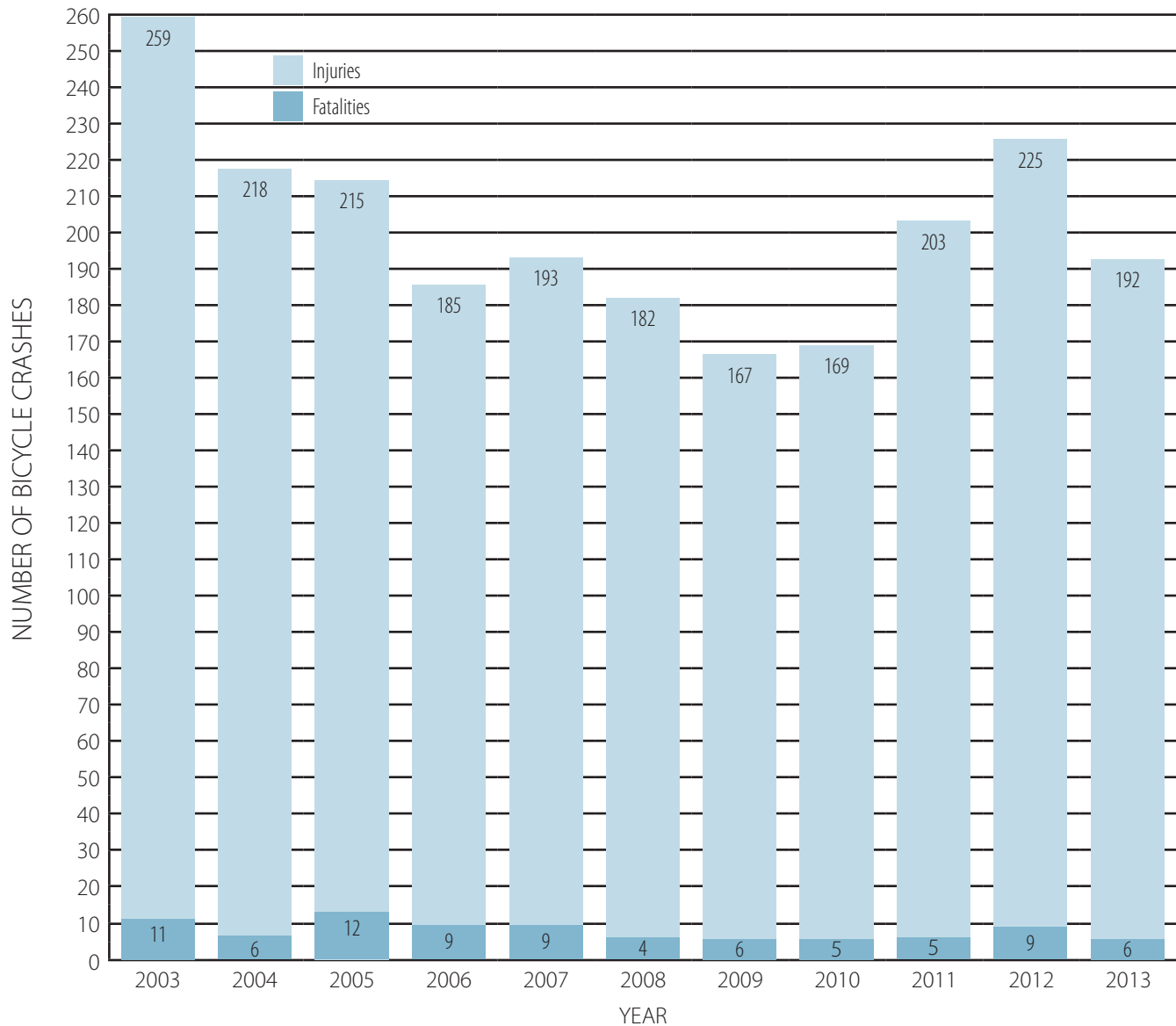
While walking and bicycling are considered leisure activities for many people, there are many others who rely on walking and bicycling for everyday transportation needs. Table ES-1 highlights groups of people who may lack access to a motor vehicle or are unable to drive a motor vehicle in Alabama. By age of person, approximately 40 percent of the state's population is unable to drive or at an age where driving may be a less desirable option. Thirty-nine percent of households in Alabama do not have a vehicle or have only one vehicle available.

Significantly, transportation is the second-highest expenditure for households in the United States, exceeded only by housing costs, and personal vehicles are a major expense for low-income households.<sup>2</sup> In addition to the cost of purchasing a vehicle, there are ongoing operating costs for gasoline, maintenance, taxes, and insurance. For

Figure ES-1. Pedestrian Crashes in Alabama: Injuries and Fatalities (NHTSA, 2013)



Figure ES-2. Bicycle Crashes in Alabama: Injuries and Fatalities (NHTSA, 2013)



many households, foregoing vehicle ownership and relying on walking, bicycling, and/or transit makes daily travel more affordable.







### *Economic Development*

In addition to the household economic benefits of walking and bicycling - which can also translate into greater local spending - many states and communities are investing in pedestrian and bicycle facilities to support economic development. States as varied as Arizona, Michigan, Oregon, Vermont, and Wisconsin have measured the economic impact of bicycle related tourism and events, with annual totals ranging from \$83 million and 1,400 jobs (Vermont) to \$400 million and 4,600 jobs (Oregon).

In Alabama, all travelers spent an estimated \$11.7 billion in 2013, or approximately 5.3 percent of the state's gross domestic product.<sup>3</sup> Notably, one study estimated that the Silver Comet Trail, Georgia's counterpart to Alabama's Chief Ladiga Trail, generates approximately \$120 million annually in total expenditures and earnings throughout the 61-mile length of the trail in northwest Georgia and supports 1,300 jobs. The total annual economic impact of the trail, including fiscal impacts and property value increases, is estimated to be \$461 million.<sup>4</sup>

Finally, pedestrian and bicycle related economic development is increasingly fueling local economic development in cities and retirement areas as the millennial and baby boomer generations express greater demand for pedestrian and bicycle friendly communities. Businesses

Table ES-1. Alabama: Key Demographics (US Census Bureau, 2013)

Alabama	Estimate	Percent
Population in Households (2013)	4,683,880	
 3 years and over enrolled in school	1,222,995	26.1%
 With a disability	766,399	16.4%
 65 years and over	660,997	14.1%
 Below poverty level	871,202	18.6%
Occupied Housing Units (2013)	1,838,683	
 Households with no vehicles available	118,518	6.4%
 Households with one vehicle available	601,473	32.7%

trying to tap the millennial generation workforce and cater to baby boomers are relocating to areas that offer more transportation options as well.<sup>5</sup>

### 3.3 Existing Conditions

Alabama is a rich mix of cities, towns, and rural communities, and walking and bicycling can be an important part of daily life and travel in each of these areas. To estimate the potential demand for walking and bicycling across the state, six factors that influence a person’s decision to walk or bicycle were evaluated and mapped. The factors, listed below, help identify where potential demand is greatest and which corridors should subsequently be prioritized for pedestrian and bicycle improvements.

- Population density;
- Employment density;
- Poverty;
- Transit access;
- Proximity to colleges and universities; and
- Proximity to schools.

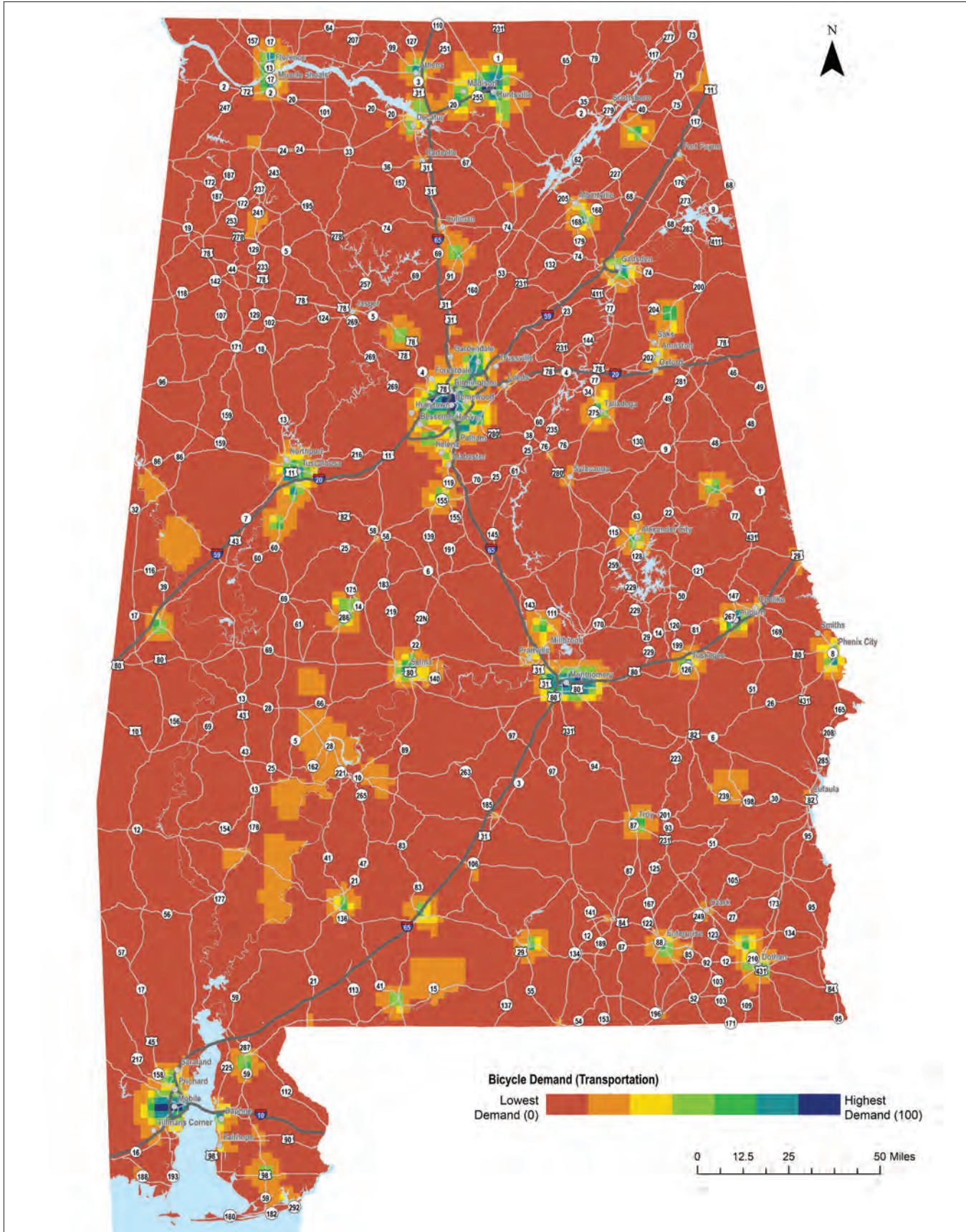
Figure ES-3 illustrates the results for bicycling demand in Alabama. For both walking and bicycling, the greatest potential demand is found in urban areas, low-income areas, and areas with colleges and universities. A second round of demand analysis considered bicycle tourism travel and evaluated proximity to recreation trails, scenic byways, state and national parks, wildlife management areas, and state historic sites, in addition to population density. The bicycle tourism demand results can help support future efforts to plan bicycle routes in corridors between cities and towns.



Source: Gresham, Smith and Partners



Figure ES-3. Statewide Bicycle Demand – Utilitarian Trips



Source: GS&P, 2015

## 4.0 Recommendations

Building on the analysis of existing conditions, trends, and public input, the plan recommends a set of strategies and actions to improve bicycle and pedestrian transportation in Alabama. Augmenting the recommended strategies and actions, the plan also includes a recommended statewide bicycle corridor network that establishes the framework for developing a state bicycle route system that can support safe and efficient bicycle travel at multiple geographic scales – local, regional, state, and national.

### 4.1 Priority Strategies and Recommended Actions

From more than 40 potential strategies to improve walking and bicycling in Alabama, stakeholders and the general public prioritized three fundamental strategies focused on safety, access, and economic development. Each of the three priority strategies, summarized in Table ES-2, includes corresponding actions to support implementation and help achieve the plan's overall goals and objectives.

### 4.2 Recommended Bicycle Corridor Plan

Additionally, to support the future development of a comprehensive system of statewide bicycle routes, the plan also identifies and recommends a network of bicycle corridors. The corridors (Figure ES-5) highlight areas with higher potential for bicycle transportation demand and connections among them. Corridors within areas of higher potential for bicycle transportation demand are defined as priority corridors, and corridors between these areas and other natural and cultural destinations are characterized as vision corridors. For the purpose of this plan, both priority and vision corridors are delineated to guide future detailed bicycle route planning and development. It is important to note that future bicycle routes may ultimately include some combination of state highways, county roads, local streets, and trails, as well as different bikeway facilities – including shared lanes, paved shoulders, bicycle lanes, bicycle boulevards, and shared use paths. Accordingly, developing these corridors into bicycle routes will require strong interagency and interjurisdictional collaboration. Statewide and local stakeholder groups, can and should play a critical role during the corridor planning process.

Table ES-2. Summary Table: Priority Strategies and Recommended Actions




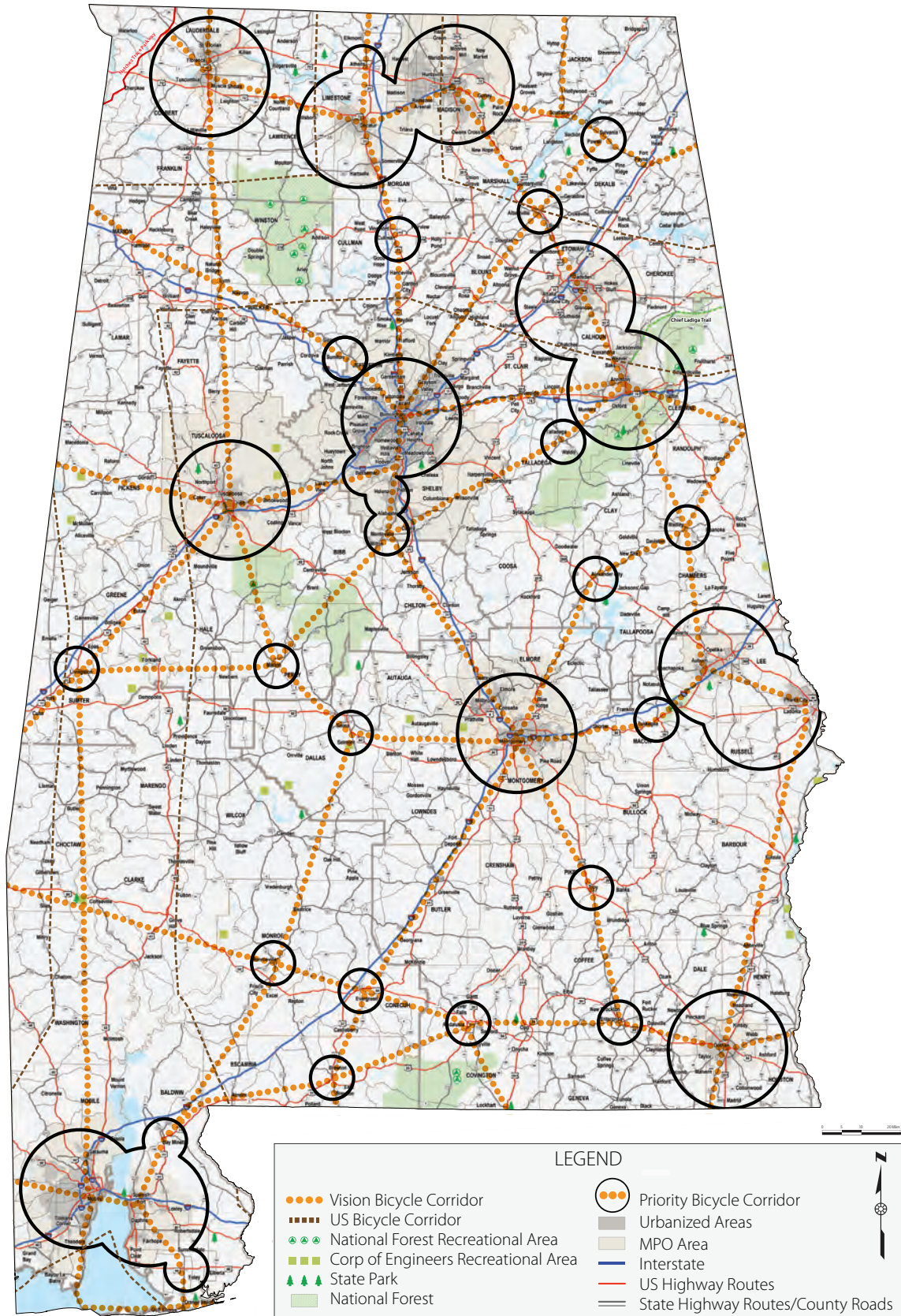
Priority Strategy	Recommended Action
 <p>1. Prioritize Pedestrian and Bicycle Safety Programs and Improvements</p>	<ul style="list-style-type: none"> <li>a. Develop a Pedestrian and Bicycle Safety Action Plan</li> <li>b. Establish Statewide Pedestrian and Bicycle Safety Goals and Performance Measures</li> <li>c. Incorporate Pedestrian and Bicycle Safety in Project Selection, Planning, and Design Processes</li> <li>d. Provide Technical Training on Pedestrian and Bicycle Facility Planning and Design</li> </ul>
 <p>2. Increase Access to Walking and Bicycling Facilities for Traditionally Underserved Populations</p>	<ul style="list-style-type: none"> <li>a. Collaborate on Local Bicycle and Pedestrian Plans in Traditionally Underserved Communities</li> <li>b. Incorporate Pedestrian and Bicycle Access for Traditionally Underserved Populations in Project Selection, Planning, and Design Processes</li> <li>c. Expand Walking and Bicycling Outreach and Education Programs in Traditionally Underserved Communities</li> </ul>
 <p>3. Improve Connections between Pedestrian and Bicycle Facilities on State Highways and Local Greenway and Shared Use Path Systems as well as to Natural and Scenic Areas</p>	<ul style="list-style-type: none"> <li>a. Inventory and Map Existing and Planned Greenways, Shared Use Paths, Parks, and Natural Areas</li> <li>b. Utilize Best Practices in Greenway and Shared Use Path Planning and Design</li> <li>c. Collaborate with Public and Private Sector Partners on Economic Development Opportunities Related to Greenway and Shared Use Path Systems</li> </ul>



Figure ES-4. Bicycle Corridor Plan



The bicycle corridors shown on this map are for planning purposes only. Within each corridor projects can be evaluated for bicycling as a viable mode of transportation based upon standard engineering practices adopted by the Alabama Department of Transportation.

## 5.0 Implementation

To help implement the recommendations, the plan underscores the importance of establishing three tools – system performance measures, project prioritization criteria, and design guidance. The implementation tools or steps are intended to provide a strong foundation for improving walking and bicycling in Alabama and support the full range of recommended actions.

### Performance Measures

System performance measures represent a pivotal first step in plan implementation. As noted in earlier sections of the plan, federal legislation, policies, and programs have all placed increasing importance on performance measures and the role they can play in better managing transportation systems, in particular, system safety. Building on federal guidance, the recommended system performance measures for walking and bicycling (Table ES-3) in Alabama initially focus on the plan's two principal goals: safety, and access and mobility.





The initial set of recommended performance measures provides a clear and understandable basis for describing how the pedestrian and bicycle systems are currently functioning in Alabama. Over time, as new goals and objectives are established and new data sources become available, the performance measures can be modified and expanded to address other goals and objectives related to economic development (e.g., intermodal connections) and quality of life (e.g., access to essential needs).

### Project Prioritization Criteria

Closely allied with performance measures are project prioritization criteria. Like performance measures, project prioritization criteria play an important role in achieving plan goals and objectives by providing key information during decision making processes. Project prioritization criteria, for example, can be used during the project development process to compare alternatives, in the Transportation Alternatives Program process to rank grant applications, and during the programming process to identify funding priorities. The recommended project prioritization criteria all build on the statewide plan's goals and objectives, and, like the performance measures, utilize readily available data. Table ES-4 outlines the recommended criteria by goal, as well as regional and local support and project readiness.







The USDOT *Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* calls for the provision of bicycle and pedestrian facilities as a matter of routine, except where pedestrians and bicyclists are prohibited by law from using a roadway, cost is excessively disproportionate to the need or probable use, and in sparsely populated areas. In addition to helping assess pedestrian and bicycle facilities as standalone projects or as part of larger roadway projects (e.g., new construction; reconstruction; resurfacing, restoration, and rehabilitation (3R); safety and traffic operations), the project prioritization criteria can serve as a quick checklist or screening tool to evaluate the appropriateness of pedestrian and bicycle facilities relative to the accommodation policy's standard exceptions.

Table ES-3. Recommended Performance Measures and Targets

 Goal	 Performance Measure	 Target	 Data Sources
Safety	Annual number of combined non-motorized fatalities and serious injuries (5-year rolling average)	2% annual decrease up to a total 50% decrease	Fatality Analysis Reporting System (FARS), National Highway Traffic Safety Administration; State crash database
Access and Mobility	Annual pedestrian commuting mode share (5-year rolling average)	Average Annual Regional* Percentage Increase	American Community Survey, US Census Bureau
Access and Mobility	Annual bicycle commuting mode share (5-year rolling average)	Average Annual Regional* Percentage Increase	American Community Survey, US Census Bureau
Access and Mobility	Annual consistency with the scheduled right-of-way improvements in current state ADA Transition Plan	100%	State ADA Transition Plan
Access and Mobility	Percentage of priority bicycle corridors designated as state bicycle routes	4% annual increase up to a total of 100% of corridors	Statewide Bicycle and Pedestrian Plan; State inventory
Access and Mobility	Total number of vision bicycle corridors designated as state bicycle routes	One new route every five years	Statewide Bicycle and Pedestrian Plan; State inventory

\*Region includes Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee

Table ES-4. Recommended Bicycle and Pedestrian Project Prioritization Criteria

PLAN GOAL	CRITERIA	PRIORITIZATION CRITERIA
 SAFETY	A	Documented high crash location (total, percent) or systemic safety need within 500 feet of proposed project
	B	Perceived high risk locations within 500 feet of proposed project
 ACCESS AND MOBILITY	C	Network connectivity (addresses important gaps and/or barriers)
	D	Traditionally underserved population (total, percent) within 0.5 mile (ped) or 1.5 mile (bike) of project
 ECONOMIC DEVELOPMENT	E	Jobs (total, percent) within 1.0 mile (ped) or 3.0 miles (bike) of project
 QUALITY OF LIFE	F	Population (total, percent) living within 0.5 mile (ped) or 1.5 miles (bike) of project
	G	Community destinations within 1.0 mile (ped) or 3.0 miles (bike) of project
 REGIONAL/LOCAL SUPPORT	H	Regional and/or local plan consistency and official and stakeholder support
 PROJECT FEASIBILITY	I	Environmental constraints within 100 feet of the right-of-way and easements of project
	J	Cost effectiveness: total jobs (E) and population (F) divided by estimated cost

### Design Guidance

There are many ways to include walking and bicycling facilities in transportation corridors and systems. Different contexts and conditions require different approaches to facility selection and design, and design guidance can be used to help incorporate walking and bicycling facilities.

For bicycle facilities, contexts and conditions can vary widely, from rural areas with a few adult bicyclists to large metropolitan regions with a full range of users. The recommended bikeways facilities guidance establishes a framework for narrowing the list of options by rural and urban development patterns, traffic volumes, and vehicle speeds. Importantly, each of the options identified in Table ES-5 provides flexibility in terms of facility type and/or potential dimensions relative to expected users.

Like bikeways, pedestrian facilities guidance (Table ES-6) can be organized around development patterns and traffic volumes. However, because of the greater demand for walking across all ages and abilities, pedestrian design guidance considers surrounding land uses more closely. In addition to roadway classification and traffic volumes, the pedestrian guidance differentiates between commercial and residential land uses.

In addition to bicycle and pedestrian facility selection and design, there are several additional design considerations that have a significant impact on walking and bicycling. Chief among these are intersection and crossing design, rumble strips, and access controlled corridors. Each of these issues was highlighted during the statewide planning process by stakeholders and the public. Importantly, the

first two issues, intersection and crossing design and rumble strips, will be addressed in two new ALDOT guidance manuals – *Guidance for Road Safety Assessments and Reviews* (September 2016) and the *Vulnerable Road Users Guide* (forthcoming, 2017). The third issue, access controlled corridors, will require state, regional, and local coordination to identify alternate on-road or off-road routes that safely connect intersecting pedestrian and bicycle routes.

### Implementation Plan

Like other transportation modes, pedestrian and bicycle systems involve a wide range of public and private stakeholders at the federal, state, regional, and local levels. While the state bicycle and pedestrian plan recommends a broad set of strategies, actions, and tools to make walking and bicycling safe, comfortable, and convenient in Alabama, successful implementation will ultimately hinge largely on strong collaboration and coordination among all public and private stakeholders. Implementation will take time, but given the necessary resources, many of the recommended strategies, actions, and tools are achievable within the near future. Table ES-7 highlights recommendations that can accelerate pedestrian and bicycle improvements in Alabama, and help build a safe, convenient, and comfortable transportation system for all users.



Table ES-5. Bikeway Facilities Design Guidance

Bikeway Facilities Guidance for Rural (Shoulder and Ditch) Cross Section				
ADT		<2,000	2,000 - 10,000	>10,000
Motor Vehicle Speed	< 30 mph	SL or WOL or PS (2-4 ft)	SL or WOL or PS (2-4 ft)	WOL or PS (2-4 ft)
	30 - 40 mph	WOL or PS (2-4 ft)	WOL or PS (2-4 ft)	PS (4-6 ft)
	41 - 50 mph	WOL or PS (2-4 ft)	PS (4-6 ft)	PS (6-8 ft)
	> 50 mph	PS (4-6 ft)	PS (6-8 ft)	PS (6-8 ft) or SUP (10 ft)








Bikeway Facilities Guidance for Urban (Curb and Gutter) Cross Section				
ADT		<2,000	2,000 - 10,000	>10,000
Motor Vehicle Speed	< 30 mph	SL or WOL	SL or WOL	WOL or BL (5 ft)
	30 - 40 mph	WOL or BL (5 ft)	WOL or BL (5 ft)	WOL or BL (5 ft) or BBL (4 ft*)
	41 - 50 mph	WOL or BL (5 ft)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*)
	> 50 mph	BL (6 ft) or BBL (4 ft*)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*) or SUP (10 ft)

BL = Bicycle Lane, PS = Paved Shoulder, SL = Shared Lane, SUP = Shared Use Path, WOL = Wide Outside Lane, BBL = Buffered Bike Lane, SBL = Separated Bike Lane, \* Add buffer a minimum of 3 feet in width

Note: Facilities shown are for guidance purposes only. The selection of bicycle facilities will be made on the basis of either an engineering study or the application of engineering judgment.

Sources: Selecting Roadway Design Treatments to Accommodate Bicycles (FHWA, 1994), Urban Bikeway Design Guide (NACTO, 2011), Guide for the Development of Bicycle Facilities (AASHTO, 2012), Separated Bike Lane Planning and Design Guide (FHWA, 2015)




Table ES-6. Pedestrian Facilities Design Guidance

Roadway Classification and Land Use		Sidewalk/Walkway	Sidewalk/ Walkway Width	Buffer Width
	Rural Highways (ADT < 2,000)	Shoulders preferred	PS (4 ft)	n/a
	Rural/Suburban Highway (ADT ≥2,000 and <1 dwelling unit/acre)	Sidewalks or side paths preferred	SW (5 ft) or SUP (8-10 ft) or PS (6 ft)	2-4 ft
	Suburban Highway (1 to 4 dwelling units/acre)	Sidewalks on both sides	SW (5 ft)	4-6 ft
	Major Arterial (residential)	Sidewalks on both sides	SW (6-8 ft)	4-6 ft
	Urban Collector and Minor Arterial (residential)	Sidewalks on both sides	SW (5 ft)	4-6 ft
	All Commercial Urban Streets	Sidewalks on both sides	SW (8-12 ft)	4-6 ft
	All Streets in Industrial Areas	Sidewalks on both sides preferred	SW (5 ft)	2-4 ft

PS = Paved Shoulder, SUP = Shared Use Path, SW = Sidewalk

Sources: Guide for the Planning, Design, and Operation of Pedestrian Facilities (AASHTO, 2004), Pedestrian Safety Guide and Countermeasure Selection System (FHWA, 2013)

Table ES-7. Recommendations for Initial Implementation

Category	Recommendation	
 Implementation Tool	<ul style="list-style-type: none"> <li>Establish system performance measures</li> <li>Define project prioritization criteria</li> </ul>	<ul style="list-style-type: none"> <li>Adopt design guidance</li> <li>Address additional systemic design considerations</li> </ul>
 Recommended Action	<ul style="list-style-type: none"> <li>Develop a pedestrian and bicycle safety action plan</li> <li>Provide technical training on pedestrian and bikeway facility planning and design</li> <li>Collaborate on local bicycle and pedestrian plans in traditionally underserved communities</li> <li>Expand walking and bicycling outreach and education programs in traditionally underserved communities</li> </ul>	<ul style="list-style-type: none"> <li>Inventory and map existing and planned greenways, shared use path, parks, and natural areas</li> <li>Utilize best practices in greenways and shared use path planning and design</li> <li>Collaborate with public and private sector partners on economic development opportunities related to greenway and shared use path systems</li> </ul>
 State Bicycle Corridor Plan	<ul style="list-style-type: none"> <li>Identify one priority corridor in each region annually and develop it as a state designated bicycle route</li> </ul>	<ul style="list-style-type: none"> <li>Identify one vision corridor statewide every three years and develop it as a state designated bicycle route</li> </ul>

## Endnotes

- <sup>1</sup> League of American Bicyclists. *Where We Ride: Analysis of Bicycle Commuting in American cities*. League of American Bicyclists. <[http://bikeleague.org/sites/default/files/ACS\\_report\\_2014\\_forweb.pdf](http://bikeleague.org/sites/default/files/ACS_report_2014_forweb.pdf)>. Accessed June 2015.
- <sup>2</sup> United States, Dept. of Labor, Bureau of Labor Statistics. *BLS Reports - Consumer Expenditures in 2012*. Mar. 2014. <<http://www.bls.gov/cex/csxann12.pdf>>. Accessed June 2015.
- <sup>3</sup> Alabama, Dept. of Tourism. *Travel Economic Impact 2014*. <[http://tourism.alabama.gov/content/uploads/2014\\_Alabama\\_Tourism\\_Economic\\_Report.pdf](http://tourism.alabama.gov/content/uploads/2014_Alabama_Tourism_Economic_Report.pdf)>. Accessed Jan. 2015.
- <sup>4</sup> Bike Walk Northwest Georgia. *Silver Comet Trail Study*. <<http://www.bwnwga.org/news/silver-comet-trail-study>>. Accessed Jan. 2016.
- <sup>5</sup> American Planning Association. *Investing in Place: Two Generations' View on the Future of Communities*. May 2014. <<https://www.planning.org/policy/polls/investing>>. Accessed June 2015.





# Introduction



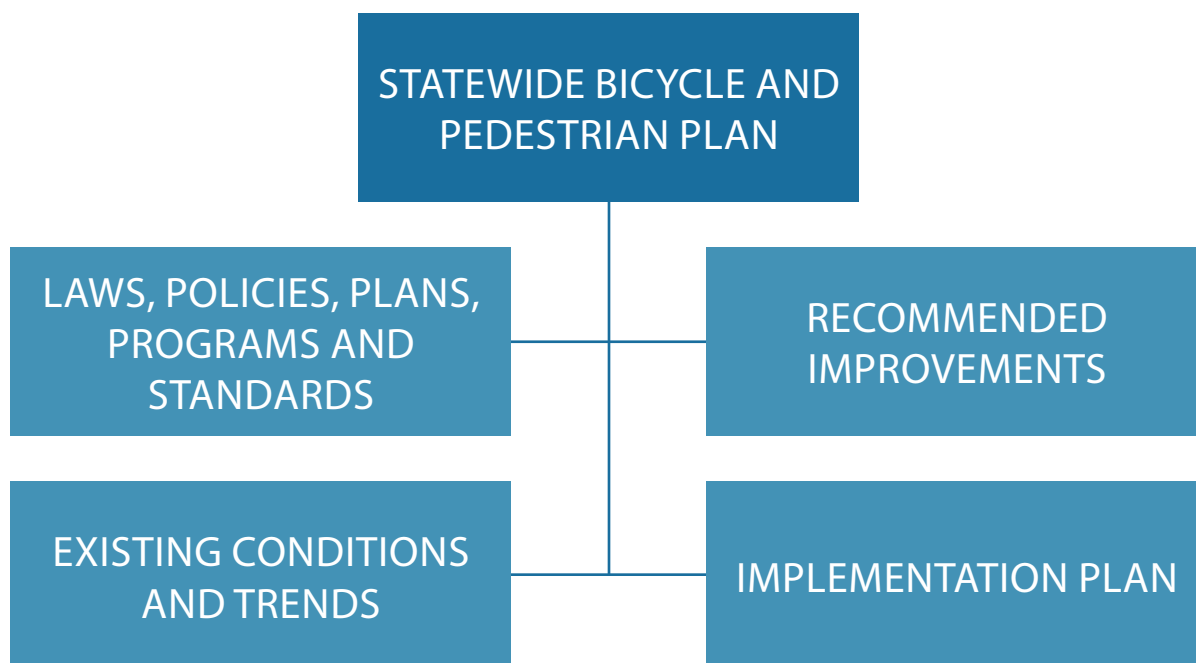


# Introduction

The purpose of the Alabama Statewide Bicycle and Pedestrian Plan is to establish a vision that supports walking and bicycling as modes of transportation in Alabama. Developed by the Alabama Department of Transportation (ALDOT) and stakeholders from across the state, the statewide plan aims to guide investments in bicycle and pedestrian facilities and programs that achieve the greatest improvements within limited funding. Providing safe bicycle and pedestrian facilities is the overriding focus of the statewide plan and underpins its recommendations.

Statewide transportation systems, including walking and bicycling, are inherently complex. Accordingly, the statewide plan is organized into four sections that address the broad range of issues and opportunities related to walking and bicycling as transportation.

- Section A: Bicycle and Pedestrian Laws, Policies, Plans, Programs, and Standards* – The legislative and policy framework for walking and bicycling has experienced rapid change over the past 20 years at the federal, state, regional, and local levels. Section A of the plan documents the changes and current legislative and policy environment. Importantly, many of the changes are taking place in direct response to the growing demand for improved bicycle and pedestrian facilities.
- Section B: Existing Conditions and Trends* – Section B of the plan outlines a statewide vision for walking and bicycling in Alabama, as well as goals, objectives, and strategies. With the vision, goals, and objectives in mind, existing conditions and trends are evaluated that help identify opportunities for improving walking and bicycling in the state.
- Section C: Bicycle and Pedestrian Recommendations* – A key takeaway from the public and stakeholder involvement process was the strong desire to develop designated bicycle routes that emphasize safety, comfort, and convenience, regardless of the functional classification of the roadway or whether it is an on-road or off-road facility. Based on public and stakeholder input, Section C highlights three priority strategies, a set of corresponding actions, and a bicycle corridor plan.
- Section D: Implementation Plan* – Planning, building, operating, and maintaining safe, comfortable, and convenient bicycle and pedestrian facilities requires collaboration and partnerships across agencies and organizations in both the public and private sectors. To reinforce greater collaboration and partnerships, Section D recommends tools to support decision making processes as well as initial implementation steps.





# Section A: Bicycle and Pedestrian Laws, Policies, Plans, Programs, and Standards







# Section A: Bicycle and Pedestrian Laws, Policies, Plans, Programs, and Standards

## 1.0 Introduction

Walking and bicycling are important elements of every transportation system, allowing people of all ages and abilities to access everyday needs, including work, education, health care, and shopping. As walking and bicycling have increased in Alabama and the nation, a broad range of policies, plans, guidelines, and standards have been developed to integrate the two modes safely into the overall transportation system. Many of these policies, plans, guidelines, and standards serve as the foundation for the statewide plan and help inform the plan's key recommendations on safety, access, and economic development.

## 2.0 Federal Laws, Policies, Plans, and Programs

### 2.1 Federal Surface Transportation Legislation

In December 2015, the most recent federal transportation spending authorization, *Fixing America's Surface Transportation (FAST) Act*, was signed into law. The program authorizes \$305 billion for all surface transportation modes for fiscal years 2016 through 2020.

The previous transportation authorization bill, *Moving Ahead for Progress in the 21st Century (MAP-21)*, consolidated several bicycle and pedestrian funding programs into the Transportation Alternatives Program (TAP). Under the FAST Act, TAP has become two set-aside programs of the Surface Transportation Block Grant (STBG) Program (formerly, the Surface Transportation Program): the STBG Set-Aside and the STBG Recreational Trails Set-Aside.

Key provisions for bicycle and pedestrian funding under the FAST Act include:

- The national total for the STBG Program is divided among states based on each state's proportionate share of Fiscal Year (FY) 2015 STP funding;<sup>1</sup>
- Funding for transportation alternatives is established at \$835 million annually in FY 2016 and 2017, and \$850 million annually in FY 2018, 2019, and 2020;
- Compared to MAP-21, the FAST Act grants a greater share of STBG funds from states to local areas, with the percentage of STBG allocated to local areas gradually increasing from 50 percent in FY 2015 to 55 percent in 2020; and

- A state may transfer up to 50 percent of its transportation alternatives funds, from the portion available for use anywhere in the state, to any of the five core federal-aid highway programs (National Highway Performance Program, National Highway Freight Program, STBG Program, Highway Safety Improvement Program, or Congestion Mitigation and Air Quality Improvement Program).<sup>2</sup>

Under the FAST Act, a variety of bicycle and pedestrian projects maintain broad eligibility for STBG funds and other major funding categories. Transit programs can also continue to fund certain types of bicycle and pedestrian projects.

The FAST Act also introduces a number of new provisions for bicycle and pedestrian programs.

- A greater emphasis is placed on design standards flexibility at the state and local levels. The language in the Act directs that States "shall consider" access for all users on non-interstate roads on the National Highway System. The United States Department of Transportation (USDOT) is directed to encourage States and Metropolitan Planning Organizations (MPOs) to adopt multimodal design standards. Also, the National Association of City Transportation Officials' (NACTO) *Urban Streets Design Guide* is included as an approved design manual for federally-funded projects.
- Non-governmental organizations (NGOs) are now eligible to receive funds.
- States are required to produce an annual report with the total amount of STBG set-aside funds requested, and the number and types of projects selected.<sup>3</sup>

Nationally, transportation alternatives authorization in the FAST Act for FY 2016-2020 represents a small increase from the dedicated TAP funding in MAP-21 (\$820 million in FY 2015). Since the introduction of the TAP in FY 2013, 19 states have transferred at least some dollars to other federal-aid highway programs for at least one year, and 10 states have supplemented the TAP with other funds. Alabama is one of the states that has not transferred transportation alternatives funds to other programs.<sup>4</sup> Figure 2-1 shows the growth of federal-aid pedestrian and bicycle obligations since 1992 and the passage of the *Intermodal Surface Transportation Efficiency Act (ISTEA)* of 1991, which broadened the eligibility for bicycle and pedestrian facilities under the federal-aid highway program.

Recent national trends on walking and bicycling safety (Figures 2-2 and 2-3) prompted the US Congress in 2013

Figure 2-1. Federal-Aid Pedestrian and Bicycle Funding Obligations, FY 1992 – FY 2014 (\$ Millions)



Source: FHWA Fiscal Management Information System

to introduce a bi-partisan bill that would include both motorized and non-motorized transportation among the highway safety performance measures. In lieu of action on the bill, the FY 2015 omnibus appropriations bill included the following provision directing USDOT:

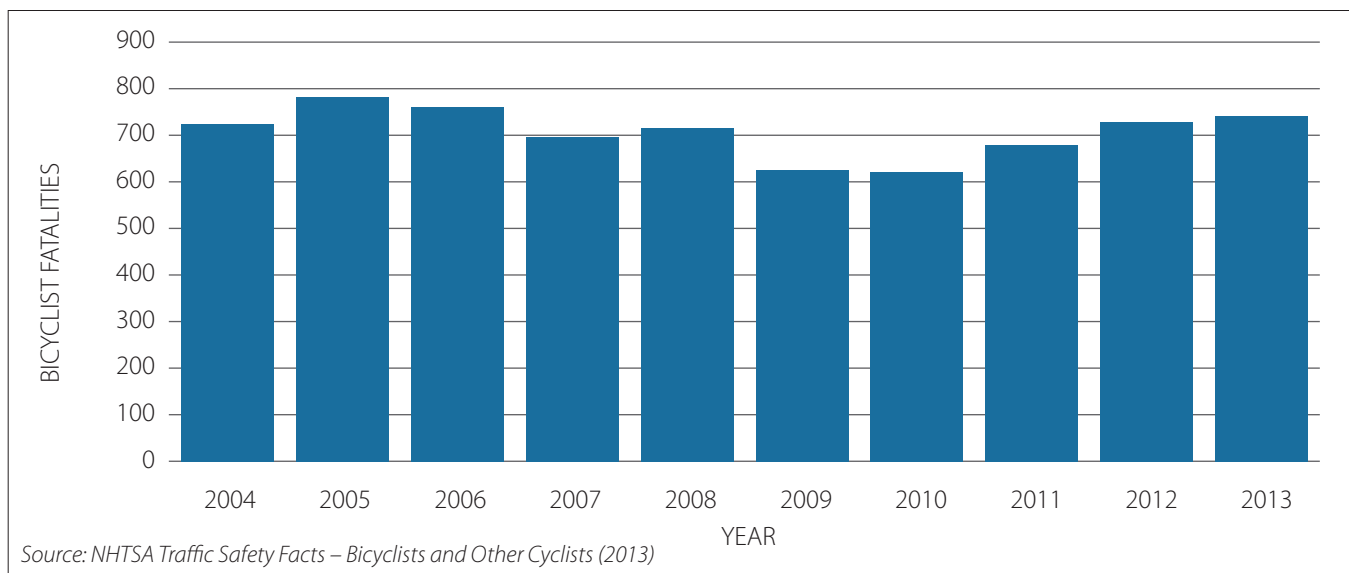
*“... to establish separate, non-motorized safety performance measures for the highway safety improvement program, define performance measures for fatalities and serious injuries from pedestrian and bicycle crashes, and publish its final rule on safety performance measures.”<sup>5</sup>*

MAP-21 introduced a number of new transit programs under the umbrella of the Federal Transit Administration

(FTA). The FAST Act largely maintains the provisions of these programs. While most of the programs focus primarily on public transportation facilities and services, some programs give consideration to bicycle and pedestrian facilities. For example, the Transit-Oriented Development (TOD) Planning Pilot Program provides funding for the development of comprehensive plans for corridors with new rail, bus rapid transit, or capacity projects. The guidance states that these comprehensive plans should increase access to transit hubs for bicycle and pedestrian projects.<sup>6</sup> FTA programs that may fund bicycle and pedestrian projects and programs include:

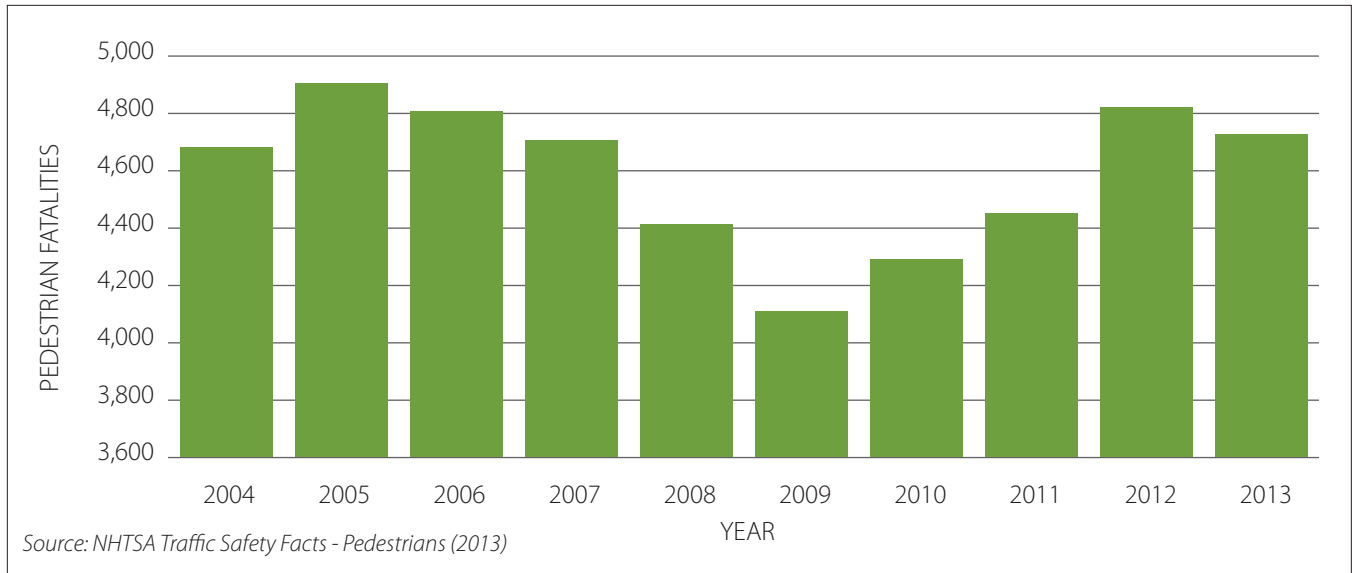
- Metropolitan & Statewide and Nonmetropolitan Transportation Planning (5303, 5304, 5305);

Figure 2-2. Total U.S. Bicyclist Fatalities in Traffic Crashes, 2004–2013



Source: NHTSA Traffic Safety Facts – Bicyclists and Other Cyclists (2013)

Figure 2-3. Total U.S. Pedestrian Fatalities in Traffic Crashes, 2004–2013



- Urbanized Area Formula Grants (5307);
- Fixed Guideway Capital Investment Grants (“New Starts”) (5309);
- Bus and Bus Facilities Formula Grants [5339(b)];
- Enhanced Mobility of Seniors and Individuals with Disabilities (5310);
- Formula Grants for Rural Areas (5311); and
- TOD Planning Pilot Grants [20008(b)].

More generally, federal code (23 US Code 135 and 217) establishes a range of bicycle and pedestrian planning, design, and public participation requirements for states and metropolitan planning organizations. These requirements ensure:

- Bicycles and pedestrians shall be given due consideration in comprehensive transportation plans;
- Bicycle and pedestrian facilities shall be considered, where appropriate, in all new construction and reconstruction projects;
- Transportation plans shall provide due consideration for safety and contiguous routes for bicyclists and pedestrians; and
- There shall be reasonable opportunities to comment on plans and programs.

Another important piece of federal legislation ensuring a fully accessible transportation system and impacting usability and safety for all users is the Americans with Disabilities Act (ADA) of 1990. The ADA protects civil rights and establishes accessibility guidelines for a wide range of disabilities, including those that affect mobility, stamina, sight, speech, and hearing, and conditions such as learning disorders or emotional illness. The ADA standards that apply to pedestrian systems have been issued by the USDOT

and are based on the United States Access Board’s ADA Accessibility Guidelines.

There are a number of provisions that pertain directly to pedestrian accommodations in the ADA. Under Title II, where public pedestrian facilities exist, persons with disabilities must be provided equal access. This is typically accomplished through design features such as curb cuts, ramps, continuous sidewalks, and detectable warnings. In addition, any project that alters the existing public right-of-way and could impact access, circulation or use (e.g., roadway widening, resurfacing, and reconstruction) must incorporate pedestrian access improvements within the scope of the project.\* Specifically, for any resurfacing projects deemed to be alterations, curb ramps are required to be installed. Finally, public agencies with more than 50 employees are required to develop and maintain an updated transition plan identifying the steps necessary to make its facilities accessible to persons with disabilities.

## 2.2 Federal Bicycle and Pedestrian Policies and Plans

USDOT policies and guidance establish the overarching framework for the consideration and inclusion of walking and bicycling in transportation plans, programs, and projects. Three guidance and plan documents, in particular, define federal bicycle and pedestrian goals, objectives, and regulations.

\* Specific asphalt and concrete-pavement repair treatments that are considered alterations include new construction; addition of new layer of asphalt; asphalt and concrete rehabilitation and reconstruction; open-graded surface course; cape seals; mill & fill/mill & overlay, hot in-place recycling; and microsurfacing/thin lift overlay.

- *FHWA Guidance on Bicycle and Pedestrian Provisions of Federal Transportation Legislation* (2008);
- *USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* (2010); and
- *USDOT Action Plan to Increase Walking and Biking and Reduce Pedestrian and Bicyclist Fatalities* (2014).

The *FHWA Guidance on Bicycle and Pedestrian Provisions of Federal Transportation Legislation* updates the 1999 guidance, which itself builds on the 1991 *Intermodal Surface Transportation Efficiency Act*. This twenty-five year history of increasing USDOT commitment to meeting the needs and demand for walking and bicycling is best captured in the guidance's policy statement on "mainstreaming non-motorized transportation."

*"Federal transportation policy is to increase non-motorized transportation to at least 15 percent of all trips and to simultaneously reduce the number of non-motorized users killed or injured in traffic crashes by at least 10 percent."*<sup>7</sup>

The USDOT issued a new *USDOT Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* in March 2010, updating the 2000 policy statement and supporting the development of fully integrated active transportation networks. The policy statement follows:

*"The DOT policy is to incorporate safe and convenient walking and bicycling facilities into transportation projects. Every transportation agency, including DOT, has the responsibility to improve conditions and opportunities for walking and bicycling and to integrate walking and bicycling into their transportation systems. Because of the numerous individual and community benefits that walking and bicycling provide – including health, safety, environmental, transportation, and quality of life – transportation agencies are encouraged to go beyond minimum standards to provide safe and convenient facilities for these modes."*<sup>8</sup>

The USDOT encourages state and local agencies to adopt similar statements to (a) confirm that walking and biking deserve equal recognition as viable transportation modes, (b) ensure there are transportation choices available for people of all ages and abilities, (c) integrate bicycle and pedestrian facilities on limited-access bridges with connections to other streets, and (d) exceed minimum design standards.<sup>9</sup>

In September 2014, the USDOT issued its *Action Plan to Increase Walking and Biking and Reduce Pedestrian and Bicyclist Fatalities* and declared pedestrian and bicycle safety as a top priority for the agency. The USDOT, in partnership with state

and local departments of transportation, has committed to undertaking a series of initiatives to reduce bicycle and pedestrian fatalities, including:

- Conducting walk and bike safety assessments on selected corridors;
- Developing a *Road Diet Guide* as one of FHWA's 2015 Every Day Counts (EDC) Initiatives;
- Updating the *Bikesafe: Bicycle Countermeasure Selection System*;
- Introducing a *Separated Bike Lane Planning and Design Guide* (issued in May 2015);
- Developing a *Strategic Agenda for Pedestrian and Bicycle Transportation* through research in facility design, connected networks, performance measures, resurfacing programs, and multimodal conflict points;
- Updating *The Resident's Guide for Creating Safe and Walkable Communities*;
- Researching and promoting evidence-based infrastructure design concepts that help bicyclists, pedestrians, and drivers safely share the road;
- Concentrating technical assistance for addressing bicycle and pedestrian safety issues on high-incident locations within cities and states;
- Researching ways to improve pedestrian safety at mid-block (non-intersection) crossings by identifying low and medium-cost pedestrian countermeasures;



Source: [www.pedbikereg.org/DanBurden](http://www.pedbikereg.org/DanBurden)

- Developing crash modification factors (CMFs) for high-priority pedestrian crash countermeasures using the latest analytical methods;
- Providing technical assistance to local officials on how to address bicycle and pedestrian safety issues around transit facilities through the *Road Safety for Transit Patrons* initiative;
- Developing *Transit Agency Safety Plans* to establish policies to encourage safe access to transit and recommend mitigation measures to address safety issues;
- Updating the *Manual on Uniform Traffic Control Devices (MUTCD)* to include new devices and applications for bicycle and pedestrian facilities;
- Undertaking new behavioral research on the risk of electronic distractions for drivers, bicyclists, and pedestrians, and examining potential countermeasures; and
- Developing new safety campaign materials for pedestrian and bicyclists.<sup>10</sup>

### 2.3 Other Federal-Aid Bicycle and Pedestrian Funding Programs

In addition to the transportation alternatives and the FTA programs previously discussed, bicycle and pedestrian facilities and programs are eligible for federal funding through a number of federal-aid highway programs, primarily four of the core highway formula programs.

- **National Highway Performance Program (NHPP)** – The program supports infrastructure projects on the National Highway System (NHS), which includes the Interstate System highways and bridges, and other major roads important to the nation’s economy, defense, and mobility. Bicycle transportation routes and pedestrian walkways on the NHS are eligible for NHPP funds.
- **Surface Transportation Block Grant (STBG) Program** – This is a flexible funding program that can be used to preserve and improve the condition and performance on any federal-aid highway, bridge projects, transit capital projects, and non-motorized transportation routes.
- **Highway Safety Improvement Program (HSIP)** – HSIP funds may be used to fund a variety of bicycle and pedestrian projects that enhance safety on public roads, such as bicycle lanes, paved shoulders, sidewalks, crosswalks, curb cuts, ramps, signal improvements, and traffic calming measures.
- **Congestion Mitigation and Air Quality Improvement (CMAQ) Program** – Funds must be spent in regions that do not meet national air quality standards for ozone and carbon monoxide levels (non-attainment areas) or have

Figure 2-4. Other Federal-Aid Highway Programs: Bicycle and Pedestrian Funding



recently become compliant (maintenance areas). Since April 2005, the Birmingham metropolitan planning area (Jefferson and Shelby Counties with a small portion of Walker County) has been designated as an air quality non-attainment area with respect to the National Ambient Air Quality Standards for particulate matter smaller than 2.5 microns in diameter (PM<sub>2.5</sub>). The planning area is designated as a maintenance area for ground-level ozone.<sup>11</sup> Projects that shift travel to other modes, such as bicycle and pedestrian travel, are eligible for funding.

- **Statewide and Metropolitan Planning Programs** – States and metropolitan areas may choose to develop bicycle and pedestrian plans or use the funding to conduct data collection or monitoring for bicyclists and pedestrians.
- **State and Community Highway Safety Grant Program (Section 402)** – Bicycle and pedestrian safety programs are eligible for Section 402 funding. Examples of such safety programs include helmet distribution programs, training in the utilization of bicycle and pedestrian design guidelines, community education programs on



safe bicycle use, and public information on crosswalk and school zone safety.

Other federal programs that currently provide funding for bicycle and pedestrian planning and projects include:

- **TIGER Discretionary Grants** – This is a highly competitive grant program that provides funding for surface transportation projects that will have significant economic impact on a national, statewide, or regional scale; and
- **Federal Lands and Tribal Transportation Programs (FLTTP)** – The Tribal Transportation Program (TTP) provides funding to address transportation needs to and within Indian reservations, Indian lands, and Alaska Native Village communities, with the goal of enhancing economic development, self-determination, and employment within these areas. Bicycle and pedestrian projects on tribal lands are eligible to receive funding from the Tribal Transportation Program.<sup>12</sup>

Each of these programs has specific eligibility requirements for bicycle and pedestrian projects. Table A-1 in Appendix A presents a summary of bicycle and pedestrian funding opportunities from federal-aid highway and transit funding programs.

## 2.4 Other Federal Agencies and Programs

### *US Centers for Disease Control and Prevention*

In 2007, the United States Centers for Disease Control and Prevention (CDC) created a Transportation Policy Group to develop a more comprehensive approach to identifying and addressing issues related to transportation and health. Their efforts have extended to include work with the USDOT, as well as non-federal partners such as the American Public Health Association and the Convergence Partnership for Healthy Eating and Active Living. In 2010, the CDC issued its *Recommendations for Improving Health through Transportation Policy*. Key recommendations include:

- Reduce injuries associated with motor vehicle crashes;
- Encourage healthy community design;
- Promote safe and convenient opportunities for physical activity by supporting active transportation infrastructure;
- Reduce human exposure to air pollution and adverse health impacts associated with these pollutants; and
- Ensure that all people have access to safe, healthy, convenient, and affordable transportation.<sup>13</sup>

The CDC's transportation program is part of the National Center for Environmental Health's Division of Emergency and Environmental Health Services and its Built Environment and Health Initiative (also known as the Healthy Community Design Initiative). The Healthy Community Design Initiative offers additional tools and strategies to improve health

through transportation. The Transportation Health Impact Assessment Toolkit, for example, can help identify potential health effects of a proposed transportation project, plan, or policy before it is built or implemented.

### *National Park Service*

The National Park Service recognizes the importance of bicycle and pedestrian trails in national parks. These trails provide critical linkages between different transportation modes (i.e., personal vehicles and park shuttle buses), allowing park users access to natural areas unreachable by motorized vehicles. The National Park Service operates

## Recommendations for Improving Health through Transportation Policy

In 2010, the CDC issued its *Recommendations for Improving Health through Transportation Policy*. Key recommendations include:

- Reduce injuries associated with motor vehicle crashes;
- Encourage healthy community design;
- Promote safe and convenient opportunities for physical activity by supporting active transportation infrastructure;
- Reduce human exposure to air pollution and adverse health impacts associated with these pollutants; and
- Ensure that all people have access to safe, healthy, convenient, and affordable transportation.<sup>11</sup>



Source: [www.pedbikemages.org/MikeCynecki](http://www.pedbikemages.org/MikeCynecki)

11 National Scenic Trails, 19 National Historic Trails, more than 1,000 National Recreational Trails, as well as several connecting and side trails and “rail banked” rail trails. These trails total over 60,000 miles in length. Within the National Parks, the trail inventory includes almost 18,000 miles of trails and 1.4 million square feet of trail bridges and tunnels.<sup>14</sup>

The National Park Service promotes and encourages bicycle and pedestrian use through a number of programs.

- In Washington DC, the Mt. Vernon, Rock Creek, and Capital Crescent Trails are used by thousands of commuters each day, helping to alleviate traffic congestion.
- The National Park Service operates bike sharing programs in Washington, DC; San Antonio, Texas; and at several bike sharing stations along the Mississippi River.
- Cuyahoga National Park in Ohio has partnered with Cuyahoga Valley Scenic Railroad in a “Bike Aboard” program, whereby bicyclists who ride the Towpath Trail can take an express train ride back to their starting location.<sup>15</sup>

## 3.0 State Laws, Policies, Plans, Programs, and Standards

### 3.1 Alabama Bicycle and Pedestrian Laws

The Code of Alabama 1975 (Code) contains several statutes to address bicycle and pedestrian safety and traveling behavior. Two articles address bicyclists: *Bicycles and Play Vehicles* (Section 32-5A, Article 12) and *Bicycle Safety* (Section 32-5A, Article 13). The *Bicycle and Play Vehicles* article states that all applicable traffic laws apply to bicyclists, and outlines how cyclists should share the road with motor vehicles.

The safety article, also known as the *Brad Hudson-Alabama Bicycle Safety Act of 1995*, requires riders age 16 or younger to wear approved protective bicycle helmets. It also requires that all bicycle passengers who weigh less than 40 pounds or are less than 40 inches in height be seated in separate restraining seats.<sup>16</sup>

Effective September 1, 2015, a new state law requires motorists who are passing bicyclists in the roadway to leave a safe passing distance of at least three feet. This law applies to the following facilities:

- A roadway that has a marked bicycle lane; and
- A roadway without a marked bicycle lane if the roadway has a marked speed limit of 45 miles per hour or less and the roadway does not have a double yellow line separating cars from oncoming traffic indicating a no passing zone.<sup>17</sup>



Source: [www.pedbikemages.org/DanBurden](http://www.pedbikemages.org/DanBurden)

Section 32-5A, Article 10 of the Code cites the rights and duties of pedestrians in Alabama. These rights and duties include:

- Like motorists, pedestrians are to obey traffic control devices;
- When traffic signals are not in place and pedestrians cross in a marked crosswalk, vehicles are required to yield or stop when the pedestrian is in the half of the roadway (or close to that portion of the roadway) where the vehicle is traveling. When a marked crosswalk is not present, pedestrians are required to yield or stop to motor vehicles before crossing;
- State law prohibits pedestrians from crossing the roadway between adjacent intersections with traffic control signals (except in a marked crosswalk);
- Pedestrians are required to use right side of marked crosswalks where practical;
- Pedestrians are required to use sidewalks if available;
- Motorists shall give pedestrians on sidewalks the right-of-way;
- If sidewalks are not available, pedestrians shall walk on the shoulder, as far as possible from the edge of the roadway; and
- If a shoulder is not available, pedestrians shall walk as far as possible from the edge of the roadway.<sup>18</sup>

### 3.2 Alabama Statewide Transportation Plan and Transportation Improvement Program

The *Alabama Statewide Transportation Plan* (SWTP) is a long-range, high-level assessment of the State of Alabama’s transportation needs. Updated in 2008, the plan is multi-modal and comprehensive in nature, considering roads and bridges, transit, bicycle and pedestrian systems, freight transportation systems, and aviation. The SWTP provides an overview of bicycle and pedestrian systems in Alabama,

describing conditions that vary significantly across the state. Key findings of the SWTP include:

- There are low levels of non-motorized travel within the state even in urban and suburban areas with bicycle and pedestrian facilities;
- Inconsistency among local policies and regulations in MPO areas limit the expansion of bicycle and pedestrian facilities;
- Adequate provisions for all modes should be considered for projects where appropriate; and
- The estimated cost of meeting bicycle and pedestrian system needs, based on annual average programming of \$2 million per year prior to 2008, is projected to be \$106 million through 2035.

Building on federal planning factors, the SWTP identifies four primary goals:

- Provide safe and efficient transportation for people and goods;
- Protect public and private investments in transportation;
- Provide an interconnected transportation system that supports economic development objectives; and
- Provide a transportation system that preserves the quality of the environment and enhances the quality of life.



Source: www.pedbikeimages.org/DanBurden

The *Statewide Transportation Improvement Program (STIP)* is Alabama's financially constrained four-year transportation capital improvement program. The STIP includes projects and programs approved in all MPO Transportation Improvement Programs (TIP), as well as projects developed by ALDOT within urban and rural areas.

### 3.3 Alabama Department of Transportation Bicycle and Pedestrian Plan (2010)

In 2010, ALDOT released a statewide *Bicycle and Pedestrian Plan* for the purpose of guiding decisions on where bicycle and pedestrian facilities should be provided. The plan identified a series of statewide bicycle routes and regional connectors, linking a number of cities, towns, state parks, and US bike routes. The recommended statewide bike routes and regional connectors are supplemented in the plan with guidance on where bicycle facilities should be included and how to select the appropriate bicycle facilities in certain settings. For the accommodation guidance, the plan builds on key themes and elements of the USDOT bicycle and pedestrian accommodation policy discussed earlier, including:

- All roadways on which bicycles are permitted are generally considered bicycle facilities;
- On-road accommodations for bicycle travel in highway projects should be considered on new construction and reconstruction projects, given conditions such as:
  - The highway or street is designated as a bikeway in a regionally or locally adopted bike plan or is part of the US Bicycle Route System;
  - The route provides primary access to employment and activity centers;
  - The route provides unique access across a natural or man-made barrier;
  - The highway project will negatively impact the utility of an existing bikeway; and
- Exceptions may be made to the above criteria.

### 3.4 Alabama Strategic Highway Safety Plan (2012)

The *Alabama Strategic Highway Safety Plan (SHSP)* is "a highly-coordinated, statewide plan that establishes optimum strategies, projects, and programs among multiple agencies to reduce highway fatalities and serious injuries on all public roads."<sup>19</sup> The long-term goal of the plan is to reduce fatalities and injuries on state roads for all roadway users.

The SHSP highlights the following key crash statistics:

- A substantial portion of all traffic crash fatalities and serious injuries are due to three types of driver decisions: speeding, alcohol, and a lack of proper seatbelt/restraint use;



- Distracted driving is a growing behavioral problem;
- In 2010, over 30 percent of crashes occurred at intersections;
- Approximately 27 percent of all crashes occur on rural roads, but represent 62 percent of all fatalities; and
- The most frequent type of fatal crashes involves some type of lane departure on a rural two-lane road.

The SHSP identifies pedestrians and bicyclists as vulnerable users of the roadway. The plan recommends that bicycle and pedestrian crashes should be mitigated in the early stages of project development, with the assistance of established guidelines that indicate when bicycle and pedestrian facilities should be integrated with roadway infrastructure. ALDOT also notes that it will evaluate the inclusion of national roadway design criteria for bicycle and pedestrian safety, should such criteria become available in the near future.

The five major focus areas of the SHSP and key priority strategies are:

- Driver behavioral crashes;
  - Plan enforcement activities for locations identified as being over-represented in speeding and alcohol-related crashes;
  - Continue public safety campaigns to educate the general public (particularly young drivers) about the dangers of distracted driving;
- Infrastructure countermeasures;
  - Categorically assess intersection safety issues;
  - Implement programs to minimize roadway safety departures;
- Legislative initiatives;
  - Provide a prioritized list of traffic safety legislation according to crash reduction potential;
  - Develop educational materials for policy makers, legislators, media outlets, grass roots organizations, and the general public;
- Traffic safety information systems;
  - Continue to improve existing electronic data systems and provide data exchange mechanisms;
  - Continue efforts to implement the American Association of State Highway and Transportation Officials (AASHTO) *Highway Safety Manual*, which emphasizes incorporating safety in the planning and project development process;
- Safety stakeholder community;
  - Activate safety stakeholders through a Traffic Safety Summit; and

- Encourage and support stakeholders for improving Alabama’s safety culture.

The SHSP calls for a major improvement in the traffic safety culture in Alabama, adopting a “Toward Zero Deaths” (TZD) target goal that makes eliminating traffic fatalities the responsibility of everyone. In addition to ALDOT, state agencies participating in the SHSP include:

- Alabama Department of Economic and Community Affairs;
- Alabama Department of Public Health; and
- Alabama Law Enforcement Agency (formerly, the Alabama Department of Public Safety).

The SHSP established a target of reducing the combination of traffic fatalities and injuries by 50 percent over a 25-year period.<sup>20</sup>

### 3.5 Alabama Bicycle and Pedestrian Design Guidelines

For on-street and off-street bicycle facilities, designers refer to AASHTO’s *Guide for the Development of Bicycle Facilities (2012)* and AASHTO’s “Green Book,” *A Policy on Geometric Design of Highways and Streets (2011)*. In addition, FHWA’s *Separated Bike Lane Planning and Design Guide* was released in May 2015. For signing and striping guidance, designers refer to the *Manual on Uniform Traffic Control Devices (MUTCD) (2009)*. For the design of pedestrian facilities, ALDOT has standards and special drawings that show curb ramp types, and released a *Guideline for Operation (GFO)* in 2013 detailing the cross-slope and longitudinal grade design criteria for federal-aid sidewalk projects. For additional pedestrian guidance, designers refer to the *Americans with Disabilities Act Guidelines (ADAG)* and the *Public Right of Way Accessibility Guidelines (PROWAG)*, or AASHTO’s *Guide for the Planning, Design, and Operation of Pedestrian Facilities (2004)*.

### 3.6 Regional and Local Plans

Regional and local planning and transportation agencies play a critical role in the provision of bicycle and pedestrian facilities. Alabama has 14 MPOs and 12 Regional Planning Organizations (RPOs) providing regional transportation planning and program services in urbanized areas with populations greater than 50,000 and rural areas, respectively. Several of the MPOs and RPOs, as well as cities that fall within their jurisdictions, have developed bicycle and pedestrian plans and/or comprehensive plans that include bicycle and pedestrian elements. Many of these areas have also established bicycle and pedestrian advisory committees. A summary of these bicycle and pedestrian initiatives in RPO and MPO areas is shown in Figure 3-1 and Table 3-1.

Figure 3-1. Bicycle and Pedestrian Initiatives in Alabama RPO Areas (as of January 2016)

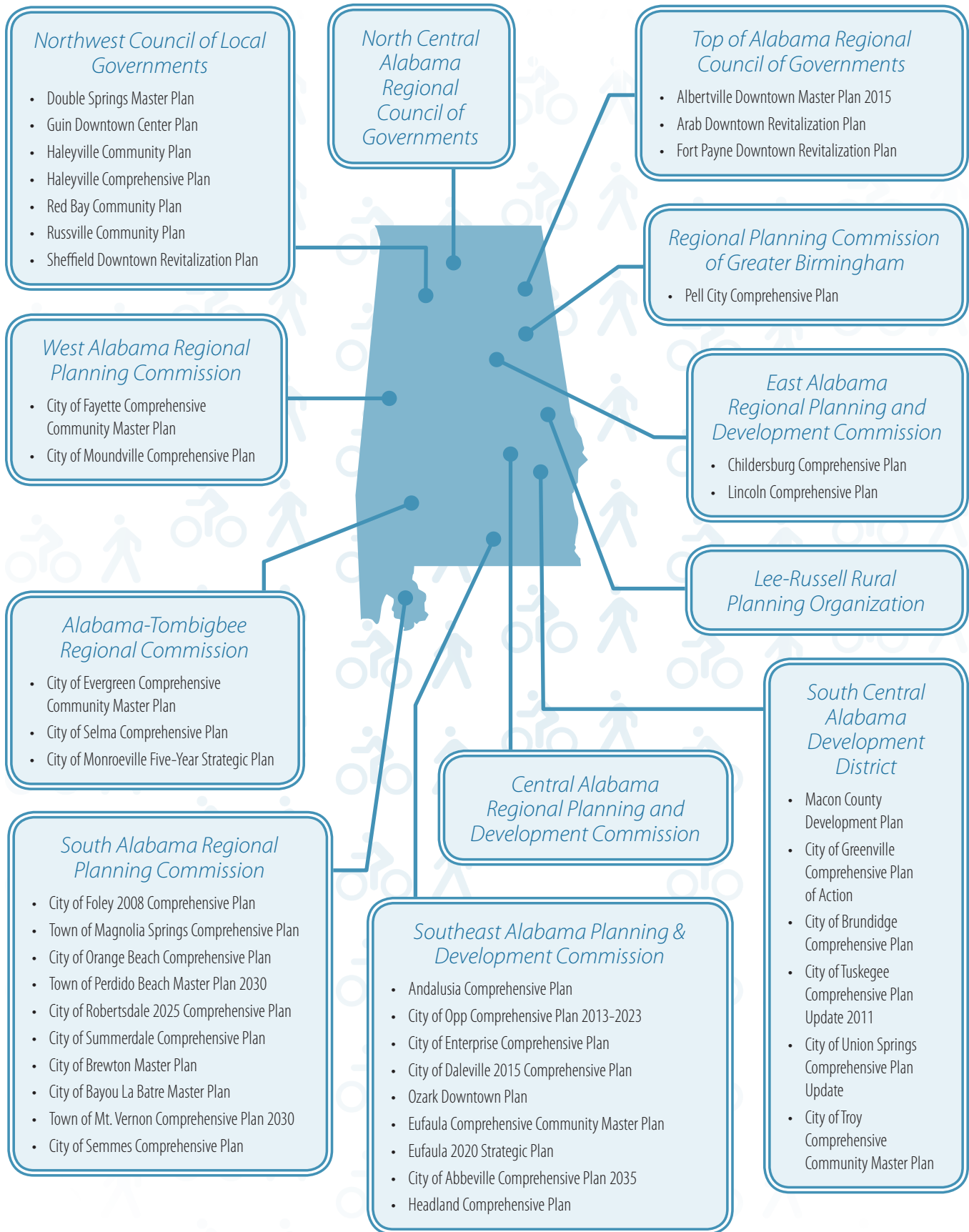



















Table 3-1. Bicycle and Pedestrian Initiatives in Alabama MPO and TPO Areas (January 2016)

Metropolitan and Transportation Planning Organizations	MPO Bicycle and Pedestrian Plans	Local Bicycle and Pedestrian Plans	Comprehensive Plans with Bicycle/Pedestrian Elements	Bicycle/Pedestrian Advisory Committees
Auburn-Opelika MPO				
City of Auburn				
City of Opelika				
Birmingham MPO				
City of Birmingham				
City of Columbiana				
City of Hoover				
City of Vestavia Hills				
Calhoun Area MPO				
City of Anniston				
City of Jacksonville				
City of Talladega				
Columbus-Phenix City MPO				
Decatur MPO				
Eastern Shore MPO				
City of Daphne				
City of Fairhope				
Town of Loxley				
City of Spanish Fort				
Gadsden-Etowah MPO				
Huntsville Area MPO				
City of Athens				
City of Huntsville				
City of Madison				
Mobile Area MPO				
City of Chickasaw				
City of Mobile				
City of Prichard				
City of Saraland				

Table 3-1. Bicycle and Pedestrian Initiatives in Alabama MPO and TPO Areas (continued)

Metropolitan and Transportation Planning Organizations	MPO Bicycle and Pedestrian Plans	Local Bicycle and Pedestrian Plans	Comprehensive Plans with Bicycle/Pedestrian Elements	Bicycle/Pedestrian Advisory Committees
Montgomery Area MPO				
Town of Coosada				
City of Prattville				
City of Montgomery				
City of Wetumpka				
Shoals Area MPO				
City of Florence				
City of Killen				
City of Leighton				
City of Muscle Shoals				
City of Sheffield				
City of St. Florian				
City of Tuscumbia				
Southeast Wiregrass Area MPO				
Tuscaloosa Area MPO				
Florida-Alabama TPO				

Source: www.pedbikemages.org/DanBurden



## 4.0 Best Practices

### 4.1 National Advocacy Organizations

National advocacy organizations generally focus on improving bicycle and pedestrian conditions and also provide a useful platform for monitoring national best practices and state-by-state comparisons. A key takeaway from the various national reports and rankings produced each year is the importance of considering these modes collectively, historically, and contextually.

The League of American of Bicyclists, for example, issues individual state report cards, called the “Bike Friendly State Ranking,” which assesses progress in five categories:

- **Legislation and Enforcement** – Basic laws and regulations that govern bicycling;
- **Policies and Programs** – State agency requirements for accommodating cyclists;
- **Infrastructure and Funding** – Specific performance measurements, e.g., amount of facilities and spending for bicycling;
- **Education and Encouragement** – Amount of bicycling education for adult and youth cyclists and individual and professional motorists; and
- **Evaluation and Planning** – How bicycling is incorporated into each state’s annual transportation, safety, and recreation planning.

The Bike Friendly State Ranking categories each include a broad range of criteria that represent a series of strategies and tools for improving bicycle conditions in a state. While Alabama has been ranked in the bottom ten percent of states over the eight-year history of the rankings, in recent years, Alabama has focused more resources in these areas evidenced by the state’s strong focus on bicycle and pedestrian safety through the ALDOT Office of Safety Operations, among other actions.

The most comprehensive report documenting bicycling and walking conditions in the United States is the Alliance for Biking and Walking’s Bicycling and Walking in the United States Benchmarking Report (2016), completed in conjunction with support from the CDC, the American Association of Retired Persons (AARP), and the American Public Transportation Association (APTA). The *Benchmarking Report* documents the following trends to help state and local officials improve their communities’ bicycling and walking activities:

- **Mode share** – Levels of bicycling and walking;
- **Health** – Rate of adults who participate in regular physical activity; rate of obesity; rate of diabetes; rate of hypertension; and rate of asthma;
- **Safety** – Bicycle and pedestrian fatality rates; percentage of traffic fatalities that are bicyclists and pedestrians;



Source: [www.pedbikemages.org/JohnPope](http://www.pedbikemages.org/JohnPope)

- **Funding** – Per capita funding and percentage of federal dollars to biking and walking projects;
- **Legislation and Enforcement** – State laws and policies designed to protect bicyclists and pedestrians;
- **Policies and Programs** – Policies and design standards to address the goals of increasing bicycling and walking and decreasing bicycle and pedestrian fatalities;
- **Infrastructure and Funding** – Miles of bicycle lanes, multi-use paths, and signed bicycle routes; state commitment to utilize different federal bicycle and pedestrian funding programs;
- **Education and Encouragement** – Programs and initiatives such as annual state bicycling and pedestrian conferences; state-sponsored bicycle rides; the inclusion of bicycling questions on the state-issued driver’s test; Share-the-Road campaigns; and the incorporation of bicycle and pedestrian public agency staff and advisory committees; and
- **Evaluation and Planning** – Statewide data collection on bicycle and pedestrian usage; statewide bicycle and pedestrian-related plans.

Importantly, in the four state ranking categories – bicycling and walking commuter levels, per capita spending on bicycle and pedestrian projects, bicycle and pedestrian fatality rates, and percent achieving recommended physical activity – southern states and more rural states generally

fare poorly. The one exception is in per capita spending on bicycle and pedestrian projects. As southern states and more rural states have continued to grow in population, they have ramped up spending for bicycle and pedestrian projects. In response, many southern states currently rank in or near the top half of states for per capita spending on bicycle and pedestrian projects. It is also important to note that in the ranking of states by bicycling and walking commuter levels, the highest ranked southern state is West Virginia at twenty-nine, which may reflect a number of variables including supporting policies, facilities, development patterns, and climate.<sup>21</sup>

## 4.2 National Professional Associations

There are a number of national professional associations that have produced guidelines on bicycle and pedestrian policy and design. Several states, regions, and local governments utilize these reports to help guide implementation of bicycle and pedestrian facilities.

### *American Association of State Highway and Transportation Officials*

The AASHTO *Guide for the Development of Bicycle Facilities* is a comprehensive guidebook on the planning, design, maintenance, and operation of bicycle facilities. The guidelines presented are intended to accommodate flexible design, sensitive to the context of different areas and resulting in facilities that meet the needs of both bicyclists and motorists. The document is an update to the original 1999 version of the guide, and includes several new topics, including guidance on how to select the optimal bikeway types, information on roadway diets, expanded bicycle lane guidance, expanded signal guidance, and additional information on shared use paths. Also included is more detailed information on buffered bicycle lanes, bicycle parking, the narrowing of travel lanes, and bicycle boulevards.

Among best practices highlighted in the document are:

- Selection of bicycle facility (bike lanes, shared use paths, etc.) based upon roadway volume and design speed;
- Language discouraging the use of wide curb lanes as a standard solution to accommodate bicycles on major roadways;
- Where wide curb lanes exist, including shared lane markings and signs;
- The use of Bicycle Level of Service as a measure of on-road bicyclist comfort level, based on the roadway's geometry and traffic conditions;
- Discouraging the use of bollards to separate bicycles from motor vehicles;
- Considering more than one design speed;



Source: Gresham, Smith and Partners

- The inclusion of bicycle-specific signals at signalized intersections;
- The extension of “green time” at signals where bicyclists are present;
- Modifying traffic signals to better detect bicycles at intersections;
- The creation of bicycle boulevards, which allow all vehicles but include modifications to enhance bicycle safety and convenience, as well as traffic calming measures to improve pedestrian safety;
- Permitting the narrowing of roadway lanes, where appropriate, to create bicycle lanes;
- The use of buffered bicycle lanes; and
- The use of contrasting green colored or textured pavement through intersections and merge areas, where conflict points between bicycles and motor vehicles exist.

FHWA recognizes the information presented in the *Guide for the Development of Bicycle Facilities* as a sound, flexible approach for bicycle facility design.<sup>22</sup> AASHTO published complementary guidance on pedestrian facilities, *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, in 2004.



### National Association of City Transportation Officials

The National Association of City Transportation Officials (NACTO) *Urban Bikeway Design Guide (2014, Second Edition)* is intended to provide cities with innovative solutions for bicyclists who travel on urban roads. The guidelines presented in the document help create streets that are safe and comfortable for bicyclists. Included in the document are best practices for the design and operation of bicycle lanes, cycle tracks, and bicycle boulevards, as well as optimal intersection design, signalization, and signs and markings for bicycle use. The guidance in the document is flexible and adaptable to different urban areas and presents the treatments with three levels of guidance: required, recommended, and optimal.

Among best practices highlighted in the document are:

- Use of cycle tracks, exclusive bicycle facilities that are physically separated from the motor vehicle traffic, parking lanes, and sidewalks. These tracks may be one-way or two-way, and either raised or at-grade; and
- Innovative intersection treatments, including:
  - Bike boxes, areas at the head of traffic lanes at signalized intersections that provide bicyclists a safe and highly visible way to wait at traffic signals;
  - Two-stage turn queue boxes, designated areas for bicyclists to make left turns at signalized intersections with multiple lanes; and
  - Median refuge islands that allow bicycles to cross traffic traveling in only one direction at a time.<sup>23</sup>

In August 2013, FHWA officially expressed its support for using the *Urban Bikeway Design Guide* and extended that support to NACTO's companion guidance contained in the *Urban Street Design Guide (2013)* in 2014.

### Institute of Transportation Engineers

The Institute of Transportation Engineers (ITE) *Designing Walkable Urban Thoroughfares: A Context Sensitive Approach (2010)* presents solutions for advancing the walkability of major urban roads, and was simultaneously endorsed by FHWA with NACTO's *Urban Bikeway Design Guide* in 2013. The best practices emphasized in this report concentrate on context-sensitive solutions that meet the needs of users and stakeholders; are compatible with their setting, and preserve scenic, aesthetic, historic, and environmental resources; respect design objectives for safety, efficiency, multimodal mobility, capacity, and maintenance; and integrate community objectives and values relating to compatibility, livability, sense of place, urban design, cost, and environmental impacts. Among the best practices discussed in the report are:

- Integrating context-sensitive design policies in statewide strategic plans, long-range transportation plans, state transportation improvement programs, and system and corridor plans;

- Revising state design manuals to include context-sensitive solutions;
- Incorporating context-sensitive criteria into the alternatives screening process; and
- Training state-level staff and local agencies on context-sensitive applications.<sup>24</sup>

### 4.3 State-Level Best Practices

This section highlights best practices in bicycle/pedestrian policy and implementation among states neighboring Alabama. The best practices have been organized into five categories: Planning and Engineering, Funding, Analysis Tools, Enforcement, and Outreach and Education. Each state may not have a best practice in each of these categories.




Table 4-1 summarizes several best practices that have been implemented by each of the peer states.




Source: www.pedbikemages.org/SoundTransit




## STATE OF GEORGIA

<i>Planning and Engineering</i>		<i>Funding</i>	
<ul style="list-style-type: none"> <li>The Georgia Department of Transportation (GDOT) has developed the <i>Georgia Bicycle and Pedestrian Safety Action Plan</i>. This plan is a result of recommendations in the <i>Strategic Highway Safety Plan</i> to focus on non-motorized transportation as a key emphasis area. The Safety Action Plan identifies current bicycling and pedestrian activity conditions, assesses where there are issues and needs, and determines future programs and funding to address these needs. The objectives in the plan set standards for:               <ul style="list-style-type: none"> <li>Reduction of bicycle and pedestrian crashes, fatalities, and injuries;</li> <li>Number of bicycling and walking trips to school; and</li> <li>Funding for bicycle and pedestrian projects.<sup>25</sup></li> </ul> </li> <li>The <i>2012 Georgia Strategic Highway Safety Plan</i> gives a history of pedestrian and bicyclist fatalities and injuries, sets benchmarks for the reduction of these figures, and highlights strategies that can be taken to achieve these goals.<sup>26</sup></li> <li>In 2012, GDOT adopted a “Complete Streets” policy designed to provide “safe, adequate, and balanced accommodations for pedestrians, bicyclists, and transit users, regardless of age or liability, where it is practical to do so...”<sup>27</sup></li> </ul>	<th data-bbox="737 436 976 483"><i>Enforcement</i></th> <td data-bbox="976 247 1427 919"> <ul style="list-style-type: none"> <li>The GDOT 2011-2014 Statewide Transportation Improvement Program allocates 4.8 percent of total funding to bicycle and pedestrian projects.<sup>28</sup></li> </ul>  </td>	<i>Enforcement</i>	<ul style="list-style-type: none"> <li>The GDOT 2011-2014 Statewide Transportation Improvement Program allocates 4.8 percent of total funding to bicycle and pedestrian projects.<sup>28</sup></li> </ul> 
<th data-bbox="737 919 1427 966"><i>Outreach and Education</i></th>			<i>Outreach and Education</i>
<ul style="list-style-type: none"> <li>Georgia has a “Share the Road” campaign, encouraging drivers to be aware of bicyclists on the roads and exercise caution when traveling near bicyclists. Motor vehicles may purchase special “Share the Road” license plates.</li> </ul>			

## STATE OF LOUISIANA

<i>Planning and Engineering</i>	<i>Enforcement</i>	
<ul style="list-style-type: none"> <li>The Louisiana Department of Transportation and Development (LaDOTD) has developed a <i>Statewide Bicycle and Pedestrian Master Plan</i> to encourage a “complete and multi-modal transportation system for the State of Louisiana.”<sup>30</sup></li> <li>In 2009, the LaDOTD adopted a “Complete Streets” policy. The state’s policy was recognized by the American Planning Association, Louisiana Chapter and National Complete Streets Coalition for being one of the best in the nation for its strength and comprehensiveness. The Department has committed to integrating provisions for all users into the project development process using context sensitive solutions.               <ul style="list-style-type: none"> <li>On all new and reconstruction roadway projects that serve adjacent areas with existing or reasonably foreseeable future development or transit service, LaDOTD will plan, fund, and design sidewalks and other pedestrian facilities.</li> <li>On all new and reconstruction road projects, LaDOTD will provide bicycle accommodations appropriate to the context of the roadway – in urban and suburban areas, bicycle lanes are the preferred bikeway facility type on arterials and collectors. The provision of a paved shoulder of sufficient width, a shared use trail, or a marked shared lane may also suffice, depending on context.<sup>31</sup></li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>The State of Louisiana has a safe passing law for bicyclists that requires motor vehicles to leave at least three feet of space between the motor vehicles and the bicyclist if passing a bicyclist.<sup>32</sup></li> <li>In Louisiana, it is “unlawful to harass, taunt, or maliciously throw objects at or in the direction of any person riding a bicycle.”<sup>33</sup></li> </ul>	
		
<th data-bbox="894 1669 1427 1715"><i>Outreach and Education</i></th>		<i>Outreach and Education</i>
<ul style="list-style-type: none"> <li>Louisiana has a “Share the Road” campaign, encouraging drivers to be aware of bicyclists on the roads and exercise caution when traveling near bicyclists. Motor vehicles may purchase special “Share the Road” license plates.</li> </ul>		

STATE OF FLORIDA

<i>Planning and Engineering</i>	<i>Funding</i>
<ul style="list-style-type: none"> <li>The Florida Department of Transportation (FDOT) has a “Complete Streets” policy that “promotes safety, quality of life, and economic development in Florida.” Through this policy, FDOT strives to meet the transportation needs of all users, including motorists, pedestrians, cyclists, transit riders, and freight handlers.<sup>34</sup></li> <li>FDOT works on bicycle and pedestrian planning through its Office of Policy Planning and the State Safety Office. The Office of Policy Planning provides regular reports on transportation trends and conditions in Florida, including a report focused exclusively on walking and bicycling, <i>Transportation System: Walking and Bicycling Facilities and Travel</i>. The Office of Policy Planning also oversees the Florida Bicycle and Pedestrian Partnership Council (BPPC) established in 2010 by FDOT. The purpose of the BPPC, a statewide committee of agency and stakeholder representatives, is, “to promote the livability, health, and economic benefits of bicycle and pedestrian activity by serving as a forum to provide guidance to the FDOT, its partners and other stakeholders on policy matters and issues affecting the bicycle and pedestrian transportation needs of the State of Florida.”<sup>35</sup></li> <li>In 2013, FDOT issued its first pedestrian and bicycle safety plan, the <i>Florida Pedestrian and Bicycle Strategic Safety Plan</i>. The purpose of the plan is, “to focus funding and resources on the areas that have the greatest opportunity to reduce pedestrian and bicycle fatalities, injuries, and crashes.”<sup>36</sup> The plan has set a goal of achieving a five percent annual reduction in the number of fatalities and serious injuries for pedestrians and bicyclists.</li> <li>Florida’s <i>Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways</i>, also referred to as the Florida “Greenbook,” provides planning and design guidance for pedestrian and bicycle facilities and is based on the principle that transportation facilities, except limited access highways, should be designed and constructed under the assumption they will be used by pedestrians and cyclists.</li> </ul>	<ul style="list-style-type: none"> <li>Although a small percentage of total spending in FDOT’s <i>2010-2013 Statewide Transportation Improvement Program</i>, stand-alone and integrated bicycle and pedestrian projects account for nearly \$356 million.<sup>37</sup></li> </ul>
<i>Outreach and Education</i>	<i>Enforcement</i>
<ul style="list-style-type: none"> <li>Through the state’s Bicycle and Pedestrian Partnership Council, and Pedestrian and Bicycle Safety Program, FDOT maintains a number of programs aimed at improving pedestrian and bicycle legislation, regulation, policy, enforcement, communication, and outreach. Chief among these efforts is the FDOT-funded Florida Pedestrian/Bicycling Safety Resource Center housed at the University of Florida.</li> </ul>	<ul style="list-style-type: none"> <li>The State of Florida has a safe passing law for bicyclists that requires motor vehicles to leave at least three feet of space between the motor vehicles and the bicyclist if passing a bicyclist.</li> </ul> 

STATE OF MISSISSIPPI

<i>Planning and Engineering</i>	<i>Enforcement</i>
<ul style="list-style-type: none"> <li>The Mississippi Department of Transportation (MDOT) has a <i>Pedestrians and Bicycle Policy</i> that states that “pedestrians and bicyclists shall be considered (where they are not prohibited, such as on the Interstate System) during the planning, design, construction, and maintenance of highway and street facilities.”<sup>38</sup></li> </ul>	<ul style="list-style-type: none"> <li>The State of Mississippi has a safe passing law for bicyclists that requires motor vehicles to leave at least three feet of space between the motor vehicles and the bicyclist if passing a bicyclist.<sup>39</sup></li> <li>In Mississippi, it is “unlawful to harass, taunt or maliciously throw an object at or in the direction of any person riding a bicycle.”<sup>40</sup></li> </ul>
	
<i>Outreach and Education</i>	<i>Outreach and Education</i>
	<ul style="list-style-type: none"> <li>Mississippi has a “Share the Road” campaign, encouraging drivers to be aware of bicyclists on the roads and exercise caution when traveling near bicyclists. Motor vehicles may purchase special “Share the Road” license plates.</li> </ul>

## STATE OF TENNESSEE


Planning and Engineering		Funding	
<ul style="list-style-type: none"> <li>Tennessee's <i>Bicycle and Pedestrian Plan</i> is a component of the Tennessee Department of Transportation's (TDOT) <i>Long-Range Transportation Plan</i>.<sup>41</sup></li> <li>Tennessee's <i>Strategic Highway Safety Plan</i> confirms the rights of bicyclists to travel on roadways, and states that motorists should yield to pedestrians in crosswalks and at intersections. The plan also highlights strategies designed to reduce bicyclist and pedestrian fatalities and injuries.<sup>42</sup></li> <li>TDOT has a "Complete Streets" policy that states, "Provisions for multimodal transportation shall be given full consideration in new construction, reconstruction, and retrofit roadway projects through design features appropriate for the context and function of the transportation facility."<sup>43</sup></li> </ul>	<ul style="list-style-type: none"> <li>The TDOT <i>2008-2014 Transportation Improvement Program (TIP)</i> allocates 4.9 percent of total funding to bicycle and pedestrian projects, and an additional 4.9 percent of total funding to road and bridge projects with bicycle and pedestrian components.<sup>44</sup></li> <li>In 2013, TDOT established the Multimodal Access Fund. This program provides a 95 percent match to local governments for bicycle, pedestrian, and transit-related projects. The Multimodal Access Fund is funded through state gas tax revenues.<sup>45</sup></li> <li>TDOT's Community Transportation Planning Grant assists rural areas in developing transportation plans that will help guide future growth. Eligible projects include pedestrian and bicycle master plans, complete streets plans, local road design guidelines, and multimodal corridor studies.<sup>46</sup></li> </ul>		
Analysis Tools	Enforcement	Outreach and Education	
<ul style="list-style-type: none"> <li>TDOT's <i>Bicycle and Pedestrian Plan</i> employs a Bicycle Level of Service methodology to identify and prioritize areas for bicycle infrastructure investments.<sup>47</sup></li> <li>TDOT's <i>Bicycle and Pedestrian Plan</i> considers the location of attractors and generators, scenic corridors, and adjoining state bicycle routes to help determine where bicycle infrastructure investments should be prioritized.<sup>48</sup></li> </ul>	<ul style="list-style-type: none"> <li>The State of Tennessee has a safe passing law for bicyclists that requires motor vehicles to leave at least three feet of space between the motor vehicles and the bicyclist if passing a bicyclist.<sup>49</sup></li> </ul> 	<ul style="list-style-type: none"> <li>Tennessee has a "Share the Road" campaign, encouraging drivers to be aware of bicyclists on the roads and exercise caution when traveling near bicyclists. Motor vehicles may purchase special "Share the Road" license plates.<sup>50</sup></li> </ul>	

Table 4-1. Selected Best Practices - Regional Peer States

SELECTED BEST PRACTICES	REGIONAL PEER STATES					
	Alabama	Florida	Georgia	Louisiana	Mississippi	Tennessee
Complete Streets Policy		X	X	X	X	X
Bicyclist/Pedestrian Access Across Major Bridges and Tunnels		X	X			X
Safe Passing Law (3 feet or >)	X	X	X	X	X	X
Bicyclists Required to Use Side Path or Bike Lane	X					
Bicycling Enforcement Part of Police Officer Standards/Training			X	X		X
"Share the Road" Campaign	X	X	X	X	X	X
Drivers License Test Questions about Bicyclists	X	X	X	X		
Statewide Bicycle and Pedestrian Conference (State-Sponsored)			X			
State Bicycle and Pedestrian Plan	X		X	X		X
State Trail Master Plan	X	X				X
Bicycle and Pedestrian Safety Emphasis in Strategic Highway Safety Plan	X	X	X	X		X
Published Goals to Increase Bicycling and Walking			X			X

Source: *Bicycling and Walking in the United States, 2014 Benchmarking Report, Alliance for Biking and Walking*

## 5.0 Key Findings

Over the past twenty-five years, states and communities across the country have witnessed a renewed interest in bicycle and pedestrian transportation. Federal policies and funding along with innovations at the state, regional, and local levels have responded to the growing interest by generating a whole new set of tools and strategies to improve the safety, comfort, and convenience of walking and bicycling. Key findings from a review of federal, state, and regional bicycle and pedestrian legislation, policies, plans, programs, and standards include:

- Nationally, transportation alternatives authorization in the FAST Act for FY 2016-2020 (\$835-\$850 million) represents a small increase from the dedicated funding in MAP-21 (\$820 million);
- Based on recent walking and bicycling safety trends nationally, the US Congress has directed USDOT to establish separate, non-motorized safety performance measures for the highway safety improvement program;
- USDOT and FHWA have a broad range of policies, plans, and programs in place to support walking and bicycling, including the “USDOT Policy Statement on Bicycle and Pedestrian Accommodation” and the more recent “USDOT Action Plan to Increase Walking and Biking and Reduce Pedestrian and Bicyclist Fatalities;”
- Walking and bicycling facilities and programs are eligible for funding under a number of other federal-aid highway programs and other federal agency programs, providing multiple opportunities to implement walking and bicycling improvements and improve safety;
- The *Alabama Statewide Transportation Plan* and *Alabama Strategic Highway Safety Plan* provide the policy foundation for bicycle and pedestrian transportation in the state, emphasizing an improved traffic safety culture, and an efficient, interconnected transportation system that supports economic development, preserves the quality of the environment, and enhances the quality of life;
- MPOs, TPOs, RPOs, and cities throughout Alabama have developed bicycle and pedestrian plans as well as bicycle and pedestrian advisory committees;
- Complementing the many public agencies working to provide bicycling and pedestrian facilities are dozens of statewide and local advocacy organizations;
- Nationally, transportation professional associations and advocacy organizations, such as the Institute of Transportation Engineers, the National Association of City Transportation Officials, and the Alliance for Biking and Walking, are playing an increasingly important role in documenting bicycle and pedestrian issues and developing new guidance for facilities and programs supported by FHWA; and

- Similar to Alabama, a number of peer states in the southeast have expanded their statewide bicycle and pedestrian programs over the past two decades. From “Complete Streets” policies to bicycle and pedestrian safety plans and safe passing laws, the pace of change in bicycle and pedestrian planning continues to accelerate.



Source: [www.pedbikemages.org/](http://www.pedbikemages.org/)Kevin Neill

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# Section B: Existing Conditions and Trends





# Section B:

## Existing Conditions and Trends

### 1.0 Introduction

#### 1.1 Vision, Goals, Objectives, and Strategies

##### *Vision Statement*

Alabama is a state where walking and bicycling are safe, comfortable, and convenient modes of transportation in communities across the state for people of all ages and abilities.

##### *Goals, Objectives, and Strategies*

#### **Goal A: Improve safety for bicyclists and pedestrians of all ages and abilities**

1. Identify and address high priority safety locations and corridors
  - Track, analyze, and report annual bicycle and pedestrian safety statistics
  - Prioritize improvements and programs with the greatest potential to reduce bicycle and pedestrian crashes, injuries, and fatalities
  - Evaluate maintenance policies and construction zone protocols to ensure safe walking and bicycling conditions
2. Educate users on safe interactions among motorists, bicyclists, and pedestrians
  - Develop educational materials and public information campaigns on safe walking, bicycling, and driving (e.g., “Share the Road” and pedestrian crossing laws)
  - Review and regularly update driver training and testing materials to include information on bicycle and pedestrian safety and laws
3. Implement laws and regulations consistently
  - Support statewide education and training programs on bicycle and pedestrian safety for state and local law enforcement officials
  - Collaborate with state and local law enforcement officials on improving consistency in bicycle and pedestrian crash reporting

#### **Goal B: Develop complete and connected bicycle and pedestrian systems**

1. Expand and improve bicycle and pedestrian networks along state highway corridors

- Develop and implement a bikeway designation program, including signage and interjurisdictional coordination
  - Collaborate with national and local partners on implementing the US Bicycle Route System in Alabama
  - Expand design guidelines for bicycle and pedestrian facilities based on national guidance
2. Incorporate bicycle and pedestrian needs in all phases of project development, routine maintenance, and system preservation
    - Increase data collection and analysis of bicycle and pedestrian safety, traffic, and geometric conditions and needs
    - Update project development policies and procedures to ensure that bicycle and pedestrian needs are evaluated in all projects
    - Integrate bicycle and pedestrian improvements as part of regular maintenance activities
  3. Coordinate state improvements with local and regional goals and objectives
    - Target bicycle and pedestrian improvements along state highway corridors that are identified in local and regional plans, or in consultation with local officials
    - Partner with local jurisdictions on flexible design approaches for bicycle and pedestrian facilities
    - Coordinate annual resurfacing, restoration, and rehabilitation (3R) and maintenance projects with local and regional bicycle and pedestrian plans

#### **Goal C: Support state, regional, and local economic development**

1. Link bicycle and pedestrian systems with other modes of transportation
  - Coordinate with regional and local transit agencies on bicycle and pedestrian improvements in transit corridors
  - Coordinate with regional and local airport authorities and passenger rail operators on bicycle and pedestrian improvements to/from airports and rail stations
  - Support secured and long-term bicycle parking at transit stops, airports, rail stations, and park and ride lots along state highways



2. Promote bicycle and pedestrian connectivity in major employment and activity centers
  - Identify priority bicycle and pedestrian improvement areas in consultation with local officials and stakeholders
  - Work with post-secondary educational institutions to improve bicycling and walking to and from campuses

#### **Goal D. Increase travel options for all transportation system users and protect the natural environment**

1. Expand and improve bicycle and pedestrian access to basic goods and services such as food, education, health care, parks, and transit
  - Improve connectivity between bicycle and pedestrian facilities on state highways and local greenway and shared use path systems
  - Increase access to walking and bicycling facilities for people unable to operate a motor vehicle and for households without personal vehicles
2. Encourage walking and bicycling for shorter everyday trips (e.g., school, shopping, social)
  - Develop a state bicycle and pedestrian webpage that includes maps, updates on policies, programs, and projects, and links to additional resources
  - Coordinate with state and local agencies and community organizations to promote the benefits of walking and bicycling
  - Encourage local partners to utilize alternative local routes in higher speed, higher volume state highway corridors
3. Preserve and protect the natural environment
  - Expand and improve the bicycle and pedestrian networks to, from, and within natural and scenic areas, including national, state, regional, and local parks
  - Coordinate state transportation planning and local land use planning to ensure walking and bicycling facilities are included in local plans and projects along state highways

Taken together, the goals, objectives, and strategies underscore the importance of being able to reach a wide variety of destinations by walking and bicycling – whether as the sole means of transportation or in conjunction with driving or other transportation modes. To evaluate existing conditions and trends, this analysis focuses on an initial set of measures emphasizing accessibility, traffic conditions, and road geometrics relative to existing roadways, including:

- Potential bicycle and pedestrian demand; and
  - Proximity to population and employment centers
  - Proximity to low-income households

- Proximity to schools, colleges, and universities
- Access to transit
- Proximity to state and national parks and trails
- Proximity to scenic byways and historic sites
- Roadway suitability (for bicycling).
  - Traffic volumes
  - Percentage of truck traffic
  - Number of lanes

Ideally, other attributes such as roadway geometry, presence, type and widths of shoulders, and roadway speeds would be included in the suitability analysis. However, these data are not currently available in an electronic format on a statewide basis.

## 2.0 Trends

The following section highlights existing conditions and trends related to bicycling and pedestrian activity in Alabama.

### 2.1 Non-Motorized Mode Share

“Mode share” measures the percentage of trips people take by different transportation modes (vehicles, transit, walking, and bicycling). For walking and bicycling or non-motorized modes, measuring mode share is inherently difficult for several reasons, including:

- Walking and bicycling occur in a wide range of contexts (e.g., not solely on roads as with vehicles or on transit systems as with transit riders), frequencies (e.g., occasional bicycling is often goes unreported), and distances (e.g., walking and bicycling to transit are unlikely to be captured);
- Surveys tend to be unreliable due to the relatively small size of walking and bicycling respondents;
- Low-income and minority households tend to be underrepresented;
- Walking and bicycling are predominantly urban transportation modes; and
- Travel surveys are expensive.

The most recent National Household Travel Survey was completed in 2009 and reported walking and bicycling mode shares for total trips at 10.4 percent and 1.0 percent, respectively. To gain a better understanding of more recent activity and trends, the US Census Bureau provides journey-to-work or commuting data through the American Community Survey. While not a measure of total trip activity, bicycle and walking mode shares of commuter trips are one means for gauging bicycle and pedestrian activity in a state and one way for measuring activity relative to peer states – in this case, states in the southeast United States.

### Bicycle Commuting Mode Share

Bicycle commuting typically comprises less than one percent of all commuting trips each year in the United States, although those figures rise in mid-size and large cities and in college towns. Tuscaloosa, Alabama, for example, ranks among the top ten bicycling commuting cities in the south with a bicycling to work mode share of 2.1 percent. Nationally, in 2013, less than one percent (0.62 percent) of commutes, or approximately 883,000 trips, were made daily by bicycle. While this represents a very small share of total commute trips, this represents a 62 percent increase nationwide in bicycle commuting since 2000, the largest increase for any commute mode during that period.<sup>1</sup>

Within the southeast US, statewide rates of bicycle commuting have been consistently lower than the national average (Figure 2-1). Louisiana and South Carolina have the highest bicycle commuting mode shares among southeastern states. Consistent with other regional trends, including population growth and per capita spending on bicycling and walking projects, bicycle commute shares in the southeast are experiencing some of the fastest growth, including Alabama (Figure 2-2).

### Pedestrian Commuting Mode Share

Walking is a more frequent means of commuting compared to bicycling in the United States. Workers who live close



Source: Gresham, Smith and Partners

Figure 2-1. Bicycling Commuting (US Census Bureau, 2013)

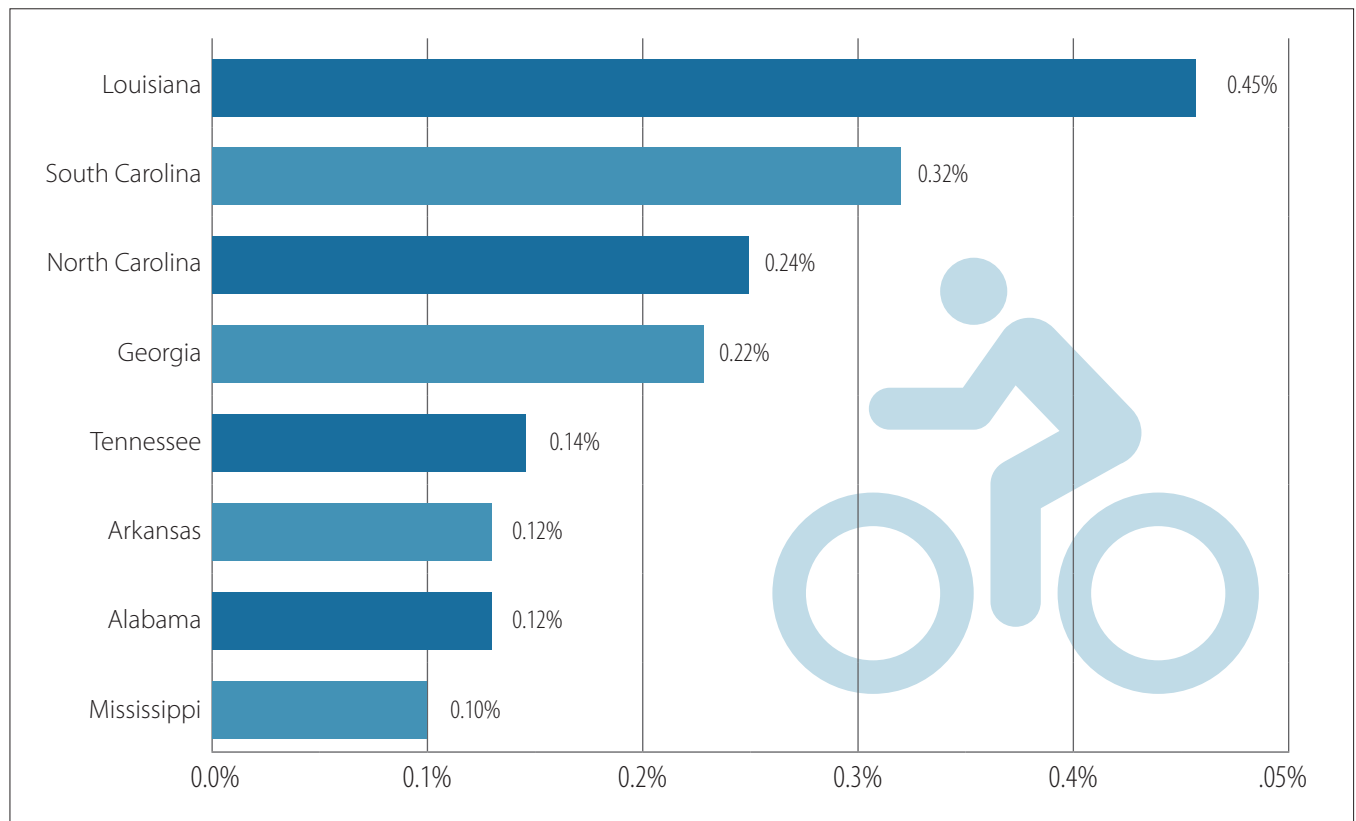
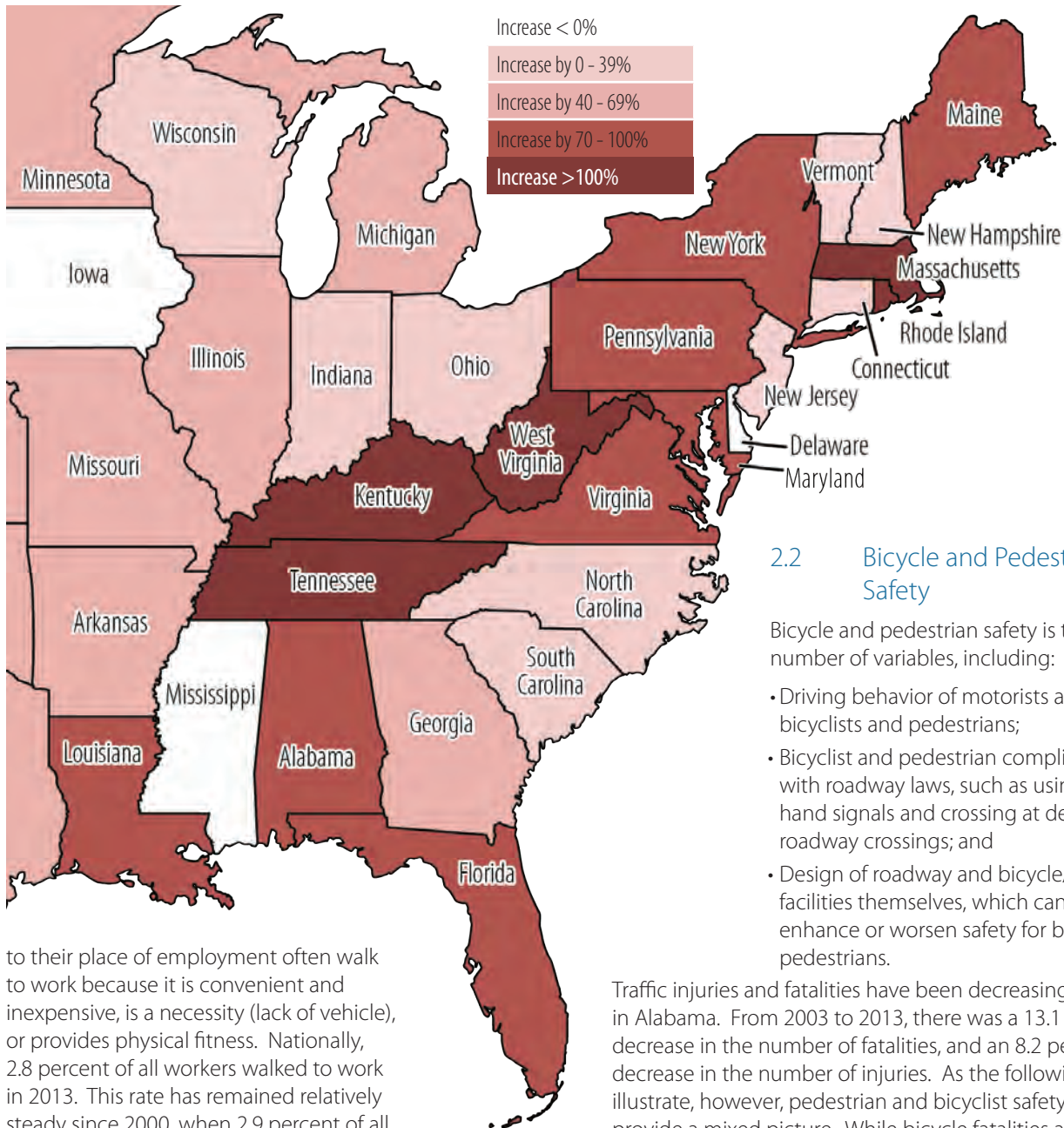


Figure 2-2. Changes in Bicycling Commuting Mode Share, 2005-2012  
(League of American Bicyclists, 2014)



to their place of employment often walk to work because it is convenient and inexpensive, is a necessity (lack of vehicle), or provides physical fitness. Nationally, 2.8 percent of all workers walked to work in 2013. This rate has remained relatively steady since 2000, when 2.9 percent of all workers commuted by walking. Similar to bicycling, statewide rates of pedestrian commutes are consistently lower in the southeast US than the national average. South Carolina has the highest proportion, with 2.1 percent of workers walking to work in 2013 (Figure 2-3).

## 2.2 Bicycle and Pedestrian Safety

Bicycle and pedestrian safety is tied to a number of variables, including:

- Driving behavior of motorists around bicyclists and pedestrians;
- Bicyclist and pedestrian compliance with roadway laws, such as using proper hand signals and crossing at designated roadway crossings; and
- Design of roadway and bicycle/pedestrian facilities themselves, which can either help enhance or worsen safety for bicyclists and pedestrians.

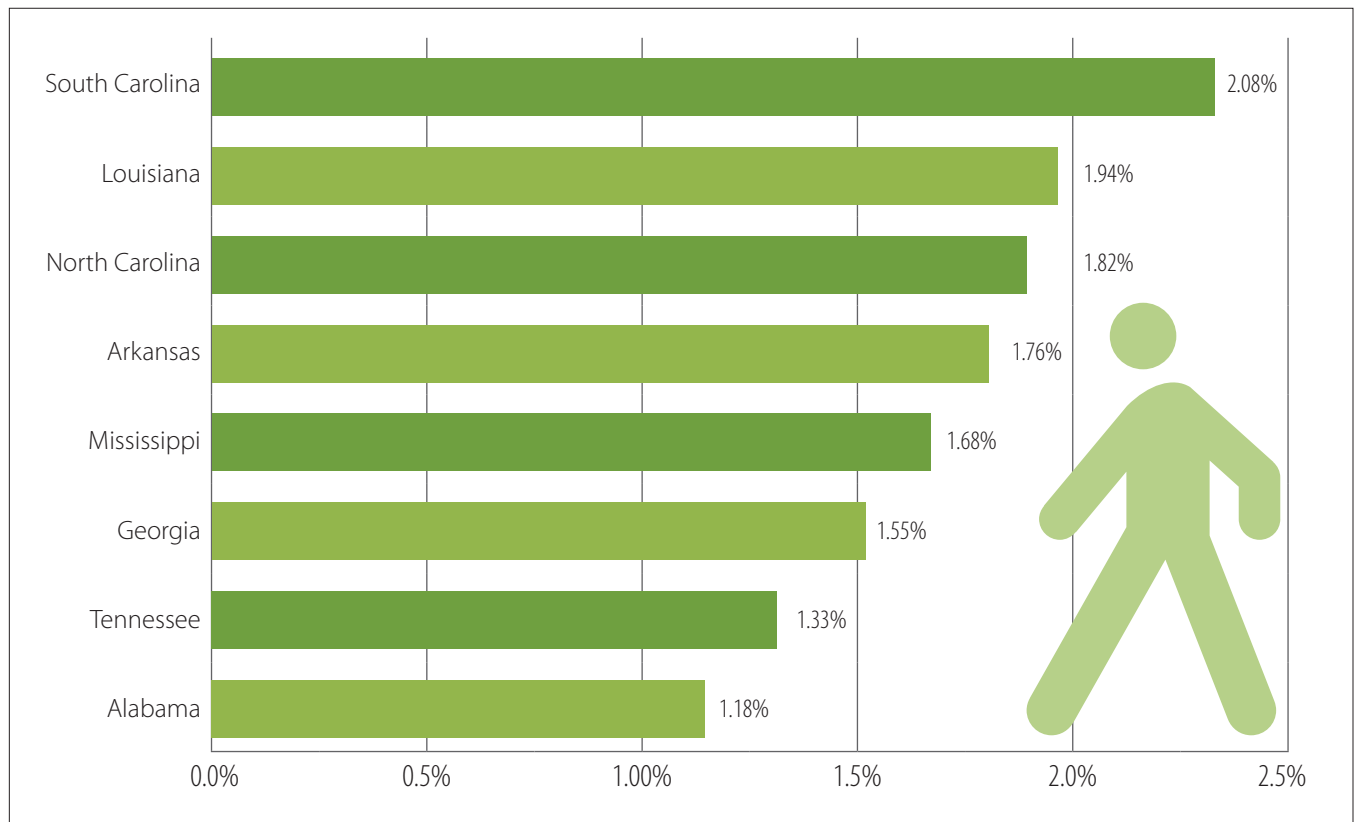
Traffic injuries and fatalities have been decreasing over time in Alabama. From 2003 to 2013, there was a 13.1 percent decrease in the number of fatalities, and an 8.2 percent decrease in the number of injuries. As the following sections illustrate, however, pedestrian and bicyclist safety data provide a mixed picture. While bicycle fatalities and injuries have generally followed a trend toward greater safety, the most recent three-year period has witnessed increases. Pedestrian injuries and fatalities have been increasing since 2008 after a five-year period of relative improvement.

### Bicyclist Safety

The number of bicycle injuries in Alabama has decreased by 26 percent from 2003 to 2015 (Figure 2-4). The number of bicycle injuries per year steadily decreased from 2000 to 2009, and then rose between 2010 and 2012 with a reduction in injuries in 2013. The period from 2010 to



Figure 2-3. Pedestrian Commuting (US Census Bureau, 2013)



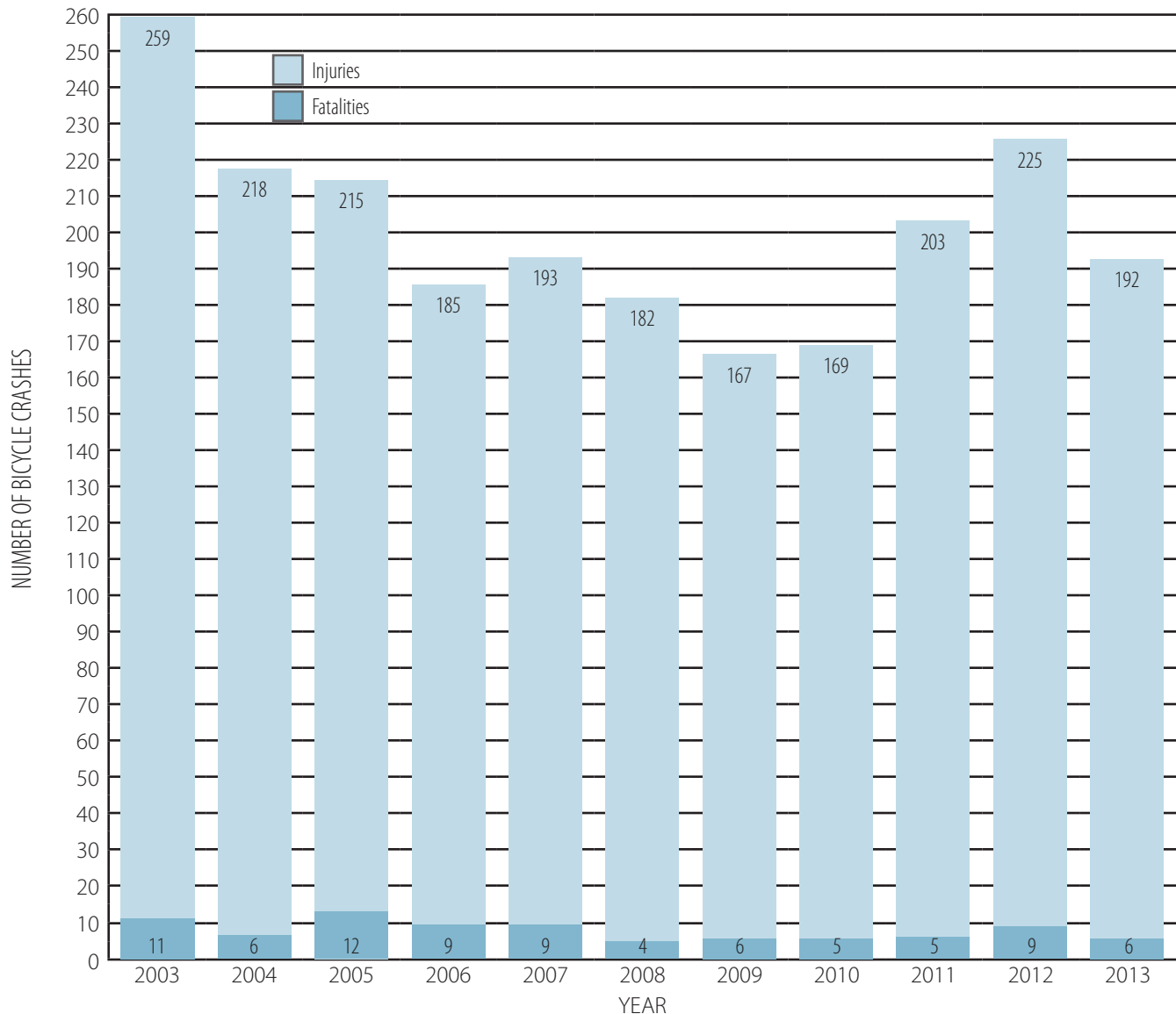
Source: Gresham, Smith and Partners

2011 saw the greatest increase in bicycle injuries, rising by 20 percent, or 34 total crashes, during the two-year period.<sup>2</sup>

The number of bicycle fatalities in Alabama has generally followed a downward trend (Figure 2-4). From 2003 to 2013, the number of fatalities decreased by 45 percent (from eleven to six fatalities). However, during that 10-year period, there have been several dips and spikes in the fatality rate, which is not unusual given the relatively small and narrow range of incidents. The highest number of bicycle fatalities occurred in 2005 with 12 fatalities, and the lowest was in 2008 with four fatalities.<sup>3</sup>

In 2013, there were approximately 1.24 bicyclist fatalities per million population in Alabama, and bicyclist fatalities represented less than one percent (0.70 percent) of total traffic fatalities. While these figures are lower than most other states in the southeast United States (Table 2-1), this may be attributed to Alabama's low bicycle commuting mode share relative to the rest of the southeast region.<sup>4</sup>

Figure 2-4. Bicycle Crashes in Alabama: Injuries and Fatalities (NHTSA, 2013)



Source: National Center for Statistics and Analysis. (Published May 2015). Bicyclists and other cyclists: 2013 data. (Traffic Safety Facts. Report No. DOT HS 812 151). Washington, DC: National Highway Traffic Safety Administration.

Table 2-1. Bicycle Fatalities: Southeast United States (NHTSA, 2013)



	Total Traffic Fatalities	Bicyclist Fatalities	Percentage of Total Traffic Fatalities	Resident Population	Bicyclist Fatalities (per million population)	Bicycle Commuting Mode Share
Alabama	852	6	0.70%	4,833,722	1.24	0.12%
Tennessee	995	8	0.80%	6,495,978	1.23	0.14%
Arkansas	483	4	0.80%	2,959,373	1.35	0.12%
Mississippi	613	6	1.00%	2,991,207	2.01	0.10%
North Carolina	1,289	22	1.70%	9,848,060	2.23	0.24%
Louisiana	703	14	2.00%	4,625,470	3.03	0.45%
South Carolina	767	15	2.00%	4,774,839	3.14	0.32%
Georgia	1,179	28	2.40%	9,992,167	2.80	0.22%

Source: National Center for Statistics and Analysis. (Published May 2015). Bicyclists and other cyclists: 2013 data. (Traffic Safety Facts. Report No. DOT HS 812 151). Washington, DC: National Highway Traffic Safety Administration.



### Pedestrian Safety

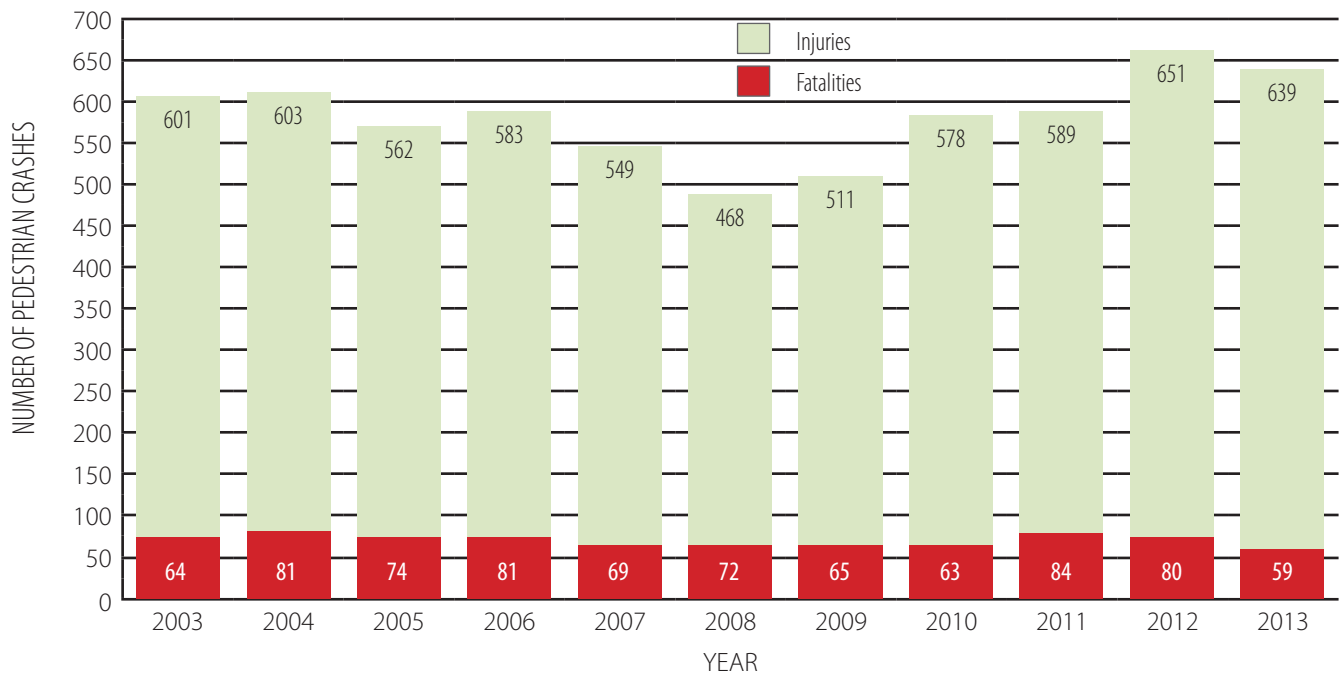
From 2003 to 2013, the number of pedestrian injuries has increased by six percent in Alabama (Figure 2-5). The rate of pedestrian injuries exhibited a decreasing trend from 2003 to 2008, and rose from 2008 to 2012, showing a slight decrease in 2013.<sup>5</sup>

Similar to bicycling, the number of pedestrian fatalities in Alabama has been sporadic (Figure 2-5). From 2003 to 2013, the number of fatalities decreased by 11 percent, from 64 fatalities to 57 fatalities. During that 10-year period, there

have been several dips and spikes in the fatality rate. The highest number of pedestrian fatalities occurred in 2011 (84), with the lowest figure (57) seen in 2013.<sup>6</sup>


In 2013, there were approximately 1.22 pedestrian fatalities per 100,000 population in Alabama (Table 2-2), and pedestrian fatalities represented 6.90 percent of total traffic fatalities that year. These figures are lower than other states in the southeast US, and as with bicycling, may be partially attributed to the fact that Alabama has the lowest pedestrian commuting mode share relative to the rest of the southeast region.<sup>7</sup>

Figure 2-5. Pedestrian Crashes in Alabama: Injuries and Fatalities (NHTSA, 2013)



Source: National Center for Statistics and Analysis. (Published February 2015). Pedestrians: 2013 data. (Traffic Safety Facts. Report No. DOT HS 812 124). Washington, DC: National Highway Traffic Safety Administration.

Table 2-2. Pedestrian Fatalities: Southeast United States (NHTSA, 2013)

	Total Traffic Fatalities	Pedestrian Fatalities	Percentage of Total Traffic Fatalities	Resident Population	Pedestrian Fatalities (per 100,000 population)	Pedestrian Commuting Mode Share
 Alabama	852	59	6.90%	4,833,722	1.22	1.18%
Tennessee	995	80	8.00%	6,495,978	1.23	1.33%
Mississippi	613	53	9.00%	2,991,207	1.77	1.63%
Arkansas	483	45	9.30%	2,959,373	1.52	1.76%
South Carolina	767	100	13.00%	4,774,839	2.09	2.08%
North Carolina	1,289	173	13.40%	9,848,060	1.76	1.82%
Louisiana	703	97	13.80%	4,625,470	2.10	1.94%
Georgia	1,179	176	14.90%	9,992,167	1.76	1.55%

Source: National Center for Statistics and Analysis. (Published February 2015). Pedestrians: 2013 data. (Traffic Safety Facts. Report No. DOT HS 812 124). Washington, DC: National Highway Traffic Safety Administration.







## 2.3 Accessibility and Equity

While walking and bicycling are considered leisure activities for many people, there are many others who rely on walking and bicycling for everyday transportation. This section highlights particular groups of people who may lack access and/or are unable to drive a motor vehicle. Table 2-3 provides an overview of key demographic groups related to walking and bicycling.

### Student Population

There are over 792,000 children, from pre-kindergarten to grade 12, enrolled in public schools in Alabama.<sup>8,9</sup> Over the past ten years, numerous states and communities have worked to improve transportation options to and from schools through the federal Safe Routes to School (SRTS) program. While SRTS is no longer a standalone federally funded program, school-oriented bicycle and pedestrian projects are still eligible under the broader umbrella of the federal Surface Transportation Program (STP) set-aside program.

Table 2-3. Alabama: Key Demographics (US Census Bureau, 2013)

Alabama	Estimate	Percent
Population in Households (2013)	4,683,880	
 3 years and over enrolled in school	1,222,995	26.1%
 With a disability	766,399	16.4%
 65 years and over	660,997	14.1%
 Below poverty level	871,202	18.6%
Occupied Housing Units (2013)	1,838,683	
 Households with no vehicles available	118,518	6.4%
 Households with one vehicle available	601,473	32.7%

College and university students are another important segment of the population that relies extensively on walking and bicycling as modes of transportation. Campuses, particularly those of larger colleges and universities, often have extensive bicycle and sidewalk facilities to accommodate the movement of students. In areas around these campuses, there may be opportunities to enhance bicycle and pedestrian facilities on adjacent routes, providing better connections between campuses and the surrounding community. There are over 80 college and university campuses across Alabama with approximately 609,000 students enrolled.<sup>10</sup>

### Persons 65 Years and Older

In 2013, approximately 14.1 percent of Alabama residents were age 65 and older. As America's "baby boomer" population ages, there is an increasing need to provide a variety of transportation options for older adults. Older adults often cannot or should not drive vehicles due to failing eyesight, slower response times, and other health factors that make driving unsafe. Other older adults may not have a personal vehicle or simply prefer not to drive. Communities that are walkable and have access to transit services – providing alternate ways to reach shopping and dining destinations, community centers, hospitals, and medical services – are critical to the physical and mental well-being of older citizens.

### Households Below Poverty Level

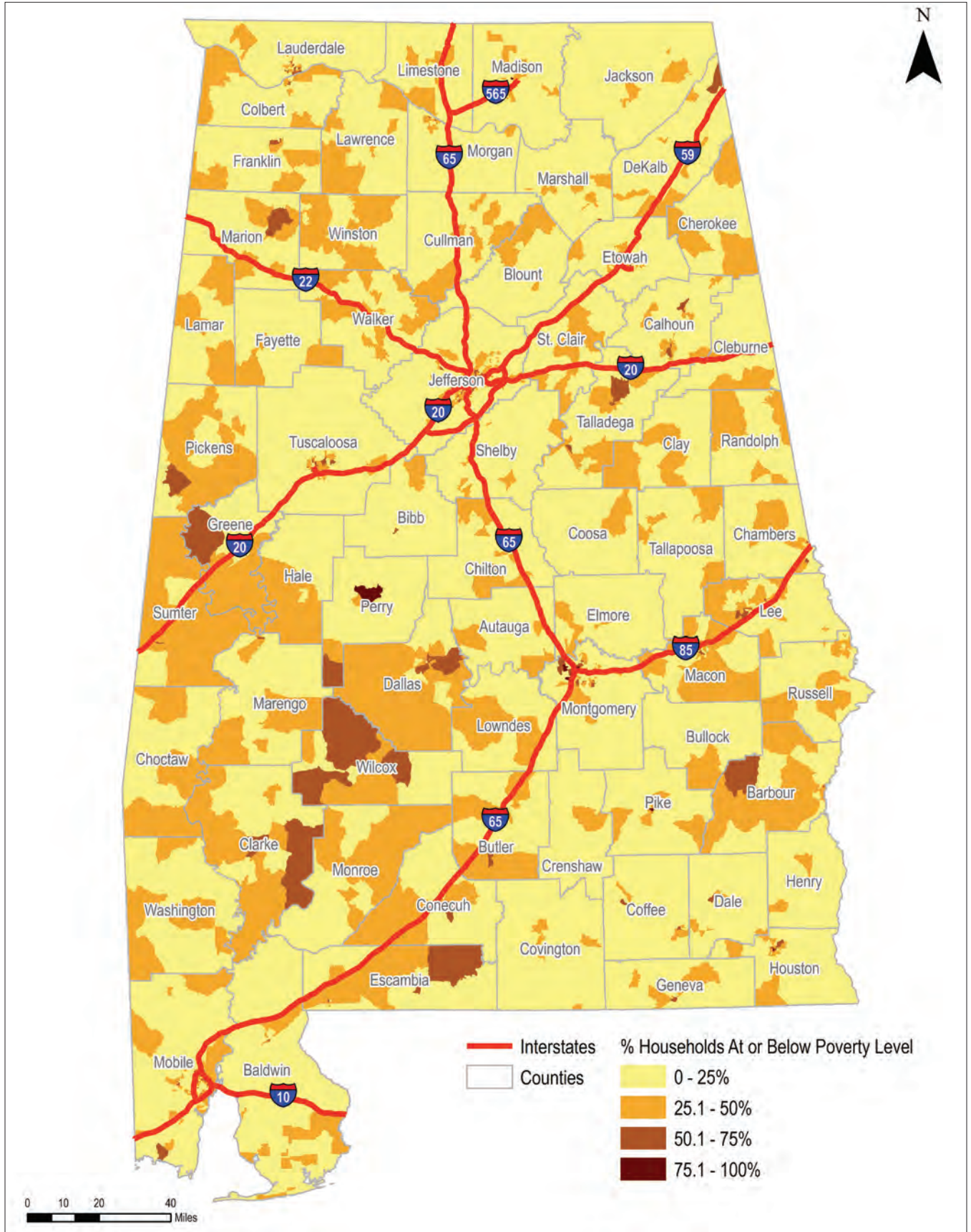
Transportation is the second-highest expenditure for households in the United States, exceeded only by housing costs,<sup>11</sup> and personal vehicles are a major expense for low-income households. In addition to the cost of purchasing a vehicle, there are ongoing operational costs for gasoline, maintenance, taxes, and insurance. Many low-income households do not own vehicles and must rely on walking, bicycling, carpooling, or transit to travel. Nationwide, individuals living at or below poverty level have the greatest rate of bicycling and walking trips, about 50 percent more than those with higher incomes.<sup>12</sup>

Figure 2-6 displays the percentage of households at or below poverty level by block group. There are high concentrations of poverty (50 percent or greater of households) in portions of Wilcox, Clarke, Perry, Dallas, Pickens, and Greene Counties in west-central Alabama; Escambia, Barbour, and Conecuh Counties to the south; and Marion County to the northwest. There are also high concentrations of poverty in or near many urbanized areas, including Birmingham, Anniston-Oxford, Selma, Montgomery, and Mobile.

### Households with No Vehicles

Households that lack access to a vehicle are completely reliant upon other modes of transportation, such as

Figure 2-6. Alabama: Households Below Poverty Level



Source: American Community Survey Five-Year Estimates (2010-2014). US Census Bureau.

carpooling, public transit, bicycling, or walking. Nearly 119,000 households, or 6.4 percent of all households in Alabama, do not have access to a vehicle. There are five metropolitan areas in Alabama – Columbus-Phenix City, Tuscaloosa, Mobile, Montgomery, and Florence-Muscle Shoals – where the percentage of households without a vehicle exceeds the statewide average (Table 2-4).

## 2.4 Economic Development





For many states and local communities, new investments in walking and bicycling facilities are translating into economic development benefits. The National Bicycle Dealers Association estimates that the nation's 60 million bicyclists spend \$46.9 billion annually on meals, transportation, lodging, gifts, and entertainment.<sup>13</sup> Accordingly, more than a dozen states have undertaken economic impact studies to measure the direct, indirect, and fiscal benefits of bicycle related travel. Some of the key findings include:

- **Minnesota** – The state found that the value of all goods and services produced in the state attributed to bicycle riders' spending came to \$261 million in 2009;
- **Oregon** – Travelers who participated in bicycle-related activities spent nearly \$400 million in 2012, representing about 4.4 percent of total direct travel spending in the state; and
- **Wisconsin** – A 2010 study found that bicycling tourism and recreation contributes \$924 million to the state's economy.<sup>14</sup>

In Alabama, all travelers spent an estimated \$11.7 billion in 2013, representing 5.3 percent of the state's gross domestic product and generating over \$768 million in state and local tax revenues.<sup>15</sup> Notably, one study estimates that the Silver Comet Trail, Georgia's counterpart to Alabama's Chief Ladiga Trail, generates approximately \$120 million annually in total expenditures throughout the 66-mile length of the trail in northwest Georgia and supports 1,300 jobs.<sup>16</sup>

At a more local level, the millennial generation, or those born between 1983 and 2000, are driving less in favor of walking, bicycling, or using public transportation.<sup>17</sup> A survey recently conducted by the American Planning Association found that 56 percent of millennials prefer to live in walkable communities, rather than subdivisions where they must use a vehicle to reach destinations. Fifty-nine percent of millennials think that there are not enough non-car transportation options available in their area.<sup>18</sup> Recognizing the desires of the younger workforce, employers are also increasingly relocating to areas that offer alternate methods of commuting.<sup>19</sup>

Table 2-4. Alabama: Zero-Car Households

 Metropolitan Area	 Total Households	 No Vehicle Available	 % Households with No Vehicles
Columbus-Phenix City	110,424	9,754	8.83%
Tuscaloosa	81,777	5,928	7.25%
Mobile	155,178	11,048	7.12%
Montgomery	141,451	9,945	7.03%
Florence-Muscle Shoals	60,718	3,938	6.49%
Anniston-Oxford-Jacksonville	45,196	2,879	6.37%
Dothan	57,196	3,626	6.34%
Birmingham-Hoover	453,313	27,651	6.10%
Gadsden	40,217	2,434	6.05%
Huntsville	164,769	8,144	4.94%
Decatur	59,574	2,848	4.78%
Auburn-Opelika	55,864	2,636	4.72%
Daphne-Fairhope-Foley	73,283	2,235	3.05%

Source: American Community Survey Five-Year Estimates (2010-2014). US Census Bureau.



The survey conducted by the American Planning Association also found that 46 percent of “active boomers,” or physically active Americans born in the post-war baby boom (1946 to 1964), also want to live in more walkable communities.<sup>20</sup> As older adults age, they are increasingly seeking alternatives to driving similar to millennials. Fifty-eight percent of active boomers believe that there are not enough non-car transportation options available in their area.<sup>21</sup> Nationally, bicycling rates among people aged 60 to 79 have soared in recent years, with new trips by older adults accounting for 22 percent of the increase in adult bicycling.<sup>22</sup> When bicycle and pedestrian facilities are readily available, older adults feel more comfortable “aging in place,” or retaining their homes in their existing communities. Communities with bicycling and walking amenities also become attractive to older adults who are seeking to relocate.

## 2.5 Natural Environment



### *Air Quality*

The transportation sector in the United States contributes an estimated 27 percent of total US greenhouse gas emissions, second only to electricity generation.<sup>23</sup> Even as fuel becomes cleaner and vehicles become more energy efficient, vehicle usage continues to rise as urbanized areas spread and people are required to travel longer distances between home and other destinations. Between 2000 and 2013, the number of vehicle miles traveled on Alabama roadways increased by 15 percent, from 56.5 million vehicle miles to over 65 million vehicle miles.<sup>24</sup>

Major pollutants from motor vehicles include particulate matter (PM<sub>2.5</sub>), volatile organic compounds, nitrogen oxides (NO<sub>x</sub>), carbon monoxide (CO), and sulfur dioxide (SO<sub>2</sub>). Ozone is also a source of air pollution. When emissions from motor vehicles interact with heat and sunlight in the atmosphere, ozone levels may increase to unsafe levels, reducing visibility and contributing to poor air quality. The Alabama Department of Environmental Management monitors pollutant levels throughout the state in compliance with guidelines from the US Environmental Protection Agency. Table 2-5 presents the specific air pollutants that are monitored in Alabama’s metropolitan areas.<sup>25</sup>

Even modest increases in walking and bicycling for transportation can have a positive impact upon air quality. According to the National Household Travel Survey, 40 percent of transportation trips are within two miles of home, and five percent of the working population in the US has a commute of five miles or less. Since most of the air pollutants monitored under the Clean Air Act are emitted into the atmosphere within a few minutes of a vehicle start,<sup>26</sup> short distance trips completed by non-polluting forms of transportation can deliver meaningful reductions in emissions.

Table 2-5. Monitored Air Pollutants (Alabama Department of Environmental Management, 2015)

Metropolitan Statistical Area	Pollutant(s) Monitored
Birmingham-Hoover	CO, NO <sub>2</sub> , Ozone
Mobile	SO <sub>2</sub> , Ozone
Huntsville	PM <sub>10</sub> , Ozone
Montgomery	PM <sub>10</sub> , Ozone
Phenix City	Ozone
Decatur	Ozone
Dothan	Ozone
Daphne-Fairhope	Ozone
Florence	Ozone
Gadsden	Ozone
Tuscaloosa	Ozone

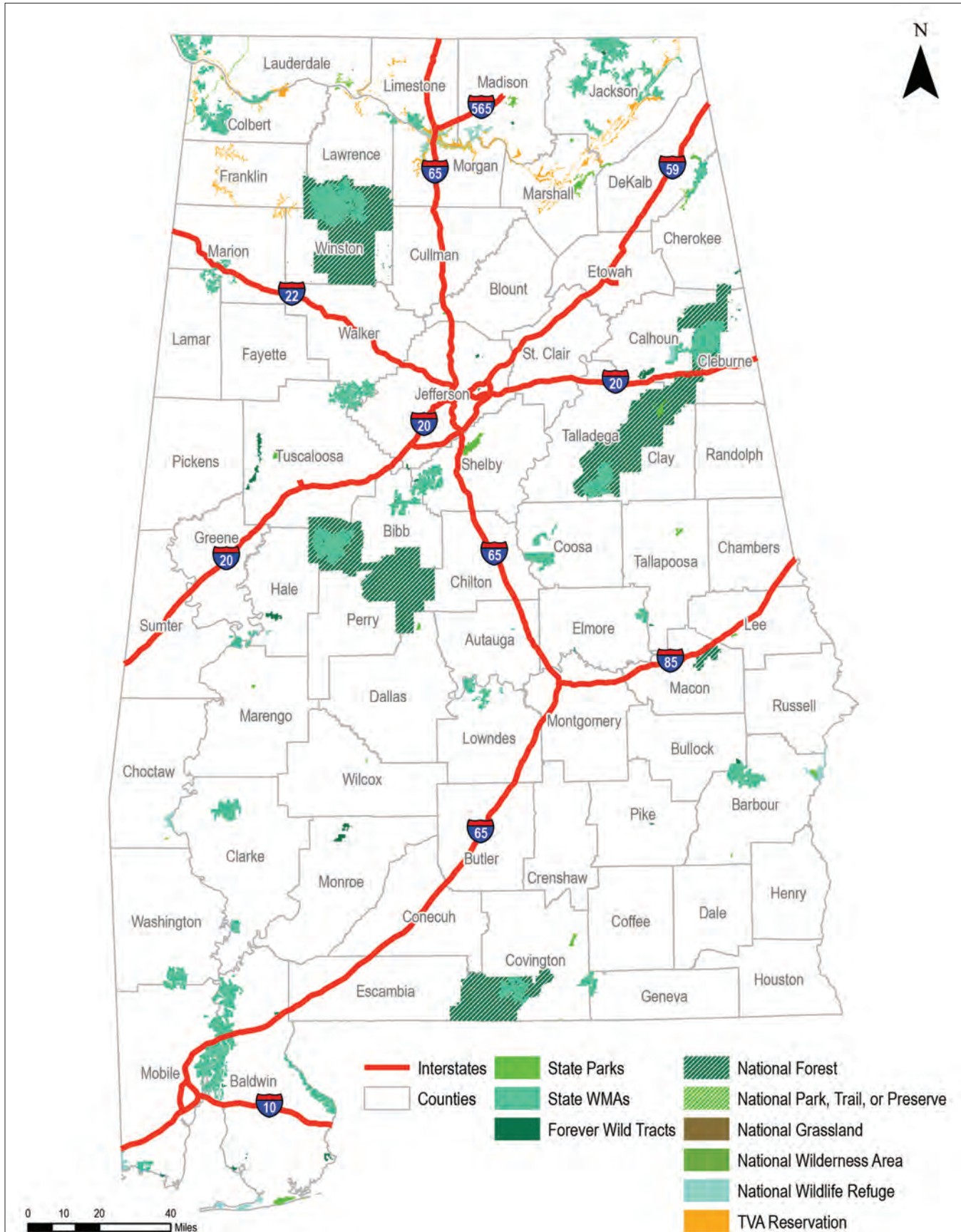
### *Natural Areas*

Alabama has a wealth of natural areas for recreation and conservation. There are 22 state parks, 12 state forests, and 29 state wildlife management areas (WMAs). Many of these areas have been acquired through Alabama’s Forever Wild Program, established in 1992 to purchase public lands for conservation and recreation. In addition, Alabama is home to four national forests (Bankhead, Conecuh, Talladega, and Tuskegee National Forests), one national preserve, three national trails, three national wilderness areas, two national parks, 10 national wildlife refuges, and the Tennessee Valley Authority Reserve across northern Alabama. There are also hundreds of county and city parks and recreational areas throughout the state. Within these parks and recreational areas are miles of hiking trails, horseback trails, mountain biking paths, boardwalks, and greenways. A map of state-owned and national conservation and recreation areas are presented in Figure 2-7.

The Alabama Department of Conservation and Natural Resources – Alabama State Parks Division and the National Park Service are responsible for the management and improvement of state and national parks, refuges, and recreational areas. Opportunities exist for these agencies to coordinate with ALDOT and local governments to determine potential bicycle and walking path linkages between state road facilities and natural and recreational areas.



Figure 2-7. Natural Areas in Alabama



Source: USGS

## 3.0 Inventory of Existing Facilities

### 3.1 Bicycle Routes

#### *National Bicycle Routes*

The United States Bicycle Route System (USBRS) was established in 1978 by the American Association of State Highway and Transportation Officials (AASHTO). Currently, there are more than 11,000 miles of routes in 23 states and the District of Columbia.<sup>27</sup> Importantly, a National Corridor Plan (Figure 3-1) was established in 2009 identifying possible route connections between states. The corridors in the national plan are 50-mile wide corridors indicating where a route could be located. The ultimate designation of a US Bicycle Route depends on each state's Department of Transportation with approval from AASHTO.

There are four corridors in the National Corridor Plan that pass through Alabama. They include:

- US Bicycle Route 23 corridor connects to the US Bicycle Route 84 corridor in the vicinity of Cullman and travels north to Ardmore where it crosses into Tennessee and extends to Kentucky;
- US Bicycle Route 25 corridor begins in the Mobile area and heads north through Mississippi, Tennessee, Kentucky, Ohio, and eventually into Canada;
- US Bicycle Route 84 corridor begins near Charleston, South Carolina, passes through northern Alabama, and extends to El Paso, Texas at the junction with the US Bike Route 90 corridor; and
- US Bicycle Route 90 corridor begins along the northeast Florida coast, passes through Mobile, and extends west to San Diego and Los Angeles.<sup>28</sup>

#### *Bicycle Routes in Adjacent States*

Alabama's neighboring states offer a wide array of bicycle connections for local, regional, and statewide travel. The following is an overview of designated routes in Florida, Georgia, Mississippi, and Tennessee with potential connections to and from Alabama.

- **Florida** – For east-west statewide travel in northern Florida, the state has designated US Bicycle Route 90, which traverses US 90 to the Alabama state line near Seminole, Alabama. In addition, Florida has developed a web-based "Bicycle Friendly Road" map that identifies roads that contain a bike lane, shared path, or a shoulder width of four feet or greater. Connections to Florida bicycle routes are possible near Dothan (SR 53, US 431, SR 109), Samson (SR 153), Florala (SR 54), Wing (SR 137), Brewton (SR 41, CR 55), Flomaton (US 31), and Atmore (SR 21).
- **Georgia** – Georgia has an extensive network of statewide bicycle routes. Potential connections to

Georgia's Chattahoochee Trace include routes in DeKalb County (SR 117), Cleburne County (SR 46), Randolph County (SR 48), Russell County (US 431), Barbour County (SR 30), and Henry County (SR 10).

- **Mississippi** – Mississippi primarily utilizes routes identified by the Adventure Cycling Association (ACA), the organization overseeing the planning of the US Bicycle Route system. Principal connections include ACA's Southern Tier (US Bicycle Route 90) in Mobile (US 90) and the Underground Railroad (US Bicycle Route 25) in Pickens County (SR 14), as well as the Natchez Trace in Colbert County.
- **Tennessee** – Similar to Georgia, Tennessee is developing an extensive state bicycle route network. In addition to the Natchez Trace in Lauderdale County, potential connections to the Tennessee bicycle route network include routes in northeast Lauderdale County (SR 207), Madison County (US 231/431), and Jackson County (SR 79). Tennessee has also designated US Bicycle Route 23, which would connect in Alabama at Ardmore.

### 3.2 Scenic Byways

Prior to the authorization of the 2012 federal transportation legislation, MAP-21, the National Scenic Byways Program made nationally-designated byways eligible for specific grants for planning, safety improvements, bicycle and pedestrian infrastructure, and marketing for the byways. While the National Scenic Byways Program was not reauthorized under the most recent federal transportation authorization, FAST Act, several types of projects appropriate for scenic byways, including the planning and construction of bicycle and pedestrian facilities, are eligible for funding under the broader umbrella of the federal Surface Transportation Block Grant Program. Alabama is home to four national scenic byways and seven state scenic byways, offering spectacular views of the state's natural beauty and connecting people to a variety of historic and cultural sites. The national and state scenic byways are presented in Figure 3-2.

#### *State Scenic Byways*

- The Appalachian Highlands Scenic Byway is 80 miles in length and meanders through the mountains of northeast Alabama. It travels thorough portions of Cleburne, Calhoun, Cherokee, and DeKalb Counties, between I-59 at Fort Payne and I-20 near Heflin.
- The Barbour County Governors' Trail recognizes eight Alabama governors who hailed from Barbour County. The trail connects visitors to historic, scenic, and recreational sites for a length of approximately 36 miles. The trail begins in Clio and ends at the Shorter Mansion in Eufaula.

Figure 3-1. 2015 National Corridor Plan (AASHTO, Adventure Cycling Association)

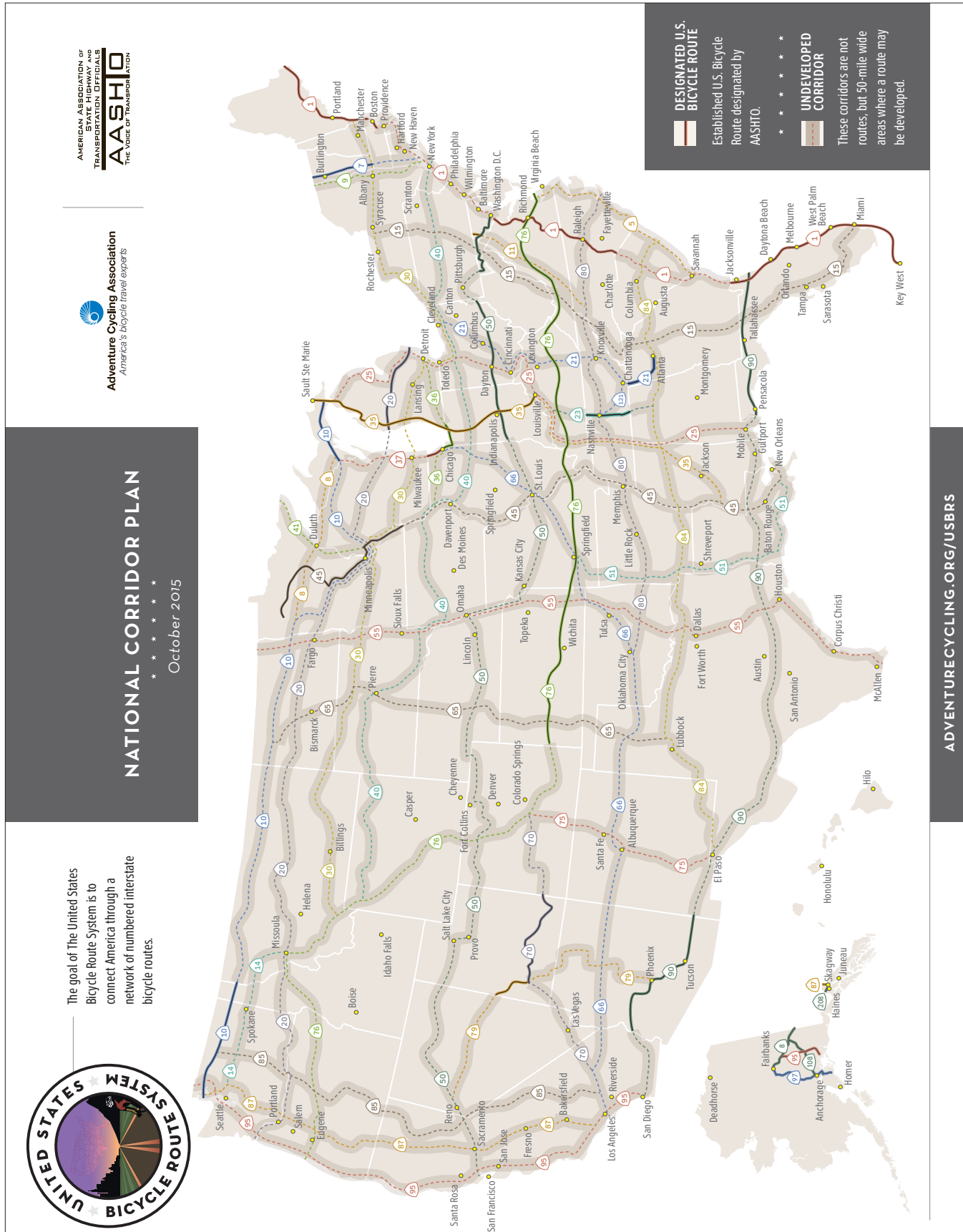
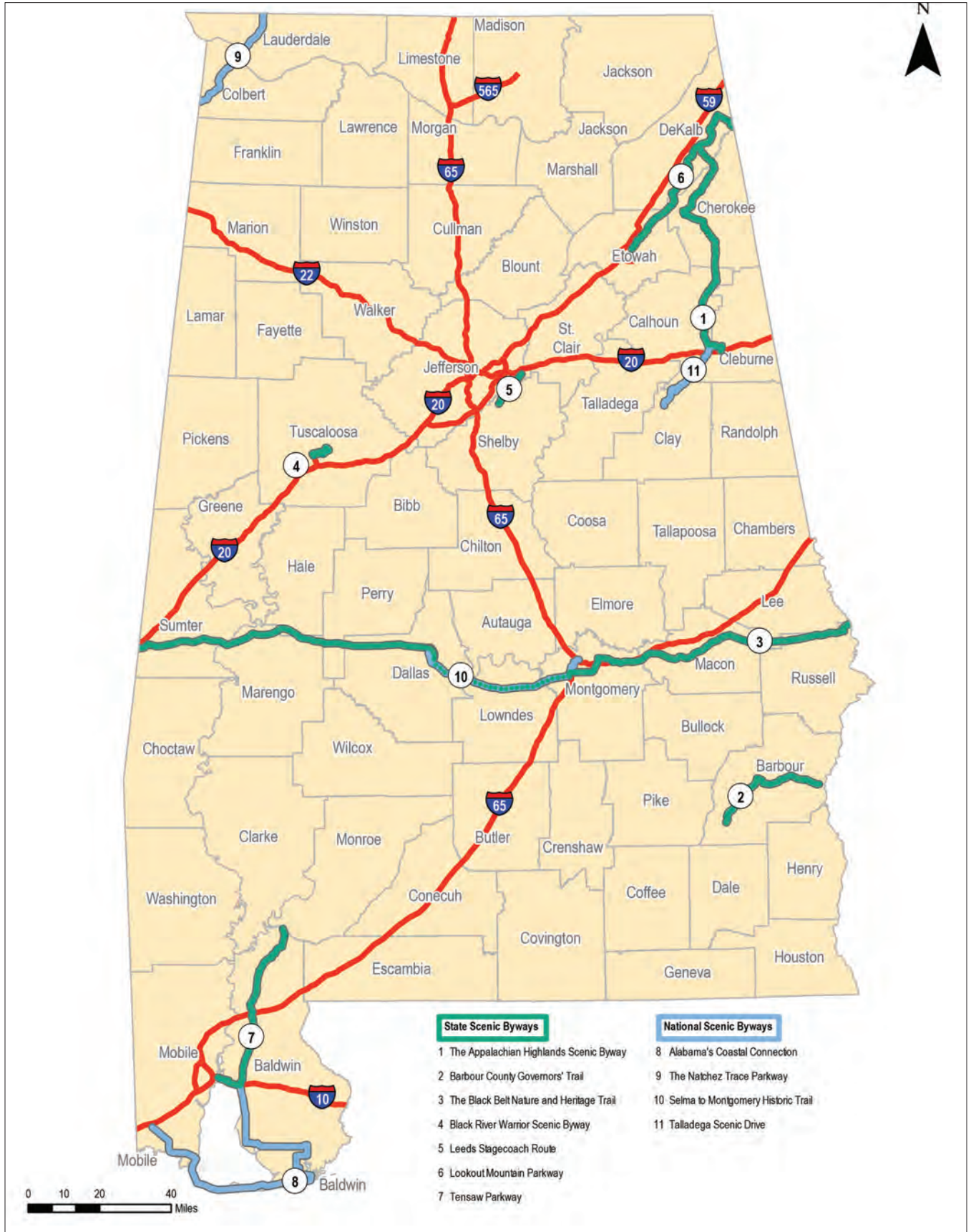




Figure 3-2. National and State Scenic Byways



Source: ALDOT, USDOT. 2015.

Source: AmericanTrails.org



- The Black Belt Nature and Heritage Trail marks remnants of the Old South and Civil Rights Movement that defined Alabama. This scenic byway provides access to the Tuskegee Institute, a variety of Civil Rights monuments and sites in the Montgomery area, and state parks and natural habitat rich in flora and fauna. This 210-mile trail begins in Cuba near the Mississippi state line and ends near Phenix City at the Georgia state line.
- The Black Warrior River Scenic Byway is a 12-mile loop around the Black Warrior River in Tuscaloosa. The route is marked by natural scenic beauty and recreational amenities such as parks, boat landings, bicycle and pedestrian trails, and national historic sites.
- The Leeds Stagecoach Route marks the history of three distinct cultures in Alabama history, including early Christian Cherokees, European veterans from the Creek Indian War, and the first African-American settlers to the area from the 1880s. The 18-mile route extends from Lake Purdy, southeast of Birmingham, to Leeds near I-20.
- Lookout Mountain Parkway extends from Gadsden in northeast Alabama to the Georgia state line near Cloudland, Georgia. This scenic route offers visitors access to historic town squares, pioneer villages, rivers, waterfalls, and a variety of recreational activities. Lookout Mountain Parkway continues into Georgia and Tennessee for a total length of 93 miles.
- Tensaw Parkway treats visitors to the rich cultural, historic, and recreational experiences of the Mobile-Tensaw River Delta. Highlights include several boat launches, a river tour, camping sites, and access to the Alabama Coastal Birding Trail. This route extends from Stockton to Mobile.<sup>29</sup>

### National Scenic Byways

- Alabama's Coastal Connection meanders from the Daphne and Fairhope areas southward to Gulf Shores, crossing Mobile Bay to Dauphin Island, and emerging near Bayou La Batre. The route gives visitors access to historic forts, state and national refuges, and several recreational activities and cultural sites.
- A portion of the three-state Natchez Trace Parkway crosses Alabama at its northwest corner. This trail was once traveled by buffalo and other wildlife, followed by Native Americans, traders, trappers, and missionaries. There are numerous trails, exhibits, campgrounds, water recreation areas, and picnic sites along the scenic byway.
- The Selma to Montgomery Historic Trail traces the history of the state's Civil Rights era. The trail follows the pathway of the historic marches from Selma taken in 1965 to protest voting restrictions for African-American citizens.
- The Talladega Scenic Drive takes visitors through the scenic Appalachian Mountains, reaching its highest peak on Cheaha Mountain, 2,407 feet above sea level. The trail provides access to the Talladega National Forest, Cheaha Wilderness and State Park, and Pinhoti Recreation Trail.<sup>30</sup>

### 3.3 Demand Analysis

There are many factors that influence a person's decision to walk or bicycle. Accordingly, evaluating potential pedestrian and bicycle demand in Alabama considers a range of metrics that reflect different age groups, abilities, trip purposes, and possible destinations. As with the subsequent roadway suitability assessment, the demand analyses are intended to serve as tools to help frame the discussion on walking and bicycling networks and potential system improvements. Public input and technical feedback from state, regional, and local stakeholders will help refine any final recommendations.

#### Pedestrian Demand

The 2009 National Household Travel Survey revealed that 88 percent of walking trips are less than one mile in length. Similarly, bicyclists tend to cover more ground, but the vast majority of those trips (74 percent) are not greater than two miles.<sup>31</sup> On a statewide basis, the greatest demand for pedestrian facilities lies within towns and cities, where destinations such as schools, parks, retail establishments,









workplaces, and homes are in closer proximity to one another.

In order to create a pedestrian demand analysis map, various factors representing demographics and destinations were given weighted values. The combined demand of these factors were calculated and mapped, with higher values indicating a greater propensity for pedestrian activity, and therefore a greater demand for pedestrian facilities. The scores are based on a scale of one to 100, where '1' represents the lowest demand and '100' represents the highest demand. The factors considered in the pedestrian demand analysis and their relative weights are described in Table 3-1. Figure 3-3 illustrates the findings. Data sources for all of the demand analyses are documented in Appendix B.

The highest demand for pedestrian trips lies within existing urbanized areas in Alabama, where there are high concentrations of population and employment as well as high concentration of schools. Pedestrian demand is also seen in less urbanized cities with colleges and universities, such as the City of Auburn, and in low-income areas in southwest Alabama.

Table 3-1. Statewide Pedestrian Demand Criteria

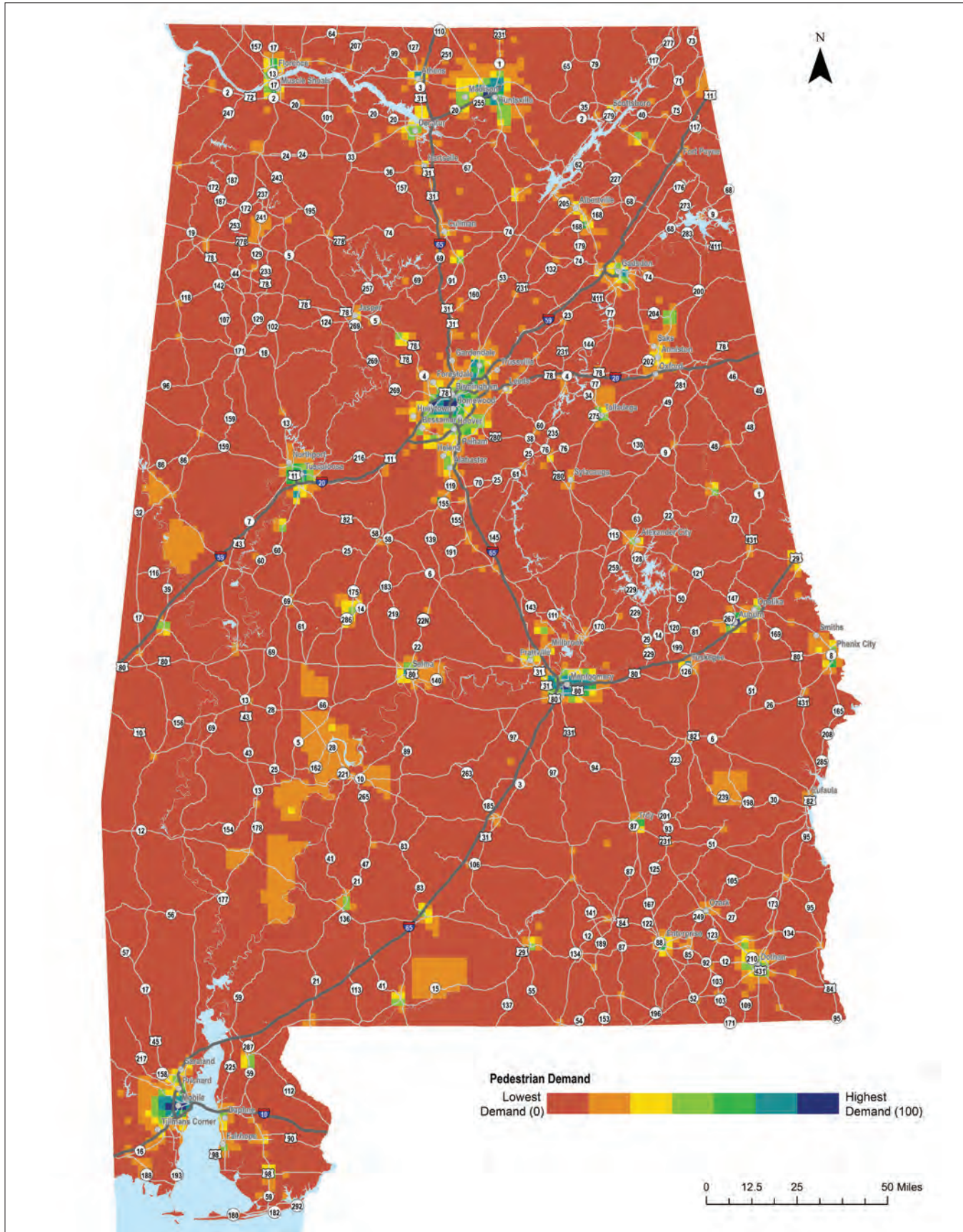
CRITERIA		SCORE
	Population Density	0 - 24 points
	Employment Density	0 - 24 points
	Poverty	
	<ul style="list-style-type: none"> <li>• 75-100% of households &lt; poverty level</li> <li>• 50-75% of households &lt; poverty level</li> </ul>	17 points 14 points
	Transit Access	5 points
	Proximity to Colleges and Universities	
	<ul style="list-style-type: none"> <li>• Within 0.5 mile</li> <li>• Within 1 mile</li> <li>• Within 1-2 miles</li> </ul>	15 points 10 points 5 points
	Proximity to Schools	
	<ul style="list-style-type: none"> <li>• Within 0.5 mile</li> <li>• Within 1 mile</li> <li>• Within 1-2 miles</li> </ul>	15 points 10 points 5 points
	<b>TOTAL</b>	<b>100 points</b>

Source: GS&P, 2015



Source: AlabamaByways.org







Figure 3-3. Statewide Pedestrian Demand



Source: GS&P, 2015



Table 3-2. Statewide Bicycle Demand – Utilitarian Trips Criteria

CRITERIA	SCORE
 Population Density 0 - 24 points	0 - 24 points
 Employment Density 0 - 24 points	0 - 24 points
 Poverty <ul style="list-style-type: none"> <li>• 75-100% of households &lt; poverty level 18 points</li> <li>• 50-75% of households &lt; poverty level 9 points</li> </ul>	18 points 9 points
 Transit Access 4 points	4 points
 Proximity to Colleges and Universities <ul style="list-style-type: none"> <li>• Within 1 mile 15 points</li> <li>• Within 1-2 miles 10 points</li> <li>• Within 2-5 miles 5 points</li> </ul>	15 points 10 points 5 points
 Proximity to Schools <ul style="list-style-type: none"> <li>• Within 1 mile 15 points</li> <li>• Within 1-2 miles 10 points</li> <li>• Within 2-3 miles 5 points</li> </ul>	15 points 10 points 5 points
<b>TOTAL</b>	<b>100 points</b>

Source: GS&P, 2015

*Bicycle Demand – Utilitarian Trips*

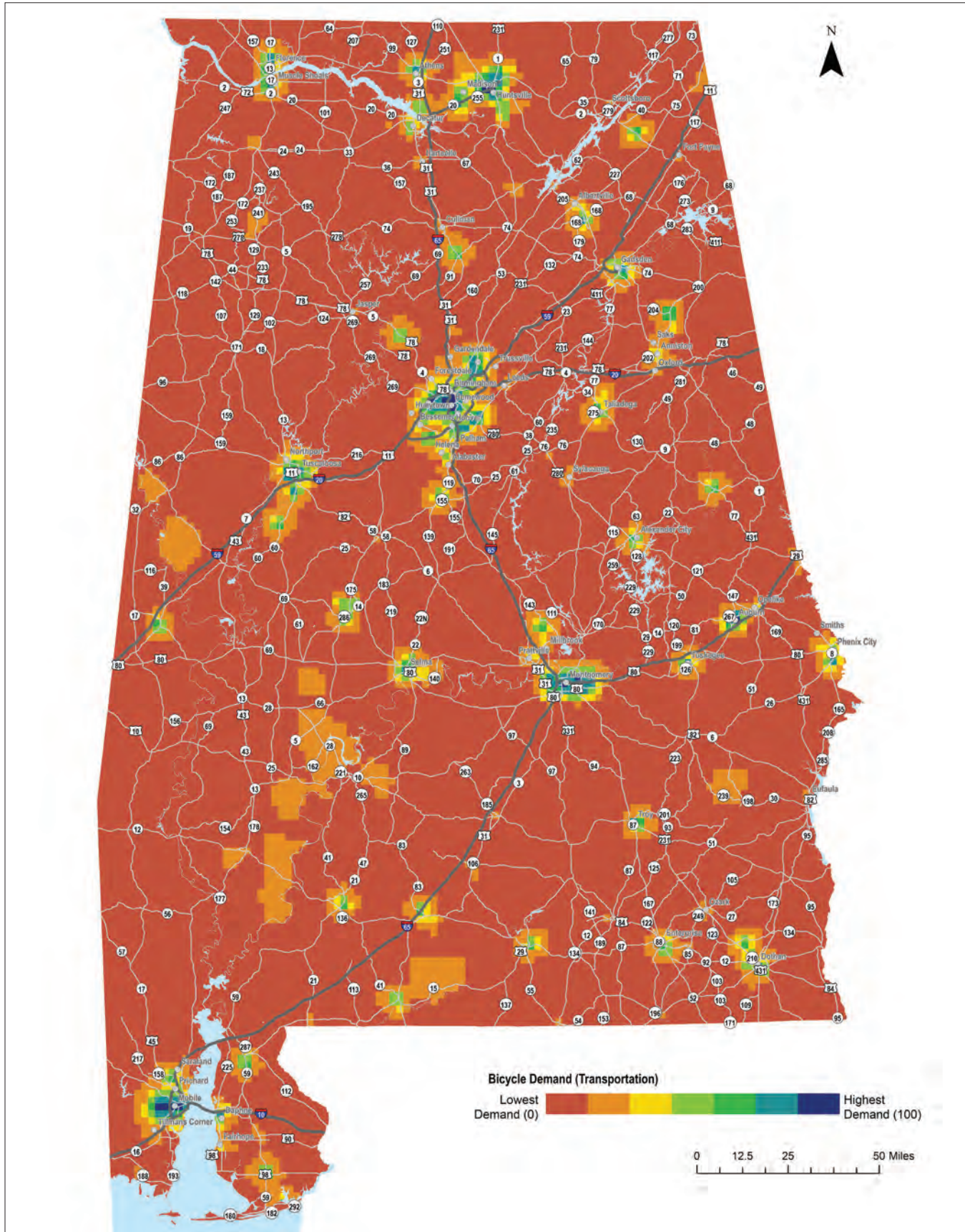
Within cities, people are increasingly using bicycles to travel for daily and weekly utilitarian trips related to work, school, and errands. The demand for bicycle facilities depends heavily upon the proximity of destinations to one another, as well as how comfortable cyclists feel riding on along roads. On a statewide basis, similar to pedestrian demand, the greatest demand for utilitarian bicycle trips lies within towns and cities. While the factors are identical to those of the pedestrian demand analysis, the bicycle demand analysis assumes that people are willing to bicycle greater distances than those that would walk (Table 3-2). Figure 3-4 illustrates the findings.

Similar to pedestrian demand, the highest demand for utilitarian bicycle trips lies in urbanized areas, in less urbanized areas with colleges and universities, and low-income areas. Because the comfortable range of bicycle travel is longer than that of pedestrian trips, the utilitarian bicycle demand map is similar to the pedestrian demand, but displays these longer range trips.



Source: Gresham, Smith and Partners

Figure 3-4. Statewide Bicycle Demand – Utilitarian Trips



Source: GS&P, 2015








Source: AlabamaByways.org

### Bicycle Demand – Tourism and Leisure Trips

In addition to bicycling for work, school, and errands, there are also many people who choose to bike in tourism areas and for leisure. As discussed earlier, tourism and leisure bicycle trips are becoming increasingly important to local, regional, and statewide economies. In order to assess statewide demand for tourism and leisure bicycling, the weighted analysis considered proximity to destinations that would generate these types of trips. Similar to the previous analyses, the combined demand of these factors was calculated and mapped, with higher values indicating a greater propensity for bicycle activity, and therefore a potential greater demand for bicycle facilities. The factors considered in the bicycle demand for tourism and leisure trips analysis and their relative weights are described in Table 3-3. Figure 3-5 illustrates the findings.

Figure 3-5 shows that there is broad demand for leisure and tourism-based bicycle travel. The highest demand exists along the several recreational trails, scenic byways, and US bicycle corridors that cross the state, and state and national natural areas. The significant demand for leisure and tourism-based bicycling statewide is a testament to the natural beauty and wide range of bicycling opportunities in Alabama, and points to the potential for these resources to spur bicycling-based economic development opportunities.

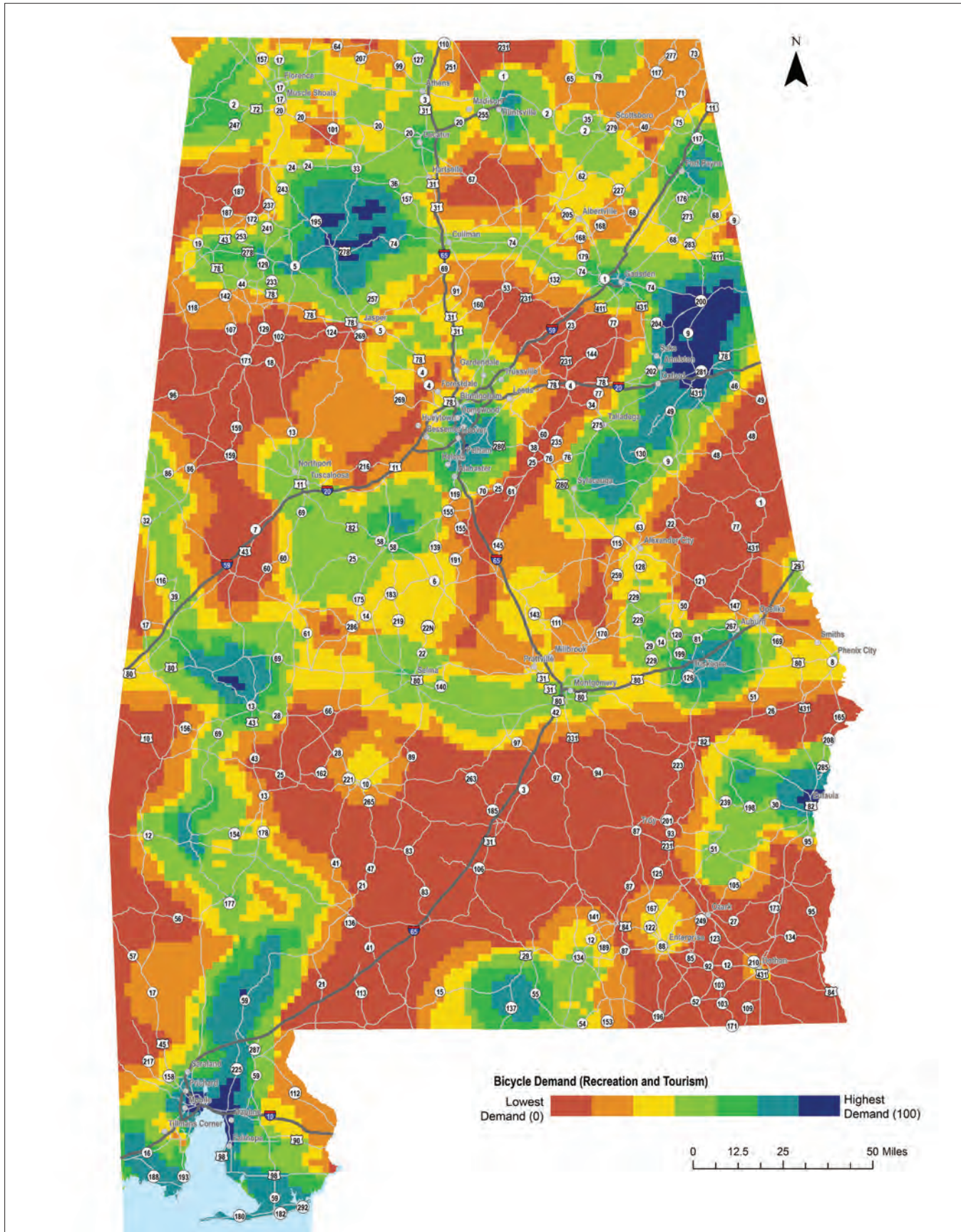
Table 3-3. Statewide Bicycle Demand – Tourism and Leisure Trips Criteria

	CRITERIA	SCORE
	Population Density	0 - 24 points
	Proximity to Recreational Trails	
	• Within 3 miles	21 points
	• Within 3-5 miles	14 points
	• Within 5-10 miles	11 points
	Proximity to Scenic Byways	
	• Within 2 miles	17 points
	• Within 2-5 miles	14 points
	• Within 5-10 miles	11 points
	Proximity to State and National Parks	
	• Within 2 miles	17 points
	• Within 2-5 miles	14 points
	• Within 5-10 miles	11 points
	Proximity to Wildlife Management Areas	
	• Within 2 miles	11 points
	• Within 2-5 miles	9 points
	• Within 5-10 miles	7 points
	Proximity to State Historic Sites	
	• Within 2 miles	10 points
	• Within 2-5 miles	8 points
	• Within 5-10 miles	6 points
	<b>TOTAL</b>	<b>100 points</b>

Source: GS&P, 2015







Figure 3-5. Statewide Bicycle Demand – Tourism and Leisure Trips



Source: GS&P, 2015

Table 3-4. Statewide Bicycle Suitability Analysis

ATTRIBUTE		URBAN CRITERIA	SCORE	RURAL CRITERIA	SCORE
 	Average Daily Traffic [vehicles per day (vpd)]	0 – 2,000 vpd	10	0 – 1,000 vpd	10
		2,001 – 4,000 vpd	9	1,001 – 2,000 vpd	9
		4,001 – 6,000 vpd	8	2,001 – 3,000 vpd	8
		6,001 – 10,000 vpd	6	3,001 – 5,000 vpd	6
		10,001 – 15,000 vpd	4	5,001 – 7,500 vpd	4
		15,001 + vpd	2	7,501 + vpd	2
	Percentage of Heavy Trucks (% of total traffic)	0-2%	10	0-2%	10
		3-4%	8	3-4%	8
		5-10%	6	5-10%	6
		11-12%	3	11-12%	3
		13-15%	2	13-15%	2
		15% +	1	15% +	1
	Number of Lanes (total lanes on roadway)	1-2 Lanes	10	1-2 Lanes	6
		3 Lanes	7	3+ Lanes	10
		4+ Lanes	4	n/a	---

Source: GS&amp;P, 2015

### 3.4 Bicycle Suitability Analysis

In addition to an assessment of bicycle demand, the current suitability of federal and state roads for bicycling was evaluated. The bicycle suitability analysis performed is based on current best practices and the availability of applicable data. The sensitivity of specific factors in the Highway Capacity Manual's Bicycle Level of Service (LOS) formula, the quality of available geographic information system (GIS) data available from various public agencies, and research on bicyclists' experiences were considered in the development of this analysis. State and US routes (excluding interstate highways) were assessed for bicycle suitability. Due to differing traffic patterns in rural and urban areas, separate analyses were conducted for urban areas (within Census-designated urbanized areas) and rural areas. Each of the three factors described in Table 3-4 were weighted equally in each analysis. The criteria for each factor were scored based on an evaluation scale of 0 to 10, where '10' represents the best suitability for bicycling and '0' represents the poorest suitability for bicycling. Figure 3-6 illustrates the findings. Data sources for the suitability analysis are documented in Appendix A.

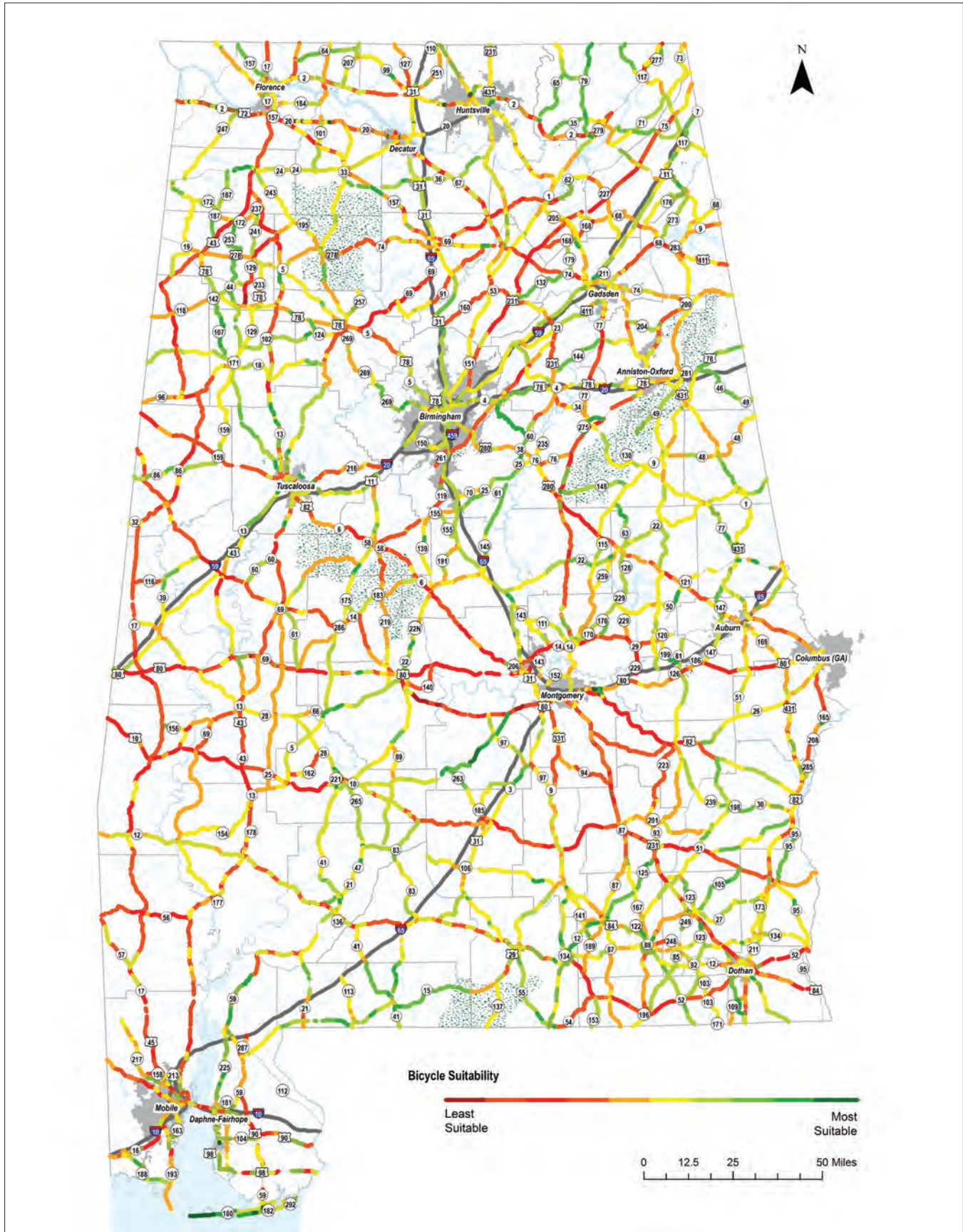
Based on the criteria established, Figure 3-6 shows that the roadways that are less suitable for bicycling tend to be near urbanized areas, where there are higher volumes of traffic, a greater prevalence of heavy truck vehicles, and, typically, a greater number of roadway lanes. In more rural areas, the lower suitability ratings can be attributed to heavy trucks that are transporting goods from freight generators such as the Port of Mobile, logging areas, or other manufacturing or distribution areas.



Source: www.pedbikemages.org/DanBurden



Figure 3-6. Statewide Bicycle Suitability



Source: GS&P, 2015

## 4.0 Key Findings

The greatest demand for utilitarian bicycle and pedestrian trips lies within urbanized areas, where high population and employment densities typically generate more bicycle and pedestrian activity, and important land uses are relatively close to each other. Accordingly, many urbanized areas have developed local bicycle and pedestrian plans to improve facilities and create better bicycle and pedestrian connections. Outside of urban areas, there are population groups, including low-income households, children and teenagers, and the elderly, who depend on alternate modes of transportation and would benefit from enhanced bicycle and pedestrian facilities for everyday needs.

Leisure and tourism-based bicycling is already popular in Alabama. Improving bicycle facilities on designated routes will make leisure and tourism-based bicycling safer for the traveling public. Moreover, peer states have demonstrated that leisure and tourism-based bicycling can also attract out-of-state visitors and generate substantial economic development activity regionally and statewide.





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# Section C: Bicycle and Pedestrian Recommendations







# Section C: Bicycle and Pedestrian Recommendations

## 1.0 Introduction

Building on the analysis of existing conditions and trends and extensive public input, this section outlines a set of recommendations to improve bicycle and pedestrian transportation in Alabama. The recommendations include actions that can be implemented in the near future as well as strategies that support the vision for bicycling and walking in Alabama as safe, comfortable, and convenient modes of transportation.

## 2.0 Public and Stakeholder Outreach

A key component of the planning process for the *Alabama Statewide Bicycle and Pedestrian Plan* was public and stakeholder outreach. Because walking and bicycling conditions and needs vary widely across the state, it was essential to work with local officials and system users to understand specific opportunities and challenges. The planning process relied on multiple outreach tools to

learn more about the opportunities and challenges facing bicyclists and pedestrians, including a project advisory committee, online surveys, and regional workshops.

### 2.1 Project Advisory Committee

The Project Advisory Committee (PAC) was formed to provide input and expertise on bicycle and pedestrian travel from a variety of perspectives at the local, regional, and statewide levels. The PAC was comprised of representatives from the Alabama Department of Transportation (ALDOT), other government agencies, and bicycle and pedestrian advocacy groups as well as a representative from a regional planning organization. Key PAC takeaways guiding the plan recommendations are shown in Table 2-1.

### 2.2 Online Survey

At the outset of the planning process, an email list was developed to include individuals and groups interested in bicycle and pedestrian transportation. An electronic newsletter was distributed announcing an online survey on ALDOT's website.

Table 2-1. Project Advisory Committee: Summary of Opportunities and Challenges

Opportunities	Challenges
<ul style="list-style-type: none"> <li>• The plan should be usable and practical and include recommendations that are implementable in the near future.</li> <li>• Bicycle and pedestrian education is extremely important and should emphasize safety and coordination with other agencies and advocacy organizations.</li> <li>• Corridors with high transportation demand should be prioritized over roads with recreation and tourism demand.</li> <li>• Corridors adjacent to traditionally underserved populations should be a priority.</li> <li>• MPOs and RPOs should guide local plans, with the state focusing on connectivity of routes..</li> <li>• The plan should identify corridors that consider local and state road networks and should focus on lower volume, lower speed roads.</li> <li>• Corridors with recreation and tourism demand pair well with state, regional, and local economic development goals.</li> <li>• The plan should prioritize potential bicycle corridors.</li> <li>• The plan should specify bicycle and pedestrian facility design guidance for different contexts.</li> <li>• Designated bicycle routes could be signed differently for different user levels.</li> </ul>	<ul style="list-style-type: none"> <li>• Tracking and analyzing bicycle and pedestrian safety data should be addressed before undertaking other strategic actions - safety is the number one priority.</li> <li>• There are very few two-lane state routes with shoulders wide enough to accommodate bicyclists safely.</li> <li>• Bicycle demand maps do not translate into a statewide bicycle network unless recreation and tourism areas are considered.</li> <li>• Many areas have heavy logging and trucking operations.</li> <li>• Horizontal and vertical sight distances on some roads pose significant safety issues.</li> <li>• Updating the driver's manual for bicycle and pedestrian information requires legislative action.</li> <li>• Implementing the US Bicycle Route System requires coordination among state and local government.</li> </ul>

The goal of the survey was to learn more about current walking and bicycling activities and identify needs for new and improved pedestrian and bicycle facilities in the state. More than 1,700 people responded to the online survey over the course of four months. The data from the survey was used to help develop the draft goals and objectives for the plan and provide an initial framework for the draft bicycle corridor network. The results of the online survey are presented in Appendix C.

### 2.3 Regional Workshops

In January 2016, a series of five regional public workshops were held for the *Statewide Bicycle and Pedestrian Plan* – one in each of the five ALDOT regions. The workshops were structured as open houses, allowing attendees to attend anytime between the hours of 4:00 PM and 7:00 PM. The meetings were held on the following dates and locations.

- North Region, January 19, 2016 – ALDOT Guntersville Area Office, 23445 US Highway 431, Guntersville, AL
- East Central Region, January 20, 2016 – ALDOT Birmingham Area Office, 1020 Bankhead Highway West, Birmingham, AL
- West Central Region, January 21, 2016 – ALDOT Tuscaloosa Area Office, 2715 East Skyland Blvd, Tuscaloosa, AL
- Southwest Region, January 26, 2016 – ALDOT Southwest Region Office, 1701 I-65 West Service Road, Mobile, AL
- Southeast Region, January 27, 2016 – ALDOT Montgomery Area Office, 1525 Coliseum Blvd, Montgomery, AL

In addition, an online version of the workshops was made available for those who were unable to participate in person. The “virtual workshop” was designed as a survey and provided an opportunity for participants to respond to and provide input on the same questions and information presented at the regional workshops. The survey was distributed via email to the project stakeholder database and made available on the ALDOT website for four weeks following the workshops. A total of 149 people attended the regional workshops and an additional 61 people participated in the virtual workshop.

The regional workshops featured a number of exercises to engage the public and obtain feedback on the draft goals, objectives, strategies, and bicycle corridor plan. In addition to the input gathered through the exercises, a total of 97 comments were received from the workshop attendees. While the comments addressed a number of different issues, they focused on the following themes.

- General support for the draft corridor plan (26 comments)
- Specific route recommendations (25 comments)
- Education for cyclists and drivers (9 comments)

- Recommendations for new or updated bicycle and pedestrian practices (9 comments)
- Connectivity to routes in MPO areas and adjacent states (9 comments)
- Safety (8 comments)
- Increased use of bicycle lanes (8 comments)
- Removal of rumble strips (7 comments)
- Recommendations for design of bicycle facilities (6 comments)
- Need for “share the road” signs (6 comments)
- Partnering with bicycle advocacy organizations (6 comments)

The complete results from the workshop can be found in Appendix D.

## 3.0 Priority Strategies and Recommended Actions

From more than 40 potential strategies in four broad goal areas, stakeholders and the general public prioritized 16 strategies (Table 3-1). Largely consistent with the PAC guidance, the highest priority strategies center on safety, access, and economic development.

















- Prioritize programs and improvements with the greatest potential to reduce pedestrian and bicycle crashes, injuries, and fatalities
- Expand and improve the pedestrian and bicycle networks to and from natural and scenic areas, including national, state, regional, and local parks
- Increase access to walking and bicycling facilities for people unable to operate a motor vehicle and for households without personal vehicles
- Improve connectivity between pedestrian and bicycle facilities on state highways and local greenway and shared use path systems

The following sections highlight steps that can be taken to implement the high priority strategies. For each strategy, the recommendation outlines the issue, describes current practices, and identifies implementation actions. In many cases, recommended strategies and actions in one category are closely related to those in another category, e.g., safety and access. It is also important to underscore that while the recommendations outlined here are focused on pedestrians and bicyclists, such improvements will also generate benefits for the overall transportation system, resulting in a safer and more efficient system for everyone.

### 3.1 Priority Strategy: Prioritize Pedestrian and Bicycle Safety Programs and Improvements

As walking and bicycling have increased across the country, the number and severity of crashes involving

Table 3-1. Priority Strategies

Strategy	Public Priority	Goal
Prioritize improvements and programs with the greatest potential to reduce bicycle and pedestrian crashes, injuries, and fatalities.	1	
Expand and improve the bicycle and pedestrian networks to and from natural and scenic areas, including national, state, regional, and local parks.	2	
Increase access to walking and bicycling facilities for people unable to operate a motor vehicle and for households without personal vehicles.	3	
Improve connectivity between bicycle and pedestrian facilities on state highways and local greenway and shared use path systems.	3	
Partner with local jurisdictions on flexible design approaches for bicycle and pedestrian facilities.	5	
Coordinate annual resurfacing, restoration, and rehabilitation (3R) and maintenance projects with local and regional bicycle and pedestrian plans.	5	
Coordinate state transportation planning and local land use planning to ensure walking and bicycling facilities are included in local plans and projects along state highways.	5	
Establish guidelines for strategically implementing a bike route network, including interjurisdictional coordination.	8	
Identify priority bicycle and pedestrian improvement areas in consultation with local officials and stakeholders.	9	
Incorporate bicycle and pedestrian improvements along state highway corridors that are identified in local and regional plans in consultation with local officials and stakeholders.	10	
Consider bicycle and pedestrian improvements as part of regular maintenance activities.	11	
Update project development policies and procedures to ensure that bicycle and pedestrian needs are evaluated in all projects.	12	
Coordinate with regional and local transit agencies on bicycle and pedestrian improvements in transit corridors.	13	
Review and regularly update driver training and testing materials to include information on bicycle and pedestrian safety and laws.	14	
Develop educational materials and public information campaigns on safe walking, biking, and driving (e.g., "Share the Road," pedestrian crossing laws, distracted driving, and impaired driving).	15	
Collaborate with national and local partners on implementing the US Bicycle Route System in Alabama.	15	



Improve safety for bicyclists and pedestrians of all ages and abilities.



Support state, regional, and local economic development.



Develop complete and connected bicycle and pedestrian systems



Increase travel options for all transportation system users and protect the natural environment.

pedestrians and bicyclists has remained largely constant and has increased as a percentage of total traffic crashes.<sup>1</sup> Accordingly, additional strategies and tools have been developed nationally to improve safety for pedestrians and bicyclists, either complementing or augmenting the traditional safety initiatives focused on the five E's: evaluation and planning, engineering, education, encouragement, and enforcement. The new set of national policies, programs, standards, and guidance aimed at improving safety, includes:

- United States Department of Transportation (USDOT), *Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* (2010), which emphasizes the incorporation of safe and convenient walking and bicycling facilities in transportation projects;
- Federal Highway Administration (FHWA), *Memorandum on Bicycle and Pedestrian Facility Design Flexibility Guidance* (2013), which expresses FHWA's support for the use of design guides developed by the National



Association of City Transportation Officials (NACTO) and the Institute of Transportation Engineers (ITE) in addition to the American Association of State Highway and Transportation Officials (AASHTO) bicycle and pedestrian design guides;

- FHWA, *PedSafe and BikeSafe Updates* (2013, 2014), which provide information on pedestrian and bicycle safety countermeasures, i.e., tools and treatments;
- USDOT, *Safer People, Safer Streets: Pedestrian and Bicycle Safety Initiative* (2014), which declared pedestrian and bicycle safety as a top priority for USDOT and included a series of targeted initiatives;
- FHWA, *Bicycle-Pedestrian Count Technology Pilot Project* (2015), which is identifying best practices in counting data collection;
- FHWA, *Bicycle and Pedestrian Funding, Design, and Environmental Review: Addressing Common Misconceptions* (2015), which clarifies common misunderstandings about federal funding, street design, and environmental review requirements for pedestrian and bicycle programs and projects;
- FHWA, *National Bicycle and Pedestrian Safety Performance Measures* (2016), which requires states to report annually a combined pedestrian and bicycle injury and fatality measure;
- FHWA, *Achieving Multimodal Networks: Addressing Design Flexibility and Reducing Conflicts* (2016), which identifies flexible strategies for addressing common design challenges and barriers; and
- FHWA, *Strategic Agenda for Pedestrian and Bicycle Transportation* (2016), which focuses on improving multimodal outcomes in the federal transportation funding process.

Regionally, states throughout the southeast United States have also undertaken initiatives to improve pedestrian and bicycle safety as populations become more urban and suburban. The state initiatives essentially fall under four of the five E's of pedestrian and bicycle safety.

- Engineering – Complete Streets Policies (Florida, Georgia, Louisiana)
- Education – Share the Road Campaigns (Alabama, Florida, Georgia, Louisiana, Mississippi, Tennessee)
- Enforcement – Safe Passing Laws (Alabama, Florida, Georgia, Louisiana, Mississippi, Tennessee)
- Evaluation and Planning – Bicycle and Pedestrian Safety Action Plans (Florida, Georgia)

### Current Practice in Alabama

Total pedestrian and bicycle crashes in Alabama have followed the national trend and have fluctuated within a relatively narrow range. As discussed in Section B of this plan, total pedestrian crashes have numbered between 630

and 730 per year from 2003 to 2013, with approximately 10 percent of the crashes resulting in fatalities. Similarly, total bicycle crashes have varied between 175 and 275 per year during the same time period, with approximately 3 percent of the crashes resulting in fatalities.

Importantly, ALDOT already has several new initiatives underway that will accelerate bicycle and pedestrian safety in Alabama and generate improved outcomes. The interagency *Alabama Strategic Highway Safety Plan* (SHSP), for example, has adopted a “Toward Zero Death” policy, establishing a target of reducing combined traffic fatalities and injuries by 50 percent over a 25-year period.

Two additional ALDOT initiatives, the *Guidance for Road Safety Assessments and Reviews* (2016) and the *Vulnerable Road Users Guide* (forthcoming, 2017), will provide new tools to improve pedestrian and bicycle safety across the state and serve as resources for local communities. Underlying all of the new safety initiatives, however, is the ongoing need for comprehensive safety data.

### Recommended Actions

As the *Alabama Strategic Highway Safety Plan* documents, there are many factors that impact pedestrian and bicycle safety – from roadway and location factors to behavioral and policy factors. Prioritizing safety programs and improvements, in turn, depends on identifying the specific problems facing a state or local community. While



Source: Gresham, Smith and Partners

it is beyond the scope of this plan to identify specific safety problems and countermeasures, the following recommended actions are intended to augment ongoing safety initiatives and help ensure that priority programs and facilities are implemented.

- A. **Develop a Pedestrian and Bicycle Safety Action Plan:** A pedestrian and bicycle safety action plan, either as a standalone document or as part of a broader highway safety plan, provides a number of opportunities to help prioritize programs and improvements. A typical safety action plan includes a data driven analysis of crashes and trends, a review and assessment of existing laws, policies, and programs, and a set of implementation steps. The data driven analysis of crashes offers an important opportunity to strengthen data management and analysis through systemic and risk based network screening.
- B. **Establish Statewide Pedestrian and Bicycle Safety Goals and Performance Measures:** Closely related to the prior recommendation, pedestrian and bicycle safety goals and performance measures are an essential element of a statewide transportation plan. Goals and performance measures reinforce the importance of pedestrian and bicycle safety and elevate its consideration in decision making processes. Establishing understandable and implementable statewide safety goals and performance measures will also complement Alabama's "Toward Zero Death" policy and the new federal requirement to report a combined pedestrian and bicycle injury and fatality measure annually. Assuming an overarching goal to improve safety for pedestrians and bicyclists of all ages and abilities, performance measures could include reducing the number and severity of crashes over a multi-year period as well as crash rates and comparative rankings with peer states.
- C. **Incorporate Pedestrian and Bicycle Safety in Project Prioritization Processes:** Building on the first two actions, safety prioritization criteria will ensure that proposed improvements and investments carefully assess those modal needs. To gauge safety impacts, established countermeasures and associated crash modification factors should be used in conjunction with any available exposure data to measure potential benefits. The proposed pedestrian and bicycle improvement or investment could be either a standalone project or program or part of a larger planned transportation project.
- D. **Provide Technical Training on Pedestrian and Bicycle Facility Planning and Design:** Pedestrian and bicycle planning and design have changed substantially in recent years and will continue to do so as multimodal transportation networks become more complex and integrated. In order to implement improvements that



Source: Gresham, Smith and Partners

have the greatest potential to reduce crashes, injuries, and fatalities, planners and engineers need to remain current with best practices in pedestrian and bicycle facilities planning and design. Regular updates to ALDOT's design policies (Guidelines for Operation) and standards (Standard Drawings) based on national best practices will support walking and bicycling generally and address safety problems more specifically.



Source: Gresham, Smith and Partners

### 3.2 Priority Strategy: Increase Access to Walking and Bicycling Facilities for Traditionally Underserved Populations

In many respects, increasing access to walking and bicycling facilities for traditionally underserved populations – low-income, minority, older adult, and limited English proficiency people and persons with disabilities, begins with the previous recommended strategy to prioritize safety programs and facilities. Nationally, traditionally underserved populations have the greatest need for walking and bicycling facilities and simultaneously are involved in pedestrian and bicycle crashes at disproportionate rates. Corresponding with the recent initiatives focused on pedestrian and bicycle safety, a number of federal agencies and national organizations have spearheaded efforts to ensure walking and bicycling facilities are provided in traditionally underserved communities. Among the policies, programs, standards, and guidance are:

- FHWA, *Memorandum on the Americans with Disabilities Act (ADA) Transition Plan Process* (2015), which outlines the minimum requirements during a state transition plan review process;
- Safe Routes to School National Partnership, *At the Intersection of Active Transportation and Equity* (2015), which reviews strategies for delivering safe and affordable transportation options to low-income and minority communities; and

- USDOT, *Ladders of Opportunity Initiative* (2016), which seeks to identify and address transportation connectivity gaps in accessing essential services and economic opportunity.

Key findings from a 2013 National Highway Traffic Safety Administration (NHTSA) survey on pedestrian and bicyclist behavior and attitudes underscore the everyday challenges of accessing walking and bicycling facilities. The NHTSA survey found that:

- The most common reason that people do not use bicycle paths and bicycle lanes is that the paths and lanes do not go where people need to go; and
- Similarly, the most common reason that people do not use sidewalks is that the sidewalks do not go where people need to go, as well as because there are few or no sidewalks available on their route.

#### *Current Practice in Alabama*

Ensuring that walking and bicycling facilities are accessible to traditionally underserved populations requires coordination among local, regional, state, and federal transportation partners. The coordination should begin in the planning phase and extend through project engineering. One example of a coordinated pedestrian and bicycle funding program has been the former Transportation Enhancements and Transportation Alternatives Programs that now fall under the new Surface Transportation Block Grant Transportation Alternatives Set-Aside (TA Set-Aside) Program. Federal TA Set-Aside funds are suballocated equally for use in any area of the state and for areas based on population, with Metropolitan Planning Organizations (MPOs) overseeing a competitive project selection process in urbanized areas with populations over 200,000.

Among Alabama MPOs, project selection criteria used by the Florida-Alabama Transportation Planning Organization (TPO) for the TA Set-Aside Program places the greatest emphasis on accessibility to pedestrian and bicycle facilities across a wide range of transportation and development contexts. Although the TPO selection guidance does not specifically identify traditionally underserved populations as part of a criterion, it does highlight important walking and bicycling network factors such as:

- Access to commercial areas;
- Gaps in the existing network;
- Connections to transit stops;
- Proximity to medium-to-high density or intensity land uses;
- Proximity to schools; and
- Access to existing or planned activity centers.

Complementing regional efforts to target transportation investments through the TA Set-Aside Program, ALDOT is currently updating its *ADA Statewide Transition Plan*. In



addition to improvements at ALDOT facilities, the ADA transition plan has documented curb ramp priorities across the state in ALDOT right-of-way and has committed \$2.5 million annually over a six-year period for those projects.

### *Recommended Actions*

The updated ADA transition plan establishes an important foundation for increasing access to walking facilities for traditionally underserved populations. More generally, a series of planning, project engineering, public engagement, and programming initiatives can further augment current practices and ensure that traditionally underserved communities routinely benefit from new pedestrian and bicycle transportation investments. Recommended actions include:

- A. **Collaborate on Local Bicycle and Pedestrian Plans in Traditionally Underserved Communities:** For many traditionally underserved and smaller communities, developing a local bicycle and pedestrian plan can prove to be challenging from a financial, staff resource, and available expertise perspective. Consequently, these communities are often at a disadvantage in terms of identifying priority needs and securing funding to address them. Interagency state, regional, and local planning partnerships can help fill the gap by providing technical assistance, funding community and corridor transportation plans, and establishing working groups or advisory committees focused on improving pedestrian and bicycle facilities in underserved areas.
- B. **Incorporate Pedestrian and Bicycle Access for Traditionally Underserved Populations in Project Prioritization Processes:** Similar to the project prioritization recommendation under the previous strategy, there are multiple opportunities in various programs and decision making processes to evaluate whether transportation projects are meeting the specific needs of traditionally underserved populations. The TA Set-Aside Program at the state and regional levels, for example, could establish a target for spending a portion of funding on projects in traditionally underserved communities based on such factors as age, poverty, race, and disabilities. In turn, proposed projects would need to demonstrate that they address critical connectivity issues, including access to employment, education, health care, shopping, parks, and transit. Alternatively, overall TA Set-Aside scoring criteria can introduce measures that award points to projects that specifically benefit underserved communities. These same criteria can also be applied in any transportation project development and programming process to evaluate solutions and identify priorities.
- C. **Expand Walking and Bicycling Outreach and Educational Programs in Traditionally Underserved Communities:** Typical transportation planning outreach

activities have had limited success involving traditionally underserved communities.<sup>2</sup> In order to discuss and understand needs in underserved areas, outreach efforts should be expanded. Often, these outreach efforts require meeting at a variety of times during a week. Increasing access to walking and bicycling facilities also means that communities have basic tools and resources available to them. Pedestrian and bicycle education programs provide essential and lifelong information on how to make walking and bicycling safe modes of transportation.



Source: Gresham, Smith and Partners



### 3.3 Priority Strategy: Improve Connections between Pedestrian and Bicycle Facilities on State Highways and Local Greenway and Shared Use Path Systems as well as to Natural and Scenic Areas

The third recommended action combines two of the top priorities identified by stakeholders and the general public during the planning process. Increasingly, pedestrian and bicycle facilities to, from, and along greenways and shared use paths are viewed as important elements of the transportation system. Once considered facilities for recreational purposes only, greenways and shared use paths – whether in a park or natural area or adjacent to a highway – now provide important connections in local, regional, and state transportation systems. Significantly, they can provide a much safer walking and bicycling option for a much broader range of ages and abilities than on-road facilities.

As important elements of the overall transportation system and local economies, greenways and shared use paths have also become important economic development assets. Business districts, tourism destinations, and residential communities in rural areas, small towns, and large cities can benefit from the additional access provided by walking and bicycling facilities. A number of states have estimated the impact of walking and bicycling investments, including:

- **Arizona (2013)** – total economic output from out-of-state bicycle tourism of approximately \$88 million and 720 jobs;
- **Michigan (2015)** – total annual economic output from out-of-state bicycle tourism and bicycle events of approximately \$22 million;
- **Oregon (2013)** – total annual direct impacts of approximately \$400 million and 4,600 jobs from out-of-state and in-state bicycle related travel; and
- **Vermont (2012)** – total annual economic output of approximately \$83 million and 1,400 jobs, excluding transportation system cost savings.

Closer to Alabama, the Silver Comet Trail in Georgia, the 61-mile connection to the Chief Ladiga Trail, is estimated to have an annual economic impact of \$461 million. With approximately 1.9 million users each year, the economic impacts include tourism spending, fiscal impacts, and property value increases. Trail expansion currently under consideration would generate an additional annual economic benefit of \$274 million.<sup>3</sup>

#### *Current Practice in Alabama*

Cities and towns across Alabama are investing in pedestrian and bicycle facilities to improve local and regional transportation options and strengthen local and regional economies. Among the many examples of existing and

planned shared use path systems and tourism-based bicycle routes discussed during the statewide planning process are:

- **Anniston and Piedmont** – Chief Ladiga Trail;
- **Birmingham** – Red Rock Ridge and Valley Trail System;
- **Cherokee County** – Cherokee Rock Village (Leesburg) to Little Canyon River Nature Center (Fort Payne);
- **Guin** – Guin, Hamilton, and Winfield Loop;
- **Gulf Shores and Orange Beach** – Hugh S. Branyon Back Country Trail in Gulf State Park; and
- **Jackson County** – Scenic Routes of Jackson County, Alabama.



In addition, as of January 2016, all 14 MPOs and 19 cities in Alabama have standalone bicycle and pedestrian plans. Another 33 cities and counties have bicycle and pedestrian elements in their respective comprehensive plans. Many of the standalone and comprehensive plans include off-road pedestrian and bicycle facilities as well as on-road facilities.

#### *Recommended Actions*

As greenway and shared use path systems expand, state highways represent important links for connecting on-road and off-road facilities. Because of the wide latitude in federal transportation funding programs for pedestrian and bicycle facilities, most roadway projects – including new construction, reconstruction, resurfacing, and safety projects – present opportunities to make these critical connections between off-road and on-road facilities. Of course, the TA Set-Aside Program is also an important resource for these connections. Following are three recommended actions for improving integrated roadway, greenway, and shared use path transportation systems.

- Inventory and Map Existing and Planned Greenways, Shared Use Paths, Parks, and Natural Areas:** A comprehensive inventory and map of all state and local existing and planned greenways, shared use paths, parks, and natural areas will directly support the development of an integrated multimodal transportation system. Not only can shared use paths and greenways complement and extend on-road facilities and sidewalks, but they can also provide important connections to additional transportation systems such as public transit and address common walking and bicycling barriers such as limited access highways, major arterials, railroads, and natural features. Mapping parks and natural areas, in particular, can help address natural feature barriers. Taken together, inventorying and mapping are important first steps to incorporating shared use paths and greenways into transportation planning and design decision making processes.

Table 3-2. Priority Strategies and Recommended Actions

Priority Strategy	Recommended Action
 <p>1. Prioritize Pedestrian and Bicycle Safety Programs and Improvements</p>	<ul style="list-style-type: none"> <li>a. Develop a Pedestrian and Bicycle Safety Action Plan</li> <li>b. Establish Statewide Pedestrian and Bicycle Safety Goals and Performance Measures</li> <li>c. Incorporate Pedestrian and Bicycle Safety in Selection, Planning, and Design Processes</li> <li>d. Provide Technical Training on Pedestrian and Bicycle Facility Planning and Design</li> </ul>
 <p>2. Increase Access to Walking and Bicycling Facilities for Traditionally Underserved Populations</p>	<ul style="list-style-type: none"> <li>a. Collaborate on Local Bicycle and Pedestrian Plans in Traditionally Underserved Communities</li> <li>b. Incorporate Pedestrian and Bicycle Access for Traditionally Underserved Populations in Project Selection, Planning, and Design Processes</li> <li>c. Expand Walking and Bicycling Outreach and Education Programs in Traditionally Underserved Communities</li> </ul>
 <p>3. Improve Connections between Pedestrian and Bicycle Facilities on State Highways and Local Greenway and Shared Use Path Systems as well as to Natural and Scenic Areas</p>	<ul style="list-style-type: none"> <li>a. Inventory and Map Existing and Planned Greenways, Shared Use Paths, Parks, and Natural Areas</li> <li>b. Utilize Best Practices in Greenway and Shared Use Path Planning and Design</li> <li>c. Collaborate with Public and Private Sector Partners on Economic Development Opportunities Related to Greenway and Shared Use Path Systems</li> </ul>

- B. **Utilize Best Practices in Greenway and Shared Use Path Planning and Design:** In order to support the increasing use of shared use paths and greenways for transportation purposes, planners and designers need to clearly understand desired destinations, the broad range of potential users, and best practices for integrating off-road and on-road facilities. From a planning perspective, greenways and shared use paths can serve as important options where local street networks lack connectivity. They can also provide a more direct connection between destinations and offer an alternative to state highways with limited right-of-way for pedestrian and bicycle facilities. New and updated FHWA and AASHTO design guidance on shared use paths emphasizes the importance of planning and designing for different types of users, including the future number of total users and differences in speed.<sup>45</sup> Moreover, because of the variability among users, design strategies should weigh various options regarding path width, clearance/shoulders, separation, turning movements, and intersections.
- C. **Collaborate with Public and Private Sector Partners on Economic Development Opportunities Related to Greenway and Shared Use Path Systems:** Collaborating with public and private sector agencies and organizations responsible for economic development, tourism, parks, and greenways will help prioritize on-road and off-road improvements

and potentially leverage additional funding sources. Priorities may include closing gaps in regional greenway and shared use path networks, targeting short-trip opportunities and access points, maintaining print and electronic maps, and improving wayfinding signage and traffic control devices at highway crossings.

## 4.0 Bicycle Corridor Plan

A statewide bicycle corridor network establishes the framework for developing a bicycle route system that can support safe and efficient bicycle travel at multiple geographic scales – national, state, regional, and local. Before describing the process for developing the Alabama bicycle corridor network, it is important to highlight the distinction between a bicycle corridor and a bicycle route.

- **Bicycle Corridor** – In transportation systems planning, regardless of travel mode, corridors are broadly defined linear areas connecting destinations. Because the width of a corridor can vary from several hundred feet to tens of miles, depending on needs and the level of analysis, corridors do not identify specific improvements and alignments in planning studies. For the purpose of this plan, bicycle corridors are delineated to guide future bicycle route development between destinations that may ultimately include combinations of state highways, county roads, local streets, and trails, as well as different bikeway facilities – including shared lanes, paved shoulders, bicycle lanes, bicycle boulevards, and shared use paths.
- **Bicycle Route** – Alternatively, a bicycle route is any roadway or bikeway designated with a unique route designation or “Bike Route” signs. A bicycle route network is a system of suggested routes to reach specific destinations, and should include wayfinding



Source: Gresham, Smith and Partners

and destination information. Bicycle route designation indicates to bicyclists that the route provides advantages over other non-designated routes – including roadway, traffic, and network advantages.

It is also important to note that the corridor network and eventual bicycle route system differ from the routine pedestrian and bicycle accommodation required by the USDOT *Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations*. Effectively, the USDOT policy calls for the provision of pedestrian and bicycle facilities as a matter of routine, except where pedestrians and bicyclists are prohibited by law from using a roadway, cost is excessively disproportionate to the need or probable use, and in sparsely populated areas. A bicycle route system builds on the routine accommodation improvements to identify preferred routes.

### 4.1 Corridor Approach

A bicycle corridor network, then, sets the stage for subsequent corridor level planning and route development. The Alabama bicycle corridor network recommended in this plan is built around three core concepts that dovetail with the priority strategies discussed in the previous section and complement one another.

1. **Safety** – Providing safe and comfortable bikeway facilities is the highest priority, and consequently, that calls for maintaining a high degree of flexibility in the bicycle corridor network so that local and state partners can develop designated routes at the corridor planning scale that best meet bicyclists’ needs.
2. **Access** – Providing access to essential everyday needs, especially for traditionally underserved populations, is another principal goal of the plan, and is captured in the high bicycle transportation demand areas designated as priority corridors.
3. **Economic Development** – In addition to the high bicycle transportation demand areas, the corridor map proposes potential connections to natural and cultural resource destinations such as state parks and historic sites. Many of these destinations serve as important economic development drivers for communities, especially in rural areas. While most of the connections to these destinations are depicted as vision corridors, others fall within the priority corridor areas and could be developed sooner.

Building on the core concepts, the bicycle corridor network combines technical criteria and direction provided by the Project Advisory Committee, ALDOT regional staff, MPO, RPO, and TPO bicycle and pedestrian plans, and public and stakeholder input. The technical criteria that helped shape the corridor network, includes:

- Safety and geographic barriers;



Figure 4-1. Bicycle Corridor Plan Core Concepts



- System continuity and accessibility;
- Trip length and directness;
- Connections to major activity centers and intermodal centers;
- Connections to regional and local routes and plans;
- Connections to scenic, cultural, historic, and tourism destinations;
- Connections to the US Bicycle Route System;
- Connections to adjacent state routes; and
- Ensuring services are available every 40-60 miles.

#### 4.2 Bicycle Corridor Plan

The bicycle corridor plan is delineated into priority corridors and vision corridors. Priority corridors fall within cities and towns demonstrating a higher than average potential demand for bicycle transportation. To capture maximum, reasonable bicycle trip distances, a 15-mile radius highlights the priority corridors in cities with populations greater than 50,000. The radius accounts for the multiple activity centers and destinations found in larger cities. In cities with populations less than 50,000 and a higher than average potential demand for bicycle transportation, a 5-mile radius describes priority corridors. In conjunction with the emphasis on safety and flexibility in the corridor approach, the intent of the priority corridors is to focus limited resources on those areas where access to everyday needs is greatest.

The vision corridors link the areas with a higher potential demand for bicycle transportation to one another and

to other major destinations including state parks, scenic areas, and adjacent state routes. Echoing a strong desire to focus on safe, convenient, and comfortable bicycle routes, public and stakeholder input emphasized the need to evaluate all possible on-road and off-road combinations to identify routes. Accordingly, developing the vision corridors into bicycle routes will require strong interagency and interjurisdictional collaboration. Statewide and local stakeholder groups should play a critical role during corridor planning processes.

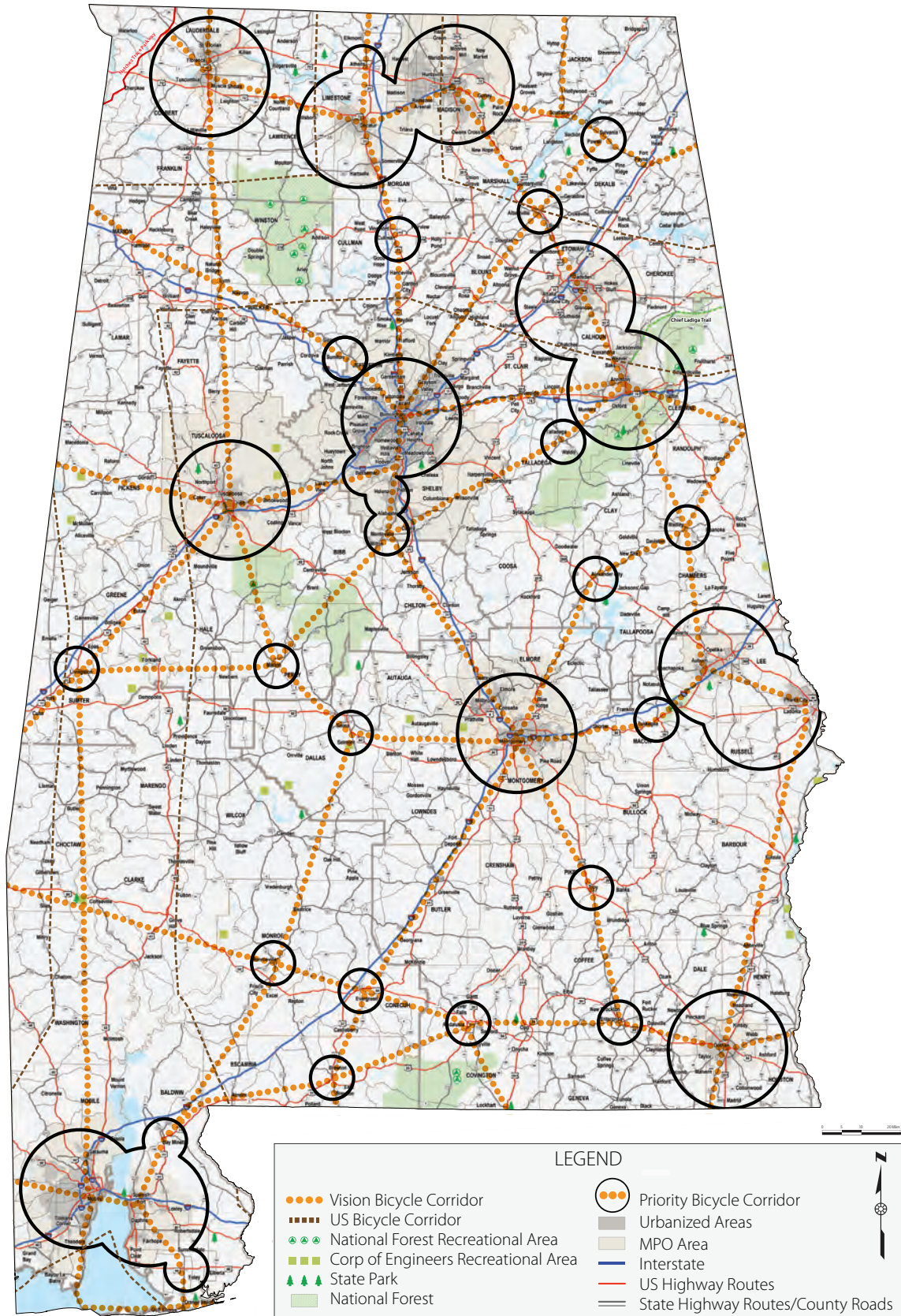
Figure 4-2 illustrates the bicycle corridor plan. It is important to emphasize that the bicycle corridors shown on this map are for planning purposes only. Within each corridor, projects will be evaluated for bicycling as a viable mode of transportation based upon standard engineering practices adopted by the Alabama Department of Transportation.



Source: Gresham, Smith and Partners



Figure 4-2. Bicycle Corridor Plan



The bicycle corridors shown on this map are for planning purposes only. Within each corridor projects can be evaluated for bicycling as a viable mode of transportation based upon standard engineering practices adopted by the Alabama Department of Transportation.

## 5.0 Key Findings

Consistent with the growth of walking and bicycling across the country, communities across Alabama are interested in improving pedestrian and bicycle facilities. Importantly, direction provided by stakeholders in the planning process have emphasized the importance of safety and access as overriding interests. As a consequence, the statewide plan focuses on the following three priority strategies and corresponding recommended actions to improve walking and bicycling in Alabama.

### Priority Strategy

1. Prioritize Pedestrian and Bicycle Safety Programs and Improvements

### Action

- a. Develop a Pedestrian and Bicycle Safety Action Plan
- b. Establish Statewide Pedestrian and Bicycle Safety Goals and Performance Measures
- c. Incorporate Pedestrian and Bicycle Safety in Project Prioritization Processes
- d. Provide Technical Training on Pedestrian and Bicycle Facility Planning and Design

### Priority Strategy

2. Increase Access to Walking and Bicycling Facilities for Traditionally Underserved Populations

### Action

- a. Collaborate on Local Bicycle and Pedestrian Plans in Traditionally Underserved Communities
- b. Incorporate Pedestrian and Bicycle Access for Traditionally Underserved Populations in Project Prioritization Processes
- c. Expand Walking and Bicycling Outreach and Educational Programs in Traditionally Underserved Communities

### Priority Strategy

3. Improve Connections between Pedestrian and Bicycle Facilities on State Highways and Local Greenway and Shared Use Path Systems as well as to Natural and Scenic Areas

### Action

- a. Inventory and Map Existing and Planned Greenways, Shared Use Paths, Parks, and Natural Areas
- b. Utilize Best Practices in Greenway and Shared Use Path Planning and Design
- c. Collaborate with Public and Private Sector Partners on Economic Development Opportunities Related to Greenway and Shared Use Path Systems



Source: Gresham, Smith and Partners

Additionally, to support the future development of a comprehensive system of statewide bicycle routes, the plan also identifies and recommends a network of bicycle corridors. The corridors (Figure 4-2) highlight areas with higher than average potential for bicycle transportation demand and connections among them. Corridors within areas of higher than average potential for bicycle transportation demand are defined as priority corridors, and corridors between these areas and other natural and cultural destinations are characterized as vision corridors. For the purpose of this plan, bicycle corridors are delineated to guide future bicycle route development between destinations that may ultimately include combinations of state highways, county roads, local streets, and trails, as well as different bikeway facilities – including shared lanes, paved shoulders, bicycle lanes, bicycle boulevards, and shared use paths.



## Endnotes

- <sup>1</sup> United States, Dept. of Transportation, National Highway Traffic Safety Administration. *Early Estimate of Motor Vehicle Traffic Fatalities for the First Half (Jan–Jun) of 2016*. Sep. 2016. <<https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812332>>. Accessed Oct. 2016.
- <sup>2</sup> United States, Dept. of Transportation, Federal Highway Administration. *Pursuing Equity in Pedestrian and Bicycle Planning*. Apr. 2016. <[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/resources/equity\\_paper](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/resources/equity_paper)>. Accessed Oct. 2016.
- <sup>3</sup> Bike Walk Northwest Georgia. *Silver Comet Trail Study*. <<http://www.bwnwga.org/news/silver-comet-trail-study>>. Accessed Jan. 2016.
- <sup>4</sup> United States, Dept. of Transportation, Federal Highway Administration. *Achieving Multimodal Networks: Applying Design Flexibility & Reducing Conflicts*. Aug. 2016. <[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/publications/multimodal\\_networks](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/multimodal_networks)>. Accessed Oct. 2016.
- <sup>5</sup> American Association of State Highway and Transportation Officials. *AASHTO Guide for the Planning, Design, and Operation of Bicycle Facilities*. 2012.

# Section D: Implementation Plan







# Section D: Implementation Plan

## 1.0 Introduction

Identifying priority strategies, recommended actions, and a statewide bicycle corridor plan, the previous section established a framework for meeting the goals and objectives of the *Alabama Statewide Bicycle and Pedestrian Plan*. This section focuses on a series of steps to help implement the recommendations, including the development of system performance measures, project prioritization criteria, and design guidance. The implementation steps or tools are intended to provide a strong foundation for improving walking and bicycling in Alabama and support the full range of recommended actions.



Source: Gresham, Smith and Partners

## 2.0 Performance Measures

System performance measures represent a pivotal first step in plan implementation. As noted in earlier sections of the plan, federal legislation, policies, and programs have all placed increasing importance on performance measures and the role they can play in better managing transportation systems, in particular, system safety. Building on federal guidance, the performance measures described below are intended to benchmark walking and bicycling in Alabama and help guide future decision making at the statewide policy and programming levels. For performance measures to be effective, they should, at a minimum, be:

- Linked to identified system goals;
- Understandable by the end user;
- Implementable with available resources; and
- Related to actions controlled by the agency.



Given these general parameters, the recommended system performance measures for walking and bicycling in Alabama initially focus on the plan's two principal goal areas: safety and access and mobility. Table 2-1 summarizes the recommended performance measures for the safety and access and mobility goals.

### 2.1 Safety

Consistent with new federal rulemaking on safety performance measures, the recommended system safety performance measure for walking and bicycling in Alabama follows.

- **Performance Measure:** Annual number of combined non-motorized fatalities and serious injuries on the state highway system (5-year rolling average)

Table 2-1. Recommended Statewide Pedestrian and Bicycle System Performance Measures

	
Goal	Performance Measure
<b>Safety:</b> Improve safety for bicyclists and pedestrians of all ages and abilities	<ul style="list-style-type: none"> <li>• Annual number of combined non-motorized fatalities and serious injuries (5-year rolling average)</li> </ul>
<b>Access and Mobility:</b> Develop complete and connected bicycle and pedestrian systems	<ul style="list-style-type: none"> <li>• Annual pedestrian commuting mode share (5-year rolling average)</li> <li>• Annual bicycle commuting mode share (5-year rolling average)</li> <li>• Annual consistency with the scheduled right-of-way improvements in current state ADA Transition Plan</li> <li>• Percentage of priority bicycle corridors designated as state bicycle routes</li> <li>• Total number of vision bicycle corridors designated as state bicycle routes</li> </ul>

According to the new federal rule, the baseline trend should be determined by calculating the five most recent five-year averages, and allows states to establish a performance measure target based on conditions specific to the state, including laws, funding, and geographic context. Importantly, the new federal rule complements the “Toward Zero Death” policy outlined in the *Alabama Strategic Highway Safety Plan* (SHSP). The “Toward Zero Death” policy calls for reducing combined traffic fatalities and injuries by 50 percent over a 25-year period. The recommended safety performance measure, proposed target, and potential data sources are described in Table 2-2.

## 2.2 Access and Mobility

### Commuting Mode Share

While not a measure of total trips, commuting mode share is one readily available means for measuring pedestrian and bicycle activity. As pedestrian and bicycle networks are improved, especially in areas with strong potential demand, commuting mode shares can help describe the impacts of investments over time. Commuting share data is available from the US Census Bureau and at scales as small as census tracts. For walking and bicycling, the recommended statewide commuting mode share performance measures are:

- **Performance Measure:** Annual pedestrian commuting mode share (5-year rolling average); and
- **Performance Measure:** Annual bicycle commuting mode share (5-year rolling average).

The recommended performance measures, proposed targets, and potential data sources are highlighted in Table 2-2. Because many states in the southeast United States have experienced similar population growth and demographic changes in recent years, the proposed targets for both pedestrian and bicycle commuting mode share focus on matching or exceeding regional average annual increases.

### Pedestrian and Bicycle Facilities

Monitoring the quality and quantity of pedestrian and bicycle facilities underpins both the recommended safety and mode share performance measures. With safe, comfortable, and convenient facilities, crashes and crash rates should decrease and commuting mode shares should increase. To capture facilities that provide a higher level of safety and comfort for pedestrians and bicyclists, the recommended performance management system features the following measures.

- **Performance Measure:** Annual consistency with the scheduled right-of-way improvements in the current state Americans with Disabilities Act (ADA) transition plan;

- **Performance Measure:** Percentage of priority bicycle corridors designated as state bicycle routes; and
- **Performance Measure:** Total number of vision bicycle corridors designated as state bicycle routes.





In addition to meeting guidelines and standards under the ADA, the state, through its ADA transition plan, develops a schedule of right-of-way improvements to eliminate barriers and correct deficiencies. Evaluating consistency with the transition plan on an annual basis ensures that the pedestrian network is improving and expanding for all users. Similarly, monitoring the percentage of priority bicycle corridors and the total number of vision bicycle corridors that are currently designated as state bicycle routes captures the quality and extent of bicycle facilities that have recognized advantages over other bikeways. It is important to note that state designated bicycle routes may include combinations of state highways, county roads, local streets, and trails, as well as different types of bicycle facilities. Accordingly, progress in these two measures will depend on strong collaboration among various public agency partners and stakeholders. Table 2-2 summarizes the performance measures, proposed targets, and potential data sources for pedestrian and bicycle facilities.

The initial set of recommended safety and access and mobility performance measures provides a clear and understandable basis for describing how the pedestrian and bicycle systems are functioning in Alabama. As additional



Source: Gresham, Smith & Partners

Table 2-2. Recommended Performance Measures and Targets

 Goal	 Performance Measure	 Target	 Data Sources
Safety	Annual number of combined non-motorized fatalities and serious injuries (5-year rolling average)	2% annual decrease up to a total 50% decrease	Fatality Analysis Reporting System (FARS), National Highway Traffic Safety Administration; State crash database
Access and Mobility	Annual pedestrian commuting mode share (5-year rolling average)	Average Annual Regional* Percentage Increase	American Community Survey, US Census Bureau
Access and Mobility	Annual bicycle commuting mode share (5-year rolling average)	Average Annual Regional* Percentage Increase	American Community Survey, US Census Bureau
Access and Mobility	Annual consistency with the scheduled right-of-way improvements in current state ADA Transition Plan	100%	State ADA Transition Plan
Access and Mobility	Percentage of priority bicycle corridors designated as state bicycle routes	4% annual increase up to a total of 100% of corridors	Statewide Bicycle and Pedestrian Plan; State inventory
Access and Mobility	Total number of vision bicycle corridors designated as state bicycle routes	One new route every five years	Statewide Bicycle and Pedestrian Plan; State inventory

\*Region includes Alabama, Arkansas, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, and Tennessee

data and resources become available, the set of performance measures can be expanded and modified to address other goals and objectives related to economic development and quality of life. While many of the initial performance measures are outcome oriented, the performance management system can also be expanded to include design oriented performance measures and administrative oriented performance measures.

### 3.0 Project Prioritization Criteria

Closely allied with performance measures are project prioritization criteria. Like performance measures, project prioritization criteria play an important role in achieving plan goals and objectives by providing key information during decision making processes. Project prioritization criteria, for example, can be used during the project development process to compare alternatives, in the TA Set-Aside Program process to rank grant applications, and during the programming process to identify funding priorities. The recommended project prioritization criteria all build on the statewide plan's goals and objectives, and like the performance measures, utilize readily available data. Table 3-1 outlines the recommended criteria by goal, as well as regional and local support and project readiness. Although prioritization criteria can be used to score projects, the intent here is to generate information for decision makers absent of points so that criteria can be tailored to the specific context and evaluation process.

#### 3.1 Safety

##### *High-Crash and High-Risk Locations*

The two recommended safety project prioritization criteria consider locations with higher than average total numbers and frequencies of pedestrian and bicycle-related crashes, and locations that may include perceived safety issues due to roadway geometry, traffic conditions, and the significant presence of pedestrians and bicyclists. Special consideration should be given to areas with a higher frequency of documented severe crashes. The crash frequency and severity at the proposed project locations should be compared to state and national rates for similar facility types. The recommended safety criteria are:

- **Prioritization Criteria:** Documented high crash location (total and percent) or systemic safety need within 500 feet of proposed project; and
- **Prioritization Criteria:** Perceived high risk locations within 500 feet of proposed project.

Sources of data include crash data from the ALDOT Traffic and Safety Operations Section and the University of Alabama Center for Advanced Public Safety's Critical Analysis Reporting Environment (CARE) software; statewide crash data from the *Alabama Highway Safety Improvement Program* (HSIP) and *Strategic Highway Safety Plan* (SHSP); the National Highway Traffic Safety Administration's Fatality Analysis Reporting System (FARS); the Federal Highway Administration's Highway Performance Monitoring System (HPMS); Alabama Law Enforcement Agency (ALEA); county and local transportation departments; county and local law



Table 3-1. Recommended Bicycle and Pedestrian Project Prioritization Criteria

PLAN GOAL	CRITERIA	PRIORITIZATION CRITERIA
 SAFETY	A	Documented high crash location (total, percent) or systemic safety need within 500 feet of proposed project
	B	Perceived high risk locations within 500 feet of proposed project
 ACCESS AND MOBILITY	C	Network connectivity (addresses important gaps or barriers)
	D	Traditionally underserved population (total, percent) within 0.5 mile (ped) or 1.5 mile (bike) of project
 ECONOMIC DEVELOPMENT	E	Jobs (total, percent) within 1.0 mile (ped) or 3.0 miles (bike) of project
 QUALITY OF LIFE	F	Population (total, percent) living within 0.5 mile (ped) or 1.5 miles (bike) of project
	G	Community destinations within 1.0 mile (ped) or 3.0 miles (bike) of project
 REGIONAL/LOCAL SUPPORT	H	Regional and local plan consistency and official and stakeholder support
 PROJECT FEASIBILITY	I	Environmental constraints within 100 feet of the right-of-way and easements of project
	J	Cost effectiveness: total jobs (E) and population (F) divided by estimated cost

enforcement; and bicycle and pedestrian advocacy and user groups.

### 3.2 Access and Mobility

#### *Network Connectivity*

The network connectivity criterion considers how a proposed pedestrian or bicycle project will enhance pedestrian and bicycle networks on a statewide, regional, or local level. For example, a proposed project that completes a “gap” in a bicycle network at either the statewide, regional, or local level would be given higher priority than a standalone bicycle project that does not connect to other bicycle facilities.

- **Prioritization Criteria:** Network completeness (addresses important gaps or barriers)

Evaluating network connectivity should comprise existing and planned bicycle and pedestrian facilities near the proposed project. Sources of data for the performance measure will include inventories of existing bicycle and pedestrian facilities; the state bicycle corridor plan; and regional and local bicycle and pedestrian plans. Alternative quantitative measures of network connectivity, such as network density and Level of Traffic Stress, may be applicable and utilized in the future.

#### *Traditionally Underserved Populations Served*

Traditionally underserved populations include low-income, minority, older adult, limited English proficiency people, and persons with disabilities. The prioritization criterion determines the number of traditionally underserved people within a defined proximity of a proposed bicycle or pedestrian project, emphasizing access to projects within a 10-minute walking or bicycling distance.

- **Prioritization Criteria:** Traditionally underserved population (total and percent) within 0.5 mile (ped) or 1.5 miles (bike) of project

The primary source of data for traditionally underserved populations is the US Census Bureau, which includes data on age, levels of poverty, income levels, zero-car households, minority groups, and disability. To calculate the population within a defined radius of the project, the criterion requires utilization of a data allocation method, such as ArcGIS Business Analyst, to deliver accurate estimates in areas that do not coincide with US Census geographic areas.

### 3.3 Economic Development

#### *Access to Jobs*

Estimating the number of jobs within a defined proximity of a proposed pedestrian or bicycle project highlights the important role transportation options play in economic development. Pedestrian and bicycle facilities within a 20-minute walk and bicycle ride of employment centers

often help provide safe, affordable, and convenient access to jobs. The prioritization criterion captures all users who walk or bicycle to work and is closely tied to the commute mode share system performance measure.

- **Prioritization Criteria:** Jobs (total and percent) within 1.0 mile (ped) or 3.0 miles (bike) of project

Sources of employment data include the US Census Bureau, US Bureau of Labor and Statistics, and local and regional sources. If future employment projections are available, especially in areas anticipating significant job growth, this data should also be factored into the evaluation.

### 3.4 Quality of Life

#### *Population Served*

This prioritization criterion emphasizes projects that serve either a high number of residents or a high percentage of a community's population. Although population served can be analyzed in isolation, when combined with the preceding jobs criterion, the two criteria spotlight major activity centers such as city and town centers, colleges and universities, and tourism destinations – all places characteristic of higher pedestrian and bicycle demand and usage.

- **Prioritization Criteria:** Population (total and percent) living within 0.5 mile (ped) or 1.5 miles (bike) of project



Source: Shutterstock, 2015

The primary source of population data is the US Census Bureau, including the Decennial Census and American Community Survey.

#### *Access to Community Destinations*

Expanding on the previous two criteria, the community destination criterion evaluates proximity to everyday and essential needs.

- **Prioritization Criteria:** Community destinations within 1.0 mile (ped) or 3.0 miles (bike) of project

Community destinations for this criterion include:

- Government offices;
- Hospitals and medical facilities;
- Parks, trails, and wildlife management areas;
- Primary and secondary schools;
- Public libraries;
- Shopping centers; and
- Transit stops and centers.

The data for this criterion can be most readily acquired from regional, county, and local level government offices of planning and development.

### 3.5 Regional and Local Support

#### *Plan Consistency and Support*

Coordinating with local officials and confirming local support for pedestrian and bicycle support early in the planning process is essential, especially with limited available resources. This prioritization criterion is designed to ensure that a proposed bicycle or pedestrian facility is consistent with regional and local transportation plans and has the necessary local commitment to advance the project under consideration.

- **Prioritization Criteria:** Regional and local plan consistency and official and stakeholder support

At the regional level, Metropolitan Planning Organizations (MPO) have developed long-range transportation plans that include walking and bicycling projects. Additionally, many local governments have developed standalone bicycle and pedestrian plans that address the location and design of bicycle and pedestrian facilities. Local governments may also have other plans and studies, such as corridor studies or downtown plans, that establish recommendations and guidelines for bicycle and pedestrian facilities and networks in their communities.

### 3.6 Project Feasibility

#### *Environmental Constraints*

Any proposed bicycle or pedestrian project that will use federal funds must undergo an environmental screening pursuant to the National Environmental Policy Act (NEPA)

guidelines as set forth by the US Environmental Protection Agency (US EPA). Typically, activities that require no additional right-of-way (ROW) and cause no negative environmental impacts, such as the marking of bicycle lanes, installation of bicycle parking, and crosswalk striping, can undergo a streamlined environmental review process. In these cases, the proposed bicycle or pedestrian project would be considered a Categorical Exclusion (CE) and would be exempt from an extensive environmental analysis. Projects that are not located on state ROW and use state or local funding are not required to undergo a NEPA analysis, however, a basic environmental screening to assess the presence of any environmental constraints and determine if there are any significant environmental impacts would be conducted. The prioritization criterion follows.

- **Prioritization Criteria:** Environmental constraints within 100 feet of the right-of-way and easements of project

Environmental constraints examined for this performance measure may include:

- Section 4(f) properties (parks, schools, etc.), historic sites, and cemeteries;
- Wetlands;
- Threatened and endangered species;
- Impacts on water quality; and
- Disproportionate negative impacts to environmental justice groups.

The presence of environmental constraints does not necessarily preclude a project from selection. Rather, environmental constraints are considered to assess whether any environmental mitigation may be needed for project delivery as well as the potential cost of such measures. Sources of data include the US Geological Survey (USGS), US Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), USFWS Information, Planning, and Conservation (IPaC) System, and the Alabama Department of Environmental Management.

### Cost Effectiveness

USDOT's bicycle and pedestrian accommodation policy recognizes three exceptions to the routine inclusion of walking and bicycling facilities in transportation projects. The standard exceptions include:

- Bicyclists and pedestrians are prohibited by law from using the roadway;
- The cost of establishing bikeways and walkways would be excessively disproportionate to the need or probable use; and
- Sparse population or other factors indicate an absence of need.

For the recommended project prioritization process, this criterion offers a broad gauge of a proposed project's cost

effectiveness or the cost relative to the need or probable use. To balance more rural and suburban based projects with urban projects, the cost effectiveness criterion should be considered in conjunction with the other recommended prioritization criteria.

- **Prioritization Criteria:** Total population (see "Population Served" above) and jobs (see "Access to Jobs" above) divided by estimated cost

In addition to the population and employment data discussed earlier, the primary data source for this criterion will be the cost estimates calculated for the proposed transportation project.

### 3.7 Routine Accommodation

As noted under the cost effectiveness criterion above, the USDOT *Policy Statement on Bicycle and Pedestrian Accommodation Regulations and Recommendations* calls for the provision of bicycle and pedestrian facilities as a matter of routine, except where pedestrians and bicyclists are prohibited by law from using a roadway, cost is excessively disproportionate to the need or probable use, and in sparsely populated areas. In addition to helping assess pedestrian and bicycle facilities as standalone projects or as part of larger roadway projects, the project prioritization criteria can serve as a quick checklist or screening tool to evaluate the appropriateness of pedestrian and bicycle facilities relative to the accommodation policy's standard exceptions.



Source: Gresham, Smith & Partners

## 4.0 Design Guidance

There are many ways to include walking and bicycling facilities in transportation corridors and systems. Different contexts and conditions require different approaches to facility selection and design, and design guidance can be used to help incorporate walking and bicycling facilities.

### 4.1 Bikeway Facilities Design Guidance

For bikeway facilities, contexts and conditions can vary widely, from rural areas with a few adult bicyclists to large metropolitan regions with a full range of users. The recommended bikeway facilities guidance establishes a framework for narrowing the list of options by rural and urban development patterns, traffic volumes, and vehicle speeds. Importantly, each of the options identified in Table 4-1 provides flexibility in terms of facility type and potential dimensions relative to expected users. For example, on an urban state highway with a posted speed of 35 miles per hour and traffic volumes less than 2,000 vehicles per day, the guidance recommends either a wide outside lane or a five-foot bicycle lane. In this example, a striped bicycle lane

would be more appropriate in most instances given the vehicle speeds, but a wide outside lane may be appropriate and more feasible where there is constrained right-of-way and the expected user is more experienced.

In addition to right-of-way and other physical constraints potentially limiting the type and size of facilities, there are a number of variables that call for a higher degree of separation and wider dimensions. These variables include:

- High expected bicyclist volumes;
- Locations serving popular community destinations, such as schools;
- Steep grades;
- Presence of on-street parking; and
- Higher volumes of expected novice bicyclists.

Because consistency and continuity are important for both bicyclists and motorists, bikeway facility selection should also consider how proposed facilities connect to the overall bicycle network. It is not uncommon for bikeway facility types to end abruptly, resulting in unsafe conditions for all roadway users. Finally, counties and municipalities are increasingly developing local bikeway facility design

Table 4-1. Bikeway Facilities Design Guidance

Bikeway Facilities Guidance for Rural (Shoulder and Ditch) Cross Section				
ADT		<2,000	2,000 - 10,000	>10,000
Motor Vehicle Speed	< 30 mph	SL or WOL or PS (2-4 ft)	SL or WOL or PS (2-4 ft)	WOL or PS (2-4 ft)
	30 - 40 mph	WOL or PS (2-4 ft)	WOL or PS (2-4 ft)	PS (4-6 ft)
	41 - 50 mph	WOL or PS (2-4 ft)	PS (4-6 ft)	PS (6-8 ft)
	> 50 mph	PS (4-6 ft)	PS (6-8 ft)	PS (6-8 ft) or SUP (10 ft)

Bikeway Facilities Guidance for Urban (Curb and Gutter) Cross Section				
ADT		<2,000	2,000 - 10,000	>10,000
Motor Vehicle Speed	< 30 mph	SL or WOL	SL or WOL	WOL or BL (5 ft)
	30 - 40 mph	WOL or BL (5 ft)	WOL or BL (5 ft)	WOL or BL (5 ft) or BBL (4 ft*)
	41 - 50 mph	WOL or BL (5 ft)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*)
	> 50 mph	BL (6 ft) or BBL (4 ft*)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*)	BL (6 ft) or BBL (4 ft*) or SBL (5 ft*) or SUP (10 ft)

BL = Bicycle Lane, PS = Paved Shoulder, SL = Shared Lane, SUP = Shared Use Path, WOL = Wide Outside Lane, BBL = Buffered Bike Lane, SBL = Separated Bike Lane, \* Add buffer a minimum of 3 feet in width  
Note: Facilities shown are for guidance purposes only. The selection of bicycle facilities will be made on the basis of either an engineering study or the application of engineering judgment.

Sources: Selecting Roadway Design Treatments to Accommodate Bicycles (FHWA, 1994), Urban Bikeway Design Guide (NACTO, 2011), Guide for the Development of Bicycle Facilities (AASHTO, 2012), Separated Bike Lane Planning and Design Guide (FHWA, 2015)



standards and guidance. Where local bicycle networks coincide with state highways, additional analysis and design flexibility may be required to ensure that facilities connect seamlessly and safely for users.

## 4.2 Pedestrian Facilities Design Guidance

Like bikeways, pedestrian facilities guidance can be organized around development patterns and traffic volumes. However, because of the greater demand for walking across all ages and abilities, pedestrian design guidance considers surrounding land uses more closely. In addition to roadway classification and traffic volumes, the pedestrian guidance differentiates between commercial and residential land uses. To provide ample pedestrian space and roadside elements, for example, recommended sidewalk widths along urban commercial streets are 8 to 12 feet compared to 5-foot sidewalks on urban collectors and minor arterials in residential areas. Table 4-2 summarizes the recommended pedestrian facilities design guidance.

Designing pedestrian facilities, of course, extends much further than the recommendations in Table 4-3. The United State Access Board's draft Public Right-of-Way Accessibility Guidelines (PROWAG) ensure that public pedestrian ways

afford the same level of convenience, connection, and safety for all users. Similarly, safe, comfortable, and convenient pedestrian access to and from transit stops and stations presents important opportunities to strengthen and expand the transportation system and provide more travel options.








## 4.3 Additional Design Considerations

In addition to bicycle and pedestrian facility selection and design, there are several additional design considerations that have a significant impact on walking and bicycling. Chief among these are intersection and crossing design, rumble strips, and access controlled corridors. Each of these issues was highlighted during the statewide planning process by stakeholders and the public.

### *Intersection and Crossing Design*

Pedestrian and bicycle safety, comfort, and convenience is strongly affected by intersection and crossing design, especially on higher volume, higher speed multilane roads. In 2015, the National Highway Traffic Safety Administration (NHTSA) reported that 20 percent of all fatal pedestrian crashes and 34 percent of all fatal bicycle crashes occurred

Table 4-2. Pedestrian Facilities Design Guidance

	Roadway Classification and Land Use	Sidewalk/Walkway	Sidewalk/ Walkway Width	Buffer Width
	Rural Highways (ADT < 2,000)	Shoulders preferred	PS (4 ft)	n/a
	Rural/Suburban Highway (ADT ≥ 2,000 and < 1 dwelling unit/acre)	Sidewalks or side paths preferred	SW (5 ft) or SUP (8-10 ft) or PS (6 ft)	2-4 ft
	Suburban Highway (1 to 4 dwelling units/acre)	Sidewalks on both sides	SW (5 ft)	4-6 ft
	Major Arterial (residential)	Sidewalks on both sides	SW (6-8 ft)	4-6 ft
	Urban Collector and Minor Arterial (residential)	Sidewalks on both sides	SW (5 ft)	4-6 ft
	All Commercial Urban Streets	Sidewalks on both sides	SW (8-12 ft)	4-6 ft
	All Streets in Industrial Areas	Sidewalks on both sides preferred	SW (5 ft)	2-4 ft

PS = Paved Shoulder, SUP = Shared Use Path, SW = Sidewalk

Sources: Guide for the Planning, Design, and Operation of Pedestrian Facilities (AASHTO, 2004), Pedestrian Safety Guide and Countermeasure Selection System (FHWA, 2013)

at intersections.<sup>12</sup> The Federal Highway Administration (FHWA), the American Association of State Highway and Transportation Officials (AASHTO), the National Association of City Transportation Officials (NACTO), and the Institute for Transportation Engineers (ITE) have all taken leadership roles by introducing new design guidance on improving intersection and street crossing conditions for pedestrian and bicyclists. Taken together, the guidance focuses on:

- Lowering vehicle speeds;
- Reducing crossing distances; and
- Improving sight distances.

As with pedestrian and bicycle facilities, there is a great deal of flexibility inherent in the many strategies and tools to address vehicle speeds, crossing distances, and sight distances. Moreover, the strategies and tools often complement one another (Figure 4-1) and provide benefits also for motorists and transit riders. Importantly, as discussed earlier, two new guides from ALDOT, *Guidance for Road Safety Assessments and Reviews* (2016) and the *Vulnerable Road Users Guide* (forthcoming, 2017), will complement many of the strategies identified in the national guidance.

### Rumble Strips

Rumble strips are a safety countermeasure present on many roadways throughout Alabama and the nation. Rumble strips are grooved patterns in the shoulder that are designed to alert drivers if they drift off the roadway by creating noise and vibration when the vehicle wheel meets the rumble strip. While rumble strips have proven to be an effective safety countermeasure for motorists, especially on limited access highways and rural highways, they are difficult and sometimes dangerous for bicyclists. Rumble strips can damage a bicycle or cause the bicyclist to lose control. Some bicyclists avoid rumble strips and ride in the general travel lane in high speed or high volume conditions, creating an additional safety hazard.

Recognizing the important safety benefits of rumble strips for motorists, FHWA and AASHTO<sup>34</sup> also recommend taking several measures to ensure rumble strip policies support bicyclists. The principal recommendations follow:

- Rumble strips are not recommended *on shoulders used by bicyclists* unless there is a minimum clear path of 4 feet from the rumble strip to the outside edge of the

Figure 4-1. Intersection and Crossing Design Strategies



paved shoulder or 5 feet to the adjacent curb, guardrail, or other obstacle;

- Utilizing rumble stripes, or locating the rumble strip under the edge line, can reduce the impact of a rumble strip on the shoulder width available for bicyclists;
- Periodic gaps in rumble strips of a minimum of 12 feet should be provided every 40 to 60 feet to allow bicyclists to move across them as needed; and
- Rumble strips should be designed – length, width, spacing, and depth – to better accommodate bicycles.

### Access Controlled Corridors

Access controlled highways can create barriers for pedestrian and bicycle travel through and across transportation corridors. These highway barriers are often relatively short in distance, yet play important roles in overall pedestrian and bicycle network connectivity. In some instances, an access controlled highway is the only reasonable route, for example, to cross a river, and in other cases, it may be a preferred route, for example, to avoid steep topography. Additionally, if not designed with pedestrians and bicyclists in mind, intersecting road underpasses or overpasses can create unsafe travel conditions.

Source: houstontomorrow.org, 2015



To support walking and bicycling in access controlled transportation corridors, state, regional, and local agencies should partner to identify alternate on-road or off-road routes and plan to accommodate pedestrians and bicyclists along intersecting roads. Specific circumstances may also call for constructing parallel facilities either immediately adjacent to or within the right-of-way of an access controlled highway. When parallel facilities are added, design considerations include:

- Physical separation, including barriers, between the pedestrian and bikeway facility and highway;
- Grade separated crossings of intersecting highways; and
- Routing around interchanges.

## 5.0 Key Findings

Implementing the priority strategies, recommended actions, and state bicycle corridor plan requires tools that can inform and guide decision making processes on a regular basis (Figure 5-1). While the focus of implementation is understandably on infrastructure improvements, building safe and efficient transportation options for pedestrians and bicyclists will depend significantly on the coordinated application of all five E's – evaluation and planning, engineering, education, encouragement, and enforcement. Infrastructure or engineering alone cannot maximize the potential benefits from new or improved facilities.

### Implementation Step 1

The first step in plan implementation is to establish a clear and meaningful set of system performance measures that can guide statewide policy and programming decisions across the five E's – reflected in the bicycle and pedestrian plan's priority strategies, recommended actions, and state bicycle corridor plan. As proposed, the system performance measures will initially focus on the bicycle and pedestrian plan's two principal goal areas, safety and access and mobility. Over time, as new goals and objectives are established and new data sources become available, the performance measures can be adjusted and expanded. The recommended performance measures are intended to benchmark walking and bicycling annually in Alabama and include:

1. **Safety Performance Measure:** Annual number of combined non-motorized fatalities and serious injuries (5-year rolling average);
2. **Access and Mobility Performance Measure:** Annual pedestrian commuting mode share (5-year rolling average);
3. **Access and Mobility Performance Measure:** Annual bicycle commuting mode share (5-year rolling average);
4. **Access and Mobility Performance Measure:** Annual consistency with the scheduled right-of-way improvements in the current state ADA Transition Plan;

Figure 5-1. Implementation Process



5. **Access and Mobility Performance Measure:** Percentage of priority bicycle corridors designated as state bicycle routes; and
6. **Access and Mobility Performance Measure:** Total number of vision bicycle corridors designated as state bicycle routes.

### Implementation Step 2

With the system performance measures in place, the next step in the implementation plan shifts to individual projects. Again, while the emphasis is typically on evaluating new and improved facilities, the prioritization criteria are flexible enough to be applied to proposals spanning the five E's. For example, a safety education program and safety improvement project can both be assessed using the prioritization criteria. Like the performance measures, the prioritization criteria all build on the statewide plan's goals and objectives and utilize readily available data.

- a. **Safety Prioritization Criteria:** Documented high crash location (total and percent) or systemic safety need within 500 feet of proposed project;
- b. **Safety Prioritization Criteria:** Perceived high risk locations within 500 feet of proposed project;
- c. **Access and Mobility Prioritization Criteria:** Network completeness (addresses important gaps and/or barriers);
- d. **Access and Mobility Prioritization Criteria:** Percent of traditionally underserved population (total and percent) within 0.5 mile (ped) or 1.5 miles (bike) of project;
- e. **Economic Development Prioritization Criteria:** Jobs (total and percent) within 1.0 mile (ped) or 3.0 miles (bike) of project;
- f. **Quality of Life Prioritization Criteria:** Population (total and percent) living within 0.5 mile (ped) or 1.5 miles (bike) of project;
- g. **Quality of Life Prioritization Criteria:** Community destinations within 1.0 mile (ped) or 3.0 miles (bike) of project;
- h. **Regional and Local Support Prioritization Criteria:** Regional and/or local plan consistency and official and stakeholder support;
- i. **Project Feasibility Prioritization Criteria:** Environmental constraints within 100 feet of the right-of-way and easements of project; and
- j. **Project Feasibility Prioritization Criteria:** Total population (see "Population Served" above) and jobs (see "Access to Jobs" above) divided by estimated cost.

### Implementation Step 3

For infrastructure projects, especially implementation of the state bicycle corridor plan, design guidance can be used to help identify walking and bicycling facility options. The guidance highlights different facilities within a given context, allowing decisions to reflect user types, operating conditions, development patterns, and various constraints. Further, the guidance can be applied routinely in construction, reconstruction, and 3R projects to incorporate pedestrian and bicycle facilities, or to select improvements that will result in the development of designated state bicycle routes.




Addressing three additional systemic design considerations will also help accelerate improvements in pedestrian and bicycle networks across the state. The first two issues, intersection/crossing design and rumble strips, will be addressed in two new ALDOT guidance manuals - *Guidance for Road Safety Assessments and Reviews* and the forthcoming *Vulnerable Road Users Guide*. The third issue, access controlled corridors, will require state, regional, and local coordination to identify alternate on-road or off-road routes and safely connect intersecting pedestrian and bicycle routes. Specific circumstances may also call for constructing parallel facilities (bridges, shared use paths, and walkways) either immediately adjacent to or within the right-of-way of an access controlled highway.



Source: Gresham, Smith and Partners



Table 5-1. Recommendations for Initial Implementation

	Category	Recommendation	
	Implementation Tool	<ul style="list-style-type: none"> <li>• Establish system performance measures</li> <li>• Define project prioritization criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt design guidance</li> <li>• Address additional systemic design considerations</li> </ul>
	Recommended Action	<ul style="list-style-type: none"> <li>• Develop a pedestrian and bicycle safety action plan</li> <li>• Provide technical training on pedestrian and bikeway facility planning and design</li> <li>• Collaborate on local bicycle and pedestrian plans in traditionally underserved communities</li> <li>• Expand walking and bicycling outreach and education programs in traditionally underserved communities</li> </ul>	<ul style="list-style-type: none"> <li>• Inventory and map existing and planned greenways, shared use path, parks, and natural areas</li> <li>• Utilize best practices in greenways and shared use path planning and design</li> <li>• Collaborate with public and private sector partners on economic development opportunities related to greenway and shared use path systems</li> </ul>
	State Bicycle Corridor Plan	<ul style="list-style-type: none"> <li>• Identify one priority corridor in each region annually and develop it as a state designated bicycle route</li> </ul>	<ul style="list-style-type: none"> <li>• Identify one vision corridor statewide every three years and develop it as a state designated bicycle route</li> </ul>

Like other transportation modes, pedestrian and bicycle systems involve a wide range of public and private stakeholders at the federal, state, regional, and local levels. While the state bicycle and pedestrian plan recommends a broad set of strategies, actions, and tools to make walking and bicycling safe, comfortable, and convenient in Alabama, successful implementation will ultimately hinge largely on

strong collaboration and coordination among all public and private stakeholders. Implementation will take time, but given the necessary resources, many of the recommended strategies, actions, and tools are achievable within the near future. Table 5-1 spotlights recommendations that can be candidates for early implementation.

## Endnotes

- <sup>1</sup> United States, Dept. of Transportation, National Highway Traffic Safety Administration, National Center for Statistics and Analysis. *Pedestrians: 2013 Data*. National Highway Traffic Safety Administration, 2015.
- <sup>2</sup> United States, Dept. of Transportation, National Highway Traffic Safety Administration, National Center for Statistics and Analysis. *Bicyclists and Other Cyclists: 2013 Data*. National Highway Traffic Safety Administration, 2015.
- <sup>3</sup> American Association of State Highway and Transportation Officials. *AASHTO Guide for the Planning, Design, and Operation of Bicycle Facilities*. 2012.
- <sup>4</sup> United States, Dept. of Transportation, Federal Highway Administration. *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach*. 2000. <[http://www.fhwa.dot.gov/environment/bicycle\\_pedestrian/guidance/design.cfm](http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design.cfm)>. Accessed Oct. 2016.



# Appendix







## Appendix A: Bicycle and Pedestrian Funding Opportunities

Table A-1. Bicycle and Pedestrian Funding Opportunities: US Department of Transportation, Federal Transit, and Federal Highway Funds (October 2015)

Activity	TIGER Discretionary Grants	Federal Transit Administration	Associated Transit Improvement	Congestion Mitigation and Air Quality Improvement (CMAQ) Program
Access Enhancements To Public Transportation	\$	\$	\$	\$
ADA/504 Self Evaluation/Transition Plan	\$plan			
Bicycle and/or Pedestrian Plans	\$plan	\$		
Bicycle Lanes on Road	\$	\$	\$	\$
Bicycle Parking	\$*	\$	\$	\$
Bike Racks on Transit	\$	\$	\$	\$
Bicycle Share (Capital and Equipment; Not Operations)	\$	\$	\$	\$
Bicycle Storage or Service Centers	\$*	\$	\$	\$
Bridges/Overcrossings For Bicyclists and/or Pedestrians	\$	\$	\$	\$*
Bus Shelters	\$	\$	\$	\$
Coordinator Positions (State or Local)				\$ Limit 1 per state
Crosswalks (New or Retrofit)	\$	\$	\$	\$*
Curb Cuts and Ramps	\$	\$	\$	\$*
Data Collection and Monitoring For Bicyclists and/or Pedestrians	\$plan	\$	\$	
Helmet Promotion (For Bicyclists)				
Historic Preservation (Bicycle and Pedestrian and Transit Facilities)	\$	\$	\$	
Landscaping, Streetscaping (Bicycle and/or Pedestrian Route; Transit Access)	\$*	\$	\$	
Lighting (Pedestrian and Bicyclist Scale Associated With Pedestrian/Bicyclist Project)	\$	\$	\$	
Maps (For Bicyclists and/or Pedestrians)		\$	\$	\$
Paved Shoulders For Bicyclist and/or Pedestrian Use	\$			\$*
Police Patrols				
Recreational Trails	\$*			
Safety Brochures, Books				
Safety Education Positions				
Separated Bicycle Lanes*	\$	\$	\$	\$
Shared Use Paths/Transportation Trails	\$	\$	\$	\$*
Sidewalks (New or Retrofit)	\$	\$	\$	\$
Signs/Signals/Signal Improvements	\$	\$	\$	\$
Signed Bicycle or Pedestrian Routes	\$	\$	\$	\$
Spot Improvement Programs	\$	\$		
Stormwater Impacts Related To Pedestrian and Bicycle Projects	\$	\$	\$	
Traffic Calming	\$	\$		
Trail Bridges	\$			\$*
Trail/Highway Intersections	\$			\$*
Training				\$
Tunnels/Undercrossings for Bicyclists and/or Pedestrians	\$	\$	\$	\$*

Source: [Bicycle and Pedestrian Funding Opportunities: US Department of Transportation, Federal Transit, and Federal Highway Funds](http://www.ftwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm), US Department of Transportation, Federal Highway Administration. [http://www.ftwa.dot.gov/environment/bicycle\\_pedestrian/funding/funding\\_opportunities.cfm](http://www.ftwa.dot.gov/environment/bicycle_pedestrian/funding/funding_opportunities.cfm); Accessed June 2015.

### KEY

\$ = Funds may be used for this activity.

\$plan = Eligible for TIGER planning funds.

\$\* = Eligible, but not competitive unless part of a larger project.

\* TIGER: Subject to annual appropriations.

Highway Safety Improvement Program	National Highway Performance Program	Surface Transportation Program	Transportation Alternatives Program	Recreational Trails Program	Safe Routes to School Program (until expended)	Planning	State and Community Highway Safety Grant Program (Section 402)	Federal Lands and Tribal Transportation Programs
		\$	\$					\$
		\$	\$	\$		\$		\$
		\$	\$			\$		\$
\$	\$	\$	\$		\$			\$
	\$	\$	\$	\$	\$			\$
		\$	\$					\$
	\$	\$	\$					\$
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		\$	\$					\$
		\$	\$ as SRTS		\$			
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		\$	\$ as SRTS		\$		\$	
		\$	\$					\$
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		\$	\$		\$			\$
\$	\$	\$	\$		\$			\$
		\$ as SRTS	\$ as SRTS		\$		\$	
		\$	\$	\$				\$
		\$ as SRTS	\$ as SRTS		\$		\$	
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\* CMAQ: See the CMAQ guidance at [www.fhwa.dot.gov/environment/air\\_quality/cmaq](http://www.fhwa.dot.gov/environment/air_quality/cmaq) for a list of projects that may be eligible for CMAQ funds. Several activities may be eligible for CMAQ funds as part of a bicycle and pedestrian-related project, but not as a highway project. CMAQ funds may be used for systemwide bicycle, pedestrian, or transit related improvements, but generally not for projects in discrete locations. Also, CMAQ funds may be used for shared use paths, but may not be used for trails that are primarily for recreational use.

\* STP and TAP: Activities marked "as SRTS" means the activity is eligible only as an SRTS project benefiting schools for kindergarten through 8th grade.

\* Separated Bicycle Lanes also may be known as "protected bike lanes" or "cycle tracks".

## Appendix B: Data Sources for Demand Analysis and Suitability Analysis

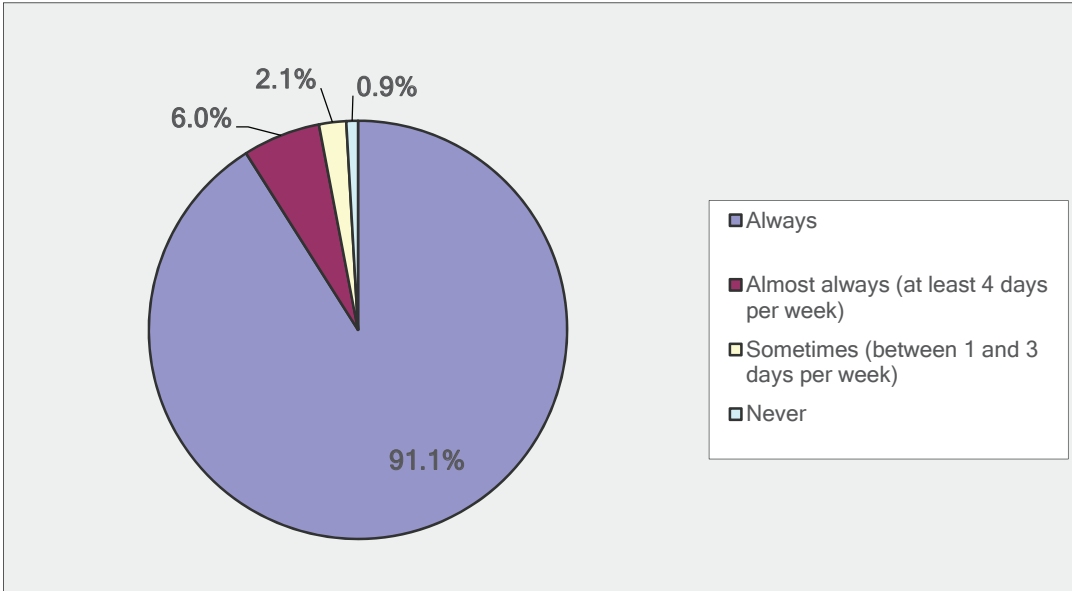
- **Colleges and Universities** – Integrated Post-Secondary Education System (IPEDS), National Center for Education Statistics, US Department of Education. Accessed via data from Oak Ridge National Laboratory, Geographic Information Sciences and Technology Group.
- **Employment** – US Census Bureau. 2013 American Community Survey – Block Group Data. Generated by Megha Young using American FactFinder. <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.
- **Fixed route transit service** – “Alabama Transit Links.” American Public Transportation Association. <http://www.apta.com/resources/links/unitedstates/Pages/AlabamaTransitLinks.aspx> Accessed July 2015.
- **National Forest Lands** – USGS National Boundary Dataset. Accessed via data from the Tennessee Valley Authority Geographic Information and Engineering.
- **Population** – US Census Bureau. 2013 American Community Survey – Block Group Data. Generated by Megha Young using American FactFinder. <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>
- **Poverty** – US Census Bureau. 2013 American Community Survey – Block Group Data. Generated by Megha Young using American FactFinder. <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.
- **Recreational Trails** – “MyTrails – High Quality Trail and POI Maps Map.” GPS File Depot. <http://www.gpsfiledepot.com/maps/view/53> Accessed June 2015. “TeleAtlas North America, Inc.” Accessed via ESRI.
- **Roadways** – Data on average daily traffic, percentage of heavy trucks, and number of lanes were provided by ALDOT.
- **Scenic Byways** – Data provided by ALDOT.
- **Schools** – Common Core of Data, National Center for Education Statistics, US Department of Education. Accessed via data from Oak Ridge National Laboratory, Geographic Information Sciences and Technology Group.
- **State Historic Sites** – Data collected from Alabama Historical Commission (<http://www.preserveala.org/>) and geocoded by GS&P.
- **State Parks** – US Department of Agriculture, US Forest Service. Accessed via data from the FSGeodata Clearinghouse. <http://data.fs.usda.gov/geodata/>
- **Wildlife Management Areas** – US Department of Commerce, National Oceanic and Atmospheric Administration (NOAA). Accessed via data from Data.gov. <http://catalog.data.gov/dataset/alabama-esi-mgt-management-area-polygons>



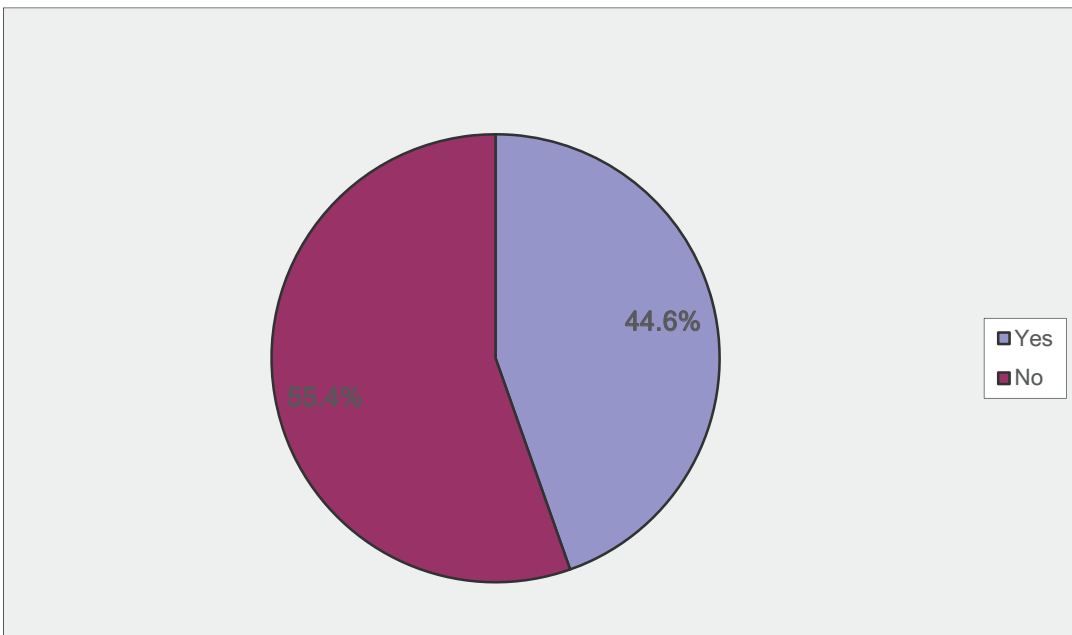
## Appendix C: Online Survey Results

**ALABAMA STATEWIDE BICYCLE AND PEDESTRIAN PLAN**  
**SUMMARY OF ONLINE SURVEY**

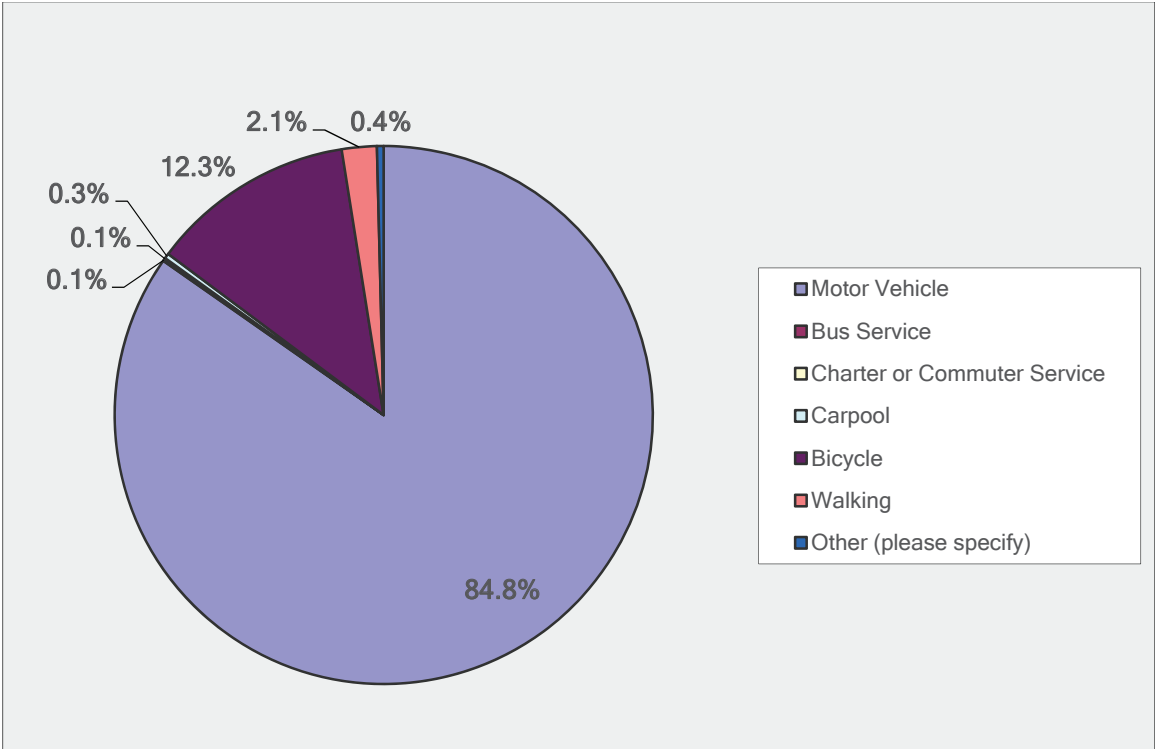
**1. Do you have access to a motor vehicle?**



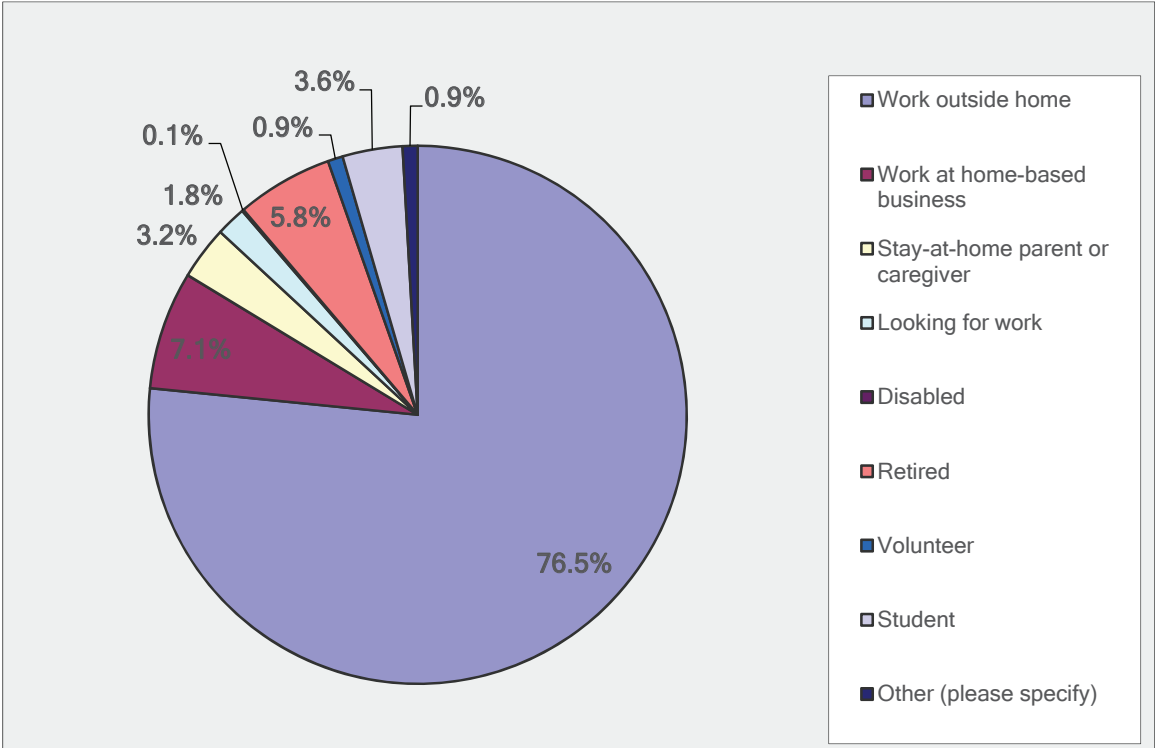
**2. Do you have access to public transportation?**



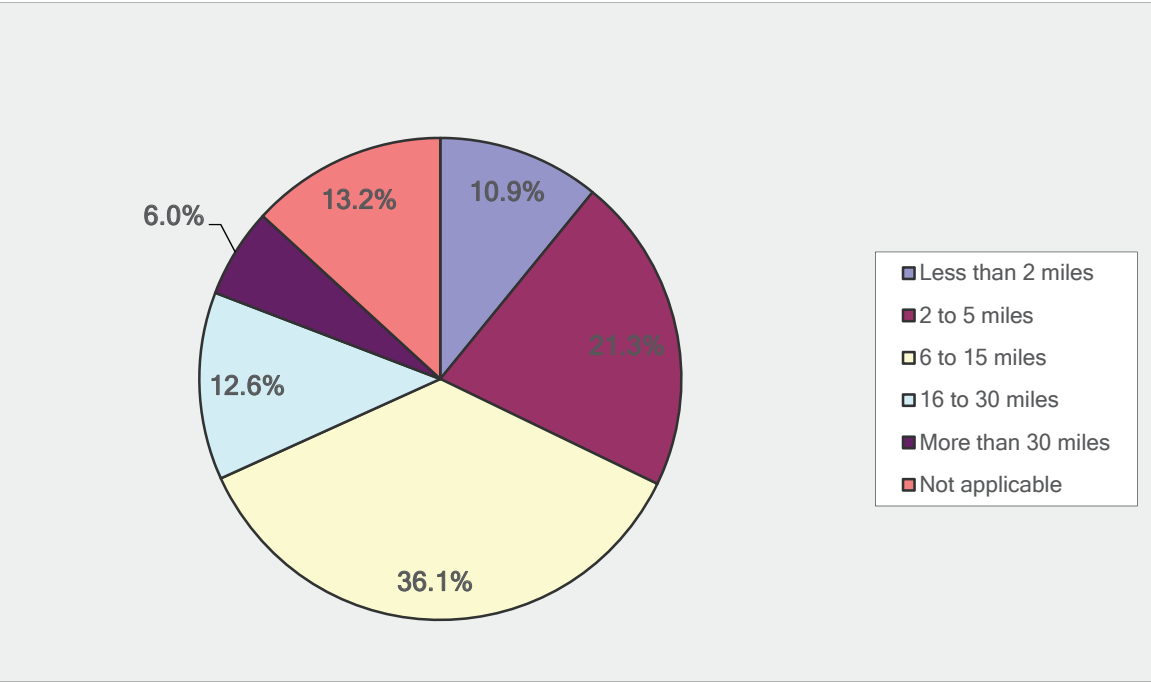
**3. Select the mode of transportation you use most often.**



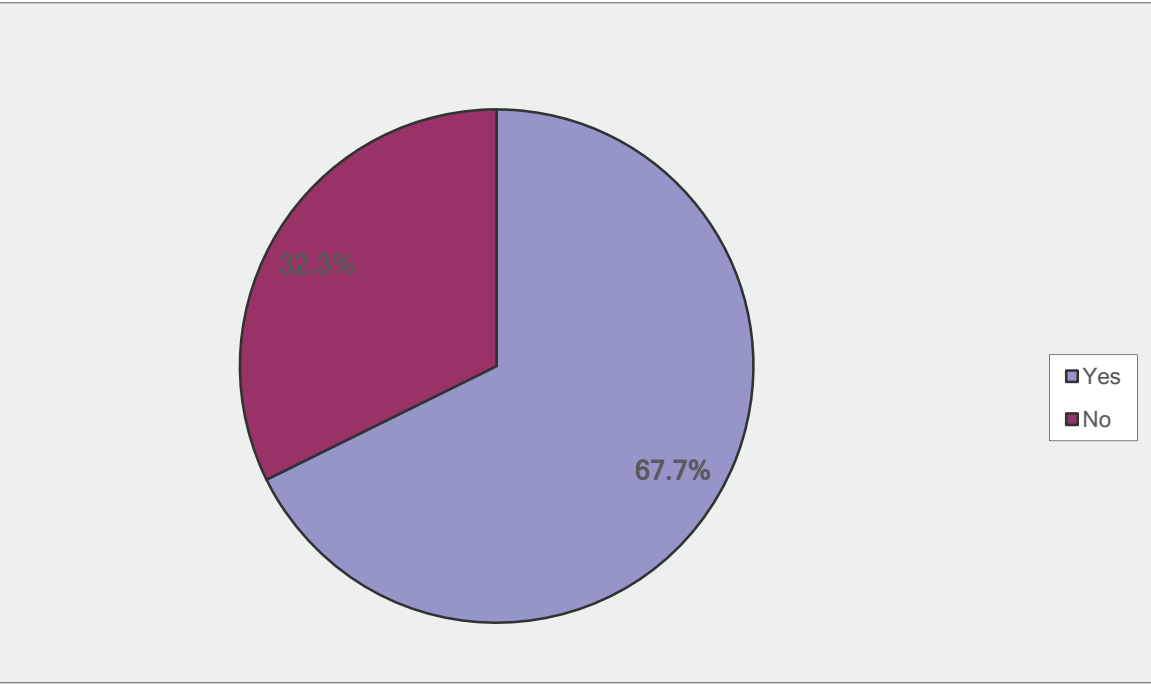
**4. Which of these best describes you?**



5. How long is your typical commute to work or school?

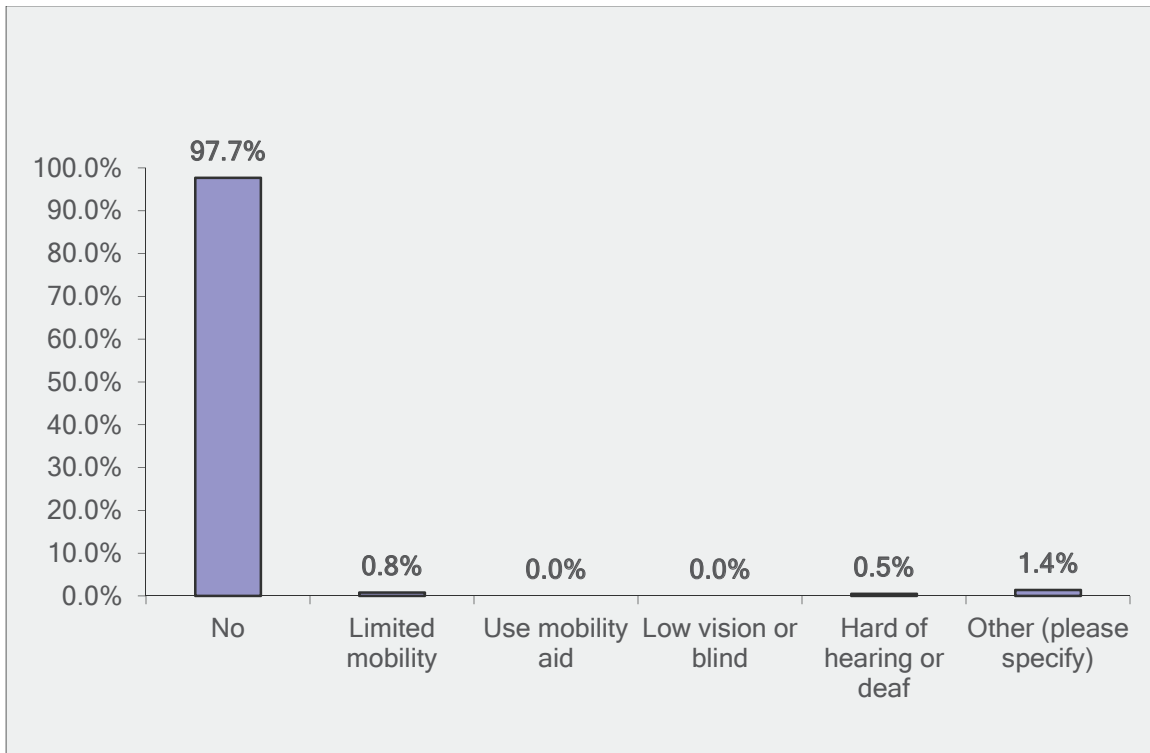


6. Was bicycling or walking friendliness an important consideration in your choice of where to live or work?

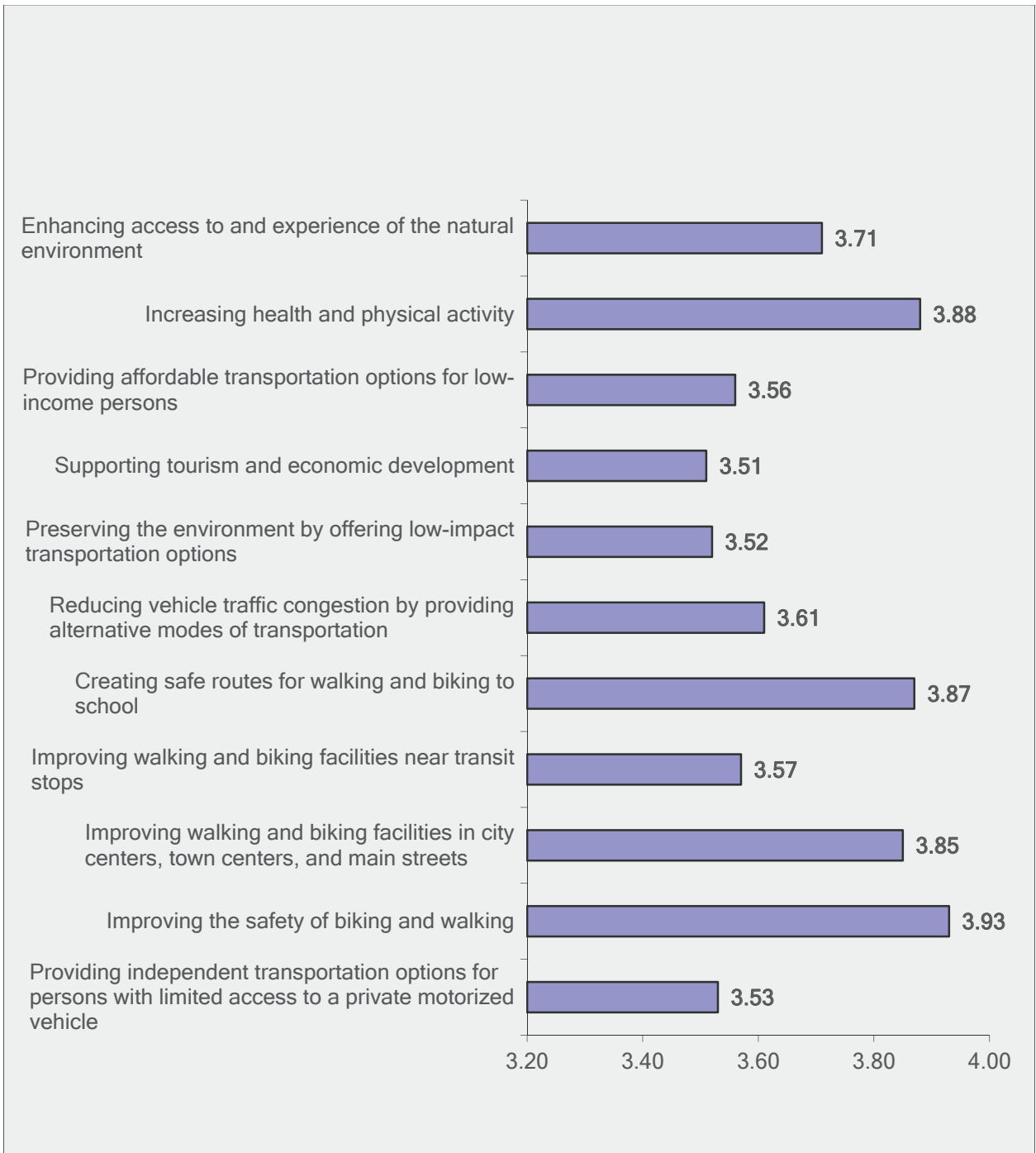




**7. Do you have any physical limitations that affect walking or cycling? (Check all that apply.)**



**8. What do you consider the most important reasons for investing in bicycling and walking?**



*Participants selected among these options, and each response was given a score as follows:*

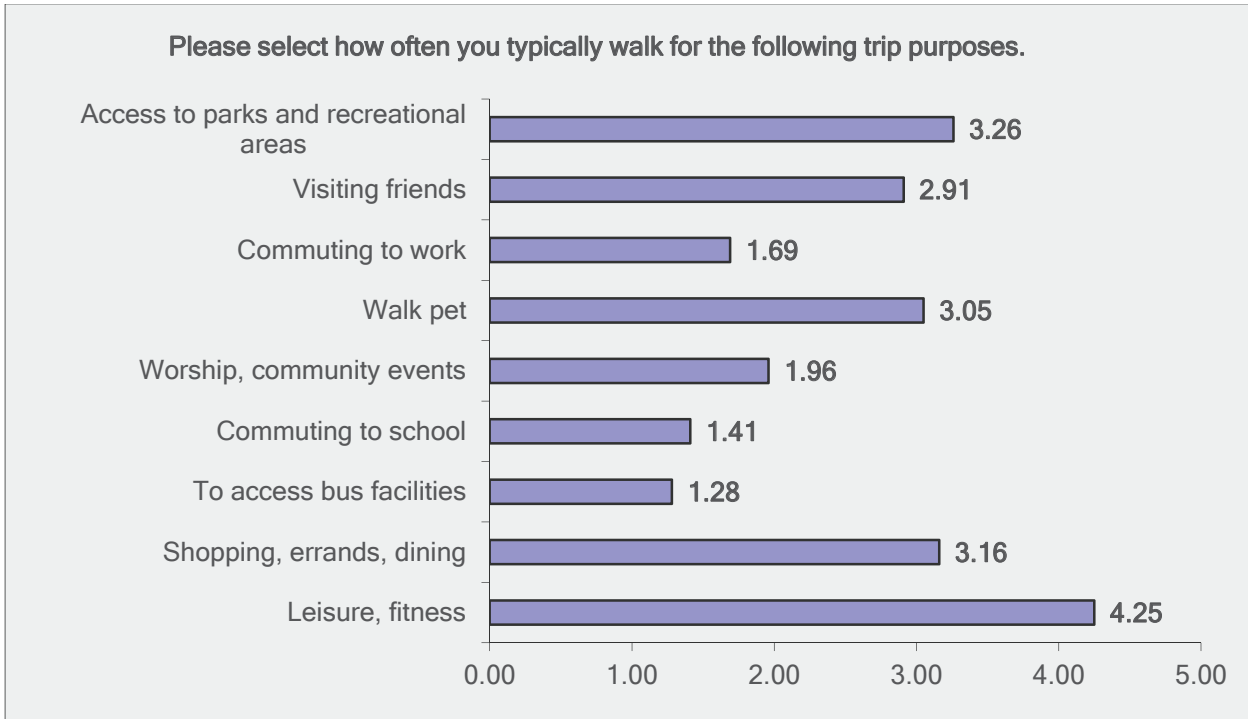
*Very Important (4.00)*

*Somewhat Important (3.00)*

*Somewhat Unimportant (2.00)*

*Not Important at All (1.00)*

**9. Please select how often you typically walk for the following trip purposes.**



Participants selected among these options, and each response was given a score as follows:

Daily (5.00)

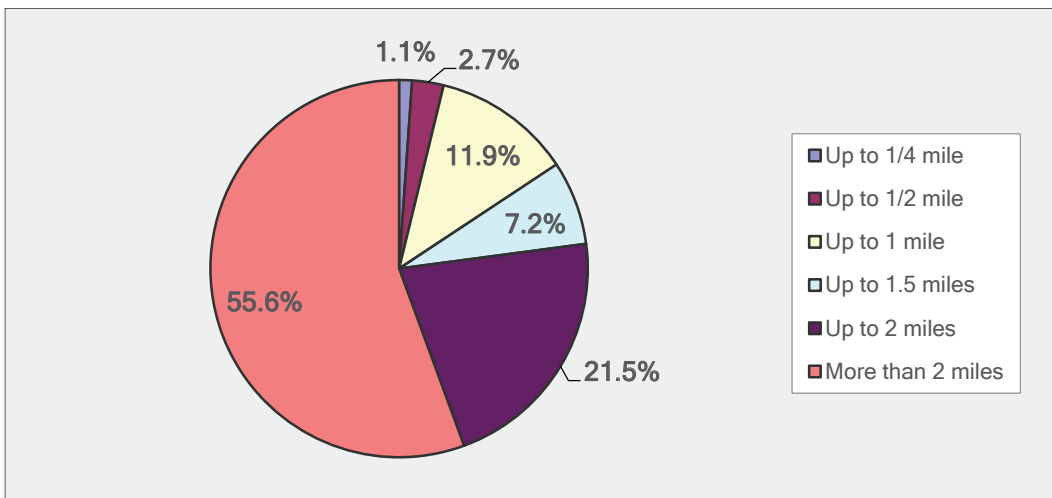
Weekly (4.00)

Monthly (3.00)

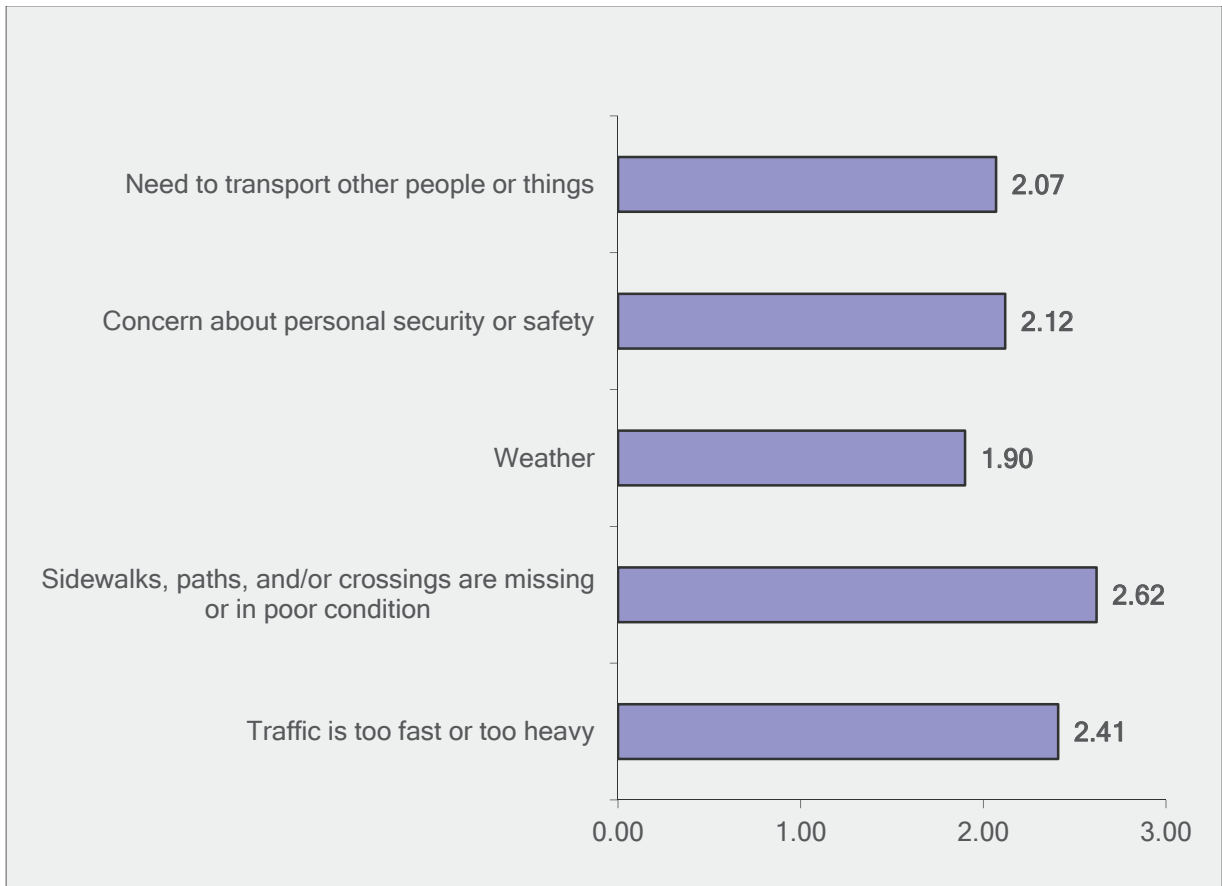
Rarely (2.00)

Never (1.00)

**10. For a typical walk, what distance is comfortable for you?**



**11. What prevents you from walking more often for short trips?**



*Participants selected among these options, and each response was given a score as follows:*

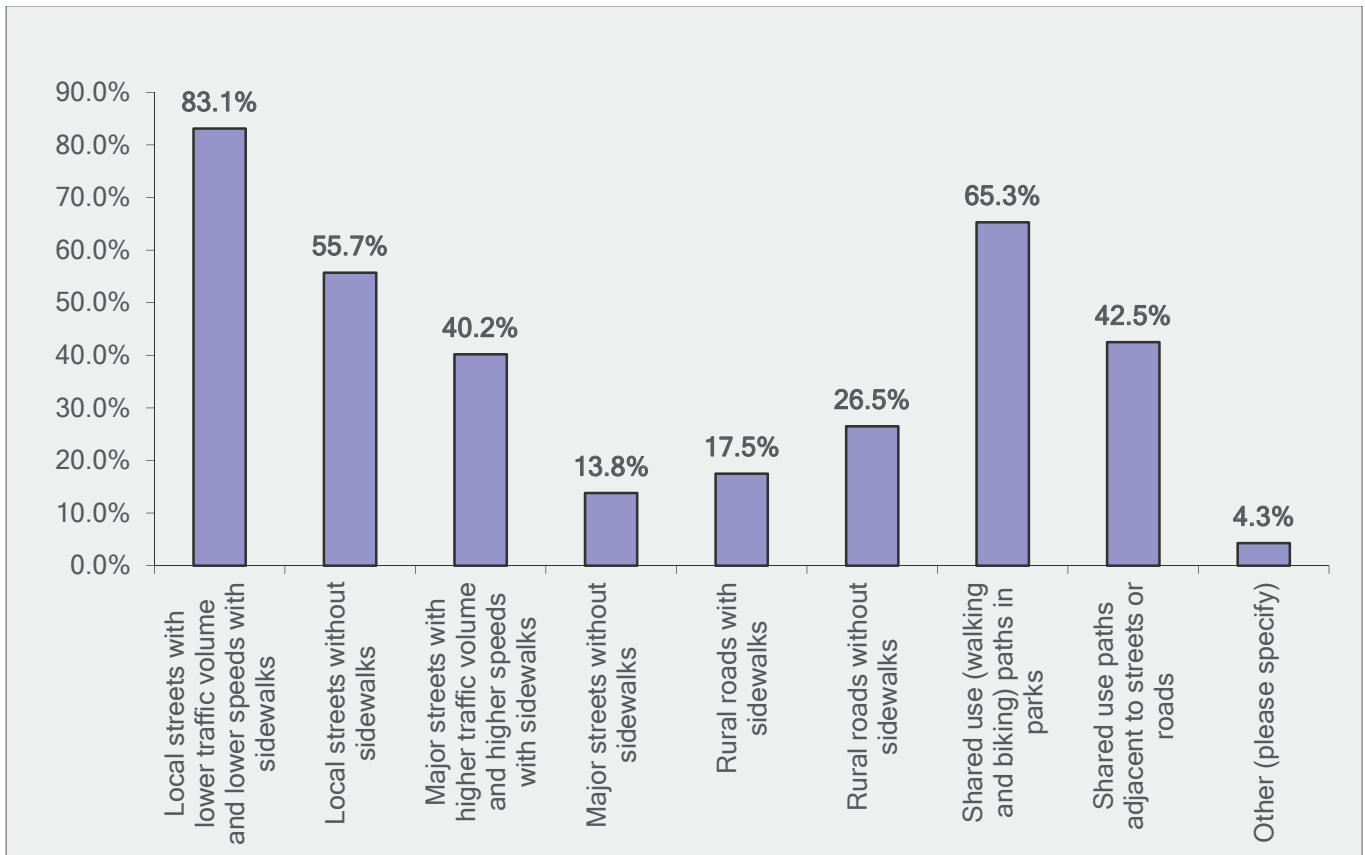
*Major Obstacle (3.00)*

*Minor Obstacle (2.00)*

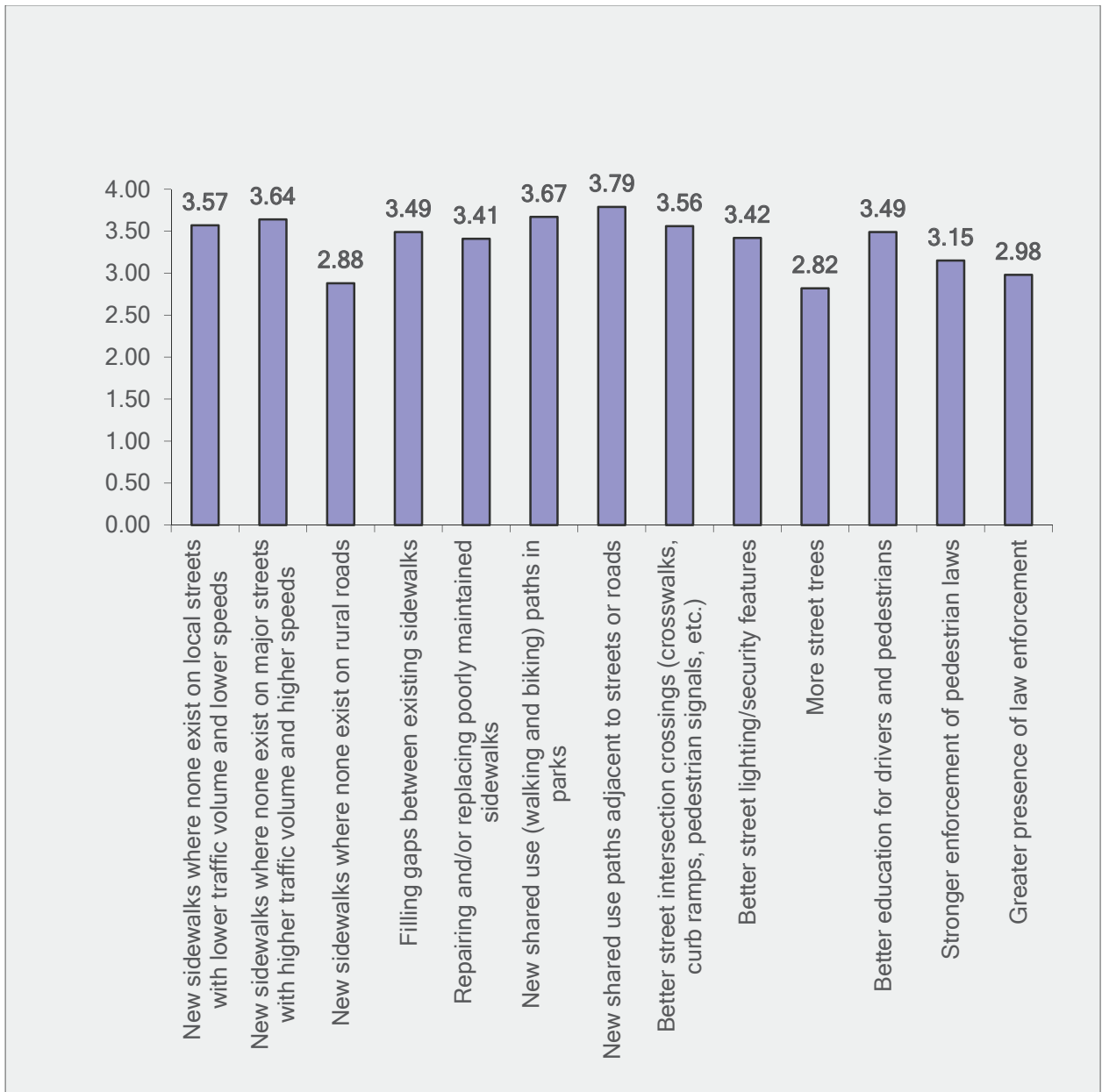
*Not an Obstacle (1.00)*



**12. What types of facilities do you use when you walk? (Check all that apply.)**



**13. Which of these improvements do you think will help increase walking in your community?**



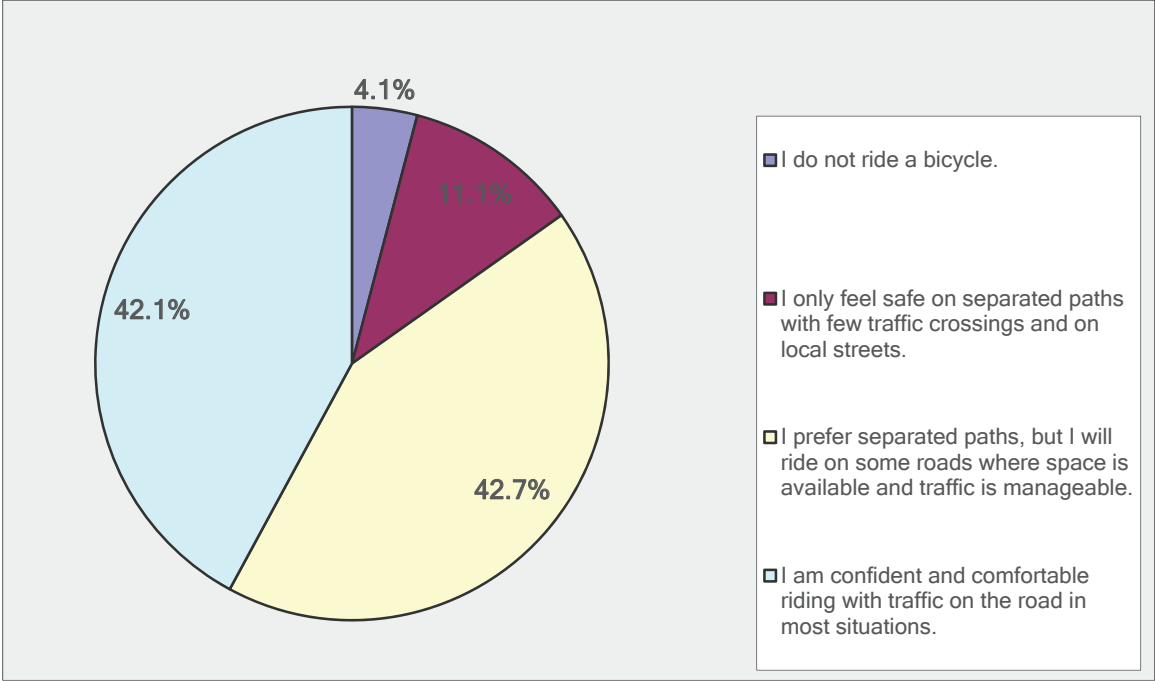
*Participants selected among these options, and each response was given a score as follows:*

- Will Help the Most (4.00)*
- Will Help Somewhat (3.00)*
- Will Probably Not Help (2.00)*
- Will Not Help at All (1.00)*

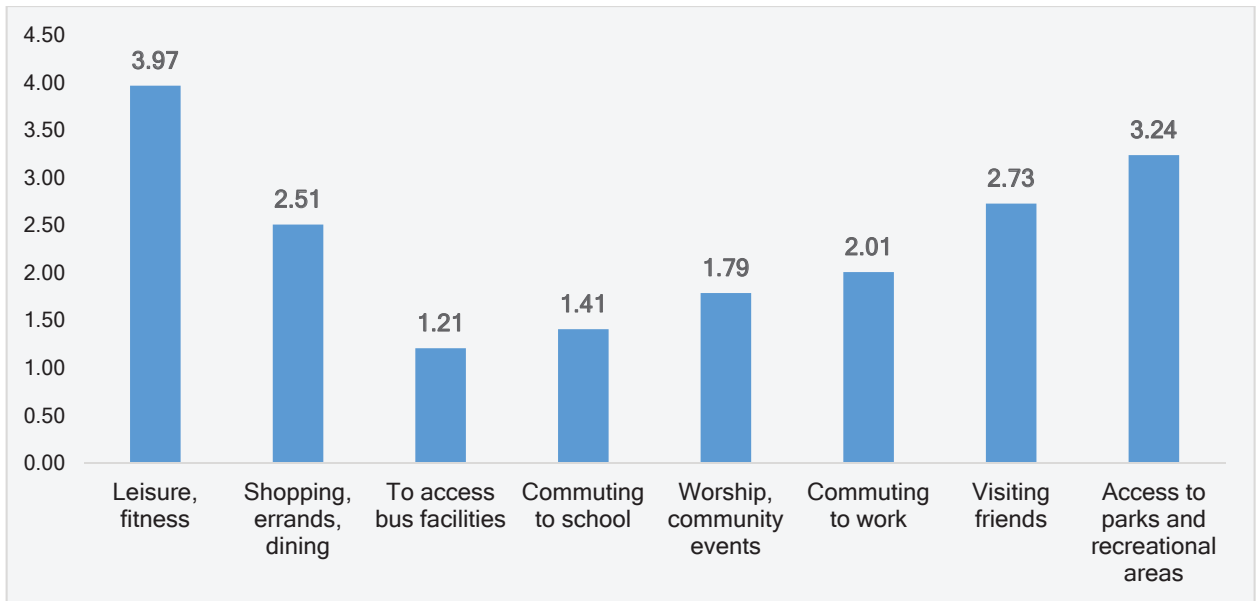
**14. Which routes or streets are your priorities for pedestrian improvements?**

*Participants provided 1,155 routes and streets for this question. This list will be provided to the appropriate ALDOT District Offices and metropolitan planning organizations (MPOs) as applicable.*

**15. How would you describe your level of comfort or confidence bicycling?**



**16. Please select how often you typically bicycle for the following trip purposes.**



Participants selected among these options, and each response was given a score as follows:

Daily (5.00)

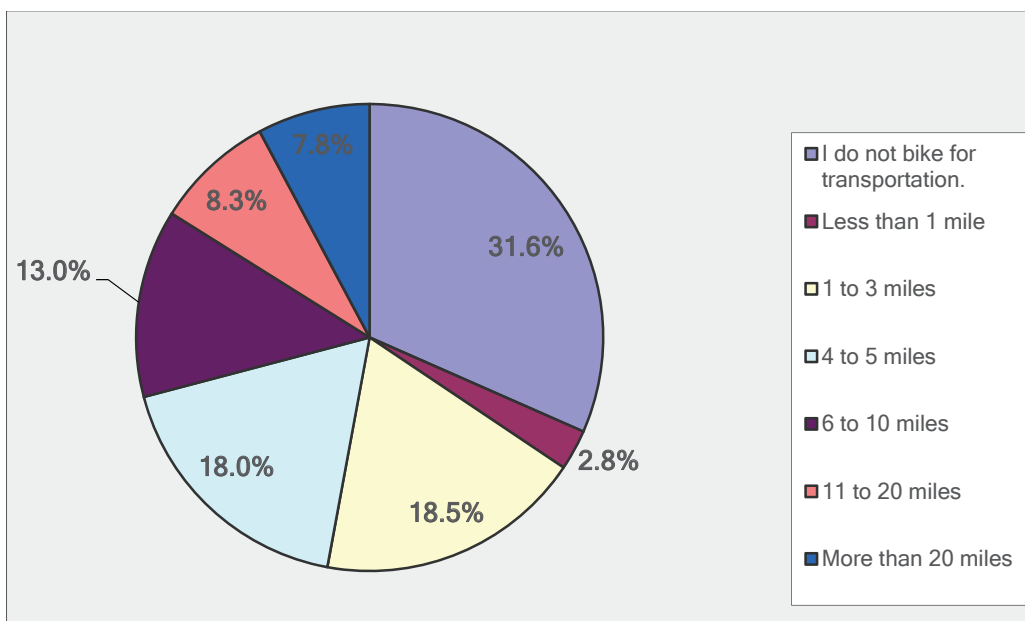
Weekly (4.00)

Monthly (3.00)

Rarely (2.00)

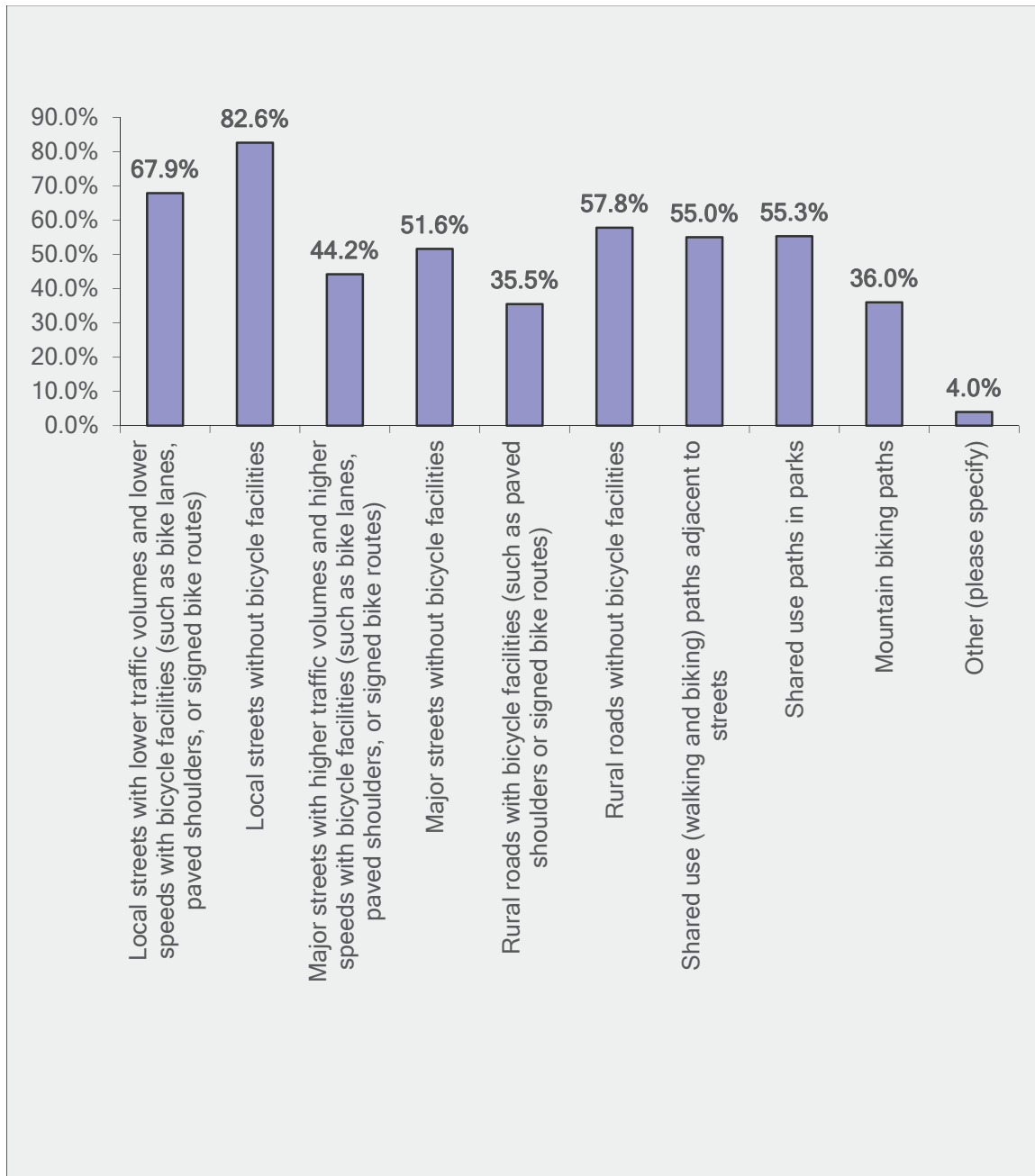
Never (1.00)

**17. What is the distance of your typical ride for transportation purposes, rather than for fitness or leisure?**

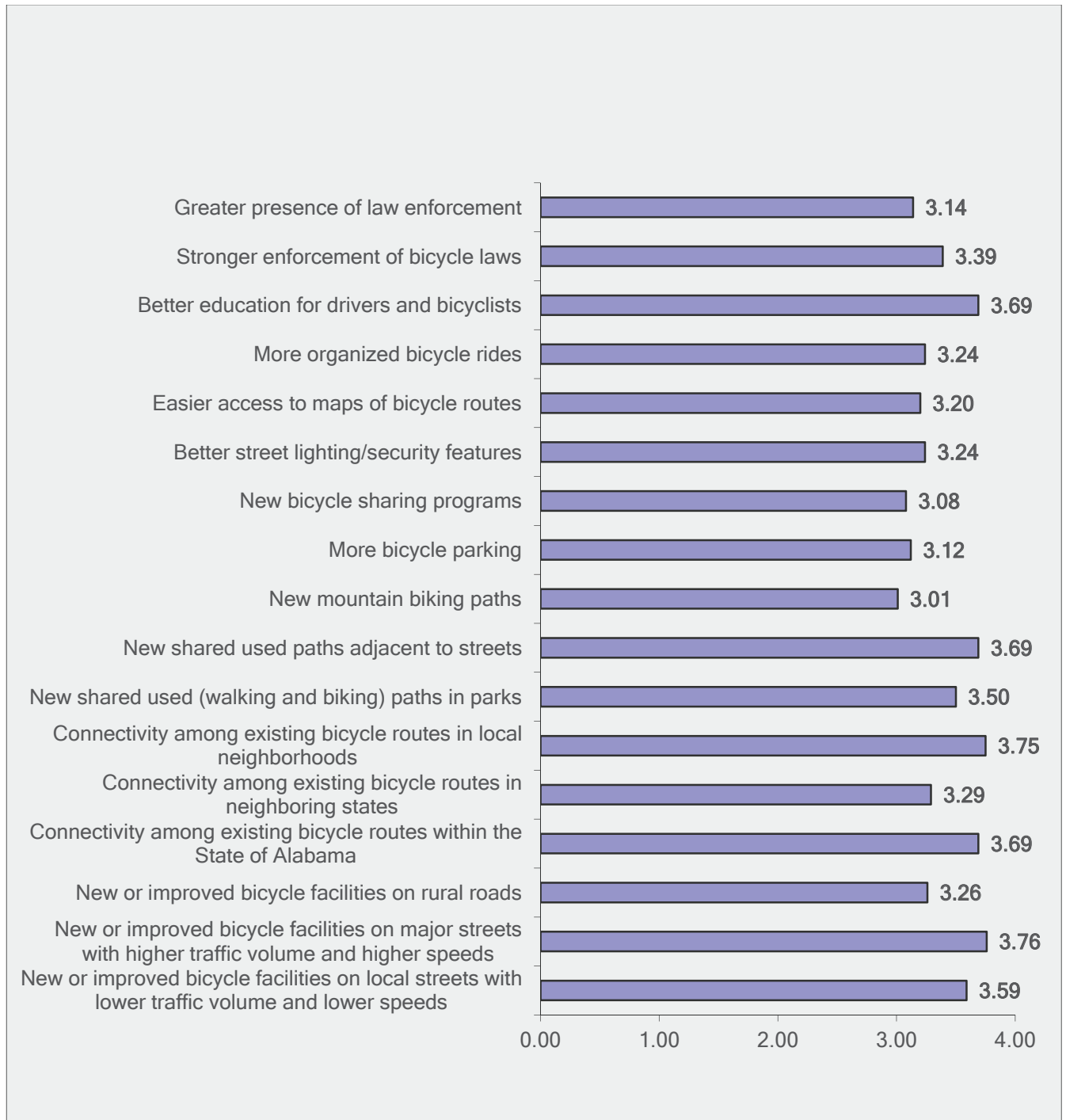




**18. What types of facilities do you currently use when you bike? (Check all that apply.)**



**19. Which of these improvements do you think will help increase bicycling in your community?**



*Participants selected among these options, and each response was given a score as follows:*

*Will Help the Most (4.00)*

*Will Help Somewhat (3.00)*

*Will Probably Not Help (2.00)*

*Will Not Help at All (1.00)*

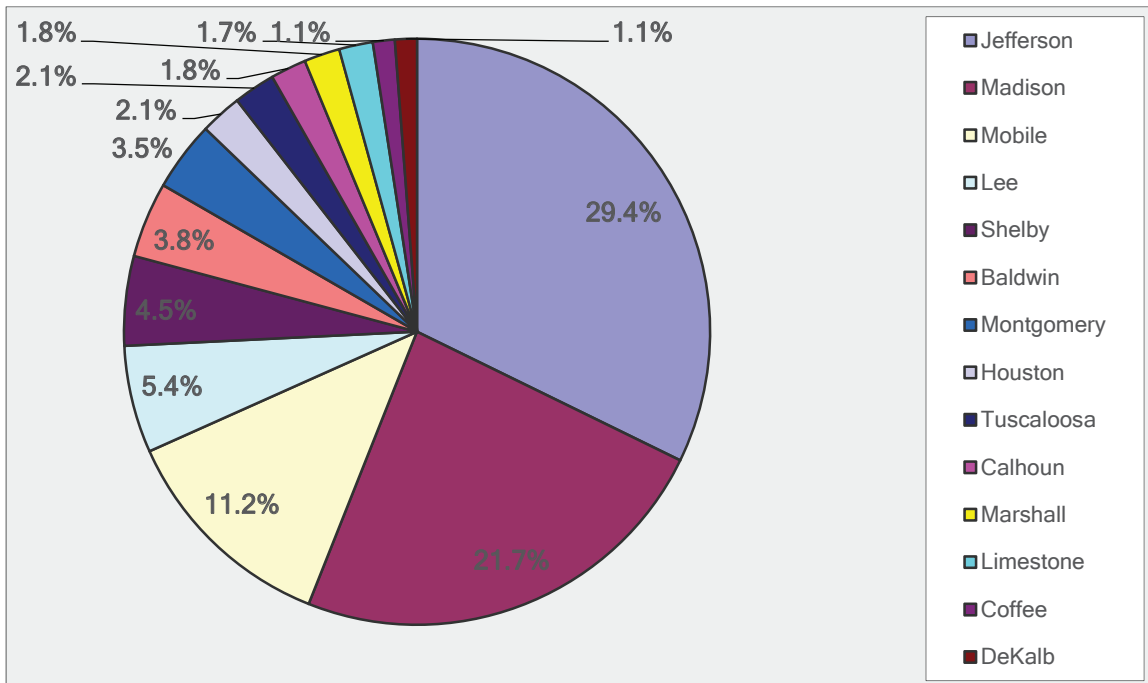
**20. Which routes or streets are your priorities for bicycle improvements?**

Participants provided 1,256 routes and streets for this question. This list will be provided to the appropriate ALDOT District Offices and metropolitan planning organizations (MPOs) as applicable.

**21. Please enter any additional input you would like to share about walking or biking in your community.**

Participants provided 271 comments in this section. This input has been used by ALDOT for the development of statewide bicycle corridors and will be shared with ALDOT District Offices and metropolitan planning organizations (MPOs) as appropriate.

**22. In which county do you reside?**

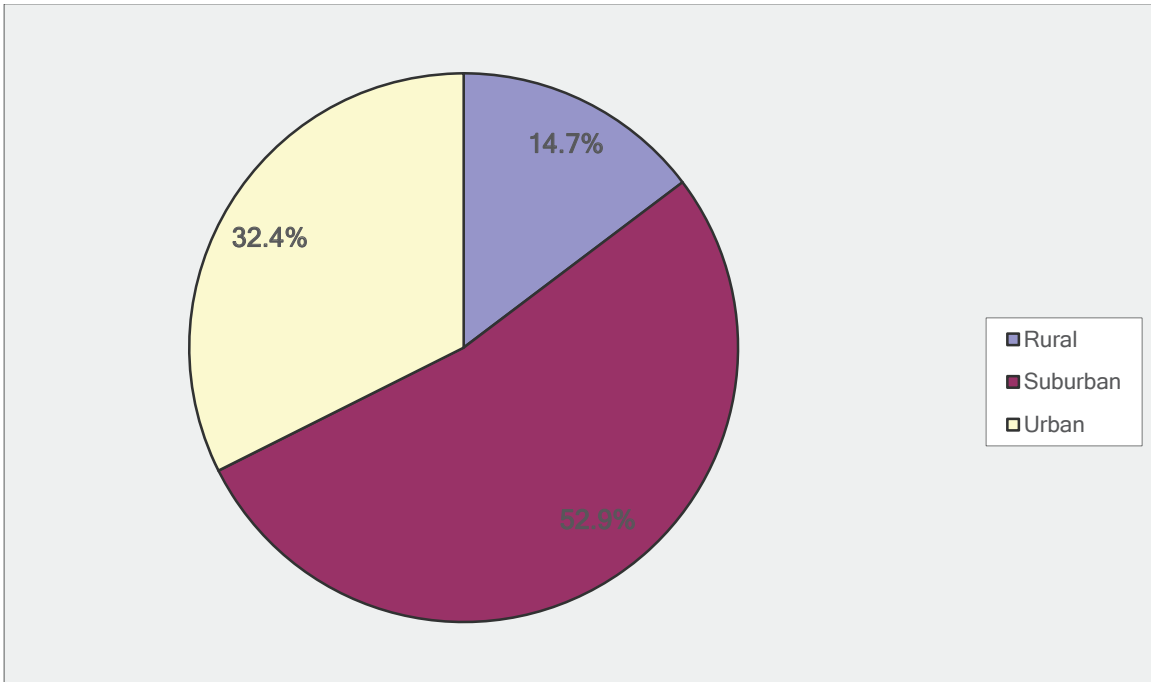


Note: In addition to the counties shown above, fewer than 1% of all respondents responded that reside in one of the following counties – Cleburne, Dale, Etowah, Morgan, Autauga, Elmore, St. Clair, Bibb, Blount, Colbert, Geneva, Talladega, Barbour, Butler, Chilton, Cullman, Franklin, Russell, and Walker Counties.

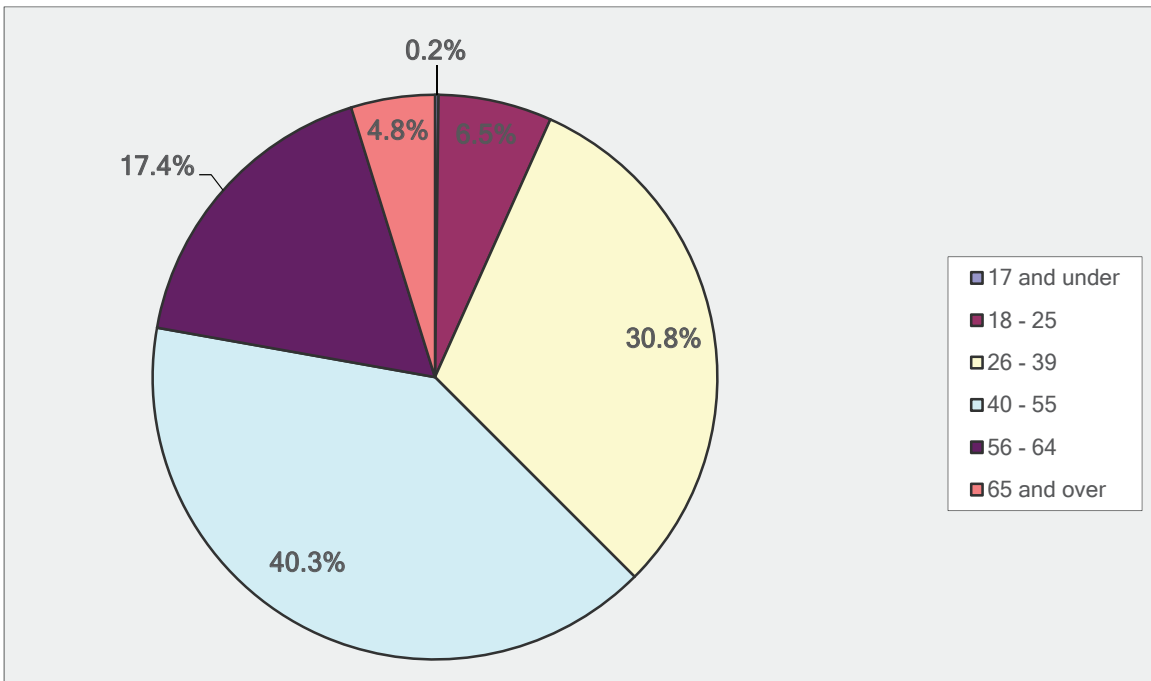
**23. What is your zip code?**

Participants provided 650 responses to this question.

24. In what type of community do you live?



25. What is your age range?





## Appendix D: Public Workshops #1 Summary

**ALABAMA STATEWIDE BICYCLE AND PEDESTRIAN PLAN**  
**SUMMARY OF REGIONAL PUBLIC WORKSHOPS**

**Overview**

In January 2016, a series of five regional public workshops was held for the Statewide Bicycle and Pedestrian Plan – one in each of the five ALDOT regions. The workshops were structured as an open house format so that attendees could come at any time between the hours of 4:00 PM and 7:00 PM.

The meetings were held on the following dates and locations.

- *January 19, 2016*  
North Region (Guntersville) – ALDOT Guntersville Area Office, 23445 US Highway 431, Guntersville, AL 35976
  
- *January 20, 2016*  
East Central Region (Birmingham) – ALDOT Birmingham Area Office, 1020 Bankhead Highway West, Birmingham, AL 35204
  
- *January 21, 2016*  
West Central Region (Tuscaloosa) – ALDOT Tuscaloosa Area Office, 2715 East Skyland Blvd, Tuscaloosa, AL 35405
  
- *January 26, 2016*  
Southwest Region (Mobile) – ALDOT Southwest Region Office, 1701 I-65 West Service Road, Mobile, AL 36618
  
- *January 27, 2016*  
Southeast Region (Montgomery) – ALDOT Montgomery Area Office, 1525 Coliseum Blvd, Montgomery, AL 36110

A total of 149 people attended the regional workshops. The following table displays the number of attendees at each of the regional workshops. These figures do not include ALDOT staff or members of the project team.

<b>Workshop</b>	<b>Number of Attendees</b>
North Region (Guntersville)	18
East Central Region (Birmingham)	55
West Central Region (Tuscaloosa)	10
Southwest Region (Mobile)	48
Southeast Region (Montgomery)	18

<b>TOTAL ATTENDEES</b>	<b>149</b>
------------------------	------------

In addition, an online version of the workshops was made available for those who were not able to participate in person. The “virtual workshop” was designed as a survey and provided an opportunity for participants to respond to and provide input on the same questions and information presented at the regional workshops. The survey was distributed via email to the project stakeholder database and made available on the ALDOT website for several weeks following the workshops. The results of the virtual workshop will be compiled after the survey has closed.

This document gives an overview of the activities conducted at the workshop; the input obtained from these activities; and a summary of the comments received.

## **Workshop Activities**

Below is a description of each of the activities conducted at the workshops.

### **A. Overview Presentation**

A PowerPoint slide presentation ran on a continuous loop throughout the workshop, allowing attendees to view the information at any time. The presentation gave a brief overview of the project, including its purpose, schedule and activities, the results of the first project survey conducted in 2015, and a summary of existing bicycle and pedestrian conditions. A copy of the presentation can be seen at the end of this appendix.

### **B. Statewide Demand and Suitability Maps (Bicycle)**

At this station, attendees had the opportunity to view maps of the statewide bicycle demand and suitability analyses that were performed during the development of the draft bicycle corridors. Project team members were on hand to explain the criteria and methodology for assessing the demand for bicycling, as well as the suitability of corridors to accommodate bicycling. The display also demonstrated how the results of the analyses were used to help develop the draft bicycle corridors.

### **C. Goals and Objectives Exercise**

The draft goals and objectives for the plan were presented on large display boards, and attendees were given sticker dots to indicate how important they believe these are to bicycle and pedestrian transportation in Alabama. Participants could rate each item as “Very Important,” “Important,” or “Less Important.”

Following the workshops, the project team recorded all the responses and assigned scores to rating categories as follows.

- Very Important = 3 points
- Important = 2 points
- Less Important = 1 point

For each item, the number of responses in each category was multiplied by the assigned score. This result was then divided by the total number of responses for the item, which produced the weighted score. The weighted score for each item ranges from one (1) to three (3), with one (1) indicating the item is least important and three (3) indicating the item is most important. The results of this analysis are presented in the attached table and charts.

**Table 1. Weighted Score for Goals and Objectives**

<b>Goal A. Improve safety for bicyclists and pedestrians of all ages and abilities.</b>	
<i>Objective 1: Identify and address high priority safety locations and corridors.</i>	
Track, analyze, and report annual bicycle and pedestrian safety statistics.	2.55
Prioritize improvements and programs with the greatest potential to reduce bicycle and pedestrian crashes, injuries, and fatalities.	2.94
Evaluate maintenance policies and construction zone protocols to ensure safe walking and bicycling conditions.	2.51
<i>Objective 2: Educate users on safe interactions among motorists, bicyclists, and pedestrians.</i>	
Develop educational materials and public information campaigns on safe walking, biking, and driving (e.g., "Share the Road" and pedestrian crossing laws).	2.71
Review and regularly update driver training and testing materials to include information on bicycle and pedestrian safety and laws.	2.74
<i>Objective 3: Implement laws and regulations consistently.</i>	
Support statewide education and training programs on bicycle and pedestrian safety for state and local law enforcement officials.	2.68
Collaborate with state and local law enforcement officials on improving consistency in bicycle and pedestrian crash reporting.	2.52
<b>Goal B. Develop complete and integrated bicycle and pedestrian systems.</b>	
<i>Objective 1: Expand and improve bicycle and pedestrian networks along state highway corridors.</i>	
Develop and implement a bikeway designation program, including signage and interjurisdictional coordination.	2.82
Collaborate with national and local partners on implementing the US Bicycle Route System in Alabama.	2.71
Expand design guidelines for bicycle and pedestrian facilities based on national guidance.	2.37
<i>Objective 2: Incorporate bicycle and pedestrian needs in all phases of project development, routine maintenance, and system preservation.</i>	
Increase data collection and analysis of bicycle and pedestrian safety, traffic, and geometric conditions and needs.	2.47
Update project development policies and procedures to ensure that bicycle and pedestrian needs are evaluated in all projects.	2.77
Integrate bicycle and pedestrian improvements as part of regular maintenance activities.	2.77



<b>Objective 3: Coordinate state improvements with local and regional goals and objectives.</b>	
Target bicycle and pedestrian improvements along state highway corridors that are identified in local and regional plans, or in consultation with local officials.	2.80
Partner with local jurisdictions on flexible design approaches for bicycle and pedestrian facilities.	2.83
Coordinate annual resurfacing, restoration, and rehabilitation (3R) and maintenance projects with local and regional bicycle and pedestrian plans.	2.83
<b>Goal C. Support state, regional, and local economic development.</b>	
<b>Objective 1: Link bicycle and pedestrian systems with other modes of transportation (transit, air, rail).</b>	
Coordinate with regional and local transit agencies on bicycle and pedestrian improvements in transit corridors.	2.76
Coordinate with regional and local airport authorities and passenger rail operators on bicycle and pedestrian improvements to/from airports and rail stations.	2.11
Support secured and long-term bicycle parking at transit stops, airports, rail stations, and park and ride lots along state highways.	2.12
<b>Objective 2: Ensure bicycle and pedestrian connectivity in major employment and activity centers.</b>	
Identify priority bicycle and pedestrian improvement areas in consultation with local officials and stakeholders.	2.81
Work with post-secondary educational institutions to improve bicycling and walking to and from campuses.	2.67
<b>Goal D. Increase travel options for all transportation system users and protect the natural environment.</b>	
<b>Objective 1: Expand and improve bicycle and pedestrian access to basic goods and services such as food, education, health care, parks, and transit.</b>	
Improve connectivity between bicycle and pedestrian facilities on state highways, and local greenway and shared use path systems.	2.84
Increase access to walking and bicycling facilities for people unable to operate a motor vehicle and for households without personal vehicles.	2.84
<b>Objective 2: Encourage walking and bicycling for shorter everyday, regional, and statewide trips.</b>	
Develop a state bicycle and pedestrian webpage that includes maps, updates on policies, programs, and projects, and links to additional resources.	2.62
Coordinate with state and local agencies and community organizations to promote the benefits of walking and bicycling.	2.55
Encourage local partners to utilize alternative local routes in higher speed, higher volume state highway corridors.	2.44
<b>Objective 3: Preserve and protect the natural environment.</b>	
Expand and improve the bicycle and pedestrian networks to, from, and within natural and scenic areas, including national, state, regional, and local parks.	2.91
Coordinate state transportation planning and local land use planning to ensure walking and bicycling facilities are included in local plans and projects along state highways.	2.83

Figure 1. Weighted Scores for Goal A

Goal A. Improve safety for bicyclists and pedestrians of all ages and abilities.

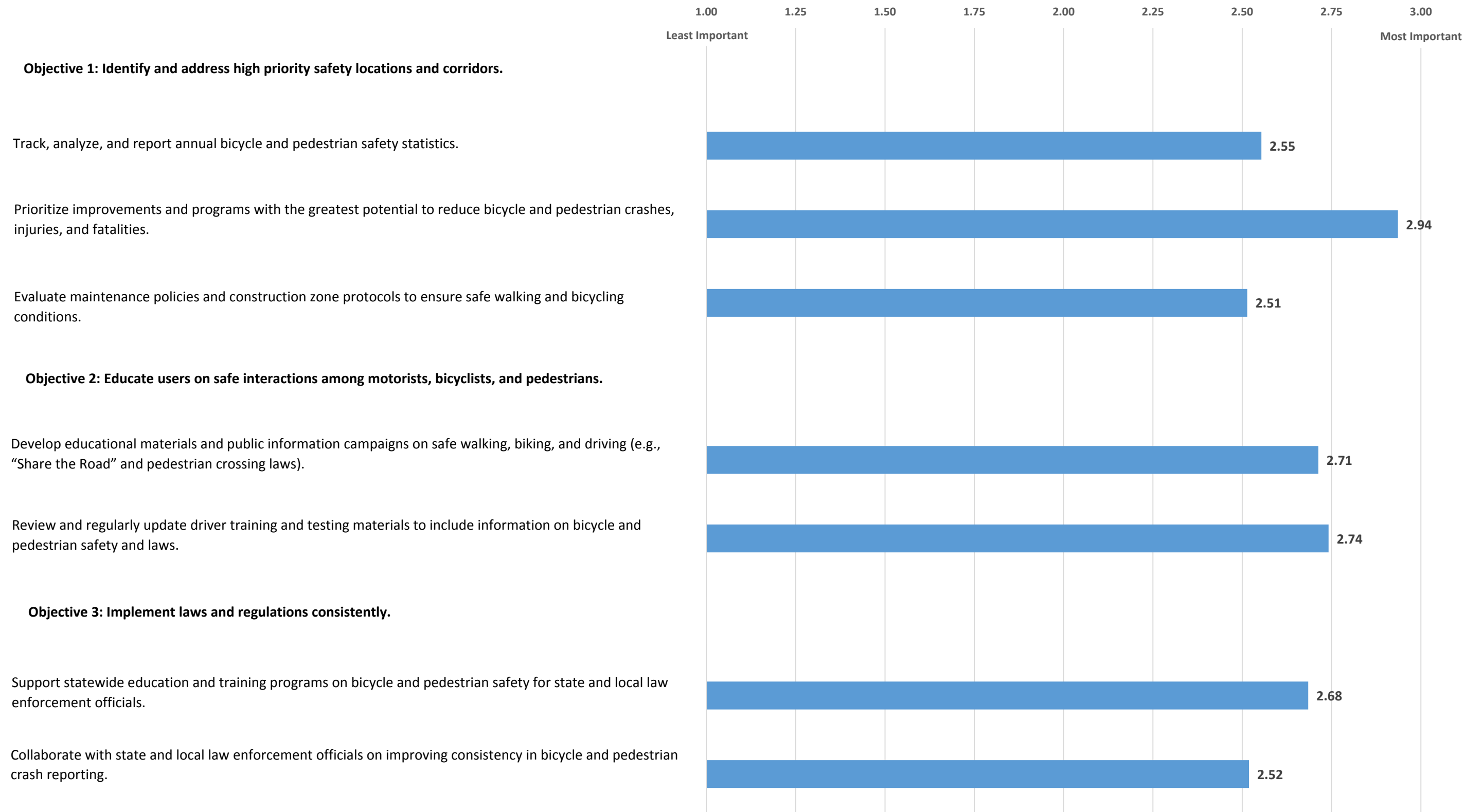


Figure 2. Weighted Scores for Goal B

Goal B. Develop complete and integrate bicycle and pedestrian systems.

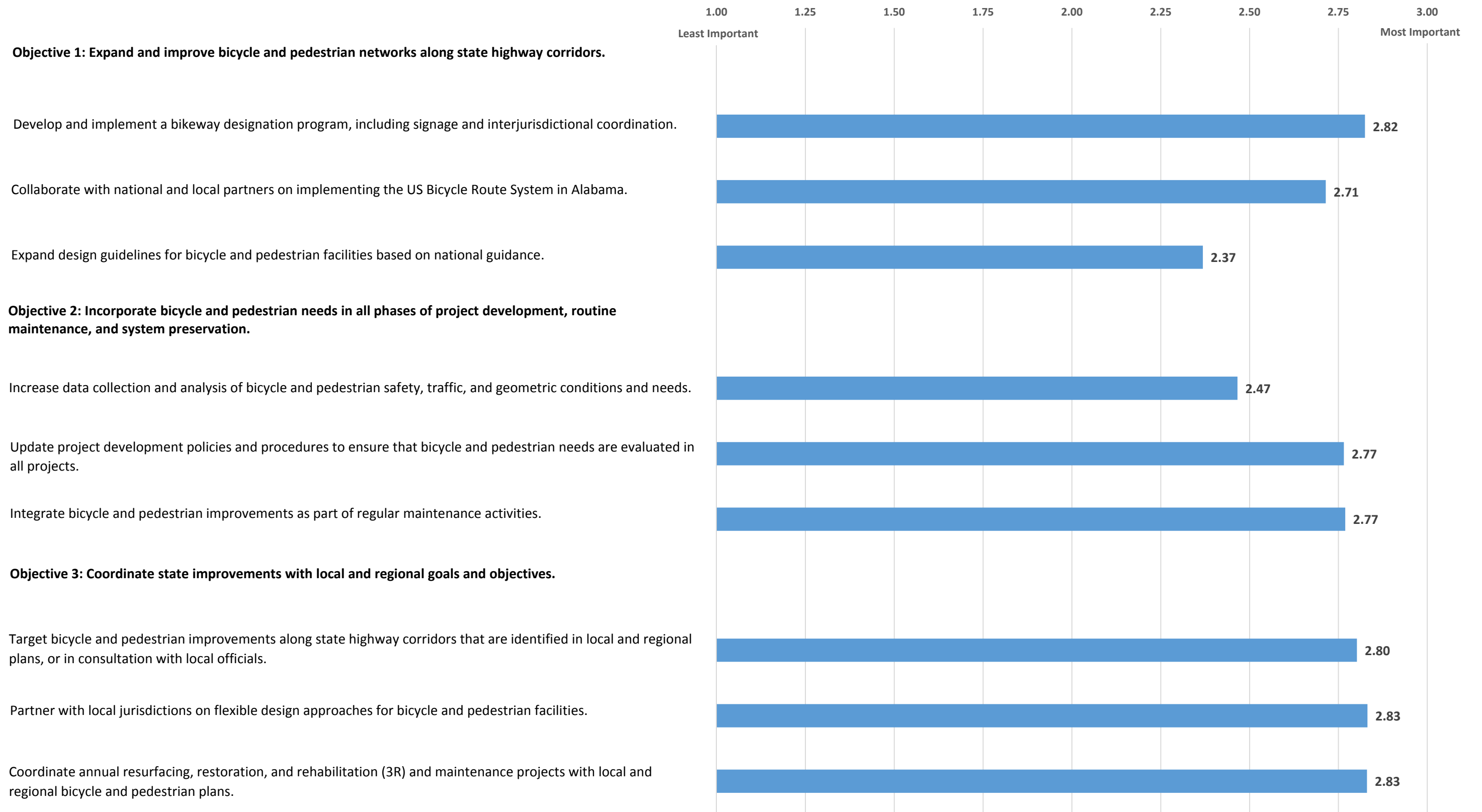


Figure 3. Weighted Scores for Goal C

**Goal C. Support state, regional, and local economic development.**

1.00 1.25 1.50 1.75 2.00 2.25 2.50 2.75 3.00  
Least Important Most Important

**Objective 1: Link bicycle and pedestrian systems with other modes of transportation (transit, air, rail).**

Coordinate with regional and local transit agencies on bicycle and pedestrian improvements in transit corridors.

2.76

Coordinate with regional and local airport authorities and passenger rail operators on bicycle and pedestrian improvements to/from airports and rail stations.

2.11

Support secured and long-term bicycle parking at transit stops, airports, rail stations, and park and ride lots along state highways.

2.12

**Objective 2: Ensure bicycle and pedestrian connectivity in major employment and activity centers.**

Identify priority bicycle and pedestrian improvement areas in consultation with local officials and stakeholders.

2.81

Work with post-secondary educational institutions to improve bicycling and walking to and from campuses.

2.67

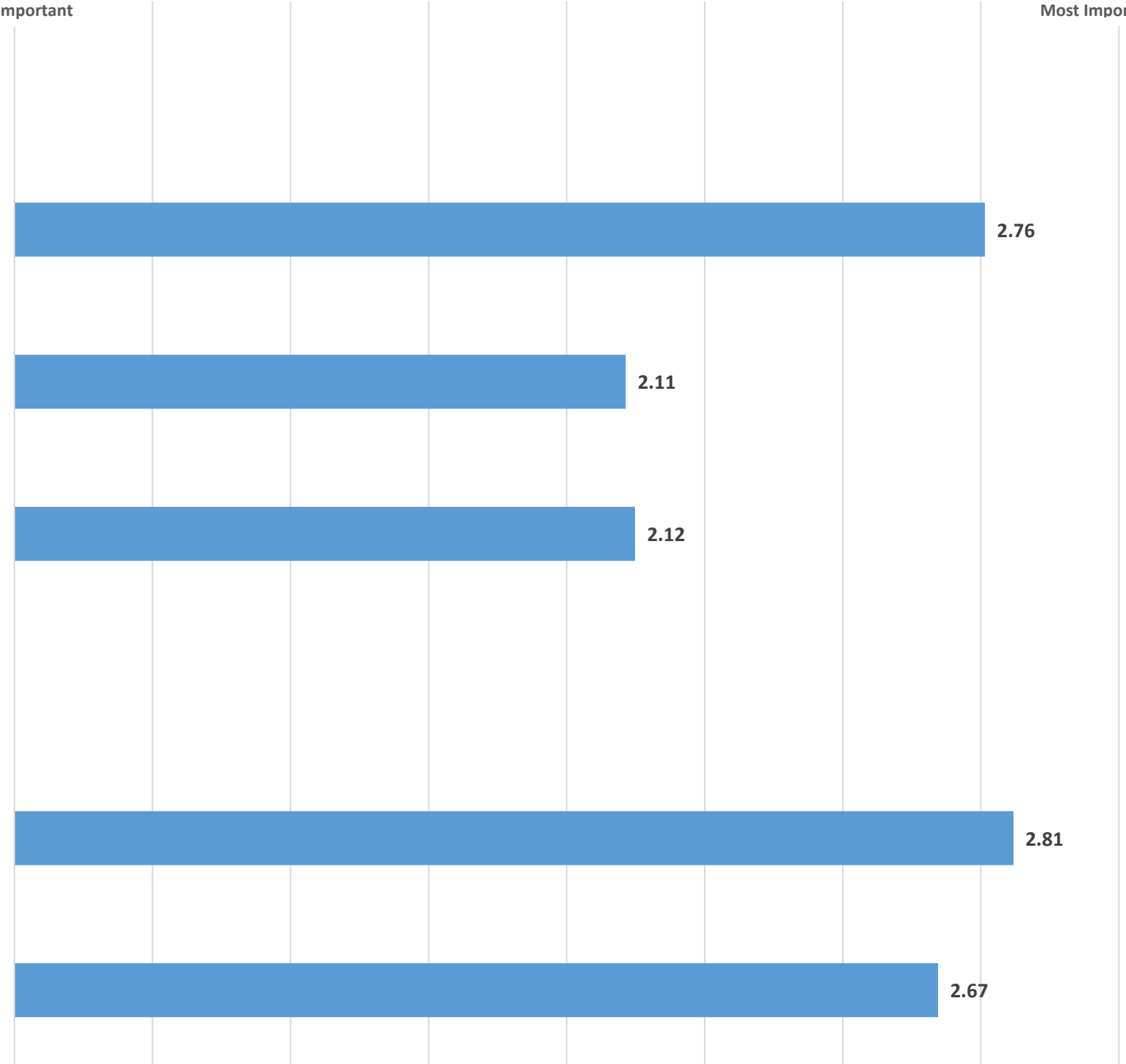
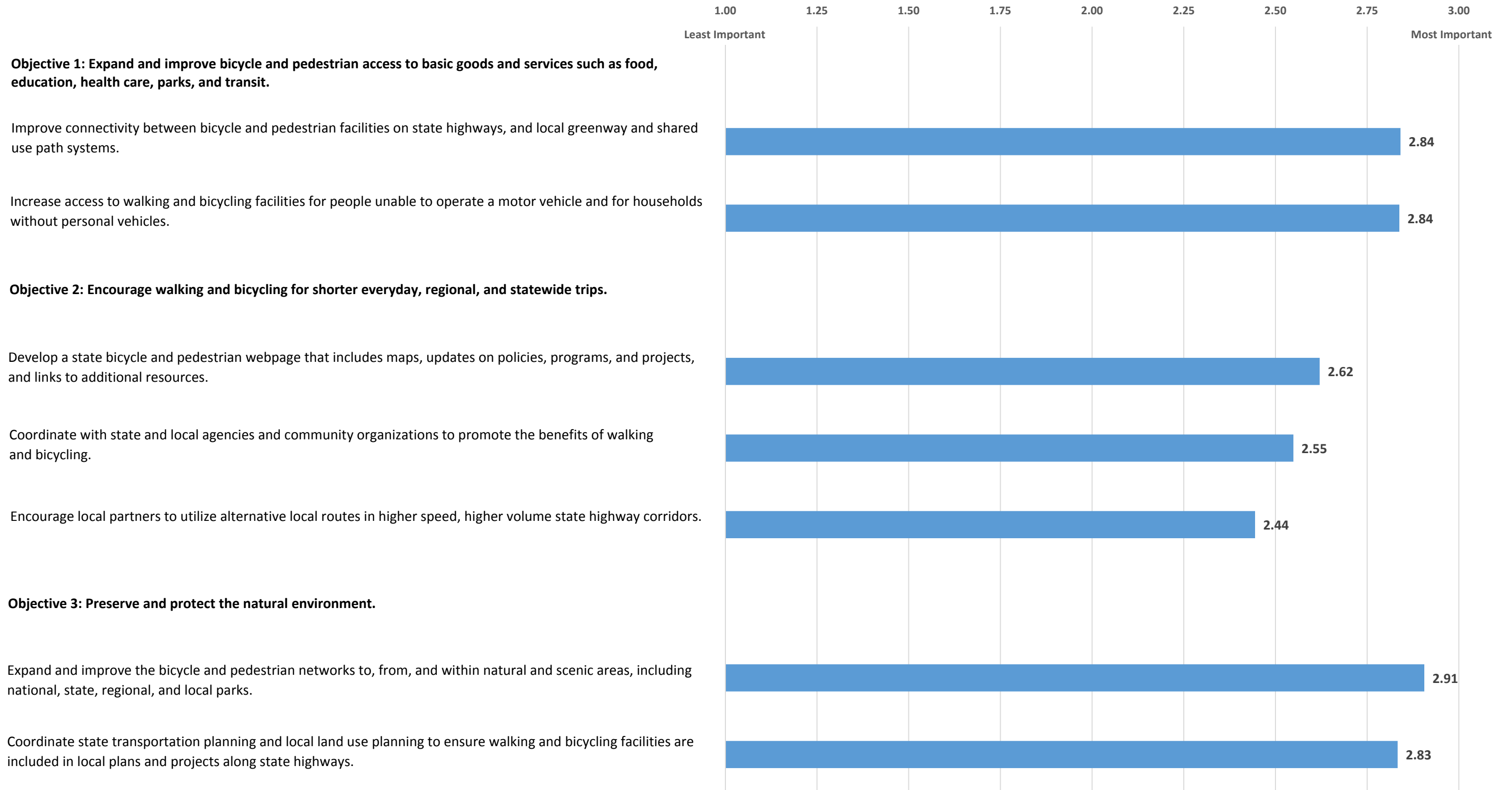


Figure 4. Weighted Scores for Goal D

Goal D. Increase travel options for all transportation system users and protect the natural environment.





Each of the items fell in the 2.00 to 3.00 range, indicating that most attendees felt that the goals and objectives were, to some degree, all “important” for bicycle and pedestrian transportation in Alabama. Among all the goals and objectives presented, the following issues were rated most important by workshop attendees:

- Prioritizing improvements and programs that reduce crashes involving bicyclists and pedestrians;
- Increasing access and connections to basic goods and services as well as shared use path networks, natural areas, and parks;
- Increasing bicycle and pedestrian facilities for the transportation-disadvantaged (seniors, those without a vehicle, etc.); and
- Coordinating with local jurisdictions on the planning, design, construction, and maintenance of bicycle and pedestrian facilities.

#### **D. Bicycle Corridors and Pedestrian Zones**

At this station, attendees reviewed large maps of the draft statewide bicycle corridors. These were presented at different scales, including statewide by ALDOT region and at the metropolitan planning organization (MPO) level, where applicable. Attendees were to identify and recommend specific routes within the highlighted corridors. They were also asked whether there were other nearby US, state, or local roads that would be more appropriate for designation on the statewide system. Attendees made notes either directly on the map documents or using sticky notes. The project team will use this feedback to refine the draft corridors and recommend specific corridors. On the locally scaled maps, attendees were also asked to mark “pedestrian zones,” or areas where there is high demand for pedestrian activity. The feedback on pedestrian zones will be used to refine the draft goals and objectives, and will also be shared with staff at the applicable MPOs.

**Appendix C** contains a statewide map of the draft bicycle corridors, and maps of the draft bicycle corridors by region followed by maps with workshop attendees’ comments.

## Comments

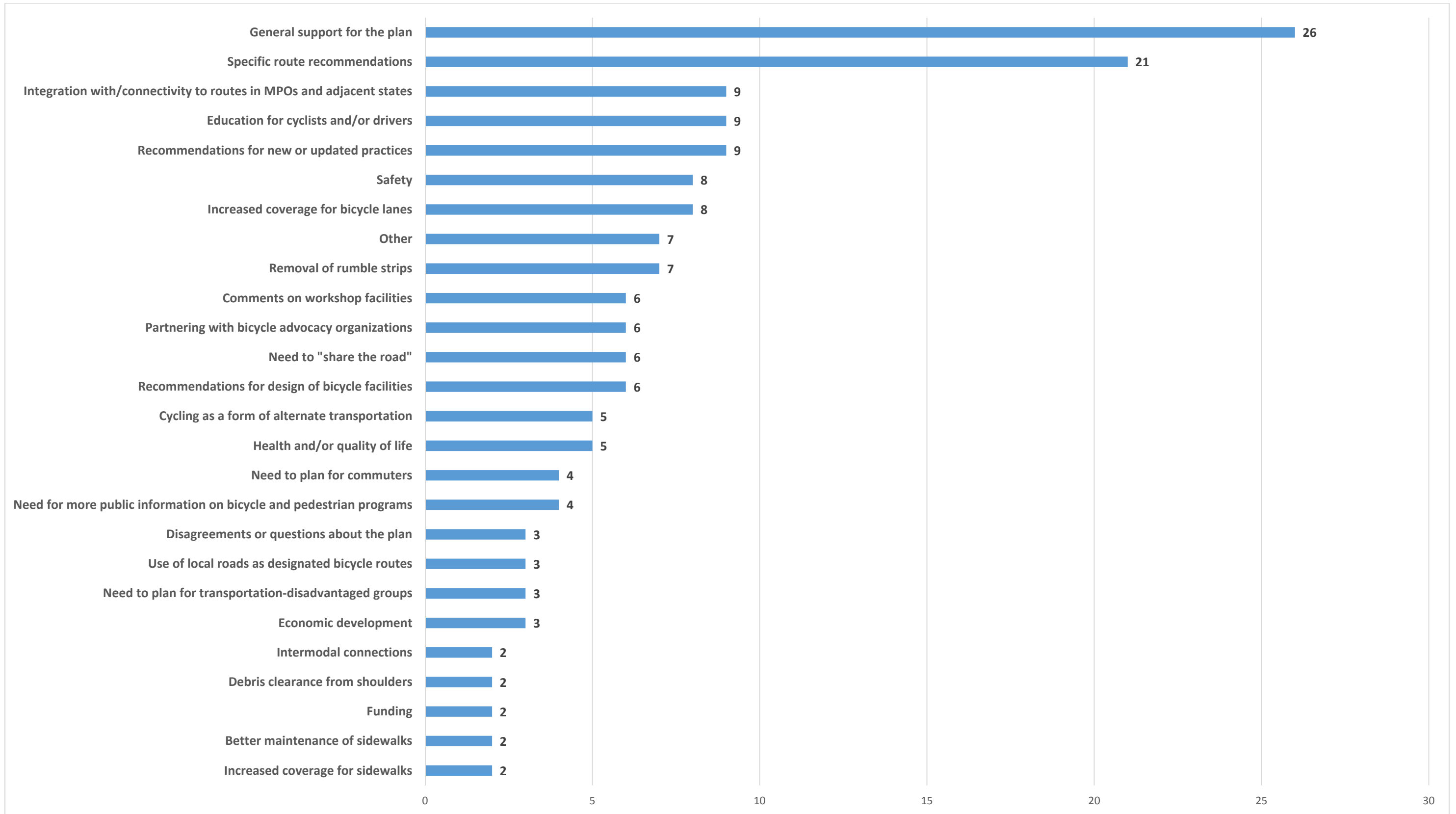
Comment sheets were provided so that participants at the regional workshops could provide additional feedback on the plan and the draft recommendations. Most attendees completed the comment sheet on-site, while others sent their comments via email on a later date. A total of 93 people completed the comment sheets. The table below shows the number of responses received from attendees at each workshop.

Workshop	Number of Responses
North Region (Guntersville)	12
East Central Region (Birmingham)	34
West Central Region (Tuscaloosa)	6
Southwest Region (Mobile)	27
Southeast Region (Montgomery)	14
<b>TOTAL RESPONSES</b>	<b>93</b>

The project team organized the responses on the comment sheets into one or more of the following categories, depending on the subject matter of the response. This information is displayed graphically in Figure 5.

- General support for the plan
- Specific route recommendations
- Recommendations for new or updated bicycle and pedestrian practices
- Recommendations for design of bicycle facilities
- Increased coverage for bicycle lanes
- Increased coverage for sidewalks
- Better maintenance of sidewalks
- Safety
- Funding
- Education for cyclists and/or drivers
- Health and/or quality of life
- Economic development
- Need to “share the road”
- Removal of rumble strips
- Debris clearance from shoulders
- Need for more public information on bicycle and pedestrian programs
- Need to plan for transportation-disadvantaged groups
- Need to plan for commuters
- Cycling as a form of alternate transportation
- Intermodal connections
- Integration with/connectivity to routes in MPOs and adjacent states
- Use of local roads as designated bicycle routes
- Partnering with bicycle advocacy organizations
- Comments on workshop facilities
- Disagreements or questions about plan information

Figure 5. Number and Topic of Comments from the Regional Public Workshops (From 93 Total Responses)



Over one-quarter of all comments (26 comments) expressed general support for the planning process. Specific route recommendations for the bicycle corridors were mentioned in 21 comments. This input, along with the feedback given on the draft bicycle corridors maps, will be taken into consideration when the project team refines the corridors and recommends specific routes.

Following general support for the plan and routing recommendations, the most prevalent topics mentioned in the comments were:

- Integration with/connectivity to routes in MPOs and adjacent states (9);
- Education for cyclists and/or drivers regarding proper behavior on the road (9);
- Recommendations on new or updated bicycle and pedestrian practices (9);
- General safety concerns (8); and
- Need for more bicycle lanes throughout the state (8).

The seven (7) uncategorized, or “Other,” comments addressed the following topics:

- Coordination with all levels of government during the planning process and implementation of the plan;
- Increased funding for bikesharing programs that could be implemented around the state;
- Coordination with rails-to-trails initiatives;
- Interest in rural trails;
- Interest in off-road trails;
- Need for better bicycle and pedestrian access to parks;
- Recommendation to conduct annual surveys to assess the effectiveness of the plan.

### **Potential Refinements to the ALDOT Bicycle and Pedestrian Plan and Programs**

Given the public comments received at the regional workshops and virtual workshop, there are potential opportunities to review current ALDOT bicycle and pedestrian program guidance. Additionally, there are opportunities for ALDOT to encourage regional and local agencies to help address bicycle and pedestrian concerns. These areas include:

- There is a need for more public education on bicycle and pedestrian safety, including the “rules of the road.” This may be accomplished through statewide public information campaigns or changes to the State of Alabama Driver Manual. ALDOT should encourage these activities at the local and regional levels as well.
- Additional local, regional, and state-level resources are needed to maintain roadway shoulders for safe bicycling.
- Better maintenance of existing sidewalks would be helpful, especially at the local level.
- The use of rumble strips along state roads outside of urban areas makes bicycling difficult.
- Major roads outside of urban areas could better accommodate bicycling by creating shoulders at least six feet in width.
- Continuity of bicycle routes is very important (through rural, suburban, and urban areas).
- A detailed statewide bicycle map would be very appreciated by the bicycling community. It would also be helpful for cyclists to access detailed maps of bicycle routes in each MPO area.
- ALDOT should take a leadership role in encouraging the use of best practices for planning and designing bicycle and pedestrian facilities.

## Appendix E: Public Workshops #2 Summary



## ALABAMA STATEWIDE BICYCLE AND PEDESTRIAN PLAN SUMMARY OF REGIONAL PUBLIC WORKSHOPS – SECOND ROUND

July 17, 2017

### Overview

In May and June 2017, the Alabama Department of Transportation (ALDOT) hosted a second round of public workshops for the Statewide Bicycle and Pedestrian Plan. The purpose of the workshops, structured as open houses, was to review and discuss the draft plan and its recommendations. The workshops were held in the following cities:

- Grove Hill, May 3, 2017
- Mobile, May 4, 2017
- Montgomery, May 10, 2017
- Troy, May 11, 2017
- Tuscaloosa, May 17, 2017
- Fayette, May 18, 2017
- Alexander City, May 23, 2017
- Birmingham, May 24, 2017
- Anniston, May 25, 2017
- Tusculumbia, June 7, 2017
- Huntsville, June 8, 2017

A total of 99 people attended the public workshops, and 12 additional people submitted comments via email. These figures do not include ALDOT staff or members of the project team. Following is a summary of responses received on the public workshop comment forms and by email. The figures in parentheses represent the number of people making the comment or a similar comment.

### Question #1: What would you suggest to improve the Statewide Bicycle and Pedestrian Plan?

- |   |  |
|---|--|
| <p>A. Develop a comprehensive implementation plan and identify funding sources, specific priorities (e.g., top three priority corridors), and dates when actions will be completed (12)</p> | <p>J. Build on the corridor concept and its flexibility – plan is a great start (4)</p>                |
| <p>B. Include a policy that prevents or reduces the impact of rumble strips on highways frequently used by bicyclists or designated as bicycle routes (9)</p>                               | <p>K. Develop a statewide education program for motorists, bicyclists, and pedestrians (3)</p>         |
| <p>C. Continue to work with law enforcement officials on implementing the 3-foot passing law and provide signage reminding people to “Share the Road” (7)</p>                               | <p>L. Utilize examples/case studies/best practices from other states and cities (3)</p>                |
| <p>D. Develop performance measures and targets specific to design and administration (5)</p>  | <p>M. Include a recommendation to repeal the mandatory sidepath rule from State Code (2)</p>           |
| <p>E. Remove wide outside lanes as an option on high-traffic, high speed roads (5)</p>  | <p>N. Provide physical separation between automobiles and bicyclists/pedestrians</p>                   |
| <p>F. Develop an engagement/outreach plan with MPOs, counties, and municipalities that creates local plans that are consistent and have universal performance metrics (5)</p>               | <p>O. Define two to three north-south and east-west corridors and implement them- adjust as needed</p> |
| <p>G. Include sidewalks, bike paths, and bike in every road project (4)</p>   | <p>P. Review any changes to the 2010 statewide plan routes with local cyclists</p>                     |
| <p>H. Consider using abandoned railroads and utility corridors for bicycle paths (4)</p>  | <p>Q. Increase pedestrian and bicycle activated signals at intersections</p>                           |
| <p>I. Focus on urban areas where possible (4)</p>   | <p>R. Include more rural areas among priority areas</p>  |
|   | <p>S. Use League of America Bicyclists criteria and set goals to improve state ranking for Alabama</p> |
|   | <p>T. Integrate the corridor concept with tourism (e.g., Trail of Tears Corridor)</p>                  |

**Question #2: What would you suggest to attract more public involvement?**

- A. Advertise meetings on public radio and local TV stations, including Facebook pages (6)
- B. Work with cities and regional planning organizations to make people aware of public involvement opportunities (5)
- C. Reach out to grass roots organizations interested in biking, walking, and running, as well as bicycle related businesses (5)
- D. Conduct public meetings at bicycle events and other community events (e.g., Hot 100) (5)
- E. Inform communities about the economic, social, health, and ecological benefits of bicycle and pedestrian infrastructure (3)
- F. Hold town hall meetings in small towns and more locations (2)
- G. Involve local college students (2)
- H. Provide walking and bicycling tours/events in local communities and statewide (2)
- I. Illustrate vision and recommendations graphically in renderings (2)
- J. Improve outreach with online information
- K. Hold a short essay contest on the benefits of bike lanes or paths for one's community
- L. Email people who attend previous meetings and submit comments online
- M. Promote completed projects that improve bicycling and walking
- N. Send meeting announcements using the US Postal Service

**Question #3: Other comments?**

- A. Provide bicycle and pedestrian safety Public Service Announcements(PSAs) on TV and radio (5)
- B. Educate drivers on bicycle/pedestrian safety, including driver education programs and driver license exams (4)
- C. Use Strava heat maps and other bicycling tracking applications to define bicycle preferred roads, as well as work with local cyclists (2)
- D. Point out need for funding
- E. Evaluate existing bike lanes for debris and motorists parking in bike lanes
- F. Promote existing bicycle events (e.g., Alabama Backroads Cycling Century Series)



