



Alabama Statewide Transportation Plan



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**ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN
FINAL REPORT**

TABLE OF CONTENTS

1. Introduction and Background	1-1
1.1. Overview of the SWTP	1-1
1.2. Trends in Federal Policy	1-1
1.3. Statewide Planning Process	1-2
1.4. Project Development Process	1-4
1.5. Overview of the Multimodal Network	1-4
1.6. State Commute Characteristics.....	1-7
1.7. Outreach and Public Input	1-7
2. Projected Growth in Alabama	2-1
2.1. Population.....	2-1
2.2. Population Demographics.....	2-4
2.3. Employment.....	2-5
2.4. Economy	2-7
2.5. Economic Development.....	2-8
3. The Roadway System	3-1
3.1. Mobility Along the Roadway System	3-1
3.2. Expanding the Roadway Network.....	3-6
3.3. Maintaining Roadway Infrastructure	3-11
3.4. Intelligent Transportation Systems (ITS).....	3-17
3.5. Safety	3-19
3.6. Hurricane Evacuation Needs.....	3-21
3.7. Historical and Projected Funding	3-24
3.8. Capacity Funding Gap Analysis	3-28
4. Goods Movement	4-1
4.1. Roadway Freight	4-1
4.2. Intermodal Goods Movement	4-5
4.3. Port of Mobile	4-8
5. Multimodal Transportation Needs	5-1
5.1. Transit, Intercity Bus and Passenger Rail	5-1
5.2. Bicycle and Pedestrian Mobility.....	5-5
5.3. Aviation	5-7

**ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN
FINAL REPORT**

TABLE OF CONTENTS (CONTINUED)

6. Future Trends and Issues.....	6-1
6.1. Supporting Alabama’s Growth.....	6-1
6.2. Projected Performance of the Current Work Program.....	6-5
6.3. Focus on the State of Good Repair	6-7
6.4. Accommodating Emerging Technology	6-7
6.5. Understanding Trends in Mode Shift.....	6-8
6.6. Moving Forward.....	6-10

APPENDICES

Appendix A: Project Development Process

Appendix B: Projected Federal FHWA Funding to ALDOT from the FAST Act

SUPPLEMENTAL DOCUMENTS

(Available Separately)

Interim Report #1 – Baseline Conditions, Travel Demand Modeling Process, and Policy Direction

Interim Report #2 – Overview of Transportation Needs and Assessment of Currently Planned Projects

Supplement #1 – Travel Demand Modeling Report

Supplement #2 – Summary of Outreach Activities and Input Received

**ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN
FINAL REPORT**

LIST OF FIGURES

1-1	Alabama MPOs and RPOs	1-3
2-1	Population Growth in Alabama, 2000-2040	2-1
2-2	Household Distribution, 2010	2-2
2-3	Proportion of Population by Metropolitan Area, 2010 vs. 2040	2-3
2-4	Employment Concentration, 2010	2-6
3-1	Existing Roadway Volumes (2014)	3-2
3-2	Projected Traffic Volumes – 2040 No-Build	3-4
3-3	Existing Levels of Congestion (2010)	3-5
3-4	Projected Congestion Levels in 2040 – No-Build Scenario	3-7
3-5	Major Capacity Improvements Committed Through 2040	3-8
3-6	Projected Levels of Congestion – 2040 Existing Plus Committed	3-10
3-7	Key Resurfacing and Pavement Rehabilitation Projects	3-15
3-8	Key Bridge Projects	3-16
3-9	Hurricane Evacuation Routes	3-22
4-1	2012 Existing Bottlenecks and Freight Volumes	4-2
4-2	2040 Forecasted Bottlenecks and Freight Volumes	4-3
4-3	Intermodal Facilities	4-6
5-1	Transit Services	5-2
6-1	Projected Household Growth, 2010-2040	6-3
6-2	Projected Employment Growth, 2010-2040	6-4

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

LIST OF TABLES

1-1	Roadway Functional Classification.....	1-5
3-1	Pavement Condition	3-12
3-2	Bridge Condition	3-13
3-3	Bridge Age.....	3-13
3-4	Historical Crash Data, 2011-2015.....	3-20
3-5	Breakdown of Historical ALDOT State Funding Revenues	3-25
3-6	Breakdown of Historical ALDOT State Transportation Expenditures.....	3-25
3-7	Anticipated ALDOT Revenues and Expenses, 2017-2020	3-26
3-8	Projected Annual ALDOT Revenues and Expenses in 2020, 2030, and 2040.....	3-27
5-1	Average Federal Transit Funding, 2013-2016	5-4
5-2	Projected Federal Transit Funding, 2017-2040.....	5-5
5-3	Projected Bicycle and Pedestrian Funding, 2017-2040.....	5-7
5-4	Historical FAA AIP Funding in Alabama, 2011-2016.....	5-9
5-5	Projected FAA AIP Funding in Alabama, 2017-2040	5-9
6-1	Population and Employment Projections from CBER	6-2
6-2	Projected Conditions Comparison – 2040 No-Build vs. 2040 E+C.....	6-5
6-3	Projected Congested Segments Comparison – 2040 No-Build vs. 2040 E+C	6-6

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

LIST OF ACRONYMS

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ABCI	Alabama Business Confidence Index
ACEA	Association of County Engineers of Alabama
ACS	American Community Survey
AIP	Airport Improvement Program
ALDOT	Alabama Department of Transportation
ATMS	Advanced Traffic Management System
AV	Autonomous Vehicle
CARE	Critical Analysis Reporting Environment (traffic crash database)
CBER	University of Alabama Center for Business and Economic Research
CBT	Concrete, Bridge or Tunnel (in Pavement Condition Rating system)
CCTV	Closed Circuit Television
CFR	Code of Federal Regulations
CMAQ	Congestion Mitigation and Air Quality
CPMS	Comprehensive Project Management System
CR	County Road
CSXT	CSX Transportation (a Class I railroad)
DMS	Dynamic Message Sign
E+C	Existing Plus Committed
EMS	Emergency Medical Services
FAA	Federal Aviation Administration
FAST Act	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal Year
GDP	Gross Domestic Product
HPMS	Highway Performance Monitoring System
HSIP	Highway Safety Improvement Program
ICTF	Intermodal Container Transfer Facility
ITS	Intelligent Transportation System
LOS	Level of Service
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21 st Century Act
MPO	Metropolitan Planning Organization

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

LIST OF ACRONYMS (CONTINUED)

NBI	National Bridge Inventory
NBIS	National Bridge Inspection Standards
NHFP	National Highway Freight Plan
NHPP	National Highway Performance Program
NHS	National Highway System
PCI	Poarch Band of Creek Indians
PCR	Pavement Condition Rating
RPO	Rural Planning Organization
RTMC	Regional Transportation Management Center
SCC	Study Coordinating Committee
SHSP	Strategic Highway Safety Plan
SR	State Road
STIP	State Transportation Improvement Program
SWTP	Statewide Transportation Plan
TAMP	Transportation Asset Management Plan
TIP	Transportation Improvement Program
TMC	Transportation Management Center
TRCC	Traffic Records Coordinating Committee
TTSGP	Tribal Transportation Self-Governance Program
USDOT	United States Department of Transportation
V/C	Volume to Capacity (ratio)
WAPT	West Alabama Public Transportation
VHT	Vehicle Hours of Travel
VMT	Vehicle Miles of Travel

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

SECTION 1: INTRODUCTION AND BACKGROUND

This report culminates a one-year effort undertaken by the Alabama Department of Transportation (ALDOT) Bureau of Transportation Planning and Modal Programs to update the long-range Alabama Statewide Transportation Plan (SWTP). This document provides a high-level description of the existing and projected travel and maintenance conditions of Alabama's transportation infrastructure from the current year through 2040. It also outlines current and projected funding levels and presents an overall policy direction for meeting the state's transportation needs through the year 2040.

As the Final Report for the SWTP, it summarizes findings from the following supplemental documents:

- Interim Report #1 – Describes the baseline conditions, travel demand modeling process, and policy direction that guides the overall contents of the SWTP.
- Interim Report #2 – Provides an overview of transportation needs throughout the state and an assessment of the projects currently planned to meet those needs.
- Supplement #1: Travel Demand Modeling Report – Details the process of developing and refining the statewide travel demand model to derive existing and projected conditions along the roadway network.
- Supplement #2: Summary of Outreach Activities and Input Received – Documents the public involvement activities undertaken throughout the SWTP update process and input that helped in developing plan recommendations.

1.1 Overview of the SWTP

Guided by federal regulations, the SWTP addresses transportation needs for a minimum of 20 years into the future. The previous plan was completed in 2008 and extended to a horizon year of 2035. The current update effort will extend projections to year 2040.

As a multimodal plan, the SWTP evaluates all transportation modes—roadways and bridges, transit, bicycle/pedestrian, rail, aviation and waterways. Freight/goods movement is a critical element for the transportation system. ALDOT is not directly responsible for all transportation modes, but works cooperatively with applicable public and private sector entities.

The SWTP is by design a macro-level assessment of the entire transportation system. It considers the extent of transportation infrastructure coverage and connectivity across the entire state and between transportation modes. It is not intended to provide a detailed assessment of transportation conditions within a specific region or mode. Unlike the ALDOT's short-range State Transportation Improvement Program (STIP) or the Long Range Transportation Plan (LRTP) of a Metropolitan Planning Organization (MPO), the SWTP does not include a detailed listing of projects. Instead, it focuses on programs, policies and strategies that will assist in working towards the achievement of longer term goals and objectives.

1.2 Trends in Federal Policy

The Fixing America's Surface Transportation (FAST) Act is the latest federal transportation bill that dictates policy priorities and allocates federal funding for transportation infrastructure. Adopted in December 2015, the FAST Act authorizes \$305 billion nationally over fiscal years 2016-2020 for highway, highway and motor vehicle safety, public transportation, motor carrier safety, hazardous materials safety, rail, and

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

research, technology, and statistics programs. In line with the nationwide trend, the FAST Act also focuses increased attention on freight transportation. The bill includes the provision of a dedicated source of federal dollars for freight projects.

From a planning perspective, the FAST Act carries forward most of the emphasis areas of its predecessor, the Moving Ahead for Progress in the 21st Century Act (MAP-21). It maintains the focus on safety, keeps intact the established structure of the various highway-related programs, and continues efforts to streamline project delivery. Importantly, the FAST Act maintains the emphasis on performance-based planning introduced in MAP-21. In accordance with the latest FHWA guidance, an effort is currently underway by ALDOT to develop a performance monitoring system, procedures and measures to be used in meeting the FAST Act requirements. Performance monitoring reports developed by ALDOT in the future will be incorporated into subsequent SWTP updates.

1.3 Statewide Planning Process

The statewide transportation planning process aims to provide a high-level assessment of how well the state's transportation system network is supporting the needs of its citizens and businesses. All modes of travel are addressed, although significant emphasis is placed on roadways for two primary reasons. First, roadways are the predominant means of movement for people and freight throughout the state regardless of distances traveled. Second, roads and bridges are the infrastructure assets under the direct responsibility of ALDOT. With regard to modal facilities and infrastructure outside its direct control, ALDOT's predominant role is coordination and its primary responsibility to improve intermodal connectivity to the roadway system.

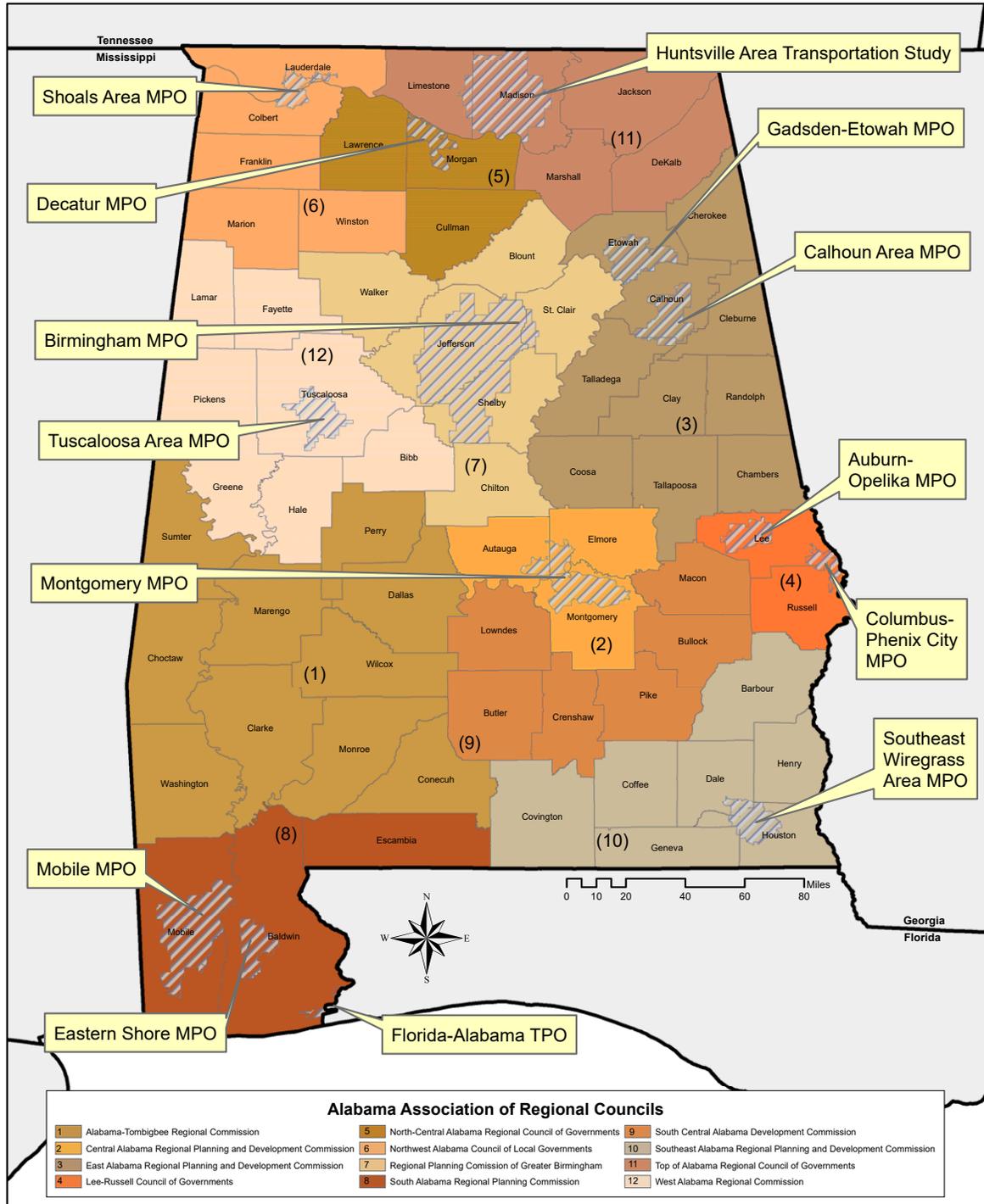
Comprehensive statewide transportation system priorities are laid out in two primary documents. The short-term State Transportation Improvement Program (STIP) provides a prioritized list of projects within a four-year horizon and is updated as needed throughout the year. In contrast, the Statewide Transportation Plan (SWTP) is a long-range planning assessment of the state's transportation program. It has a minimum horizon of 20 years and is typically updated every five years.

The geographic building block leading to the statewide level is the Metropolitan Planning Organization (MPO) structure, which is designated for urban areas with populations of 50,000 or greater. MPOs are federally-mandated to undertake the metropolitan planning process, which more or less mirrors the statewide process. The MPOs prepare short-term project prioritization (Transportation Improvement Program, or TIP) and long-term program assessment (Long Range Transportation Plan, or LRTP) documents for their respective areas. There are currently 14 MPOs in Alabama, including 2 that cross state boundaries. In addition, 12 Rural Planning Organizations (RPOs) support planning activities outside the MPO areas across the state. The state's Regional Commissions serve as the staff of the RPOs. Figure 1-1 shows the MPOs and RPOs in Alabama.

Similarly, planning activities related to non-roadway modes (e.g., transit, bicycle/pedestrian, rail, aviation and waterways) are conducted by other ALDOT bureaus. Detailed short and long-term assessments identify and prioritize needs and improvement projects within each specific mode. These findings then become inputs into the comprehensive statewide planning process.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 1-1: Alabama MPOs and RPOs



Source: <http://alarc.org/>

Regional Councils represent Rural Planning Organizations by serving as staff to local officials. More information can be found at: <http://alarc.org/the-councils/>

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

1.4 Project Development Process

A key item of the SWTP is an assessment of overall investment for various types of projects throughout the state. For each project type, distinct phases of project development are incorporated into the ALDOT work program:

- Step 1: Planning and Project Identification
- Step 2: Environmental Study
- Step 3: Preliminary Design
- Step 4: Final Design and Right-of-Way Acquisition
- Step 5: Construction

Improvements such as new roadways, roadway widenings or bridge replacements, which call for more complex construction plans and/or require additional right-of-way, typically have a higher level of design and environmental review than improvements such as resurfacing, sidewalks, or operational improvements. As a result, these projects typically take longer to go through the steps listed above.

Another important consideration during the project development process is the ability for public input into the process. As projects advance through the project development process, decisions are made regarding their overall definition that influence their overall costs and subsequent programming into the ALDOT work program. Therefore, citizen participation in the process is much more involved during the initial planning and environmental steps of the process. This allows for community concerns and preferences to be incorporated into the overall definition of the project. This input occurs through a variety of means, including project-related public information open houses, public hearings, and direct comments to local officials.

A summary of the ALDOT Project Development Process is included as Appendix A.

1.5 Overview of the Multimodal Network

Alabama offers a comprehensive transportation system to address the many diverse needs of residents, visitors and businesses. The multimodal transportation network is composed of roadways and bridges, public transportation and intercity buses, bicycle and pedestrian facilities, rail lines, airports, waterways, and intermodal facilities, which are interconnected and work together to facilitate the movement of both people and freight. This sub-section presents an overview of the state's multimodal transportation network. More details related to each individual mode are included in Interim Report #1, which is posted on the ALDOT website at: <http://www.dot.state.al.us/oeweb/pdf/swtp/InterimReport1.pdf>.

As the backbone of Alabama's transportation system, the roadway network provides for mobility as well as connectivity between modes. ALDOT's Highway Performance Monitoring System (HPMS) identifies over 102,000 miles of roadways in the state, of which approximately 10,900 centerline miles are State maintained. Although composing only ten percent of roadway miles, the federal and state highways respond to a majority of the transportation demands by carrying the greatest volumes of traffic. Table 1-1 presents a breakdown of Alabama roadway miles by functional classification. A roadway's functional classification identifies its role within the network in terms of access and mobility. More information on functional classification is provided in Interim Report #1.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Table 1-1: Roadway Functional Classification

Functional Classification	All Roads (miles)	ALDOT- Maintained Network (miles)	Percent of All Miles on ALDOT Network
Interstate	1,000.74	1,000.74	100.0%
Principal Arterial-Other Freeways and Expressways	30.15	30.15	100.0%
Principal Arterial-Other	3,319.37	3,177.98	95.7%
Minor Arterial	6,333.87	4,613.78	72.8%
Major Collector	15,855.20	2,048.15	12.9%
Minor Collector	6,820.44	31.64	0.0%
Local	68,657.20	1.01	0.0%
TOTAL	102,016.97	10,903.45	10.7%

Source: ALDOT HPMS, 2014

Public Transportation

ALDOT does not directly operate transit systems within the state. However, as a multimodal transportation plan, the SWTP addresses public transportation needs across the state. The identification of common statewide transit needs was completed through review of the following documents:

- 2040 LRTP for each MPO
- Coordinated Public Transit-Human Services Transportation Plan for each of the 12 regional commissions

Public transportation services are available to a large portion of the state’s residents. Nine urban areas offer fixed route transit services, with demand response service available in another four. Rural demand response service is provided in 50 counties. Eleven counties have both urban and rural public transportation services. Nevertheless, the greatest public transportation deficiency within Alabama is the lack of unrestricted service. Many comments were received during the public and stakeholder regional meetings expressing the need for expanded transit services statewide in both urban and rural areas. Statewide, 13 counties do not have any public transportation services for residents regardless of age or ability: Bullock, Butler, Chambers, Coffee, Crenshaw, Dale, Elmore, Fayette, Geneva, Henry, Lamar, Limestone, and Randolph. Another three counties (Mobile, Montgomery and Tuscaloosa) have urban fixed route service but no service in the rural areas.

Passenger Rail

Amtrak provides passenger rail service along one route in Alabama. The *Crescent* route between New York and New Orleans stops in Anniston, Birmingham and Tuscaloosa. There is one train per day in each direction; however, the timetable does not facilitate a return trip on the same day within Alabama. Westbound trains depart Anniston at 10:00 am and arrive in Tuscaloosa at 1:07 pm, while eastbound trains depart Tuscaloosa at 12:44 pm and arrive in Anniston at 3:59 pm.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

According to the National Association of Railroad Passengers, Amtrak in Alabama had a total of 60,167 passengers (arrivals and departures) in 2015, a 9 percent decrease from the seven-year high of 66,403 in 2012. Birmingham had the most passengers in 2015 with 44,212, followed by 10,870 in Tuscaloosa and 5,085 in Anniston. There are 1.3 million Alabamians (14 percent) within 25 miles of an Amtrak station.

Bicycle and Pedestrian Mobility

The growing significance placed on bicycle and pedestrian facilities has resulted in increased planning, funding and construction of facilities, particularly at the local and regional level. Bicycle and pedestrian facilities are discussed in each MPO's LRTP, if not also in a stand-alone plan, and many local jurisdictions have prepared their own plans. Many areas across the state have implemented bicycle and pedestrian facilities in recent years. Most of these facilities are intended for shorter distance, recreational use and are often situated in or adjacent to parks and other natural areas. The ability for bicycle facilities in particular to serve the transportation needs of a community is a strategic focus for ALDOT, in keeping with the Department's purpose and mission. Route connectivity is an important emphasis area in ALDOT's ongoing update to its statewide bicycle and pedestrian plan.

Aviation^{1,2}

Alabama has approximately 235 airport facilities, including public and privately owned airports and heliports. Most were built in the 1950s-1960s. Commercial airports exist in Birmingham, Dothan, Huntsville, Mobile, Montgomery and Muscle Shoals, with Birmingham and Huntsville being the state's two international airports. In the past, regularly scheduled commercial passenger flights also operated from Tuscaloosa Regional Airport, but they have been discontinued. Airport planning is typically done by the airports themselves, which are often locally governed by an airport authority.

The *Alabama Statewide Airport System Plan* identifies a system of 84 publicly owned airports across the state, located in all 67 counties except Cleburne, Coosa, Houston³, Lauderdale, Russell, and Sumter. The plan recommends an airport system that classifies each airport into one of five functional roles: international, national, general aviation-regional, general aviation-community, and local. The plan recognizes the economic development potential of a robust airport system for Alabama. However, funding levels cannot keep up with aviation needs of the businesses the state is seeking to attract.

ALDOT's Aeronautics Bureau is tasked with overseeing the state's aviation infrastructure and ensuring Federal Aviation Administration (FAA) and ALDOT safety standards are met. Aging infrastructure and limited State and local resources have made it difficult to keep up with the growing aviation needs. The FAA provides grant funds for airport improvement projects (at 80 or 90 percent of the total project cost, depending on the project), and the Aeronautics Bureau assists with the matching funds. However, State revenues from aviation fuel taxes generate only approximately \$1.5-\$2.0 million per year, severely limiting potential opportunities.

¹ http://www.dot.state.al.us/aerweb/aviation_facts.htm, accessed April 25, 2017

² http://www.dot.state.al.us/aerweb/alabama_state_airport_system_plan.html, accessed April 25, 2017

³ Although owned and operated by the Dothan-Houston County Airport Authority, the Dothan Regional Airport is actually located in Dale County.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

1.6 State Commute Characteristics

Although approximately 75 percent of Alabama’s population resides in its metropolitan areas, the state is characterized primarily by rural and suburban land uses. As such, automobile travel remains the predominate means of travel. Not surprisingly, this is true for commuting to work as well. According to the US Census, 85 percent of Alabama workers age 16 years and over drove alone to work in 2015. This compares to 76 percent for the nation as a whole. Carpooling remains the second most popular mode of commute in the state and the nation, averaging 9 percent in Alabama and 10 percent in the US. Significantly more people nationwide commute by public transportation than is seen in Alabama, averaging 5 percent versus a mere 0.4 percent in Alabama. Only 1 percent of Alabamians commute by walking (compared to 3 percent for the US), while nearly 3 percent work at home (compared to over 4 percent for the US). The mean travel time to work continues to increase across the country. Alabama’s 2015 travel time to work of 24.4 minutes remains below the national average of 25.9 minutes.

1.7 Outreach and Public Input

Coordination and outreach efforts to better understand system needs and issues were solicited in several forums and incorporated throughout the SWTP development process. The three primary forms of engagement consist of client coordination, stakeholder outreach, and public involvement. A brief overview of the outreach effort and activities is presented below. Supplemental to the SWTP Final Report, *Supplement #2 – Summary of Outreach Activities and Input Received* fully documents the complete outreach effort and related materials. This document is available on the ALDOT SWTP website at: <http://www.dot.state.al.us/oeweb/statewideTransportationPlan.html>.

Client Coordination and Study Coordinating Committee

Extensive client coordination activities were ongoing throughout plan development. In addition, a Study Coordinating Committee (SCC) composed of ALDOT Central Office staff representatives from the bureaus/sections associated with statewide multimodal transportation planning was established. Progress updates and findings included in the interim report deliverables and draft/final plan document were presented to the committee for review, discussion and comment. Two meetings were held with the SCC – in July 2016 (study kickoff and background activities) and December 2016 (preliminary existing conditions and needs). In addition, the SCC reviewed the draft SWTP Final Report prior to its finalization.

Stakeholder Involvement

Stakeholder involvement guided plan development activities. Key stakeholders included ALDOT Region Engineers, the MPOs and RPOs, FHWA (Federal Highway Administration), and representatives of state agencies and select private sector modal, economic development and advocacy organizations. A full list of stakeholder organizations and representatives was developed at the outset for approval by the client contact. Additional stakeholders who expressed interest in the study through email and/or regional meeting attendance were added to the contact list over the course of the effort. Email was the primary form of communication with the stakeholders and was used to notify them of upcoming regional meetings and materials added to the study webpage.

In addition to general stakeholder communication, efforts to increase coordination between ALDOT and the state’s Tribes and Tribal Organizations are underway. The State of Alabama recognizes nine Tribes: Poarch Band of Creek Indians, Echota Cherokee Tribe of Alabama, Cherokee Tribe of Northeast Alabama,

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Ma-Chis Lower Creek Indian Tribe of Alabama, Southeastern Mvskoke Nation, Cher-O-Creek Intra Tribal Indians, MOWA Band of Choctaw Indians, Piqua Shawnee Tribe, and United Cherokee Ani-Yun-Wiya Nation. One Tribe, the Poarch Band of Creek Indians, is also federally recognized. In follow-up to the first public and stakeholder meeting (discussed below), the study team conducted an individual meeting with a representative of the Poarch Band of Creek Indians. ALDOT is continuing its efforts towards more fully incorporating the Tribes into its planning processes, particularly with regard to transportation and socioeconomic data and information.

Public Outreach

Two rounds of public and stakeholder outreach meetings were held in each of the five ALDOT Regions across the state (Hoover/Birmingham, Huntsville, Mobile, Montgomery and Tuscaloosa) to coincide with key milestones. The first round of meetings, held in late September 2016, corresponded to the identification of existing/future needs. A total of 151 people signed in at the five meetings, and 38 comment forms were received. The second round of meetings, in early April 2017, presented draft plan findings and recommendations. A total of 89 people signed in at the five meetings, and 9 comment forms were received. In addition to the regional meetings, study related materials were posted to the study webpage on ALDOT's website (<http://www.dot.state.al.us/oeweb/statewideTransportationPlan.html>) and a designated ALDOT email address (altransplans@dot.state.al.us) was provided to submit comments or questions to the study team.

Communication

The primary method of direct communication with committee members, stakeholders and members of the general public who expressed interest in the SWTP update was email. An ALDOT-hosted webpage and email address were established to efficiently communicate with all stakeholders and the general public. In addition, the study team encouraged all stakeholders and planning partners to distribute SWTP updates through their own websites and/or newsletters and to add a link to the ALDOT SWTP webpage on their own websites.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

SECTION 2: PROJECTED GROWTH IN ALABAMA

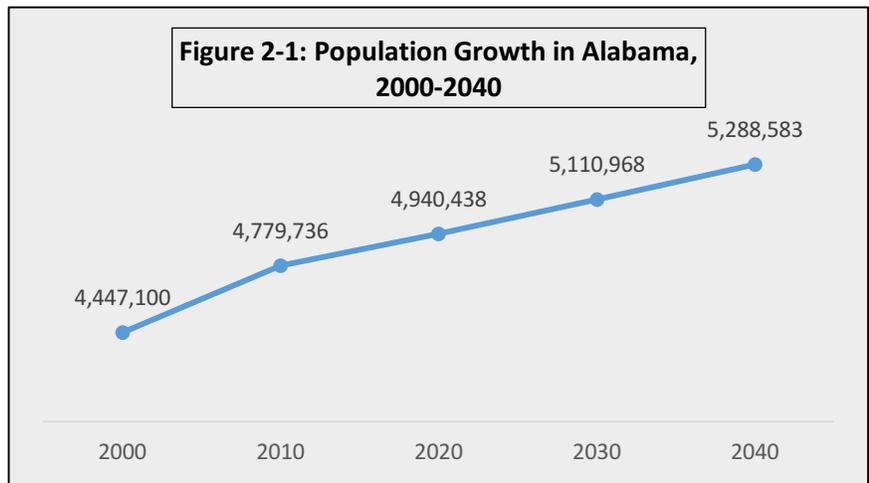
A number of different public and private sector entities have ongoing programs to collect and analyze a wide variety of demographic and economic data at both the national and state levels. The most well-known, extensive and reliable data source is the US Census Bureau and its ongoing American Community Survey (ACS). In Alabama, the University of Alabama Center for Business and Economic Research (CBER) utilizes data from the US Census and other reliable sources to provide detailed statistics and projections specific to Alabama. The transportation plan development process utilizes data from these sources to provide an overview of demographic and growth conditions and trends across the state. In addition, the travel demand model relies on population and employment related data to forecast existing and projected conditions on the roadway network.

This section summarizes a number of statistics that speak to population and economic conditions and trends across Alabama. The US Census data is the source of most of this data, with CBER data sources indicated when applicable. Because CBER's data sources are multiple and the data is refined specific to Alabama, some projections herein may vary slightly from those in other sections of the report. Nevertheless, the trends indicated in both data sources are consistent with each other.

2.1 Population^{4, 5}

The United States population in 2016 was estimated at over 323 million. Alabama's population of 4,863,300 ranked 24th in the nation, a slight drop from 23rd in 2010. Projections estimate a growth rate in excess of 10 percent from 2010 to 2040, resulting in a 2040 population of 5,288,583, or an increase of 508,847 residents.

As Figure 2-1 shows, Alabama experienced slightly more aggressive growth from 2000 to 2010 than expected from 2010 through 2040. The 2000-2010 rate of about 7.5 percent levels out somewhat to about 3.5 percent, which is expected to then continue on trend through 2040.



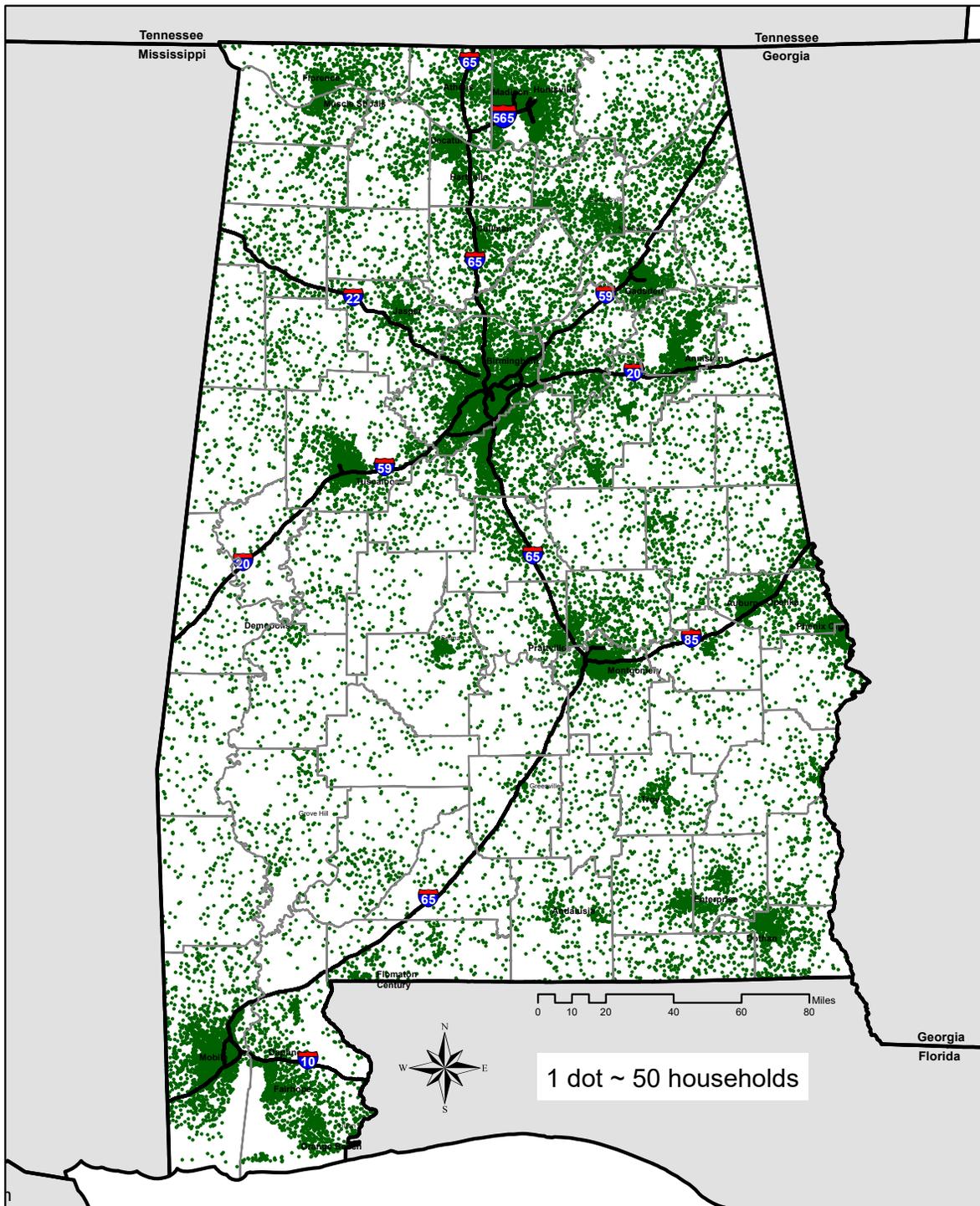
Alabama's 2010 population density of 94.4 people per square mile placed it in the middle range of all states. Alabama had 1,848,325 households in 2015, with 2.55 persons per household. Figure 2-2 shows the distribution of households across the state in 2010. As this map illustrates, large portions of southern Alabama remain very rural.

⁴ <https://www.census.gov/quickfacts/table/PST045216/01>, accessed 3/21/2017

⁵ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>, accessed 3/21/2017

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 2-2: Household Distribution, 2010

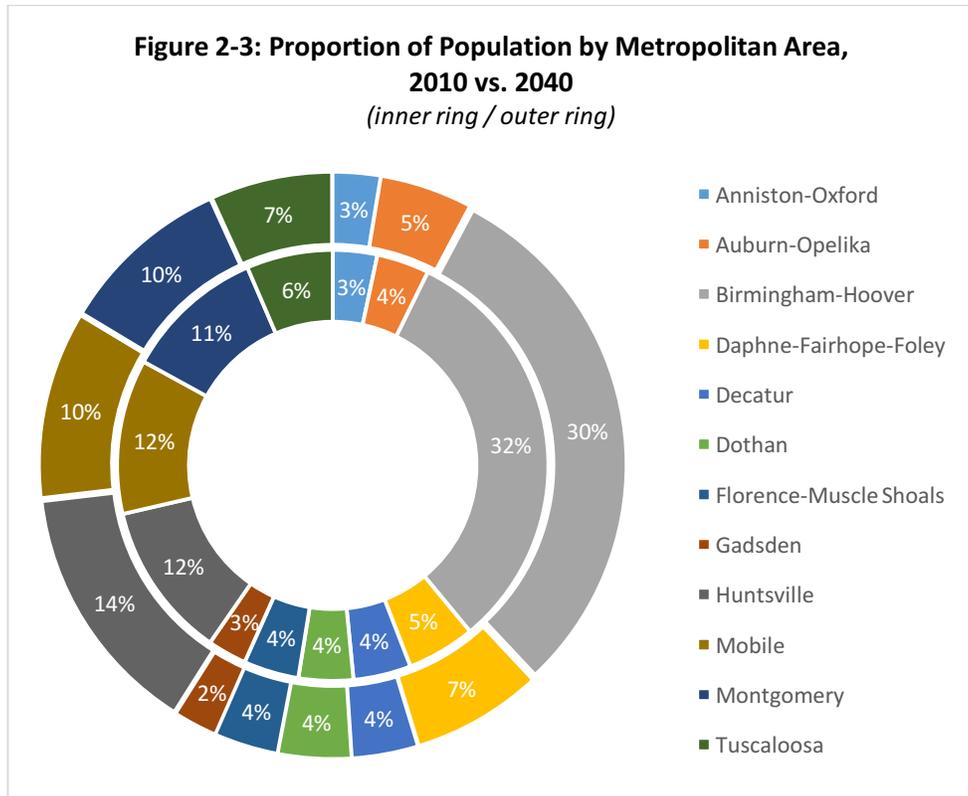


Source: US Census Bureau

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Alabama’s metropolitan areas continue to gain a larger proportion of the state’s total population. In 2015, more than 75 percent of the state’s population lived within a metropolitan area (3,642,990 of the state’s 4,855,847 residents). From less than 73 percent in 2000, this proportion is expected to continue growing and exceed 78 percent by 2040. Alabama has 12 metropolitan areas wholly within the state’s boundaries. In addition, small portions of Alabama are also included within two multi-state metropolitan areas: Phenix City in the Columbus, GA area and Lillian-Orange Beach in the Pensacola, FL area. The Census data from which this assessment is derived did not include the AL populations within those areas separately; therefore, their relative populations could not be included within this analysis.



As the graphic indicates, the Birmingham-Hoover metropolitan area will continue to be home to about one-third of all the state’s metropolitan population. The Birmingham-Hoover area’s 2015 population of 1,144,942 is projected to increase to 1,246,782 in 2040, or more than 10 percent. However, the largest increases over the next 25 years are expected to occur in other areas of the state. Between 2015 and 2040, three metropolitan areas are projected to experience significant growth. The largest percentage increase is anticipated in the Daphne-Fairhope-Foley area, which would see a 65 percent increase in population, from 202,710 to 300,899. Auburn-Opelika would grow by approximately 52 percent, increasing from a population of 156,351 to 212,431. Although the Huntsville area’s 40 percent growth ranks it third in the state, it is projected to experience the largest increase in raw numbers of any area in the state – adding 166,792 residents as it grows from 443,745 to 584,385 in population.

However, not all of Alabama’s metropolitan areas are expected to grow. Four of them are actually expected to decrease in population, losing a combined total of 19,151 residents. The largest population decline is expected to be in the Anniston-Oxford area, which would decrease 9 percent from 115,713 to

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

107,875. The neighboring Gadsden area is also projected to lose population, dropping 4 percent from 103,156 to 99,980. In the northern portion of the state, both the Decatur and Florence-Muscle Shoals areas are also expected also see small declines. Decatur is projected to drop two percent, from a population of 152,781 to 150,951, while Florence-Muscle Shoals is projected to decrease less than one percent, from 147,099 to 146,011. It would not be unexpected for the population losses of these metropolitan areas to be a portion of the gains projected in others.

In 2015, 12 of Alabama's 67 counties had populations over 100,000. By 2040, 15 counties are projected to exceed 100,000 population. As with its metropolitan area, Jefferson County is expected to hold its position as the most populous county, experiencing very modest growth from 660,367 to 665,702. Madison County is projected to overtake Mobile County for second place, spurred forward by a 35 percent population increase (the fifth largest rate of all the counties). Similarly, Baldwin County and Montgomery County are expected to switch places between fourth and seventh, attributable to Baldwin County's projected 65 percent increase, the largest growth rate in the state. Shelby County and Tuscaloosa County are projected to remain fifth and sixth, respectively.

Limestone County's projected 61 percent population increase (gaining over 50,500 people) ranks it the second largest in the state and further contributing to the significant growth expected in the Huntsville metropolitan area. Lee County, which ranks as the eighth largest county in both 2015 and 2040, is expected to see a 52 percent increase, similarly propelling the high growth projected for the Auburn-Opelika metropolitan area. St. Clair County, located in the greater Birmingham area, is expected to experience a 42 percent population increase, the fourth largest across the state. This will take the county's population from approximately 87,000 residents in 2015 to over 111,000 in 2040, and jumping from 16th to the 12th most populous county in the state.

2.2 Population Demographics ^{6, 7}

In terms of population demographics, nearly one-quarter (23 percent) of Alabama's population is under the age of 18 years, while those age 65 years and older total 16 percent. Of those under age 65, 12 percent have a disability. Approximately 84 percent of individuals age 25 years and older have graduated high school, with 24 percent holding a Bachelor's degree or higher. The majority of Alabama's population (66 percent) reported themselves as White Not Hispanic in 2015. Persons reporting as Black or African American represent more than one-quarter of the population (27 percent). The remaining seven percent included other minority groups as well as those reporting as two or more races and/or Hispanic. Over three percent of the population is foreign born, with one-third of those being naturalized US citizens and over 86 percent having entered Alabama before 2010. More than half were born in Latin America while a third came from Asia. Five percent of households speak a language other than English at home, and only two percent report speaking English less than "very well."

Alabama's median (middle point) household income for 2015 was \$43,623, while the mean (average) was \$60,511. CBER used the US Department of Housing and Urban Development Office of Economic Affairs' Economic and Market Analysis Division data to present a breakdown of median family income for fiscal year 2016. The US median family income of \$65,700 is nearly 20 percent greater than Alabama's, at

⁶ <https://www.census.gov/quickfacts/table/PST045216/01>, accessed 3/21/2017

⁷ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>, accessed 3/21/2017

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

\$55,500. Only one metropolitan area in Alabama exceeds the US median – the Huntsville area at \$71,800. However, only one metro area’s median falls below \$50,000 – the Anniston-Oxford-Jacksonville area at \$46,700. The owner-occupied housing unit rate is 69 percent, with a median housing value of \$125,500.

The poverty threshold was approximately \$24,000 for a family of four (two adults and two children) in 2015. More than 18 percent of all people in Alabama are in poverty, as compared to over 15 percent for the US as a whole. At the county level, 44 of Alabama’s 67 counties exceed the state poverty percentage of 18 percent, while eight counties are below the US poverty percentage of 15 percent. The state’s lowest poverty rate is found in Shelby County, at approximately 10 percent. Of those in poverty, 27 percent are under 18 years and nearly 11 percent are 65 years and over.

2.3 Employment^{8, 9}

Alabama has over 2.2 million workers age 16 years and older, or approximately 58 percent of the population. According to Alabama Department of Labor statistics, the January 2017 preliminary seasonally adjusted unemployment rate for the state was 6.4 percent. The same report indicates that 22 counties have an unemployment rate of 6.5 percent and below, while another 22 counties have a rate of 8.0 percent and above. Shelby County has the lowest rate at 5.0 percent, while Wilcox County has the highest at 17.1 percent.

According to the US Census, the largest portion of civilian workers in Alabama (33 percent) are employed in management, business, science, and arts occupations, with sales and office occupations following (24 percent). The remainder include 17 percent in service occupations, 16 percent in production, transportation and materials moving occupations, and 10 percent in natural resources, construction and maintenance occupations. The top three industries for civilian employment include educational services and healthcare and social assistance at 23 percent, manufacturing at 14 percent, and retail trade at 12 percent. The remaining 51 percent is composed of 10 other industries, each with less than 10 percent. The Armed Forces account for fewer than one percent of Alabama employment.

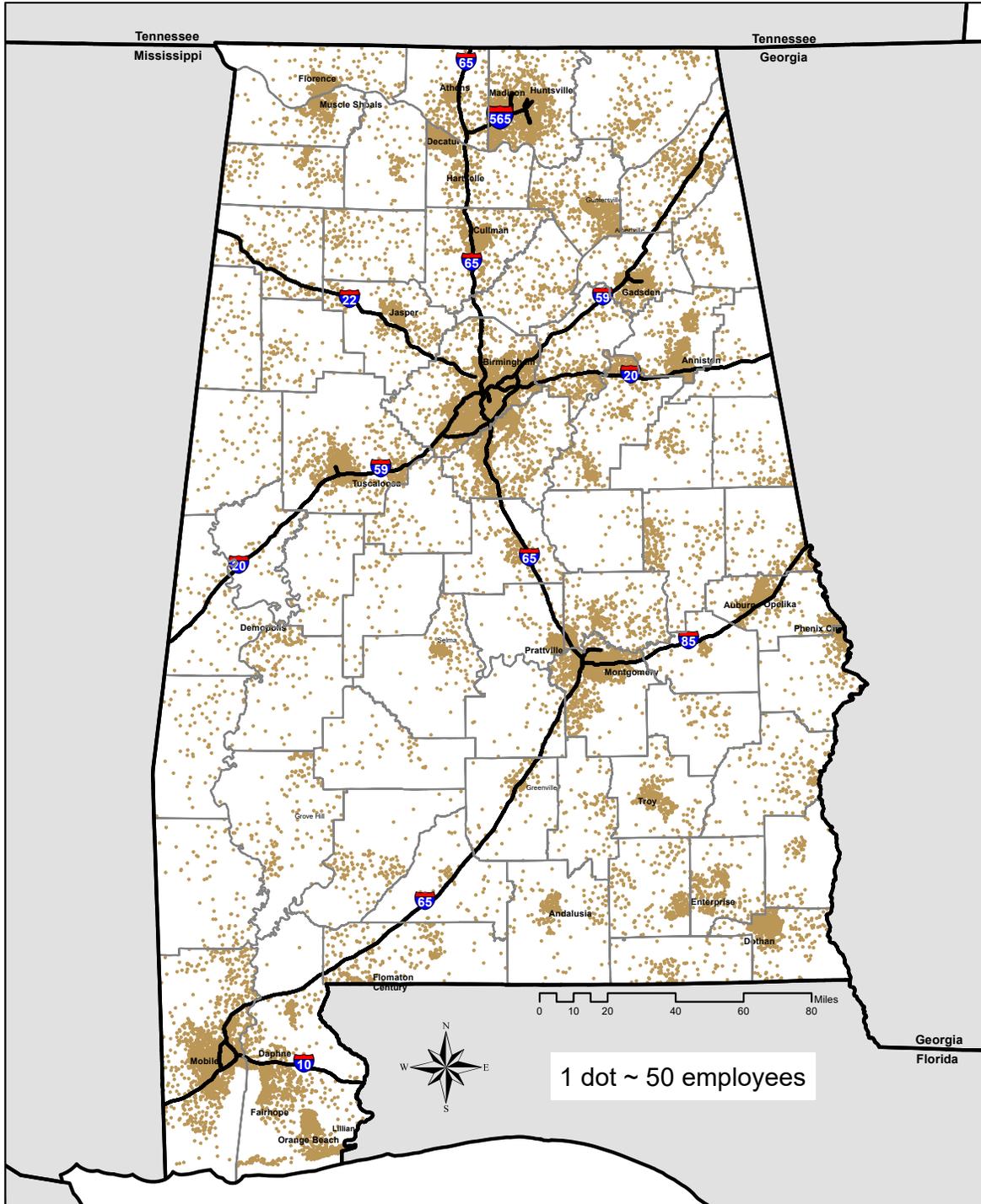
In 2014, total employer establishments numbered 97,714 and resulted in 2,000,031 jobs in Alabama. The 10 counties with the most jobs were Jefferson (371,895 jobs), Madison (198,765 jobs), Mobile (182,366 jobs), Montgomery (142,112 jobs), Tuscaloosa (97,535 jobs), St. Clair (88,164 jobs), Baldwin (70,811 jobs), Lee (60,104 jobs), Houston (50,115 jobs), and Morgan (49,906 jobs). Not surprisingly, the Birmingham-Hoover area topped the list for metropolitan areas, offering more than half a million jobs (524,535). The remaining metropolitan areas are ranked from greatest to least as follows: Huntsville (223,364 jobs), Mobile (182,366 jobs), Montgomery (177,098 jobs), Tuscaloosa (104,622 jobs), Daphne-Fairhope-Foley (70,811 jobs), Auburn-Opelika (60,104 jobs), Dothan (59,340 jobs), Florence-Muscle Shoals (57,721 jobs), Decatur (55,556 jobs), Anniston-Oxford (47,398 jobs), and Gadsden (38,071 jobs). Figure 2-4 shows employment concentration across the state in 2010.

⁸ <https://www.census.gov/quickfacts/table/PST045216/01>, accessed 3/21/2017

⁹ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmmk>, accessed 3/21/2017

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 2-4: Employment Concentration, 2010



Source: US Census Bureau

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Alabama's total retail sales per capita was \$12,145 in 2012. The US Census' 2014 County Business Patterns report¹⁰ for Alabama indicates a total annual payroll for all sectors in excess of \$64 billion. The three largest sectors were manufacturing (243,899 employees and annual payroll over \$12 billion); healthcare and social assistance (236,675 employees and nearly \$10.5 billion annual payroll); and retail trade (227,977 employees and \$5.5 billion annual payroll). Although the accommodation and food services sector ranks fourth for number of paid employees with 165,836, its annual payroll of \$2.4 billion actually ranks fifth. The administrative and support and waste management and remediation services sector employs fewer, with 129,311 paid employees, but has the fourth largest annual payroll at \$3.4 billion.

2.4 Economy

CBER undertakes a number of initiatives throughout the year to analyze and conduct economic forecasts for Alabama. The results are widely disseminated through their website, newsletter emails, and presentations at various events. One example is the Alabama Business Confidence Index (ABCI), which surveys business executives quarterly on issues facing the state and business. The results of the first quarter 2017 ABCI survey indicated that business confidence grew significantly, with the index scoring over 60 for the first time since 2006 (above 50 indicates a positive outlook). Economic optimism increased for both the nation and the state. Manufacturing and professional, scientific and technical services led the indices, and even the least optimistic industry (construction) expected growth. Similarly, all metro areas showed higher confidence, with Mobile in the lead and Huntsville as the lowest yet still positive. The biggest gain in confidence was in the Birmingham-Hoover area.

According to the survey conducted in November 2016, the top issues facing Alabama are:

- Education and workforce training
- Economic and business development
- Dissatisfaction with government
- Infrastructure improvement
- Job growth

The top issues facing companies were noted as:

- Economy in general
- Government regulations and taxes
- Workforce
- Company finances and development

In January 2017, CBER's Executive Director and Director of Economic Forecasting presented the 2017 Alabama Economic Outlook. The percent change in Alabama Real Gross Domestic Product (GDP) from 2010 to 2016 averaged 1.3 percent. While this was a positive improvement compared to the nearly 4 percent decline during the recession in 2009, it still lags behind the state's 2.5 percent average GDP experienced from 1991-2007. Birmingham-Hoover had the greatest share of State GDP in 2015, at nearly 32 percent. No other single metro area accounted for more than the combined rest of the state, which totaled 17 percent. The next four metro areas with the biggest shares of the State GDP went to Huntsville (12 percent), Mobile (9 percent), Montgomery (8 percent), and Tuscaloosa (5 percent).

¹⁰ <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>, accessed 3/21/2017

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Alabama's goods exports rose by 5.7 percent from September 2015 to September 2016 to \$15.2 billion. The top goods exports markets for 2015 were Canada, China, Mexico, and Germany. In looking at goods export industries in 2015, Transportation Equipment accounted for 48 percent of the total, with over \$9.3 billion. Chemicals (\$2.1 billion, 11 percent), Primary Metal Manufacturing (\$1.5 billion, 8 percent), Machinery (\$1.1 billion, 6 percent), and Paper (\$781 million, 4 percent) rounded out the top five.

The metropolitan area with the largest share of State exports in 2015 is Mobile (10 percent, \$1.8 billion), followed by Birmingham-Hoover (9 percent, \$1.8 billion), Montgomery (7 percent, \$1.4 billion) and Huntsville (7 percent, \$1.3 billion). In considering the percent change from 2014 to 2015 in total merchandise exports by metro area, the biggest increases were seen in Florence-Muscle Shoals (74 percent) and Daphne-Fairhope-Foley (66 percent). Auburn-Opelika and Anniston-Oxford-Jacksonville also increased but modestly, at 5 percent and 1 percent, respectively. Sizable decreases were seen in Dothan (34 percent), Gadsden (23 percent), Montgomery (20 percent), and Decatur (18 percent).

2.5 Economic Development

The Alabama Department of Commerce maintains a website called "Made in Alabama" (www.madeinalabama.com) that presents a plethora of information related to economic development and doing business in Alabama, including current business news covering every industry and sector in Alabama. *Business Alabama* magazine recently published its 2017 Economic Development Guide,¹¹ which it identifies as a comprehensive resource for site selection. In addition to feature articles, it provides regional profiles (the Tennessee Valley, Central Highlands, Capital Heartland, Southeastern Wiregrass, and Gulf Coast regions) and focuses on emerging industries (automotive, aerospace, information technology and biotechnology), international trade, incentives, transportation, and economic development agencies.

The Alabama Economic Development Alliance recently updated its Accelerate Alabama 2.0¹² plan, which provides direction to economic development efforts for the next three to five years. The seven targeted business sectors for the state to focus on over the next three years are:

- Aerospace/Aviation
- Agricultural Products/Food Production
- Automotive
- Bioscience
- Chemicals
- Forestry Products
- Metal and Advanced Materials

Included within the detailed assessment of each business sector are Alabama's advantages, particularly related to location assets and key locations. One of the location assets noted for multiple business sectors is *intermodal transportation infrastructure*. In this regard, the report highlights Alabama's six interstates, extensive rail track and Class I railroad coverage, and the deep-water Port of Mobile, as well as the interconnectivity between them. It is critical Alabama continues to invest in maintaining and enhancing its infrastructure system to ensure its ability to continue to support a strong economy across the state.

¹¹ <http://www.madeinalabama.com/assets/2017/03/2017-Economic-Development-Guide-1.pdf>

¹² <http://www.madeinalabama.com/assets/2017/01/Accelerate-Alabama-2.0.pdf>

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

SECTION 3: THE ROADWAY SYSTEM

The backbone of Alabama’s transportation system is the roadway network. There are over 102,000 miles of roadways in Alabama, of which approximately 10 percent (10,900 miles) are maintained by the State.¹³ Intended to provide for statewide mobility, the ALDOT-maintained roadways include all interstates and expressways and most arterial roadways. In other words, designated US and State routes, as well as other roadways in the National Highway System (NHS). In contrast, roadways intended for localized travel and access are predominantly maintained by local jurisdictions. The SWTP focuses on the portion of the roadway network that is maintained by ALDOT in order to assess characteristics of statewide significance.

This section profiles Alabama’s statewide roadway system. The profile summarizes the existing and projected traffic volumes and congestion levels on the ALDOT-maintained roadway network; the condition of its pavement and bridges; and roadway capacity, bridge and pavement projects within the ALDOT work program. Overviews of ITS facilities/architecture, safety priorities, and hurricane evacuation routes within the state are also presented. The section closes with a discussion of historical and projected funding levels and an analysis of the gap in funding related to capacity improvements. More detail on specific elements can be found in Interim Report #1 (existing conditions), Interim Report #2 (future conditions and needs assessment), and Supplement #1 – Travel Demand Modeling Report.

3.1 Mobility Along the Roadway System

The primary indicators of roadway mobility are traffic volumes and associated levels of congestion. Existing and projected travel conditions were analyzed to identify locations that should be considered for project improvements. The roadways within this analysis consisted only of the State maintained roadway system and several others of statewide significance due to their volumes and/or connectivity.

Existing Traffic Volumes

Roadway volumes reflect travel patterns, but they are also indicators of where maintenance needs are likely to arise. Figure 3-1 shows the existing Annual Average Daily Traffic (AADT) roadway volumes in 2014. Not surprisingly, the heaviest traffic volumes are seen along the interstate system. The Birmingham metropolitan area experiences the heaviest volumes of any urban area in the state by a substantial margin. Interstate segments with volumes exceeding 80,000 AADT along significant portions are seen on:

- I-20/59, I-65, and I-459 in Birmingham
- I-65 and I-85 in Montgomery
- I-10 and I-65 in Mobile
- I-565 in downtown Huntsville

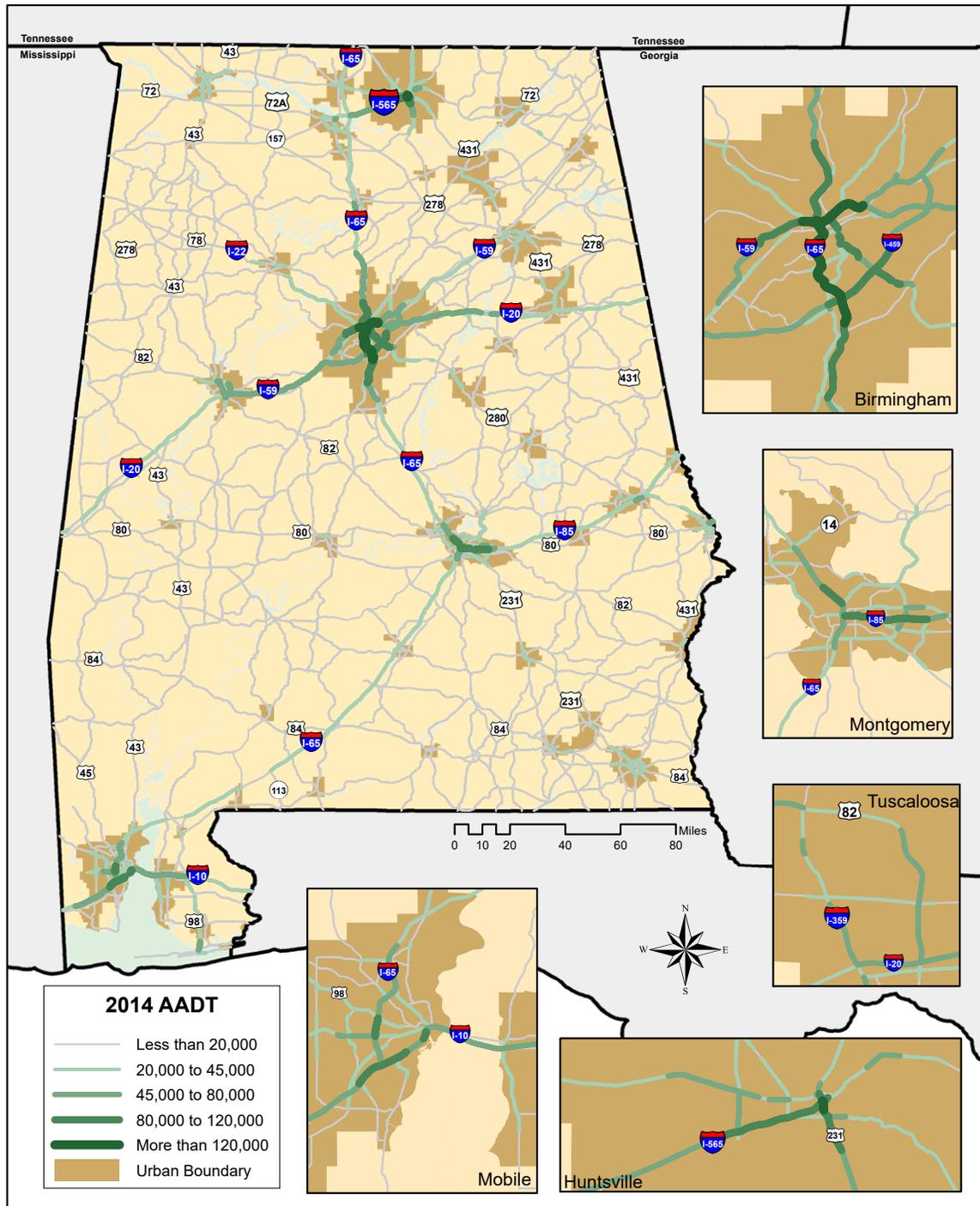
Most non-interstate roadways with higher volumes are in the larger urban areas. However, some arterials connecting between cities range from 10,000 to more than 30,000 AADT along portions. Examples include:

- US 280 between Columbus and Birmingham
- US 231 between Dothan to Montgomery
- Segments of US 431 from I-20 to Huntsville
- US 72 between the Huntsville and Muscle Shoals areas

¹³ ALDOT Highway Performance Monitoring System (HPMS)

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-1: Existing Roadway Volumes (2014)



Source: Alabama Department of Transportation

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Projected Traffic Volumes

The travel demand model was utilized to project roadway volumes throughout the state for future year 2040 conditions without major capacity improvements (No-Build). Figure 3-2 shows the projected 2040 roadway volumes. As with the existing volumes, most roadways with higher projected traffic volumes in 2040 are along interstates and in the larger metropolitan areas – particularly Birmingham, Huntsville, Mobile and Montgomery. The interstate facilities with the highest traffic volumes include:

- I-10 through Mobile
- I-20/59 through Birmingham
- I-65 through Birmingham
- I-565 through Huntsville

Not surprisingly, the roadways listed above are also projected to accommodate significant growth through 2040 as compared to their 2014 volumes. These increases are often due to growth and development in surrounding areas and/or capacity improvements on these or nearby facilities that attract additional trips.

Several non-interstate facilities are also projected to carry significant volumes in 2040:

- US 280 in Birmingham
- US 72 in Huntsville
- US 90 in Mobile
- US 31 in Decatur
- US 280 in Phenix City

One issue identified during the statewide travel demand modeling process relates to the high traffic volumes identified on US 280 between Auburn, AL and Columbus, GA. A function of how travel demand models operate, the result is that more trips are assigned from Columbus to Auburn than actually occur. In actuality, the trips that occur travel from Phenix City to Columbus. The highest volumes on US 280 in this area – currently exceeding 30,000 AADT – are found in the Phenix City-Columbus area. A more detailed explanation of why this happens is provided in Supplement #1 – Travel Demand Modeling Report.

Existing Congestion Levels

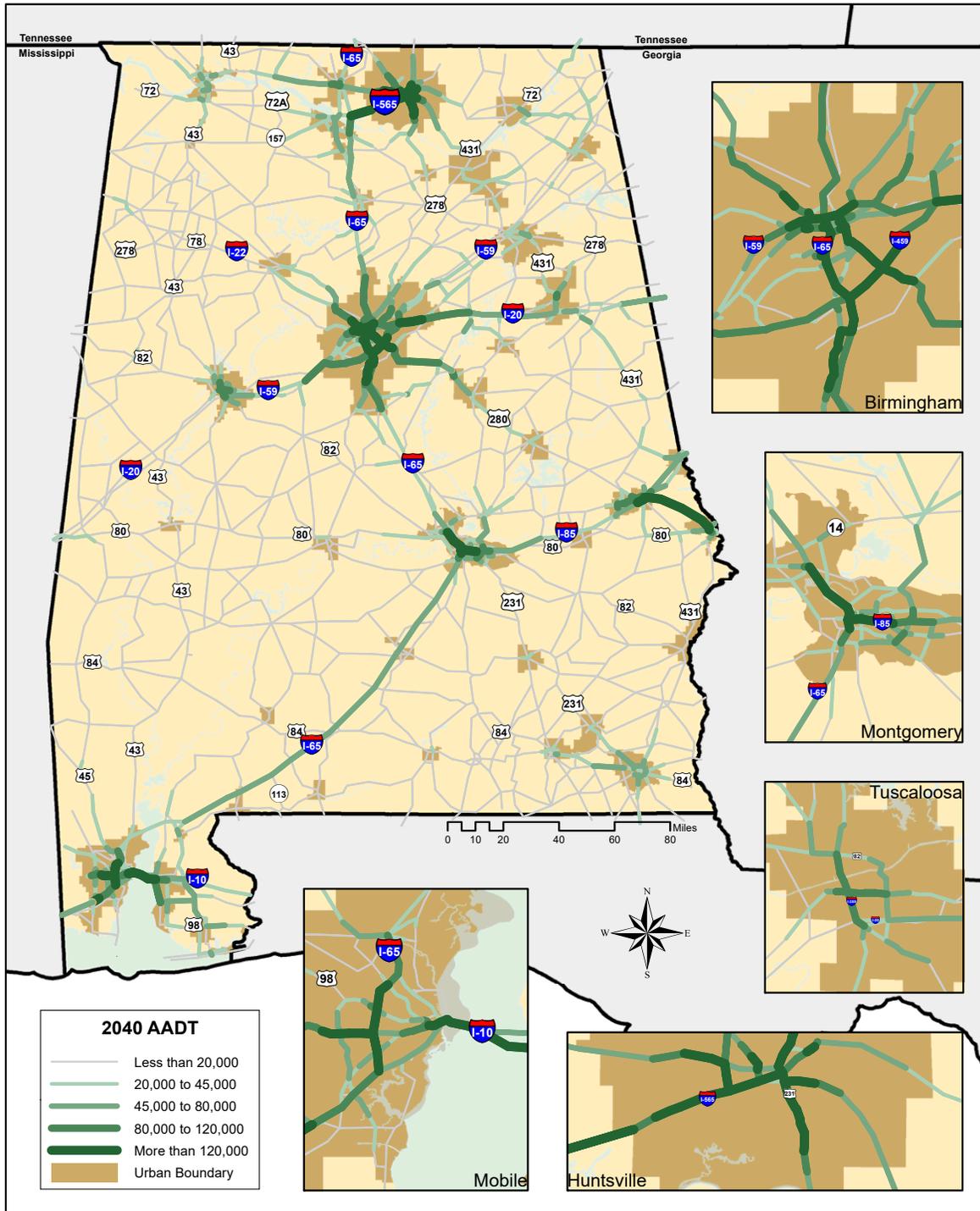
The travel demand model identifies existing roadway congestion by measuring volume-to-capacity (V/C) ratios. V/C ratios compare roadway demand (vehicle volumes) against roadway supply (carrying capacity). For the purposes of this analysis, roadway congestion levels are categorized from “free flow” to “highly congested” conditions.

It is important to note that the statewide travel demand model network is much less dense than the roadway network within a typical MPO model. Therefore, congestion levels derived from this analysis are at a much less detailed level than those at a regional level for MPOs. For more specific analysis within metropolitan areas, it is recommended that regional LRTPs be consulted.

Figure 3-3 depicts existing (2010 base year) levels of congestion throughout the state. As shown, most of the congestion is located within the urban areas of the state. The highest levels of congestion were found in the core areas of Birmingham, Huntsville and Mobile.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

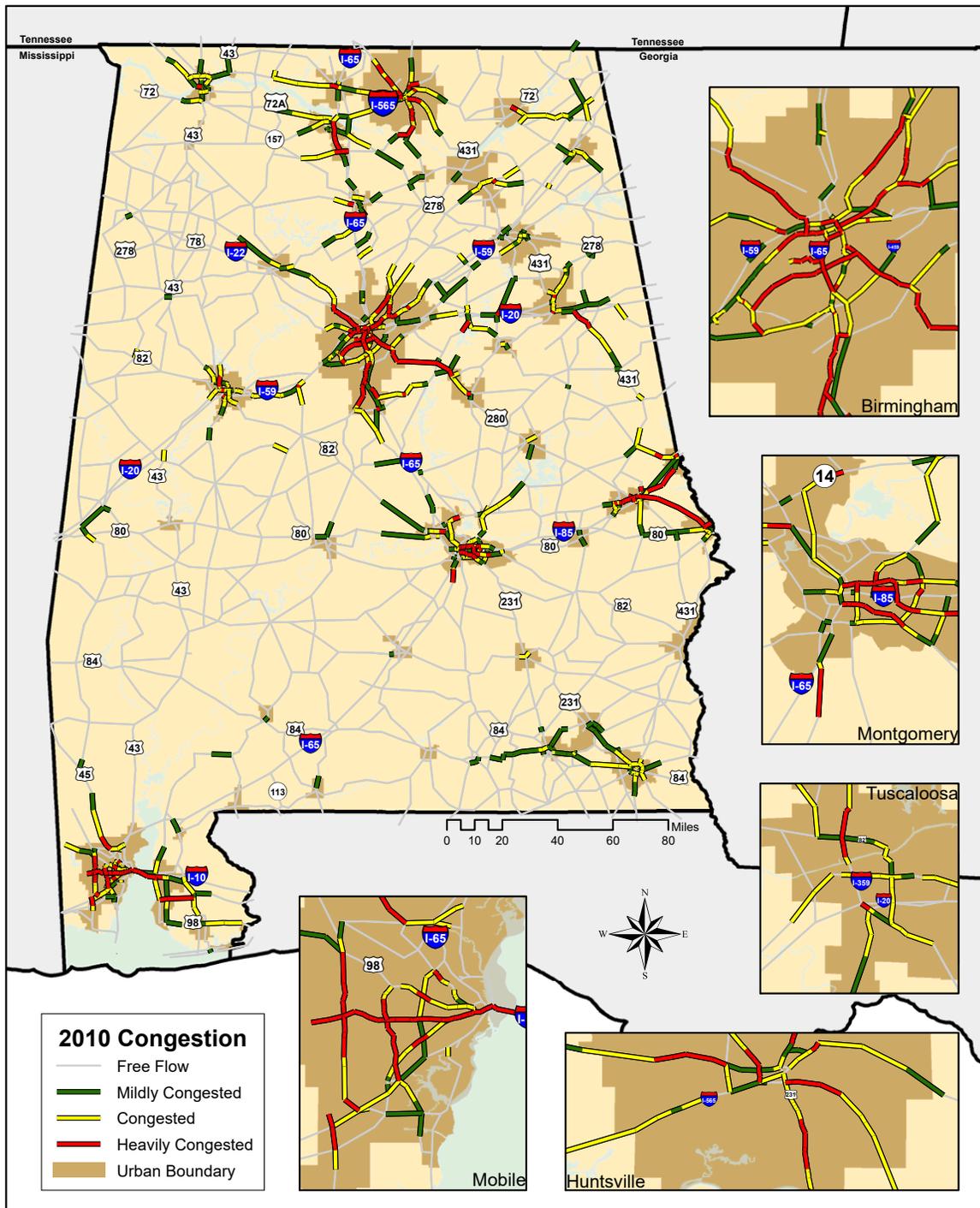
Figure 3.2: Projected Traffic Volumes – 2040 No-Build



For more accurate results in the metropolitan areas, the regional models and/or L RTPs from those respective MPOs should be consulted.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-3: Existing Levels of Congestion (2010)



Source: Statewide Travel Demand Model

For more accurate results in the metropolitan areas, the regional models and/or LRTPs from those respective MPOs should be consulted.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Major roadways currently experiencing significant congestion levels include:

- I-20/59, I-459, I-65, US 280, and US 78 in Birmingham
- I-65 in Shelby County
- I-85 in Montgomery
- I-10 and US 98 in Mobile
- US 72 in Huntsville

Projected Congestion Levels (No-Build Scenario)

To develop a baseline of future capacity needs, projected 2040 traffic volumes are applied to the existing 2010 roadway capacities. This methodology, commonly called a No-Build scenario, assumes that growth will occur as forecasted but no projects to add capacity will be constructed between now and 2040. Although an unlikely scenario, it provides a snapshot of anticipated congestion given projected growth.

A map of projected congestion under the No-Build scenario is provided in Figure 3-4. As expected, all of the currently congested roadway segments would see similar or increased levels of congestion, with most found in the Mobile, Birmingham, Huntsville and, to a lesser degree, Montgomery urban areas. Major roadways expected to experience significant congestion levels in the No-Build scenario are:

- I-10 and US 98 in Mobile
- I-65, I-459, I-22 and US 280 in Birmingham
- US 98 and US 90 in Baldwin County
- US 231, US 431, and SR 53 in Huntsville

3.2 Expanding the Roadway Network

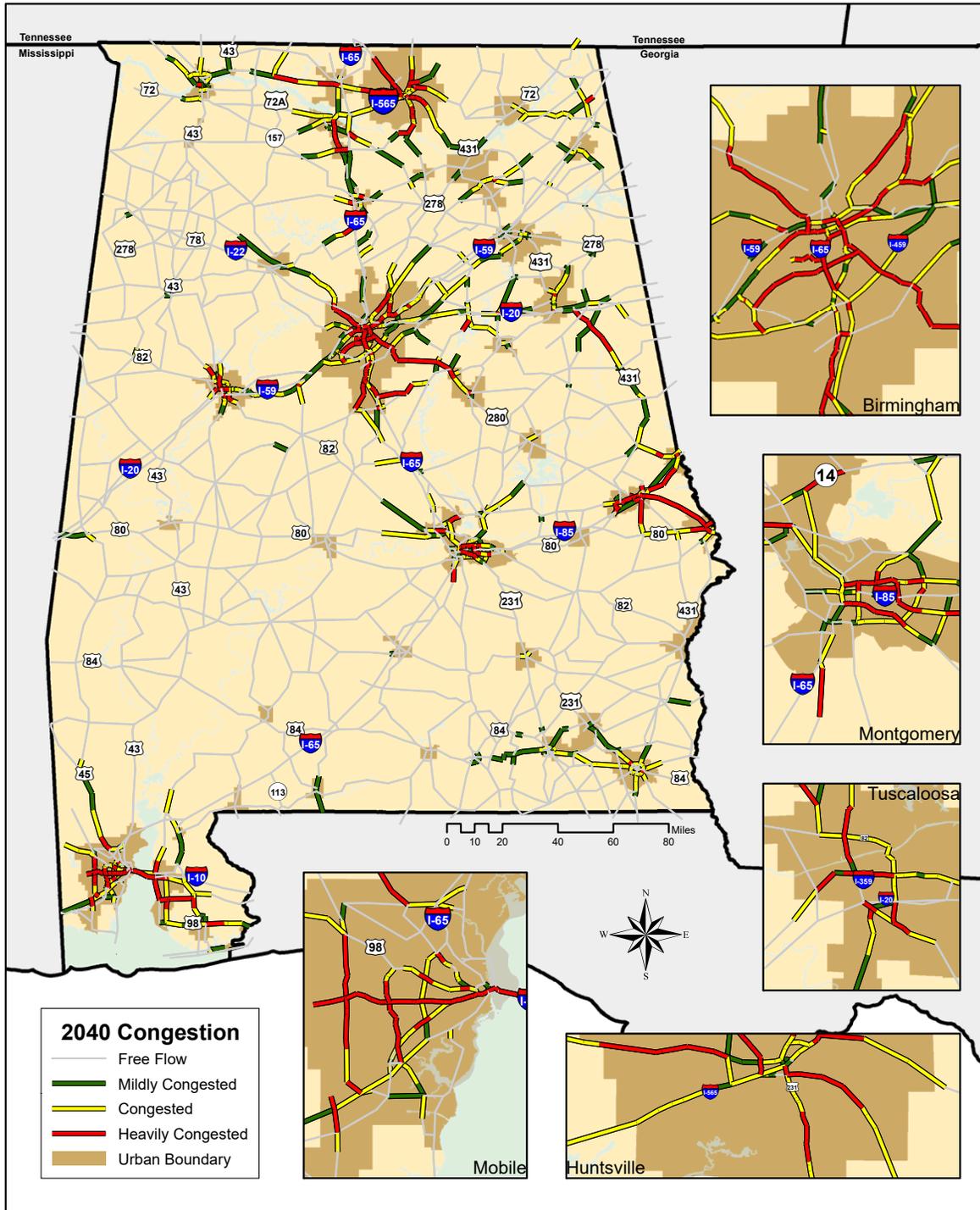
Although ALDOT's transportation investments are first and foremost focused on maintaining a state of good repair across the system, roadway expansion will be necessary in certain places to accommodate projected population and economic growth. Two primary types of improvements increase roadway capacity: adding lanes to an existing roadway or constructing a new roadway. Due to the significant amount of up-front funding required to add any roadway capacity to the system, as well as other related factors such as environmental considerations and public support, the nationwide trend in recent years is to first investigate opportunities to mitigate congestion through operational improvements. However, due in large part to their very localized nature, operational improvements are not able to be appropriately analyzed within a statewide context and travel demand modeling effort.

Committed Roadway Capacity Improvements

As of April 1, 2017, there were approximately 120 roadway capacity improvement projects in the ALDOT work program. (Because projects are continually added, removed and/or revised in the CPMS, it is in a state of constant flux.) Major capacity improvements in the ALDOT work program committed through 2040 are shown on Figure 3-5.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-4: Projected Congestion Levels in 2040 – No-Build Scenario

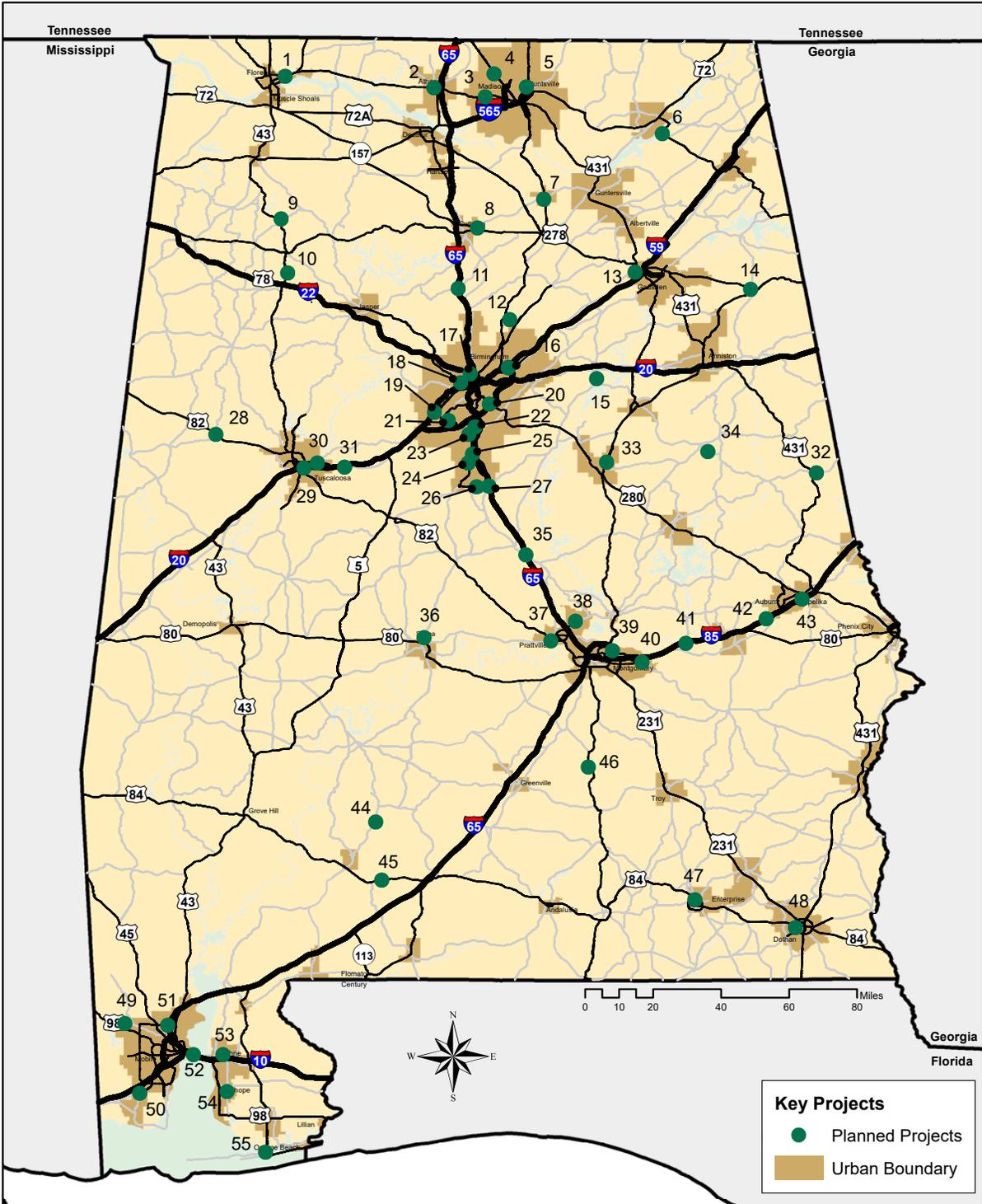


Source: Statewide Travel Demand Model

For more accurate results in the metropolitan areas, the regional models and/or L RTPs from those respective MPOs should be consulted.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-5: Major Capacity Improvements Committed Through 2040



Source: Alabama Department of Transportation

Note: The key capacity projects indicated by the numbering scheme on this map correspond to the projects listed in Table 1: Major Capacity Improvements Committed Through 2040 of Supplement #1 – Travel Demand Modeling Report.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

One of the key capacity improvements scheduled prior to 2040 is the widening of the I-10 Mobile River Bridge in Mobile and Baldwin counties. Divided into two projects totaling approximately \$850 million, the improvement will widen I-10 over Mobile Bay from four to eight lanes. Both projects are scheduled for construction in 2020.

Other significant capacity improvements prior to 2040 include:

- Northern Beltline construction from SR 75 to SR 79 in Jefferson County (new four-lane facility)
- I-65 widening from US 31 to CR 52 in Shelby County (four to eight lanes)
- I-65 widening from Blount County line to State Route 91 in Cullman County (four to six lanes)
- I-85 widening from Taylor Road to east of Chantilly Parkway in Montgomery (four to six lanes)
- I-85 widening from Gateway Drive (Exit 58) to US 29 (Exit 64) in Lee County (four to six lanes)
- I-20/59 widening from US 11 to I-459 in Jefferson County (four to six lanes)
- I-20/59 widening from Black Warrior Parkway to US 82 in Tuscaloosa County (four to six lanes)
- I-10 widening from CR 39 to Carol Plantation Road in Mobile County (four to six lanes)
- I-10 widening from Bayway Bridge to east of SR 181 in Baldwin County (four to six lanes)
- I-22 extension from I-65 to US 31 in Jefferson County (new four-lane interstate)
- US 72 widening from County Line Rd to Providence Main Rd in Madison County (four to six lanes)
- US 84 widening from I-65 near Evergreen to CR 7 in Conecuh County (two to four lanes)
- SR 158 extension from US 98 to Newburn Road in Mobile County (new four-lane facility)
- SR 210 (Ross Clark Circle) widening around Dothan (four to six lanes)
- SR 1 (Memorial Parkway) widening from south of Mastin Lake Drive to Winchester Road in Huntsville (four to eight lanes)
- SR 157 widening from SR 69 to east of US 31 north of Cullman (two to five lanes)

Projected Congestion Levels (E+C)

To take the assessment of traffic congestion to the next step, the No-Build scenario is modified to include committed capacity projects. Called the E+C (Existing Plus Committed) scenario, the forecasted growth is applied to a roadway network that is expanded to include capacity projects committed for construction by the year 2040. The E+C scenario projects statewide congestion levels after completion of capacity projects already committed in the ALDOT work program for construction by the year 2040.

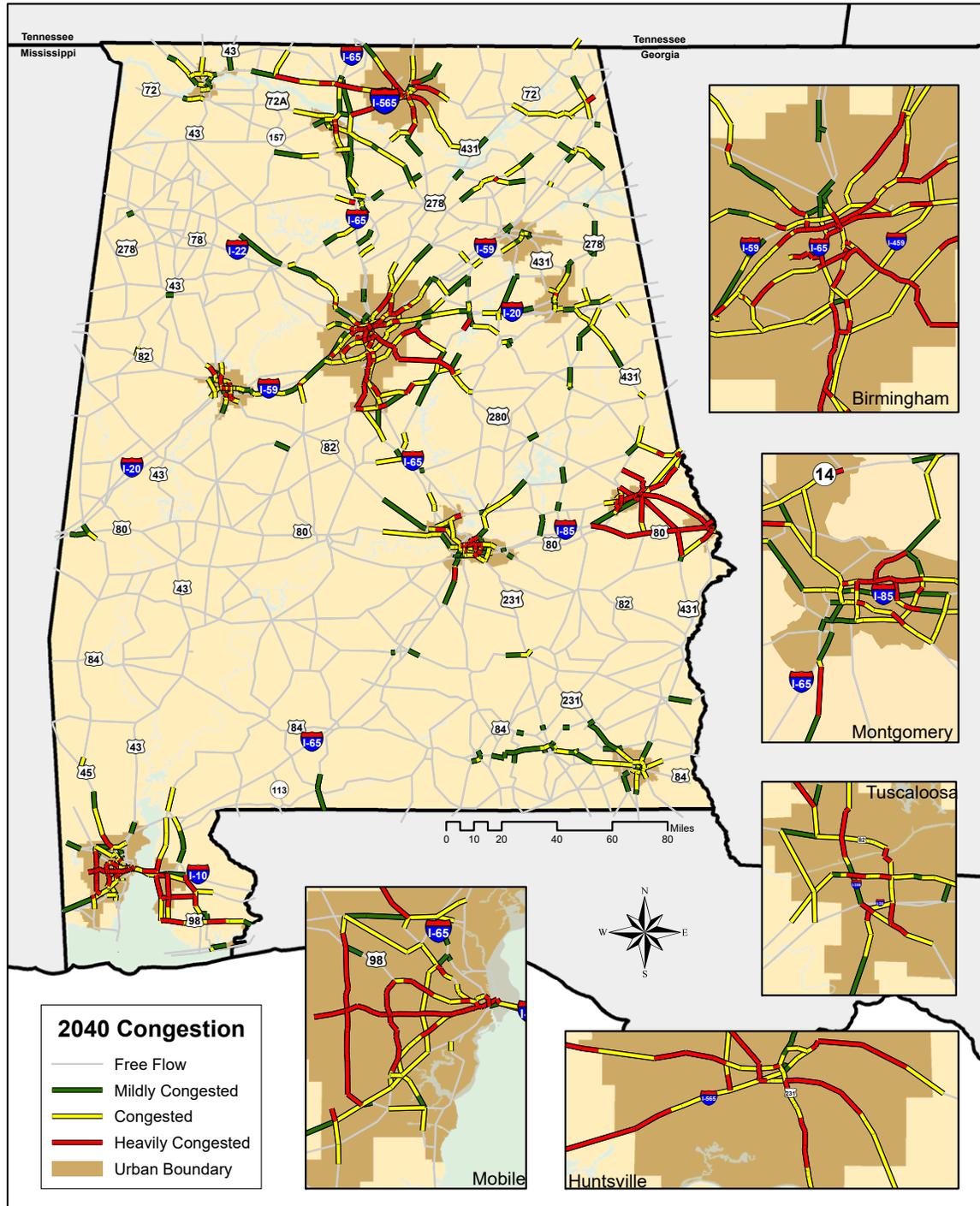
Figure 3-6 shows the projected congestion in 2040 under the E+C scenario. Compared to No-Build congestion levels (Figure 3-4), very few differences in the distribution of congestion statewide are seen, indicating that a major shift in statewide travel patterns is not anticipated. Major roadways projected to experience lower levels of congestion due to improvements in the current work program include:

- I-10 in Mobile (portions)
- I-85 in Montgomery (portions)
- US 31 in Shelby County and from Montgomery to Prattville
- US 72 in Athens
- SR 53 in Huntsville

It is important to note that while some roadways do not experience a noticeable post-improvement reduction in projected congestion, the entire network is responding to an increase in travel demands. In many instances, an increased number of trips are drawn to a facility as a result of additional capacity.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-6: Projected Levels of Congestion – 2040 Existing Plus Committed



ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Capacity Needs

Even after the construction of planned improvements in the ALDOT work program, congestion is projected to occur along major roadways around the state in 2040. Some segments are likely to operate under extremely congested conditions, particularly those that are already congested under current conditions.

Segments expected to experience congestion in 2040 include:

- I-20/59, I-459, I-65, US 280, and US 78 in Birmingham
- I-85 and SR 126 (Chantilly Boulevard) in Montgomery
- I-10, Schillinger Road, University Boulevard, and Airport Boulevard in Mobile
- US 98 and US 90 in Baldwin County
- I-565, US 72, US 231 and US 431 in Huntsville
- US 31 in Shelby County

While congested roadway segments in non-urban areas were not as prolific as in urban areas, some non-urban segments are projected to experience congestion in 2040 after construction of planned improvements in the ALDOT work program. These include:

- US 431 between I-20 and Opelika
- US 72 in Athens
- US 84 near Enterprise
- SR 40 east of Scottsboro

As shown in Figure 3-6, numerous roadways throughout the state are projected to operate under some level of congested conditions. In conjunction with the high cost of capacity improvements, the existence of widespread congestion reinforces the need for cost effective solutions to increasing travel flow.

3.3 Maintaining Roadway Infrastructure

Maintaining existing transportation infrastructure is a primary consideration for ALDOT. Two of the most significant maintenance related elements of the transportation system are pavement and bridges.

Pavement Conditions

ALDOT maintains approximately 29,400 lane-miles of roadway. Information from ALDOT's Bureau of Materials and Tests was obtained to complete the pavement condition assessment. The following factors are considered in developing pavement condition ratings (PCR):

- Roughness, which is usually a sign of public perception
- Structure, or cracking of the surface
- Rutting, which presents safety issues
- Age of the overlay

Pavement ratings are reported as follows:

- New
- Good: $PCR \geq 70$
- Fair: $55 < PCR < 70$
- Marginal: $PCR \leq 55$

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- CBT (Concrete, Bridge, or Tunnel) – Refers to overlays that are concrete, thin overlays (1 inch) over concrete, major bridge sections (that are their own overlay), and tunnels
- Incomplete – Represents segments where more data is needed

Table 3-1 identifies pavement condition by roadway network category for the ALDOT-maintained roadway system (identified previously on page 3-1).¹⁴

Table 3-1: Pavement Condition

Condition	Interstate		Non-Interstate NHS		Non-NHS		Total	
	Miles	%	Miles	%	Miles	%	Miles	%
New	176.87	17.7%	329.00	10.4%	784.48	11.7%	1,290.35	11.9%
Good	420.27	42.0%	1,862.42	58.8%	2,962.85	44.2%	5,245.54	48.2%
Fair	152.69	15.2%	512.65	16.2%	1,133.29	16.9%	1,798.63	16.6%
Marginal	91.37	9.1%	456.75	14.4%	1,804.14	26.9%	2,352.26	21.6%
CBT	157.69	15.7%	8.09	0.2%	10.62	0.2%	176.40	1.6%
Incomplete	2.59	0.3%	0.67	0.0%	7.82	0.1%	11.08	0.1%
TOTAL	1,001.48	100.0%	3,169.59	100.0%	6,703.20	100.0%	10,874.26	100.0%
	Lane-Miles	%	Lane-Miles	%	Lane-Miles	%	Lane-Miles	%
New	777.14	17.0%	1,048.23	10.1%	1,682.41	11.7%	3,507.78	11.9%
Good	1,921.70	42.1%	6,067.51	58.5%	6,375.00	44.1%	14,364.21	48.9%
Fair	701.51	15.4%	1,706.65	16.4%	2,441.41	16.9%	4,849.57	16.5%
Marginal	405.14	8.9%	1,510.70	14.6%	3,889.53	26.9%	5,805.37	19.8%
CBT	744.35	16.3%	38.87	0.4%	30.38	0.2%	813.61	2.8%
Incomplete	14.98	0.3%	2.60	0.0%	25.69	0.2%	43.27	0.1%
TOTAL	4,564.82	100.0%	10,374.55	100.0%	14,444.43	100.0%	29,383.80	100.0%

Source: ALDOT Bureau of Materials and Tests, December 2015

A review of the data above highlights the following about existing pavement conditions statewide:

- 60 percent of the ALDOT network is rated as good or above, increasing to 77 percent with fair or above ratings.
- 59 percent of the interstate system and 70 percent of the non-interstate NHS (National Highway System) is rated as good or above.

Bridge Conditions

Beginning with the Federal-Aid Highway Act of 1968, FHWA established National Bridge Inspection Standards (NBIS) for the proper safety inspection and evaluation of all highway bridges. The NBIS regulations apply to all publicly-owned highway bridges longer than 20 feet located on public roads. The states establish criteria for inspection level and frequency, with the routine frequency generally not to exceed every 24 months.¹⁵ Among the many items inspected as part of the National Bridge Inventory (NBI), the key elements in bridge condition ratings include the bridge deck, superstructure and substructure, as well as culverts.

¹⁴ As of December 31, 2015.

¹⁵ <https://www.fhwa.dot.gov/bridge/inspection/>, accessed 8/25/2016

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

FHWA is in the process of developing performance measures for a number of roadways characteristics, including bridge condition. The latest FHWA guidance classifies bridges as Good, Fair, or Poor based on the following criteria for any bridge element (the lowest rating of the deck, superstructure, or substructure) or culvert in the National Bridge Inventory (NBI):

- Good: Lowest rating is 7, 8, or 9
- Fair: Lowest rating is 5 or 6
- Poor: Lowest rating is 4, 3, 2, 1, or 0

The ALDOT Maintenance Bureau reports a total of 5,752 ALDOT-maintained bridges in the state. Of these, slightly over half (3,101 bridges, or 54 percent) are on the NHS. Table 3-2 presents the bridge condition of non-NHS and NHS bridges throughout the state.

Table 3-2: Bridge Condition

Condition	Non-NHS Bridges		NHS Bridges		Total	
	Number	Percent	Number	Percent	Number	Percent
Good	1,081	40.8%	1,043	33.6%	2,124	36.9%
Fair	1,528	57.6%	2,007	64.7%	3,535	61.5%
Poor	42	1.6%	51	1.7%	93	1.6%
TOTAL	2,651	100.0%	3,101	100.0%	5,752	100.0%
Total Deck Area (sq. ft.)	22,709,073		60,050,035		82,759,107	

Source: ALDOT Maintenance Bureau

Bridge condition highlights include:

- 98 percent of bridges rate in Good or Fair condition.
- 54 percent of bridges are on the NHS system, but NHS bridges comprise 73 percent of the deck area. Because NHS facilities carry more traffic, they include many four-lane or greater facilities.
- The lower percentage of NHS bridges rated as Good than non-NHS bridges (34 percent vs. 41 percent) may be partially attributed to their greater traffic volumes and associated wear.

Bridge age, shown in Table 3-3, is also considered by ALDOT when prioritizing bridge improvements. Over 50 percent of the state’s non-NHS bridges were built prior to 1970. In contrast, slightly more than half of NHS bridges have been built since 1970. This reflects a historical trend favoring NHS facilities in project prioritization, as well as the fact that many bridges along the NHS were replaced when capacity was added.

Table 3-3: Bridge Age

Year	Non-NHS Bridges		NHS Bridges		Total	
	Number	Percent	Number	Percent	Number	Percent
Pre-1960	1,145	43.2%	729	23.5%	1,874	32.6%
1960-1969	393	14.8%	720	23.2%	1,113	19.3%
1970-1979	187	7.1%	554	17.9%	741	12.9%
1980-1989	417	15.7%	400	12.9%	817	14.2%
1990-1999	268	10.1%	315	10.2%	583	10.1%
2000-2009	193	7.3%	284	9.1%	477	8.3%
2010-2016	48	1.8%	99	3.2%	147	2.6%
TOTAL	2,651	100.0%	3,101	100.0%	5,752	100.0%

Source: ALDOT Maintenance Bureau

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Maintenance Improvements

The primary document to guide maintenance improvements and priorities will be the Transportation Asset Management Plan (TAMP), currently being developed by ALDOT. Per FHWA requirements, a State Asset Management Plan shall include for National Highway System (NHS) facilities:

- A summary listing of the pavement and bridge assets on the NHS, including a description of the condition of those assets
- Asset management objectives and measures
- Performance gap identification
- Lifecycle cost and risk management analysis
- A financial plan
- Investment strategies

It is important to note that the TAMP can address roadways beyond those on the NHS. Anticipated for completion after the SWTP update, the TAMP will in essence serve as a supplemental document to the final SWTP. Until the TAMP's completion, the resurfacing and bridge projects in the current ALDOT work program will serve as the overall ALDOT strategy for addressing pavement and bridge needs across the state. A detailed distribution of the ALDOT work program is provided in Section 7 of Interim Report #2.

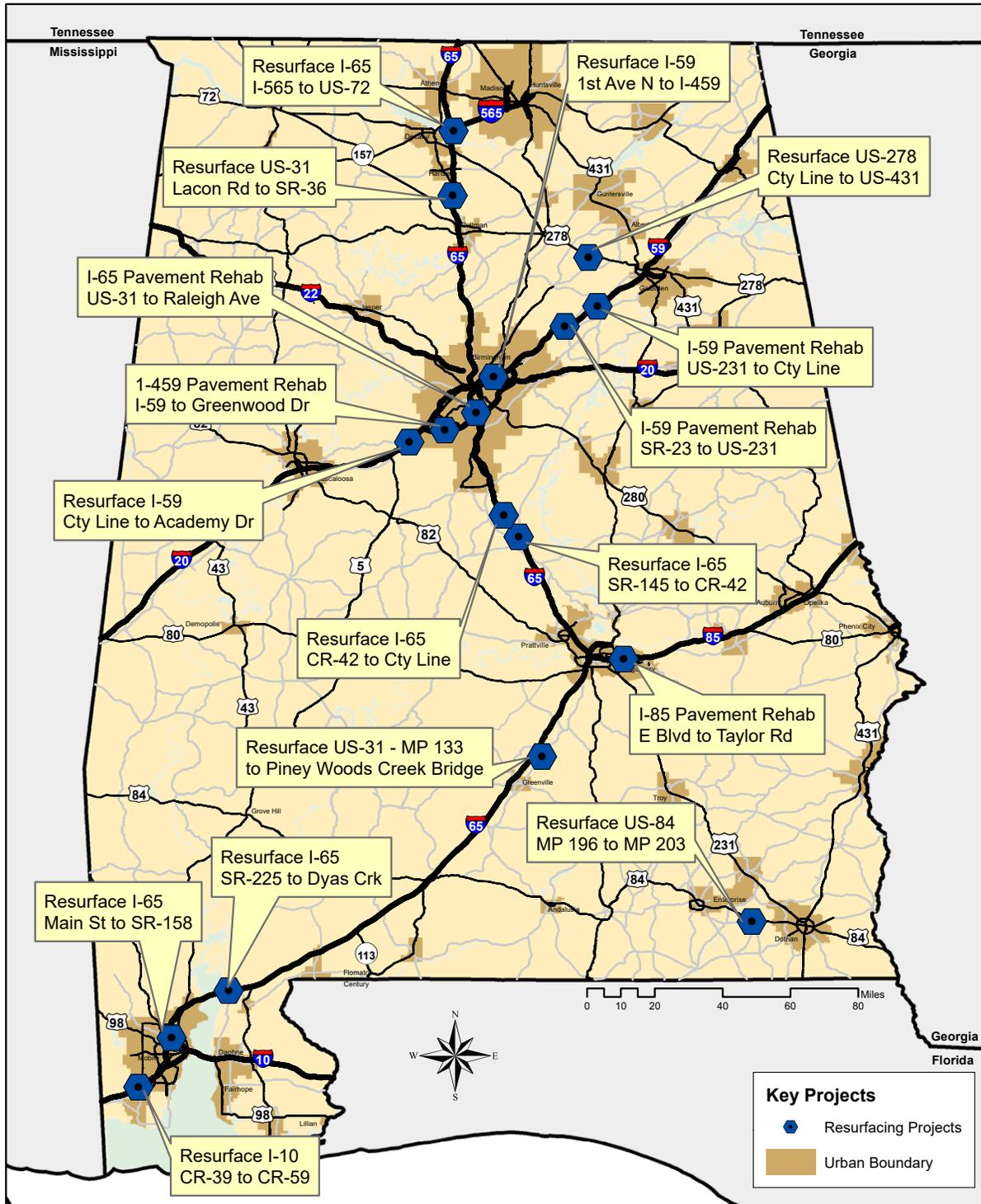
The current ALDOT work program includes a number of resurfacing/pavement rehabilitation and bridge projects to maintain the existing infrastructure network. Figures 3-7 and 3-8 show the location of key resurfacing/pavement rehabilitation and bridge projects in the work program.

The key resurfacing and pavement rehabilitation projects (and their approximate lengths) include:

- I-10 from Carol Plantation Road to CR 39 in Mobile County (resurfacing, 5 miles)
- I-59 from Etowah County line to SR 23 in St. Clair County (two resurfacing projects, 19 miles)
- I-59 from 1st Avenue North to I-459 in Jefferson County (resurfacing, 5 miles)
- I-59 from Tuscaloosa County line to north of Academy Drive in Jefferson County (resurfacing, 9 miles)
- I-65 from I-565 to US 72 in Limestone County (resurfacing, 12 miles)
- I-65 from US 31 to Raleigh Avenue overpass in Jefferson County (pavement rehabilitation, 4 miles)
- I-65 from Shelby County line to SR 145 in Chilton County (two resurfacing projects, 15 miles)
- I-65 from SR 225 to Dyas Creek in Baldwin County (resurfacing, 9 miles)
- I-65 from Main Street to north of SR 158 in Mobile County (resurfacing, 5 miles)
- I-85 from west of Eastern Boulevard to east of Taylor Road in Montgomery County (pavement rehabilitation, 4 miles)
- I-459 from I-59 to Greenwood Drive in Jefferson County (pavement rehabilitation, 6 miles)
- US 31 from SR 36 to Lacon Road in Morgan County (resurfacing, 8 miles)
- US 31 from MP 133 to Piney Woods Creek Bridge in Butler County (resurfacing, 8 miles)
- US 84 from east of SR 123 west of Beaver Creek in Houston County (resurfacing, 7 miles)
- US 278 from US 431 to the Blount County line in Etowah County (resurfacing, 13 miles)

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-7: Key Resurfacing and Pavement Rehabilitation Projects



Source: Alabama Department of Transportation

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Several significant bridge projects in CPMS (the ALDOT work program) include:

- New bridges associated with the new Northern Beltline in Jefferson County
- I-65 over Murder Creek and relief bridges in Conecuh County (bridge replacement)
- I-20 at the St. Clair-Talladega County line (bridges and approaches)
- I-65 in Shelby County (bridge widenings)
- I-10 East Tunnel Interchange Bridge in Mobile County (bridge rehabilitation)
- I-65 bridges over Tennessee River in Morgan County (bridge rehabilitation)
- I-65 bridge over Sepulga River in Conecuh County (bridge replacement)
- US 84 over the Tombigbee River and relief bridges in Choctaw County (bridge replacement)
- US 80 over Alabama River in Dallas County (bridge replacement)
- SR 77 northbound bridge over the Coosa River in Etowah County (bridge replacement)

3.4 Intelligent Transportation Systems (ITS)

The deployment and integration of Intelligent Transportation Systems (ITS) has enhanced ALDOT's ability to increase the productivity, mobility, safety, efficiency, and security of the state's transportation network. ITS utilizes a variety of advanced technological applications to monitor roadway conditions, relay travel information to motorists, collect and archive travel information, and modify traffic signals. These applications are a vital component of incident/emergency management and improving overall traffic conditions on a regular basis.

ITS infrastructure includes:

- Transportation Management Centers (TMC) – The base of operations and monitoring for statewide, regional or local transportation networks, TMCs provide a wide range of services, including relaying traveler information, monitoring traffic and weather conditions, and coordinating incident response.
- Field Devices – Including Advanced Traffic Management Systems (ATMS) hardware such as closed circuit televisions (CCTV), dynamic message signs (DMS) and traffic signals among others, these devices collect live traffic conditions and relay information to motorists.
- Software – Supporting TMC operations with data collected from field devices, computer applications coordinate traffic signals, collect and archive incident management information, and manage work orders to repair ITS and traffic signal infrastructure.
- Incident Management and Traveler Information Systems – Used by motorists and first responders alike, these applications relay current traffic conditions through streaming video, active dynamic message signs, incident information, and road closures.

The core of ITS architecture is the Regional Transportation Management Center (RTMC). ALDOT has four regional RTMCs – in Birmingham, Mobile, Montgomery and Tuscaloosa – as well as a future RTMC in Huntsville. Each RTMC has local control of that region's field devices and is responsible for daily freeway and major arterial operations. The coverage of each RTMC is outlined below:

- Birmingham RTMC – Freeway and incident management for the ALDOT East Central Region, which includes Blount, Calhoun, Chambers, Clay, Cleburne, Coosa, Jefferson, Randolph, Shelby, St. Clair, Talladega, and Tallapoosa counties. The primary routes managed are I-20, I-22, I-59, I-65, I-459, and US-280. It operates 24 hours a day, 7 days a week.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- Mobile RTMC – Freeway and incident management for the ALDOT Southwest Region, which includes Baldwin, Conecuh, Escambia, Mobile, Clarke, Choctaw, Marengo, Monroe, Washington, and Wilcox counties. The primary routes managed are I-10, I-65, I-165, US-90, and US-98. It operates 24 hours a day, 7 days a week.
- Montgomery RTMC – Freeway and incident management for the ALDOT Southeast Region, which includes the counties of Autauga, Barbour, Bullock, Butler, Coffee, Covington, Crenshaw, Dale, Dallas, Elmore, Geneva, Henry, Houston, Lee, Lowndes, Macon, Montgomery, Pike, and Russell counties. The primary routes managed are I-65, I-85, US-80, US-82, US-31, US-231, and US-331. The facility operates weekdays (five days) from 6:00 AM to 6:00 PM, with plans to expand operations as needed.
- Tuscaloosa RTMC – Freeway and incident management for the ALDOT West Central Region, which includes Bibb, Chilton, Fayette, Greene, Hale, Lamar, Marion, Perry, Pickens, Sumter, Tuscaloosa, Walker, and Winston counties. The primary routes managed are I-20/59, I-22, I-65, I-359, US-11, US-31, US-43, US-82, SR-69, and SR-215. The facility opened in July 2017 and operates weekdays (five days) from 6:00 AM to 6:00 PM, with plans to expand operations as needed.
- Huntsville RTMC (future) – Freeway and incident management for the ALDOT North Region, which includes Cherokee, Colbert, Cullman, Dekalb, Etowah, Franklin, Jackson, Lauderdale, Lawrence, Limestone, Madison, Marshall, and Morgan counties. The primary routes managed are I-59, I-65, I-565, US-11, US-31, US-72, US-72 Alternate, US-231, and US-431. The facility will initially operate from 6:00 AM to 6:00 PM, with operations expanding as warranted.

ALDOT's *ITS Strategic Business Plan* was completed in 2015. Serving as the five-year plan for necessary actions and priorities to appropriately guide the ITS program, key plan elements include:

- Vision, goals and objectives for ITS deployment
- Program needs and prioritized ITS improvements
- Financial plan that highlights expenditures over the next five years

Prioritized deployment strategies fall into three primary categories:

- Interstate system improvements
- Urban area improvements
- General/statewide improvements

Interstate system projects include wireless and/or fiber optic communications, vehicle detection, surveillance cameras, and traveler information dissemination devices (ITS components or capability required for the reporting of real-time traffic and travel information). Projects also include necessary ATMS hardware, software and/or equipment upgrades at associated TMCs. Interstates scheduled for these improvements include all segments of I-65, I-20, I-59, I-10 and I-85.

Specific urban area ITS projects include:

- Installation of projects in the Birmingham region to provide real-time information on high priority/heavily congested metropolitan corridors required for compliance with CFR 511, and State-designated routes of significance. It is recommended corridors include only State and US routes.
- Emergency management focused projects along parallel routes identified as detours and emergency alternate routes to assist emergency responders to avoid congestion. Projects may include enhancements to existing traffic signals (upgraded equipment, emergency traffic signal

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

timing plans, and adaptive traffic signal timing), transit vehicle priority and emergency vehicle pre-emption enhancements as appropriate. This is planned in the Huntsville, Mobile, Tuscaloosa and Montgomery metropolitan areas.

Statewide projects that are not associated with a specific area or interstate facility are also included. These projects consist of various types of improvements, including parallel route emergency management strategies, planning activities, and installation of equipment (DMS, CCTV, etc.) throughout the state.

Review of the current ALDOT work program identified a total of \$24.5 million in ITS improvements. The majority of these improvements are for equipment in the Birmingham area. However, it is important to note that ITS improvement projects are typically phased into a relatively short-term implementation period. Therefore, it is not unexpected to see that the ITS projects currently in the work program are all identified for construction no later than 2023. As the ITS business strategy continues to be implemented through 2040, more ITS projects across the state will be added to the ALDOT work program.

Most of the ITS priorities are concentrated in the urbanized areas of Birmingham, Montgomery, and Mobile. This is due in large part to the presence of existing TMCs in those areas. Furthermore, most of the focus in the current program emphasizes interstate ITS applications. Given the projected volumes and congestion levels throughout the state, it will be important for ALDOT to continue investing in ITS technologies within urban areas and along interstates. In addition, the following components beyond those noted within the ALDOT *ITS Strategic Business Plan* are needed:

- Construction of RTMCs in other metropolitan areas.
- ITS applications on major arterials and parallel arterials that serve regional trips, such as US 280, US Alternate 72, US 98 and US 90. In many cases, these applications can work in tandem with interstate applications to facilitate better corridor-level mobility.

3.5 Safety

The *State of Alabama Strategic Highway Safety Plan*¹⁶ (SHSP) is a collaborative effort by a number of state agencies with the goal of reducing serious accidents, injuries, and fatalities on Alabama's roadways. The second edition was developed in 2011 and contains historical crash data, causes of crashes, and strategies to mitigate crashes along Alabama's highways. Per the report, the top three crash causes from 2006 to 2011 were "restraint not used," "speeding," and "alcohol/drug abuse." The SHSP is currently being updated and will be available in summer 2017.

The recommendations resulting from the 2011 SHSP focus on needed actions in five main policy areas. The focus areas are not mutually exclusive and support one another. More information on the strategies within the focus areas can be found in the 2011 SHSP. The five focus areas are:

1. Driver Behavioral Crashes – Strategies to curb distracted driving, specifically in the areas of speeding, alcohol/drug use while driving, cell phone use, and increasing seatbelt/restraint use. Strategies also serve to reduce crashes from commercial vehicles, which include aggressive enforcement of commercial vehicles, improved inspection and data collection processes, additional personnel, enhanced personnel training, and public awareness/education to reduce commercial vehicle crashes.

¹⁶ https://www.dot.state.al.us/dsweb/divTed/SafetyPlanning/pdf/SHSP_Summary.pdf

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

2. Infrastructure Measures – Strategies to improve the roadway network to alleviate accidents. Intersection strategies include signalization, realignment of atypical intersections and the addition of turn lanes. For roadway segments, multiple types of countermeasures are deployed to reduce roadway lane departure crashes and to minimize crash severity when these type crashes do occur. This includes items such as rumble strips, wider pavement, median barriers, and other measures.
3. Legislative Initiative – Strategies include coordinating with elected officials to promote traffic safety legislation; an annual assessment of traffic data to analyze crashes and citations to identify traffic safety legislation needs; and the development and provision of educational materials to policymakers, legislators, media outlets, grassroots organizations, and the general public.
4. Traffic Safety Information Systems – Centers around the actions of the Traffic Records Coordinating Committee (TRCC), which acts as an umbrella under which safety data planning and activities occur both at the direction of the TRCC and by safety related agencies. Strategies center on the collection and dissemination to EMS and law enforcement officials. Another strategy is to continue to improve safety databases such as the CARE crash database.
5. Safety Stakeholder Community – Aims to raise public awareness regarding safety issues and create more of a safety culture in the state. Strategies include a Traffic Safety Summit, periodic stakeholder meetings, e-newsletters, printed safety materials and a Speaker’s Bureau.

Data from the *Alabama Crash Fact Book* was obtained for recent crash data. The 2010 American Association of State Highway and Transportation Officials (AASHTO) Highway Safety Manual¹⁷ indicates that combining fatal and severe injuries usually provides a better basis for safety studies. Historical statewide crash data from 2011-2015 are provided in Table 3-4.

Table 3-4: Historical Crash Data, 2011-2015

Category	2011	2012	2013	2014	2015
Fatalities	899	870	852	821	849
Injuries	38,017	40,202	37,559	39,518	44,020
Crashes	127,683	128,307	126,862	133,219	147,452

Source: Alabama Crash Fact Book, 2015

As the table shows, Alabama experienced a 15 percent increase in total crashes between 2011 and 2015, with a majority of that increase occurring during a single year, 2014-2015. However, there are several other interesting findings:

- There was a slight reduction in the number of fatal crashes, from a high of 899 in 2011 to 849 in 2015, with 2014 having the fewest fatalities of the five-year period at 821.
- The fatality rate averaged less than one percent each year, dropping from .07 percent in 2011-2013 to .06 percent in 2014-2015.
- The rate of injury crashes remained consistent at 30 percent for each year of the five-year period.

¹⁷ <http://www.highwaysafetymanual.org/Pages/About.aspx>

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

3.6 Hurricane Evacuation Needs

Emergency preparedness is another primary consideration when addressing highway safety. Specific to Alabama is the evacuation of coastal areas in advance of a hurricane. An important component of this process is ensuring that the roadways most critical to evacuation are well maintained and able to support needed mobility and access. Alabama's primary hurricane evacuation routes, shown on Figure 3-9, are:

- I-65 from Mobile northeast to Montgomery
- US 231 from the Florida state line northwest through Dothan to Montgomery
- US 331 from the Florida state line north to Montgomery
- US 431 from Dothan north to Phenix City
- US 29 from the Florida state line northeast to US 331 (in Brantley)
- US 43 from Mobile north to I-20/59 (in Eutaw)
- US 45 from Mobile northwest to the Mississippi state line and on to Meridian, MS
- US 98 from Mobile northwest to the Mississippi state line and on to Hattiesburg, MS

Of the roadways listed above, I-65 is by far the most critical link due to its direct access from the Mobile area and proximity to the Pensacola, FL area. During a hurricane evacuation sequence, I-65 is anticipated to carry a majority of traffic from these areas. For this reason, ALDOT has a "reverse-laning" plan in place for I-65 for significant evacuation scenarios. In the reverse-laning situation, the southbound lanes are redirected to accommodate only northbound traffic by clearing all southbound traffic and closing all southbound access points. ALDOT also considered reverse-laning for US 331, US 231 and US 431, but it was deemed infeasible due to the logistics complications required to manage the numerous intersections with highways, local routes, commercial access points and personal driveways.

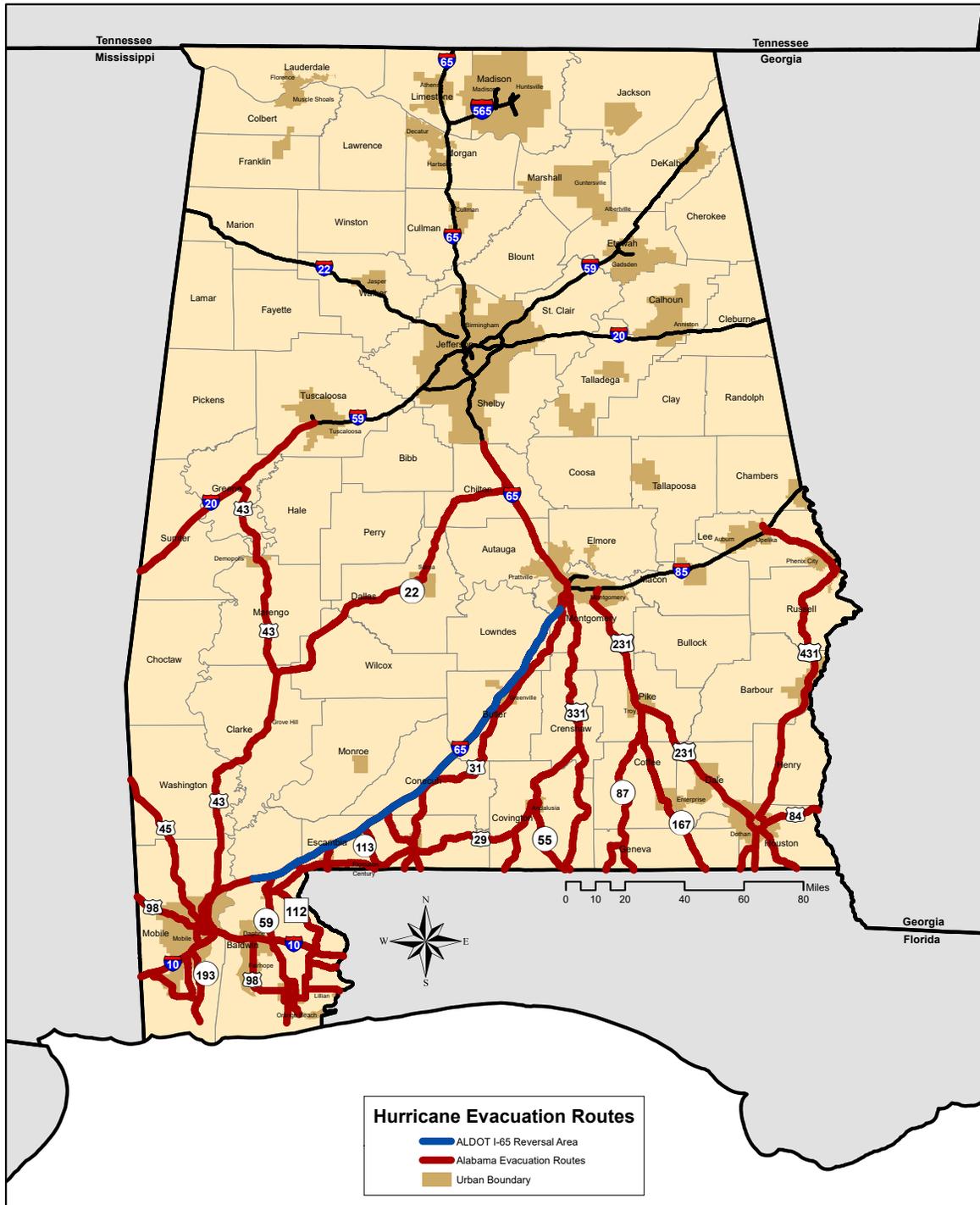
In addition to the currently designated section of AL-55 that runs from the Alabama-Florida state line north to Andalusia, stakeholder input identified the northern segment of AL-55 as a potential future route. The entire section of AL-55 from Andalusia north to I-65 at Georgiana is four-lane and provides an alternate to the US 29 to US 331 corridor, which can experience bottlenecks where they converge in Brantley. The information was forwarded to appropriate ALDOT staff so that the segment may be evaluated in the future.

A key consideration is regular congestion levels along these routes and on the east-west roadways that connect to these routes. A review of existing and projected 2040 levels of congestion with improvements (Figures 3-4 and 3-6) indicates that most of the key evacuation routes are not currently or projected to be congested, primarily because they traverse mostly rural areas. The majority of existing and projected congestion along the evacuation routes is within the Mobile and, to a lesser degree, Dothan areas. Key evacuation and access routes that currently experience higher levels of congestion include:

- I-10 in Mobile and Baldwin counties
- US 98 in Mobile and Baldwin counties
- US 90 in Mobile and Baldwin counties
- US 45 in Mobile
- Schillinger Road in Mobile
- University Boulevard in Mobile
- Airport Boulevard in Mobile
- US 231 in Dothan (including Ross Clark Circle)

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 3-9: Hurricane Evacuation Routes



Source: <http://miscwapps.dot.state.al.us/ECC/>
Source: <https://algotraffic.com>

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- US 84 in and west of Dothan
- US 431 north of Dothan

In addition, SR 225 and SR 181 in Baldwin County are expected to become congested by 2040.

Projections indicate that most of the roadway capacity added to the network in Mobile and Baldwin counties through 2040 will be absorbed by the high level of growth also projected in these areas. As a result, congestion levels are not projected to decrease in 2040 in the Mobile region. However, a number of significant capacity-adding (widening) projects are planned that will assist with hurricane evacuation in both the Mobile and Dothan areas. These include:

- I-10 Bayway Bridge from Mobile to Baldwin County (four to eight lanes)
- I-10 from Bayway Bridge to east of SR 181 in Baldwin County (four to six lanes)
- I-10 from CR 39 to Carol Plantation Road in Mobile County (four to six lanes)
- US 84 from I-65 near Evergreen to CR 7 in Conecuh County (two to four lanes)
- SR 158 (as new US 98) in Mobile County (two to four lanes and four-lane extension)
- SR 210 (Ross Clark Circle) around Dothan (four to six lanes)
- US 90 from CR 39 to south of Theodore in Mobile County (two to four lanes)
- US 98 from Mississippi state line to Glenwood Road in Mobile County (two to four lanes)
- SR 180 from Foley Beach Expressway to SR 161 in Baldwin County (two to five lanes)
- SR 181 from US 98 to CR 64 in Baldwin County (two to four/five lanes)
- US 31 from Spanish Fort to SR 180 in Baldwin County (two to five lanes)
- US 84 from east of SR 87 to CR 507 in Coffee County (two to four lanes)
- US 331 from CR 17 to CR 5 in Crenshaw County (two to four lanes)

In addition to capacity improvements, operational improvements such as interchange and intersection improvements and ITS and signal enhancements can improve network mobility. The ALDOT work program includes several operational improvements on roadways critical to hurricane evacuation:

- I-10 interchange modifications from Texas Street to West Tunnel entrance in Mobile County
- I-65 interchange improvements at US 43 in Mobile County
- I-10/SR 183 interchange modification to divergent diamond in Baldwin County
- Adaptive signal installation at 28 intersections along US 98 in Baldwin County

The overall maintenance of the roadways critical to hurricane evacuation must also be considered. The following resurfacing projects will serve to improve critical evacuation facilities:

- I-10 from Carol Plantation Road to CR 39 in Mobile County (5 miles)
- I-65 from SR 225 to Escambia County Line in Baldwin County (16 miles)
- I-65 from Main Street to north of SR 158 in Mobile County (5 miles)
- US 84 from east of SR 123 west of Beaver Creek in Houston County (7 miles)
- I-65 from south of CR 141 to south of Beaver Creek in Butler County (9 miles)
- US 31 from mile post 133 to Piney Woods Creek Bridge in Butler County (15 miles)
- US 29 from Escambia County Line to SR 137 (11 miles)
- US 31 from Baldwin County line to Flomaton/Mile Post 55 in Escambia County (10 miles)
- US 43 from Plateau Avenue to Cold Creek Bridge in Mobile County (8 miles)
- US 90 from east of Ramsey Road to Fowl Rover Bridge in Mobile County (15 miles)

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- US 231 from south of Airport Road to Montgomery County line in Pike County (7 miles)
- US 231 from north of CR 82 to south of SR 93 at Brundidge in Pike County (7 miles)

Significant bridge improvements in the CPMS will also improve evacuation routes:

- I-65 over Murder Creek and relief bridges in Conecuh County (replacement)
- I-10 East Tunnel Interchange in Mobile County (rehabilitation)
- I-65 over Sepulga River in Conecuh County (replacement)
- SR 180 over the Intracoastal Waterway in Baldwin County (new bridge)
- SR 180 over the Perdido River in Baldwin County (replacement; shared with Florida DOT)
- US 84 over Pea River in Coffee County (replacement)
- SR 167 over Pea River in Coffee County (replacement)
- US 331 over Lightwood Knot Creek in Covington County (replacement)
- US 331 over Patsaliga Creek in Crenshaw County (replacement)
- US 43 over railroad southeast of Demopolis in Marengo County (replacement)
- US 45 over Bennett’s Creek in Mobile County (replacement)
- US 43 over Steele Creek in Mobile County (culvert replacement)
- US 98 over Big Creek in Mobile County (extension of bridges)
- Westbound US 90 over Tensaw-Spanish River in Mobile County (replacement)
- SR 158 over Seabury Creek tributary east of SR 217 in Mobile County (extension of bridges)
- US 431 over Uchee Creek in Russell County (replacement)

As ALDOT continues to evaluate its overall needs against available funding sources, improving the performance of hurricane evacuation routes will continue to be a priority in the ALDOT work program.

3.7 Historical and Projected Funding

Historical and projected funding are key elements to determining the future of the ALDOT work program. The State contributes a significant amount of revenues to transportation, but most funding for transportation comes from federal aid.

Historical Funding

A breakdown of historical State funding sources for transportation from 2011-2015 was taken from the ALDOT 2015 Annual Report and is provided in Table 3-5. Key points of note:

- ALDOT annual revenues for transportation improvements averaged approximately \$1.5 billion.
- Roughly one-third of the revenues for transportation (an average of approximately \$490 million) comes from State sources. The remaining two-thirds comes from federal aid, highway bonds, and other sources.
- Over half of the revenues ALDOT spends on transportation (approximately \$880 million annually) is from federal aid. It should be noted that this federal aid includes funds beyond the funding allocations presented here, such as leftover apportionments from previous transportation bills and federal Appalachian funds.
- Approximately 70 percent of State sources (an average of \$341 million) are generated from gas excise taxes and motor fuel taxes.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Table 3-5: Breakdown of Historical ALDOT State Funding Revenues

STATE REVENUE SOURCE	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Average	%Average
Gasoline Excise Tax .04	\$ 44,149,000	\$ 43,761,000	\$ 43,260,000	\$ 43,465,000	\$ 45,142,000	\$ 43,955,400	2.9%
Motor Fuel Tax .06	\$ 37,924,000	\$ 38,162,000	\$ 38,395,000	\$ 39,825,000	\$ 40,001,000	\$ 38,861,400	2.6%
LP Gas Vehicle	\$ 96,000	\$ 79,000	\$ 89,000	\$ 69,000	\$ 62,000	\$ 79,000	0.0%
Motor Vehicle License	\$ 98,431,000	\$ 96,483,000	\$ 99,743,000	\$ 96,939,000	\$ 98,696,000	\$ 98,058,400	6.5%
Gasoline Excise Tax .07	\$ 75,480,000	\$ 74,862,000	\$ 73,979,000	\$ 74,319,000	\$ 77,188,000	\$ 75,165,600	5.0%
Lubricating Oil Tax	\$ 639,000	\$ 568,000	\$ 533,000	\$ 549,000	\$ 525,000	\$ 562,800	0.0%
Oversize Hauling Permit	\$ 3,376,000	\$ 3,688,000	\$ 3,589,000	\$ 3,786,000	\$ 3,756,000	\$ 3,639,000	0.2%
Motor Fuel Tax .13	\$ 87,062,000	\$ 87,588,000	\$ 88,157,000	\$ 91,441,000	\$ 91,840,000	\$ 89,217,600	5.9%
Truck Identification Decal	\$ 850,000	\$ 883,000	\$ 867,000	\$ 925,000	\$ 973,000	\$ 899,600	0.1%
Petroleum Products Inspection Fee	\$ 46,927,000	\$ 46,642,000	\$ 43,068,000	\$ 44,335,000	\$ 44,982,000	\$ 45,190,800	3.0%
Outdoor Advertising Permit Fee	\$ 67,000	\$ 66,000	\$ 62,000	\$ 67,000	\$ 61,000	\$ 64,600	0.0%
Motor Carrier Tax	\$ 457,000	\$ 530,000	\$ 488,000	\$ 432,000	\$ 573,000	\$ 496,000	0.0%
Gasoline Excise Tax .05	\$ 94,243,000	\$ 93,396,000	\$ 92,344,000	\$ 92,782,000	\$ 96,362,000	\$ 93,825,400	6.2%
SUBTOTAL	\$ 489,701,000	\$ 486,708,000	\$ 484,574,000	\$ 488,934,000	\$ 500,161,000	\$ 490,015,600	32.3%
OTHER REVENUE							
Federal Aid	\$ 909,420,000	\$ 803,690,000	\$ 891,727,000	\$ 920,293,000	\$ 876,319,000	\$ 880,290,000	58.1%
County Aid and Miscellaneous	\$ 20,402,000	\$ 23,524,000	\$ 50,000,000	\$ 63,416,000	\$ 137,522,000	\$ 58,973,000	3.9%
Highway Bonds	\$ -	\$ -	\$ 38,268,000	\$ 162,278,000	\$ 229,170,000	\$ 85,943,000	5.7%
UMTA Vehicle Disposition Proceeds	\$ 420,000	\$ 334,000	\$ 294,000	\$ 194,000	\$ 271,000	\$ 303,000	0.0%
Right-of-Way Title 23 Revenue	\$ 330,000	\$ 371,000	\$ 380,000	\$ 250,000	\$ 466,000	\$ 359,000	0.0%
SUBTOTAL	\$ 930,572,000	\$ 827,919,000	\$ 980,669,000	\$ 1,146,431,000	\$ 1,243,748,000	\$ 1,025,868,000	67.7%
TOTAL RECEIPTS	\$ 1,420,273,000	\$ 1,314,627,000	\$ 1,465,243,000	\$ 1,635,365,000	\$ 1,743,909,000	\$ 1,515,883,600	100.00%

Source: ALDOT Annual Report, FY 2015

ALDOT transportation expenditures from 2011-2015, as provided in the ALDOT 2015 Annual Report, are presented in Table 3-6. It is important to note that, in this breakdown, “construction” projects include all construction activities currently being undertaken by ALDOT. In addition to traditional roadway capacity improvements, this also includes bridge repair and replacement, resurfacing, safety improvements, ITS enhancements, and sidewalks (many of which are included under “maintenance” in other areas of this report). As shown:

- ALDOT spent an average of roughly \$1.5 billion on transportation from 2011-2015.
- An average of just under \$1.2 billion per year was spent on construction activities (in accordance with the expanded project definition provided above).
- Maintenance activities are performed by the Department’s employees in each Region and cover all activities such as mowing, debris removal, paint striping, etc. required to maintain the roads and state right-of-way. It averages approximately \$179.3 million annually and accounts for the second largest expenditure.

Table 3-6: Breakdown of Historical ALDOT State Transportation Expenditures

	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Average	%Average
Construction*	\$ 1,043,097,000	\$ 1,124,255,000	\$ 1,207,483,000	\$ 1,196,094,000	\$ 1,282,573,000	\$ 1,170,700,400	78.0%
Maintenance**	\$ 194,011,000	\$ 157,841,000	\$ 182,472,000	\$ 178,331,000	\$ 183,610,000	\$ 179,253,000	11.9%
Equipment Purchases	\$ 7,001,000	\$ 6,356,000	\$ 7,994,000	\$ 8,668,000	\$ 14,339,000	\$ 8,871,600	0.6%
Administration	\$ 60,755,000	\$ 55,470,000	\$ 48,796,000	\$ 75,024,000	\$ 89,635,000	\$ 65,936,000	4.4%
Debt Service	\$ 13,605,000	\$ 13,930,000	\$ 14,540,000	\$ 22,675,000	\$ 27,555,000	\$ 18,461,000	1.2%
Other Expenditures	\$ 49,171,000	\$ 61,876,000	\$ 63,316,000	\$ 59,755,000	\$ 50,687,000	\$ 56,961,000	3.8%
TOTAL EXPENDITURES	\$ 1,367,640,000	\$ 1,419,728,000	\$ 1,524,601,000	\$ 1,540,547,000	\$ 1,648,399,000	\$ 1,500,183,000	100.0%

Source: ALDOT Annual Report, FY 2015

*Includes construction related to all project types, including bridge repair and replacement, resurfacing, safety improvements, ITS enhancements and roadway capacity improvements

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Projected Funding

Based on the anticipated federal funding reflected from FHWA, ALDOT has developed anticipated revenues and expenses through the life of the FAST Act (2016-2020), as provided in Table 3-7. Major highlights of the anticipated work program from 2017 through 2020 include:

- Federal sources will account for approximately 60 percent of ALDOT’s total funding, or \$3.25 billion. This is consistent with the historical federal share.
- The majority of ALDOT revenues (approximately 60 percent) will be allocated to maintenance expenses such as bridge, resurfacing, and safety projects. In contrast, capacity improvements will receive only 7 percent of the revenues, or approximately \$391 million in total.
- Approximately 17 percent of funds will go to local governments for improvements on their local networks.
- Approximately \$380 million (7 percent) will be used for debt service on previous transportation bonds through 2020.

Table 3-7: Anticipated ALDOT Revenues and Expenses, 2017-2020

	2017	2018	2019	2020	Total	Percent
Income						
Federal Aid	\$ 785,464,000	\$ 802,439,000	\$ 820,550,000	\$ 840,202,000	\$ 3,248,655,000	60.9%
State Funds	\$ 495,000,000	\$ 500,000,000	\$ 505,000,000	\$ 510,000,000	\$ 2,010,000,000	37.6%
Repurposed Earmarks	\$ 40,000,000	\$ 40,000,000	\$ -	\$ -	\$ 80,000,000	1.5%
Total	\$ 1,320,464,000	\$ 1,342,439,000	\$ 1,325,550,000	\$ 1,350,202,000	\$ 5,338,655,000	
Expenses						
Federal aid to others	\$ 130,000,000	\$ 132,000,000	\$ 134,000,000	\$ 136,000,000	\$ 532,000,000	10.0%
State aid to others	\$ 87,900,000	\$ 87,900,000	\$ 87,900,000	\$ 87,900,000	\$ 351,600,000	6.6%
ATRIP Garvee Bond Payment	\$ 70,000,000	\$ 70,000,000	\$ 70,000,000	\$ 70,000,000	\$ 280,000,000	5.2%
CBD Garvee Bond Payment	\$ 10,000,000	\$ 20,000,000	\$ 35,000,000	\$ 35,000,000	\$ 100,000,000	1.9%
Overhead	\$ 75,100,000	\$ 75,851,000	\$ 76,610,000	\$ 77,376,000	\$ 304,937,000	5.7%
Equipment/Land and Building	\$ 14,000,000	\$ 14,000,000	\$ 14,000,000	\$ 14,000,000	\$ 56,000,000	1.0%
Routine Maintenance	\$ 167,000,000	\$ 169,500,000	\$ 172,000,000	\$ 174,500,000	\$ 683,000,000	12.8%
Safety	\$ 52,000,000	\$ 53,092,000	\$ 54,207,000	\$ 55,346,000	\$ 214,645,000	4.0%
Bridge Replacement	\$ 90,000,000	\$ 91,000,000	\$ 92,000,000	\$ 93,000,000	\$ 366,000,000	6.9%
State Route Resurfacing	\$ 280,000,000	\$ 284,000,000	\$ 288,000,000	\$ 292,000,000	\$ 1,144,000,000	21.4%
Interstate Resurfacing	\$ 205,000,000	\$ 172,000,000	\$ 174,000,000	\$ 176,000,000	\$ 727,000,000	13.6%
Capacity/Added Lanes	\$ 92,464,000	\$ 126,096,000	\$ 80,833,000	\$ 92,080,000	\$ 391,473,000	7.3%
Overruns/OA	\$ 47,000,000	\$ 47,000,000	\$ 47,000,000	\$ 47,000,000	\$ 188,000,000	3.5%
Total	\$ 1,320,464,000	\$ 1,342,439,000	\$ 1,325,550,000	\$ 1,350,202,000	\$ 5,338,655,000	

Source: ALDOT, 2017

A more detailed breakdown of the federal funding by category is provided in Appendix B.

As noted throughout this report, projecting funding sources beyond 2020 and the life of the FAST Act are uncertain. Given recent federal and state policy, it is very likely that more emphasis will be placed on maintenance, operations and safety projects. This is logical since the result of any capacity-adding project (widening or new roadway) is additional infrastructure requiring maintenance. As previously noted, the projected investment strategy for resurfacing and bridge projects will be developed in the Transportation Asset Management Plan (TAMP). This will provide a clearer direction for maintenance funding by ALDOT in the near term.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

In order to develop projections for funding and expenditures through the year 2040, the following steps were followed:

1. A two percent annual inflation rate was applied to the amount of federal funding through 2040. This is consistent with the inflation rate provided by FHWA for the FAST Act.
2. State funding was assumed to increase by \$5 million annually through 2040, consistent with the short-term projections from the FAST Act through 2020 as provided by ALDOT.
3. The same distribution of expenses provided in the short-term projections by ALDOT was assumed to remain constant through 2040. This includes expenditures for bond repayment, as it is reasonable to assume that bonds will continue to be issued to fund transportation improvements.
4. Given that they are approximate values, projected amounts were rounded to the nearest \$1,000 for ease of review.

Based on this methodology, ALDOT is projected to receive approximately \$1.9 billion annually by the year 2040, as shown in Table 3-8. In addition:

- Maintenance expenditures are projected to exceed \$1 billion annually.
- Annual spending on capacity projects is projected to average \$136 million by 2040.
- Roughly \$310 million will be distributed to local governments throughout the state for local projects.

Table 3-8: Projected Annual ALDOT Revenues and Expenses in 2020, 2030, and 2040

	2020	2030	2040
Income			
Federal Aid	\$ 840,202,000	\$ 1,024,202,000	\$ 1,248,496,000
State Funds	\$ 510,000,000	\$ 560,000,000	\$ 610,000,000
Total	\$ 1,350,202,000	\$ 1,584,202,000	\$ 1,858,496,000
Expenses			
Federal aid to others	\$ 136,000,000	\$ 157,867,000	\$ 185,200,000
State aid to others	\$ 87,900,000	\$ 104,334,000	\$ 122,399,000
ATRIP Garvee Bond Payment	\$ 70,000,000	\$ 83,088,000	\$ 97,474,000
CBD Garvee Bond Payment	\$ 35,000,000	\$ 29,674,000	\$ 34,812,000
Overhead	\$ 77,376,000	\$ 90,488,000	\$ 106,155,000
Equipment/Land and Building	\$ 14,000,000	\$ 16,618,000	\$ 19,495,000
Routine Maintenance	\$ 174,500,000	\$ 202,675,000	\$ 237,766,000
Safety	\$ 55,346,000	\$ 63,694,000	\$ 74,722,000
Bridge Replacement	\$ 93,000,000	\$ 108,607,000	\$ 127,412,000
State Route Resurfacing	\$ 292,000,000	\$ 339,473,000	\$ 398,250,000
Interstate Resurfacing	\$ 176,000,000	\$ 215,731,000	\$ 253,084,000
Capacity/Added Lanes	\$ 92,080,000	\$ 116,166,000	\$ 136,280,000
Overruns/OA	\$ 47,000,000	\$ 55,787,000	\$ 65,447,000
Total	\$ 1,350,202,000	\$ 1,584,202,000	\$ 1,858,496,000

In conjunction with the increasing costs of construction, the amount of funding for capacity improvements will not be sufficient to meet the demand given the level of growth and related congestion levels projected throughout the state by 2040.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

3.8 Capacity Funding Gap Analysis

The congested locations and conditions currently experienced on Alabama's State-maintained roadway network are projected to continue increasing statewide through 2040, even with the construction of planned projects. An analysis of the funding "gap" between projected revenues and the financial investment needed to provide for relatively uncongested conditions across the entire network (and thus avoid worsening congestion at more locations) was completed.

The gap analysis considered two primary factors: the number of lane-miles of congested facilities and the cost of capacity improvements. A roadway segment was determined to be congested if it had a volume to capacity (V/C) ratio of 1.0 or greater. Congested roadway lane-miles were then categorized by location (urban or rural) and facility type (freeway or arterial) to account for differences in construction costs. A detailed explanation of the gap analysis methodology and results is provided in Supplement #1 – Travel Demand Modeling Documentation.

It should be noted that this analysis was conducted by directional lane-miles and not centerline miles. Within any given centerline mile, a need for multiple lane-miles to accommodate additional congestion on both directions would be needed. The actual length of deficient segments collectively represents the number of deficient centerline miles throughout the state. Furthermore, this is a macro-level statewide analysis to determine capacity needs. In reality, many of these congested corridors may not be suitable for widening projects due to corridor constraints that would be determined through a more detailed corridor analysis during project development. Given corridor constraints, other improvements such as signal enhancements, turn lane modifications, or improvements to parallel facilities may be appropriate.

The analysis results indicate that significant investments in additional capacity would be required to alleviate congestion across Alabama. Given the extensive need, it is important to consider the degree to which current conditions worsen by 2040. The analysis determined that, even after the construction of planned improvements in ALDOT's Work Program, approximately 1,400 lane-miles of additional capacity would be required by 2040 to simply maintain current conditions and mitigate worsening congestion. This additional capacity would cost an estimated \$5.2 billion, with nearly half allocated to urban arterial facilities.

Any discussion of ALDOT funding expenditures must be preceded by noting that a foremost priority of the Department is on maintaining previous infrastructure investments. Therefore, maintenance projects (including resurfacing) account for a significant portion of ALDOT's expenditures, and are projected to continue to do so through 2040. Furthermore, the exact programming of maintenance funds to specific projects cannot be done more than several years in advance given the shorter-term nature of maintenance needs and project types.

Funding projections indicate that ALDOT will have an estimated total of \$2.6 billion for capacity improvements through 2040, which is expected to be completely expended on planned projects in the ALDOT work program. The approximately 1,400 lane-miles of additional capacity needed to maintain current conditions is estimated to cost \$5.2 billion. Therefore, it is projected that ALDOT would need to invest nearly \$7.8 billion in additional capacity through 2040 to simply maintain conditions at 2010 levels and mitigate worsening congestion.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

SECTION 4: GOODS MOVEMENT

The information in this section was developed from the recent *Alabama Statewide Freight Plan*, which was completed in March 2016. In keeping with the FAST Act, the Freight Plan addressed all modes of goods movement – roadway freight, rail, air cargo, waterways and pipelines – with a focus on providing infrastructure to support economic initiatives.

4.1 Roadway Freight

The Freight Plan assessed existing (2012) and projected (2040) commodity flows along major roadways to identify areas where future improvements could facilitate freight mobility. Several corridors that play an important role in freight movement within Alabama are:

- I-20/I-59 from west of Birmingham to the Mississippi state line
- I-65 from Decatur through Birmingham to US 84
- I-20 from I-59 to US 231, east of Birmingham
- I-59 from I-20 to US 278 in Gadsden

Highlights of the projected commodity flows by truck include:

- Steady growth throughout the entire interstate network.
- All roadway segments projected to carry more than 40,000 annual kilotons are along interstates.
- The greatest freight flows (over 120,000 annual kilotons) are along:
 - I-20/59 from west of Birmingham to the Mississippi state line (especially in western Jefferson County near the Norfolk Southern Intermodal Facility and the Mercedes Plant)
 - I-65 south of Birmingham through Shelby County
 - I-65 south of Montgomery to Greenville

Not surprisingly, the Port of Mobile’s critical role in Alabama’s economy directly impacts freight movements. In assessing the primary commodity flow corridors and bottlenecks, it is important to note that much of the commodity flow volume to and from the Port of Mobile occurs by rail.

Locations of existing freight bottlenecks are shown on Figure 4-1. Notable areas include:

- All interstates and many State-maintained roadways (US 11 and US 280) in the Birmingham area
- I-10 and I-65 in Mobile
- I-65 and I-85 in Montgomery
- I-565 in Huntsville
- The Anniston and Gadsden areas

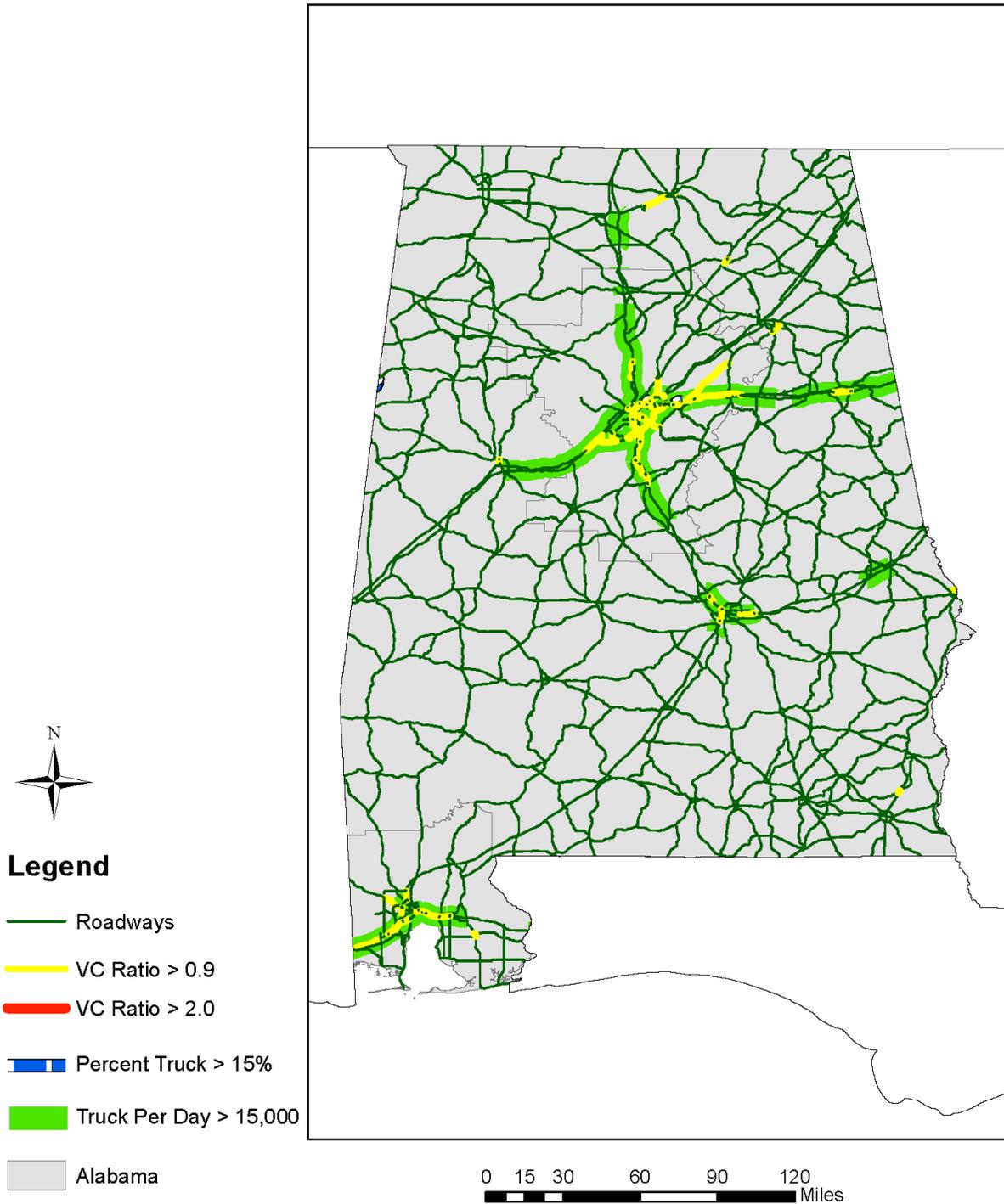
Projected freight bottleneck locations are shown on Figure 4-2. A few key findings include:

- The Birmingham area will continue to have the highest levels of congestion, occurring along its interstates and principal arterials that carry freight traffic.
- Conditions at all existing bottlenecks statewide are projected to worsen.
- Smaller pockets of bottlenecks combined with greater freight volumes are projected to occur on non-interstate facilities such as US 280, US Alternate 72 and US 231.

In many cases, bottlenecks result from general automobile traffic congestion rather than directly from freight traffic. Nevertheless, corridor congestion is a challenge to freight mobility regardless of the cause.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

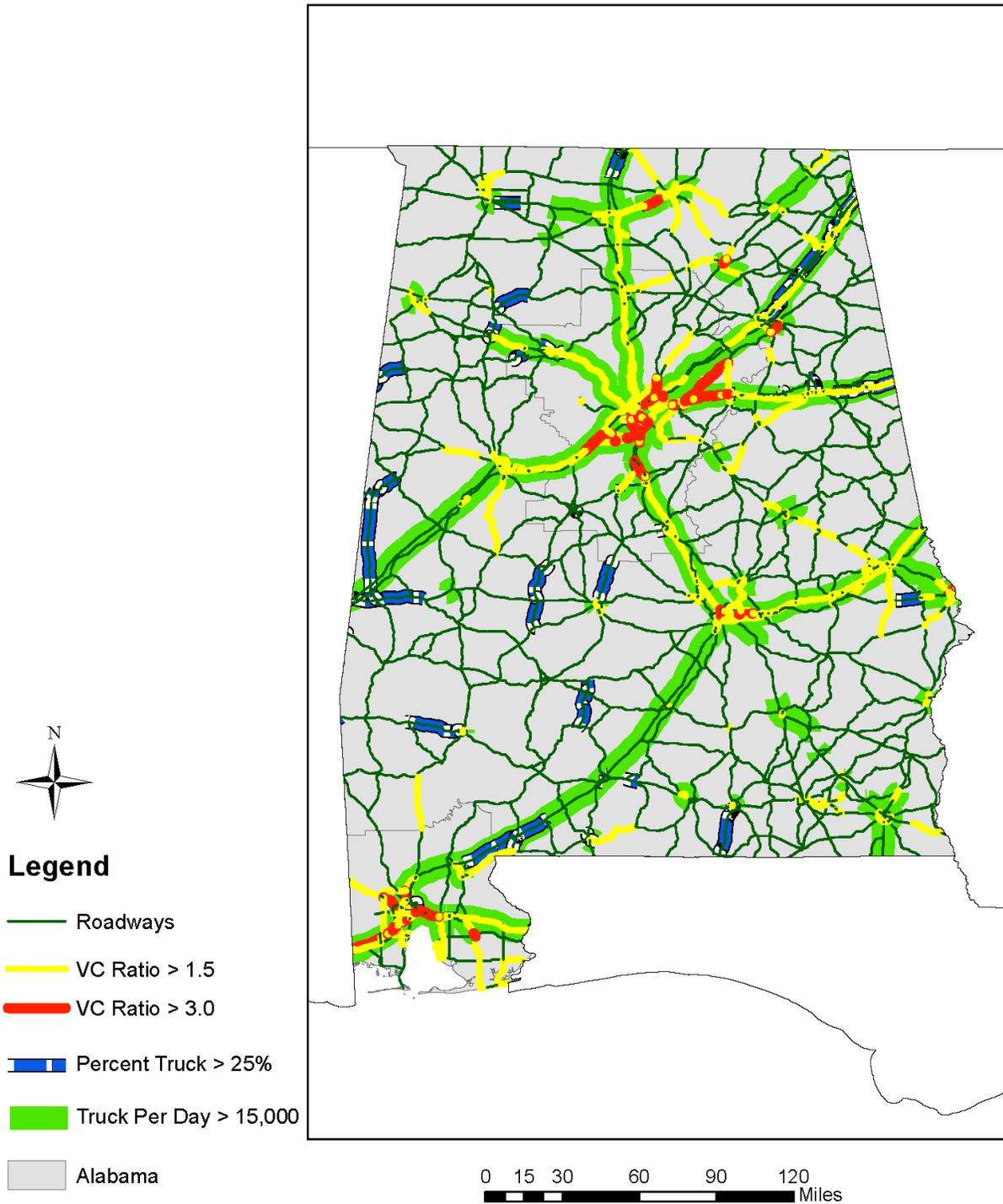
Figure 4-1: 2012 Existing Bottlenecks and Freight Volumes



Source: ALDOT Statewide Freight Plan, 2016

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 4-2: 2040 Forecasted Bottlenecks and Freight Volumes



Source: ALDOT Statewide Freight Plan, 2016

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Key Freight-Related Improvements

The Statewide Freight Plan identified a number of projects in CPMS that will serve to benefit overall freight movement. These included a number of capacity, maintenance, operations and safety projects along roadways that serve significant volumes of freight traffic. Projects identified through 2040 include:

- I-10 Bayway and Mobile River bridge widening (2020)
- I-10 widening from CR-39 to CR-59 in Mobile County (2023) from four to six lanes
- I-59/I-20 widening in Tuscaloosa County (2018) and Jefferson County (2023-2025) from four to six lanes
- I-65 widening in Shelby County (2021) and Cullman County (2025) from four to six lanes
- I-85 widening in Montgomery County (2030) and Lee County (2030) from four to six lanes
- I-22 extension from east of I-65 to US 31 (2025) as a new four-lane facility
- US 98 widening in Mobile County from the Mississippi state line to east of Glenwood Road (2022-2025) from two to four lanes
- US 82 widening and relocation west of Gordo to the Tuscaloosa County line (2019) from two to four lanes
- US 84 widening in Conecuh County from the Monroe County line to CR-7 (2032) from two to four lanes
- SR 157 widening from SR 69 to east of US 31 in Cullman County (2020) from two to five lanes
- US 72 widening in Madison County (2017), Limestone County (2019) and Lauderdale County (2024) from four to six lanes

In addition, two specific projects in CPMS directly address freight mobility:

- Truck climbing lane on SR 21 in Monroe County totaling \$10.5 million in 2025
- State-funded industrial access road to support Project Thunder in Lee County totaling approximately \$1.4 million in 2017

Freight Roadway Needs

Several corridors that provide access to ports and other intermodal freight facilities were identified as congested under projected E+C conditions in 2040. The following key interstate and highway segments projected for congested conditions in 2040 would also impact freight mobility:

- I-20/59, I-459, I-65, US 280, and US 78 in Birmingham
- I-85 and SR 126 (Chantilly Boulevard) in Montgomery
- I-10, Schillinger Road, University Boulevard, and Airport Boulevard in Mobile
- US 98 and US 90 in Baldwin County
- I-565, US 72, US 231 and US 431 in Huntsville
- US 31 in Shelby County

Given the projected levels of overall congestion, most projected freight bottlenecks will occur even with the construction of planned improvements on the primary freight-carrying facilities. This is logical since the primary contributor to freight bottlenecks is general traffic congestion.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

4.2 Intermodal Goods Movement

Another key aspect of goods movement is the transfer of goods from rail, ports, and airports to the roadway network. Specific information regarding commodity flows by mode can be found in the *Alabama Statewide Freight Plan*. Highlights of commodity flow characteristics by mode include:

- Trucks are currently, and are projected to remain, the most utilized mode for freight movement. The overall projected increase of truck freight flow, in conjunction with increasingly limited funding for additional capacity infrastructure, heightens the need for an investment plan addressing Alabama's roadways.
- Uncertainty regarding significantly increased or decreased coal demand in the future could profoundly impact freight movement in Alabama. While the overall impact of coal movements on Alabama's roadways appears to be negligible, impacts to the Port of Mobile and rail freight flows could be more significant.
- Overall increases in rail and truck traffic confirm the need for continued improvements to at-grade rail crossings through the Section 130 Program.
- The share of overall freight traffic shipped by air is relatively small, but increases for most major commodities shipped via air are projected. Therefore, better freight roadway connections and access to major airports may be needed in the near future.

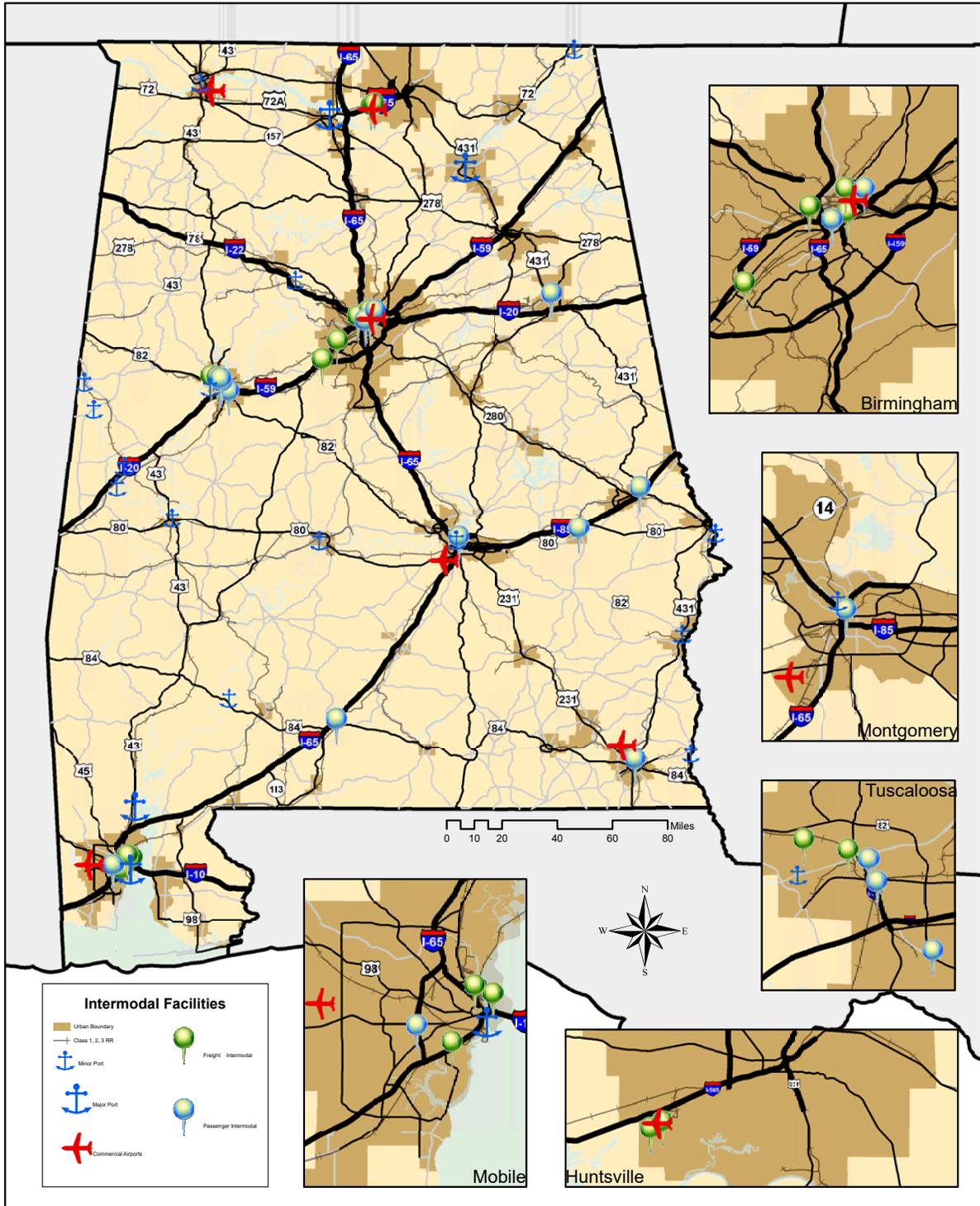
Major intermodal facilities in Alabama, shown in Figure 4-3, include:

- Port of Mobile (Alabama State Port Authority)—The Port of Mobile handles container, bulk and general cargo services for commodities including coal, liquid bulk, forest products, iron, and steel products. The Port's immediate access to two interstates, four Class I railroads, inland waterways, and a rail ferry is ideal for extensive intermodal operations. A rail access bridge connecting to the Intermodal Container Transfer Facility (ICTF), together with the Port's deep channel and large turning basin, will ensure its continued viability with larger megaships.¹⁸
- Port of Huntsville (International Intermodal Center)—Comprised of the Huntsville International Airport, the International Intermodal Center, and the Jetplex Industrial Park, the International Intermodal Center located in the Port of Huntsville Global Logistics Park provides a single hub location specializing in receiving, transferring, storing, and distributing international and domestic cargo via air, rail, and highway. The Huntsville-Madison County Airport Authority owns and operates industrial switching track off the Norfolk Southern spur into the International Intermodal Center, with the capability to extend rail southward to a potential riverport facility. The International Intermodal Center also features a US Customs & Border Protection Port of Entry with customs officials, US Department of Agriculture inspectors, and custom brokers.
- Norfolk Southern's Birmingham Regional Intermodal Facility—Located in McCalla and adjacent to the Jefferson Metropolitan Logistics Park, the facility is a critical component of Norfolk Southern's multi-state Crescent Corridor initiative to establish an efficient, high-capacity intermodal freight rail route between the Gulf Coast and the Northeast. This facility allows transloading of both containers and trailers, with a capacity for 400 trucks per day.

¹⁸ <http://www.businessalabama.com/Business-Alabama/October-2015/Alabama-Port-Already-Bulked-Up-for-Worlds-Giant-Post-Panamax-Ships/>, accessed 9/2/2016

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 4-3: Intermodal Facilities



Source: Alabama Department of Transportation

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- BNSF's Finley Boulevard Yard—An important part of the BNSF Railway's intermodal network handling freight for the Southeast region, the Finley Boulevard and East Thomas Yards in Birmingham handle the shipment of automobiles and a mix of carload freight.
- CSXT's Boyles Yard—This major rail yard for CSX Transportation located in Birmingham offers TRANSFLO terminal services (for transferring liquid and dry products between transportation modes) and provides logistics management of rail shipments nationwide.
- CSXT's Central Alabama Intermodal Container Transfer Facility—This intermodal container transfer facility is located southwest of Birmingham in Bessemer, with service to international customers between the facility and the Atlantic Ocean ports of Charleston and Savannah.
- Port Birmingham is an intermodal facility operated by Warrior & Gulf Navigation Co., with trackage for Birmingham Terminal Railway at the Locust Fork of the Black Warrior River, that handles the transshipment of coal and iron ore. Additionally, Alabama Power operates an intermodal facility on the Locust Fork at its James H. Miller Steam Plant for coal receipt/delivery.
- A number of other independent rail and truck transload facilities are located in Birmingham. Most of these intermodal facilities are clustered around 1st Avenue North, Finley Boulevard, I-20/59, Avenue W, and along the path of the planned Finley Boulevard extension.

Given the levels of congestion projected throughout the state, critical roadway links to a number of intermodal facilities are projected to experience some level of congestion (V/C over 1.0) by 2040:

- Norfolk Southern Intermodal Facility, McCalla (I-20/59, I-459)
- BNSF Intermodal Facility, Birmingham (I-20/59, I-65)
- Norfolk Southern Independent Bulk Transfer Center, Birmingham (I-20/59, I-65)
- Central Alabama Intermodal Transfer Facility, Birmingham (I-20/59, I-65)
- Transflo/TSID Auto Distribution Facility, Birmingham (I-20/59, I-65)
- Alabama State Docks, Mobile (I-10, US 98)
- CSX Mobile Intermodal Terminal (I-10, US 98)
- Tuscaloosa Airport (US 82)
- Northport Inland Dock, Tuscaloosa (US 11 and US 82)
- Huntsville Intermodal Center (I-565)
- Norfolk Southern Huntsville Intermodal (I-565)
- Port of Decatur (US 31)
- Port of Montgomery (US 82)
- Port of Cordova (I-22)
- Mobile Regional Airport (Airport Boulevard, Schillinger Road)
- Birmingham-Shuttlesworth International Airport (I-20/59)
- Huntsville International Airport (I-565)
- Port of Guntersville (US 431, SR 79)
- Port of Florence (US 72, US 43)

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

4.3 Port of Mobile

Information was obtained from the Alabama State Ports Authority on future expansion activities through 2040. Their overall mission is to facilitate international trade for the benefit of Alabama and regional shippers and receivers. While it is somewhat problematic to forecast overall Port needs through 2040, the following information was provided:

- The planned phases for expansion of the overall container terminal at the Port of Mobile should ramp up to a capacity of 1.5 million 20-foot shipping containers per year by 2040. This is anticipated to increase the amount of truck traffic through the Port significantly through 2040. Future phases of the container terminal are estimated to cost approximately \$125 million.
- The Vehicle/Roll On-Roll Off Terminal will be completed and operational by 2019, at an estimated cost of \$60 million to complete. This is anticipated to generate as much as 170,000 autos per year plus associated roll-on/roll-off cargo. Port staff estimates it will generate an additional 20,000 trucks per year from the Port.
- The Port is in the process of developing value-added sites adjacent to the container terminal for Port-related businesses. It is estimated that developing these properties will generate roughly 30,000 trucks and \$50-60 million per year.

While these increases in truck traffic are estimates, it will be important for ALDOT to coordinate with Port officials, as well as the Mobile and Eastern Shore MPOs, to monitor increases in truck traffic and address freight needs accordingly.

Revenue for the Port of Mobile comes to the Port Authority from various sources, such as wharfage, dockage, storage, cargo handling, switching railcars, and lease payments from concessions. A majority of these items can be found in the Port's tariff and serve as a basis of its revenue. The Port also receives funds through TIGER grants for specific projects as well as federal money for its harbor maintenance program.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

SECTION 5: MULTIMODAL TRANSPORTATION NEEDS

Alternative modes offer important transportation options within a comprehensive multimodal system. ALDOT does not directly operate any of the state's transit, intercity bus, passenger rail or aviation systems, and has a very limited role in bicycle and pedestrian facilities. However, as a multimodal plan, the SWTP addresses related transportation conditions and needs across the state. More details on existing conditions and needs related to multimodal transportation are provided in Interim Reports #1 and #2.

5.1 Transit, Intercity Bus and Passenger Rail

Transit

Public transportation helps citizens complete personal and business trips within and between communities and across the whole state. The identification of existing conditions and common statewide needs related to public transit was completed through review of each MPO's 2040 LRTP as well as the Coordinated Public Transit-Human Services Transportation Plan for each of the 12 regional councils.

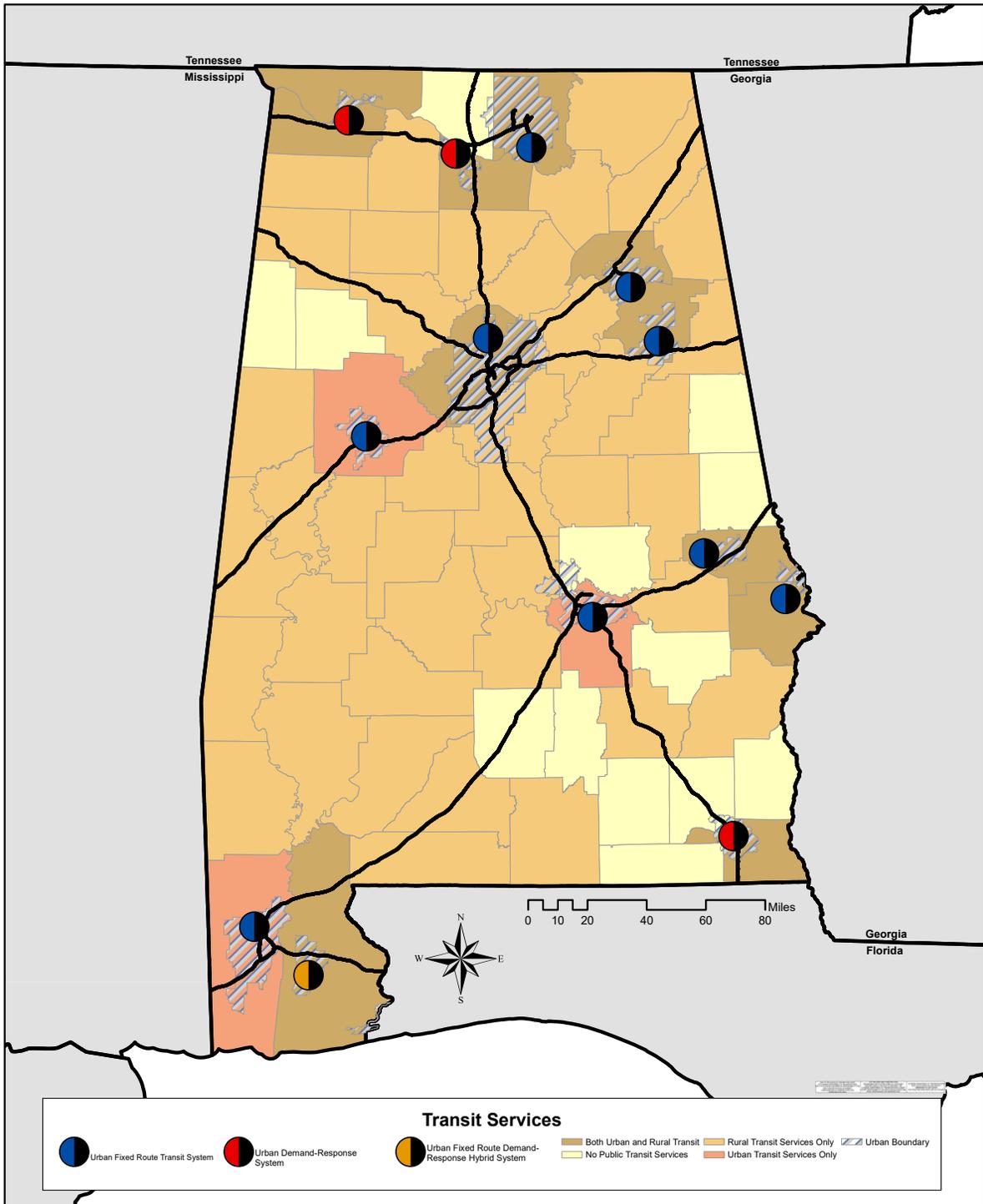
Nine of the state's urban areas offer fixed route transit services: Anniston, Auburn-Opelika, Birmingham, Gadsden, Huntsville, Mobile, Montgomery, Phenix City, and Tuscaloosa. Demand response service is available in another four: Decatur, Dothan, Florence, and the Eastern Shore communities of Daphne, Fairhope and Foley. Rural demand response service is provided in 50 counties, although it should be noted that three of the counties with urban fixed route service do not have rural services (Mobile, Montgomery and Tuscaloosa counties). Statewide, 13 counties do not have any public transportation services for residents regardless of age or ability. These counties are: Bullock, Butler, Chambers, Coffee, Crenshaw, Dale, Elmore, Fayette, Geneva, Henry, Lamar, Limestone, and Randolph. Figure 5-1 shows which transit services are available in each county of the state.

Three other transit systems operate in addition to the county and urban services. The Poarch Band of Creek Indians (PCI) operates one federally subsidized vehicle for transit services on the Poarch Creek Reservation and Off-Reservation Trust Land areas in Alabama and Florida. In addition, Auburn University's Tiger Transit and the University of Alabama's Crimson Ride are independently operated transit systems of the respective universities.

Tiger Transit services on campus and to outlying areas are available to students, faculty and staff only and are not integrated with the general urban/rural public transportation services provided in the area. Tiger Transit is funded by student fees and the system does not receive any federal transit funding. Although most Crimson Ride services are similarly funded by student fees and restricted to students, faculty and staff, the University has a contract with the Tuscaloosa County Parking and Transit Authority to provide fixed route bus service on one route between Downtown Tuscaloosa and the campus. This route is open to the general public and uses federal funding. In the past, the University has received funds through Federal Transit Administration (FTA) Section 5309 (Capital Investment Grants) and Section 5311 (Rural Area Formula Grants) to purchase vehicles and build parking decks. They have also applied for funds through Section 5310 (Enhanced Mobility for Seniors and Individuals with Disabilities Formula Grants).

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 5-1: Transit Services



Source: Alabama Department of Transportation

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

The greatest public transportation deficiency within Alabama is the lack of service. Many comments were received during the public and stakeholder regional meetings expressing the need for expanded transit services statewide in both urban and rural areas. For those areas that are served by some degree of urban and/or rural services, several common needs were identified:

- Expanding service and adding routes into unserved areas, both urban and rural
- Extending service operation hours and days, especially evenings and weekends
- Decreasing headways
- Increasing opportunities for regional/intercity connections into adjacent counties

The most significant factor limiting the provision and/or expansion of transit services throughout the state is funding availability. Federal transit programs adhere to specific formula allocations in the distribution of urban and rural transit funds. In addition, under ALDOT's current funding structure, the Department is not permitted to spend State transportation funds on transit. Therefore, the burden of funding transit falls heavily on local jurisdictions, and the lack of available local funding for transit services has a profound impact. The lower population densities and dispersed trip origins/destinations characteristic of many areas in the state result in higher operating costs, further exacerbating the funding difficulties. Nevertheless, ALDOT remains supportive of local jurisdictions funding enhanced public transportation options and continues its coordination activities within the scope of its responsibilities.

Intercity Bus

Greyhound provides regular (unsubsidized) intercity bus service connecting 14 Alabama communities to major US cities including Atlanta, Chicago, Dallas, Houston, Nashville, Orlando and St. Louis. Cities served on these routes are Anniston, Athens, Birmingham, Dothan, Evergreen, Gadsden, Huntsville, Mobile, Montgomery, Opelika, Phenix City (by way of Columbus, GA), Troy, Tuscaloosa and Tuskegee.

Since FY 2012, federally subsidized rural intercity bus service has operated in several areas of the state. Greyhound runs two routes. One connects between Birmingham and Chattanooga via Gadsden, while the second connects Birmingham and Mobile via Columbus/Phenix City and Dothan. West Alabama Public Transportation (WAPT) operates five different routes in west-central Alabama. The routes connect smaller communities to Montgomery, Tuscaloosa and Meridian, MS. The popularity of the route between Selma and Montgomery led to the increase of service to three daily round-trips, while the routes were converted to demand response service due to low ridership. Finally, a route servicing southwest Alabama between Tuscaloosa and Mobile via Selma was originally operated by Capital Trailways. However, in late 2016, Capital Trailways announced it would no longer participate in the program and, at last report, Greyhound had expressed intentions to pick up the route.

The *Intercity Bus Service Study* completed in 2014 evaluated the coverage achieved by the existing services, the remaining gaps in coverage, and the implications of adding another route. The primary gap in service coverage exists in the central and northern portion of western Alabama. A proposed route connecting Tuscaloosa northward to Florence was recommended.

As with general public transit service, comments received during the public and stakeholder regional meetings indicated a need for increased intercity bus services, albeit primarily on a more local scale (between adjacent and nearby counties within a region).

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Passenger Rail

Amtrak provides passenger rail service along one route in Alabama. The *Crescent* route between New York and New Orleans stops in Anniston, Birmingham and Tuscaloosa. There is one train per day in each direction; however, the timetable does not facilitate a return trip on the same day within Alabama. Westbound trains depart Anniston at 10:00 am and arrive in Tuscaloosa at 1:07 pm, while eastbound trains depart Tuscaloosa at 12:44 pm and arrive in Anniston at 3:59 pm.

According to the National Association of Railroad Passengers, Amtrak in Alabama had a total of 60,167 passengers (arrivals and departures) in 2015, a 9 percent decrease from the seven-year high of 66,403 in 2012. Birmingham had the most passengers in 2015 with 44,212, followed by 10,870 in Tuscaloosa and 5,085 in Anniston. There are 1.3 million Alabamians (14 percent) within 25 miles of an Amtrak station.

Re-establishing some form of passenger rail service in two previously used corridors remains a desired outcome of several ongoing efforts. The first is the Gulf Coast corridor, which passes through Mobile on east-west travels between Florida and New Orleans. The Southern Rail Commission (SRC), working closely with State government agencies, represents Alabama’s interest in expanding passenger rail services and promotes passenger rail transportation on a regional basis. The most recent Amtrak study on re-instating passenger rail service along the Gulf Coast, as well as the Gulf Coast Working Group report to Congress providing details on costs, obstacles and opportunities for re-establishing service, can be accessed on the SRC’s website at: <http://www.southernrailcommission.org>. The second corridor is a north-south connection between Birmingham, Montgomery and Mobile, and ultimately Huntsville. More on Birmingham to Montgomery study can be found at: http://adeca.alabama.gov/Divisions/ced/Documents/BHM-MGM%20Passenger%20Rail%20Study_Final.pdf.

Projected Transit Funding

Since the passage of MAP-21 in 2012, the allocation of transit funding throughout Alabama has been relatively consistent across the main federal programs, averaging approximately \$51.7 million per year, as shown in Table 5-1.

Table 5-1: Average Federal Transit Funding, 2013-2016

FTA Program	2013	2014	2015	2016	Average
5307	23,117,305	23,545,904	23,296,675	23,704,433	23,416,079
5309/5339	3,610,566	3,670,963	3,670,963	3,979,961	3,733,113
5310	4,178,668	4,200,592	4,193,149	4,265,784	4,209,548
5311	20,519,200	20,641,376	20,607,569	19,794,400	20,390,636
TOTAL	51,425,739	52,058,835	51,768,356	51,744,578	51,749,377

Source: Federal Transit Administration

Unfortunately, the projected amount of funding from FTA available through the FAST Act was not available. Therefore, an estimated amount of federal funding through 2040 was calculated by applying a two percent annual inflation factor to the recent average funding totals (presented in Table 5-1). The result was projected federal funding for transit reaching approximately \$83 million by 2040, as shown in Table 5-2.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Table 5-2: Projected Federal Transit Funding, 2017-2040

FTA Program	2017	2020	2030	2040
5307	\$ 23,884,401	\$ 25,346,317	\$ 30,897,019	\$ 37,663,294
5309/5339	\$ 3,807,776	\$ 4,040,842	\$ 4,925,764	\$ 6,004,478
5310	\$ 4,293,739	\$ 4,556,550	\$ 5,554,410	\$ 6,770,794
5311	\$ 20,798,449	\$ 22,071,480	\$ 26,905,011	\$ 32,797,059
TOTAL	\$ 52,784,365	\$ 56,015,190	\$ 68,282,204	\$ 83,235,626

The projections above are dependent on similar levels of transit funding through 2040. Also, as noted in Interim Report #2, roughly 30 percent of the funding for transit throughout the state is from local sources. Therefore, another important consideration for the projection of federal funds for transit is the availability of local funds for the required match.

5.2 Bicycle and Pedestrian Mobility

Existing Conditions

The growing significance placed on bicycle and pedestrian facilities has resulted in increased planning, funding and construction of facilities, particularly at the local and regional level. Many areas across the state have implemented bicycle and pedestrian facilities in recent years. However, most of these facilities are intended for shorter distance, recreational use and are often situated in or adjacent to parks and other natural areas, with limited opportunities for future route and/or network expansion. Each MPO's LRTP and stand-alone Bicycle and Pedestrian Plan discusses bicycle and pedestrian facilities within its region, and an increasingly greater number of local jurisdictions are preparing their own plans.

Increased emphasis is being placed at all levels – federal, state, regional and local – on policies that promote bicycling and walking as viable transportation alternatives. These include FHWA guidance for the provision of bicycle and pedestrian facilities as part of road improvement projects, as well as the application of Complete Streets concepts for new construction and reconstruction. Complete Streets are designed to enable safe access by all users – motorists as well as pedestrians, bicyclists and transit riders. A number of Alabama jurisdictions have enacted Complete Streets policies, including Birmingham, Chickasaw, Daphne, Fairhope, Homewood, Midfield, Mobile, Orange Beach, and Prattville. One of several jurisdictions in Jefferson County with Complete Streets policies, the City of Birmingham's policy has earned nationwide recognition. Several federal funding programs are also available for bicycle and pedestrian facilities, although funding is limited and highly competitive. The ability for bicycle facilities in particular to serve the transportation needs of a community is a strategic focus for ALDOT, in keeping with the Department's purpose and mission.

At the statewide level, ALDOT is currently updating the *Statewide Bicycle and Pedestrian Plan*. The previous plan, completed in 2010, identified eight state bicycle routes connecting east-west and north-south through larger cities and urban areas and following existing trails and scenic routes as feasible. Most of the routes did not designate the exact roadway routing (particularly within urban areas), nor were the routes signed. The ongoing plan effort will emphasize route connectivity, the ability for facilities to serve important transportation needs within communities, and providing safe facilities. Information on the

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

plan, which is expected to be finalized in summer 2017, can be found on the plan's webpage at: <http://www.dot.state.al.us/oeweb/bicyclePedestrian.html>.

The plan identifies four goals for walking and bicycling across the state:

- Improve safety for bicyclists and pedestrians of all ages and abilities.
- Develop complete and connected bicycle and pedestrian systems.
- Support state, regional, and local economic development.
- Increase travel options for all transportation system users and protect the natural environment.

Four primary trends characterizing walking and biking in Alabama were also highlighted:

- Safety – As walking and bicycling travel expands, pedestrian and bicycle crashes also increase. Greater exposure may continue this nationwide trend despite overall traffic safety improvements.
- Mode Share – The share of bicycling commuting trips in the region is experiencing some of the fastest growth in the nation. Other trends that support increased walking and cycling trips include population growth (and the increasing urbanization of the population), new investments in bicycling/walking infrastructure, and as complementary modes in auto and transit-based trips.
- Access and Equity – Many people walk or cycle for everyday transportation needs. In Alabama, 40 percent of the population is unable to drive or at an age where driving may be less desirable, and 39 percent of households have zero or only one vehicle available. As the second-highest expenditure for US households, transportation is a major expense for low-income households.
- Economic Development – The economic benefits of walking and bicycling impact all levels of the economy. Spending less on household transportation can translate into greater local spending. Increasing demand by millennials and baby boomers, combined with businesses trying to tap into that workforce and market, fuels local economic development in cities and retirement areas. Finally, significant long distance or destination trail facilities – such as the Chief Ladiga Trail or Coldwater Mountain Bike Trail – can bring in millions of tourism dollars annually, support hundreds of jobs, and increase property values along or adjacent to the trail.

For both walking and bicycling, the greatest potential demand is found in urban areas, low-income areas, and areas with colleges and universities. Bicycle tourism demand may also support future efforts to plan bicycle routes in corridors between cities and towns and connecting recreational areas.

Identified Needs

Input from the public and stakeholders at all levels of outreach confirms an increasing demand for bicycle and pedestrian facilities as alternatives to local congestion and delay. The ongoing update to the Bicycle and Pedestrian Plan has undertaken a number of detailed assessments to identify bicycle and pedestrian demand and bicycle suitability statewide. The *Alabama Statewide Bicycle and Pedestrian Plan* will recommend a set of strategies and actions to improve bicycle and pedestrian transportation in Alabama. The three fundamental strategies, supported by specific recommended actions to support implementation, focus on safety, access, and economic development:

- Prioritize pedestrian and bicycle safety programs and improvements.
- Increase access to walking and bicycling facilities for traditionally underserved populations.
- 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.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

The plan will also include a recommended statewide bicycle corridor network that establishes the framework for developing a state bicycle route system. Crisscrossing the state north-south and east-west, the corridors highlight areas with higher potential for bicycle transportation demand and connections between them. Priority corridors will be developed within areas with higher demand, which will be connected to each other through vision corridors. The future bicycle routes are likely to ultimately include a combination of highways, local roads, bicycle boulevards, and shared use paths. Therefore, strong interagency and interjurisdictional collaboration will be critical for development and implementation.

Projected Bicycle and Pedestrian Funding

Approximately \$68.6 million is specifically called out for bicycle and pedestrian improvements in 2017 in the ALDOT work program. This represents approximately five percent of the overall ALDOT work program. The improvements primarily consist of trails and greenways, sidewalks, pedestrian overpasses, and streetscaping and landscaping. Estimated bicycle and pedestrian funding, assuming a two percent annual inflation rate on spending through 2040, is presented in Table 5-3.

Table 5-3: Projected Bicycle and Pedestrian Funding, 2017-2040

Year	Amount
2017 Funding	\$68,683,111
2020 Projection	\$72,887,067
2030 Projection	\$88,848,928
2040 Projection	\$108,306,348

Two other important factors to consider when reviewing the numbers presented above are that:

- Many bicycle and pedestrian improvements are incorporated with other types of projects, such as widening and resurfacing projects. Therefore, the amount of funding for bicycle and pedestrian improvements in the current work program is somewhat understated.
- The projections in Table 5-3 assume the share of improvements within the overall ALDOT work program remains constant through 2040. The increasing demand for active transportation opportunities as the general public becomes more health conscious may eventually lead to a greater share of available funding.

It should be noted that the *Alabama Statewide Bicycle and Pedestrian Plan*, to be finalized in summer 2017, will provide a variety of potential funding sources and policy guidelines for the implementation of bicycle facilities throughout the state.

5.3 Aviation

Existing Conditions

Alabama has approximately 235 airport facilities, including public and privately owned airports and heliports.¹⁹ Commercial airports exist in Muscle Shoals, Huntsville, Birmingham, Montgomery, Dothan and Mobile, with Huntsville and Birmingham being the state's two international airports. In the past,

¹⁹ http://www.dot.state.al.us/aerweb/aviation_facts.htm, accessed August 25, 2016

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

regularly scheduled commercial passenger flights also operated from Tuscaloosa Regional Airport, but they have been discontinued for a number of years.

The *Alabama Statewide Airport System Plan* identifies a system of 84 publicly owned airports located across the state in 61 of Alabama's 67 counties. The plan recommends an airport system that classifies each airport into one of five functional roles: international, national, general aviation-regional, general aviation-community, and local. The plan recognizes the economic development potential of a robust airport system for Alabama.

Identified Needs

At the time of this report, coordination with the ALDOT Aeronautics Bureau to identify overall statewide needs is ongoing. However, review of the projects in the 2016 Airport Improvement Program (AIP) Grants from the Federal Aviation Authority (FAA) and current ALDOT work program indicates that most airport needs center around expansion and/or maintenance. Examples include:

- Construction of taxiways, aprons, runways, fuel farms and other onsite facilities
- Maintenance projects such as apron and taxiway rehabilitation, drainage improvements, and obstruction/debris removal
- Installation of guidance signs and taxiway lighting
- Acquiring land for approaches
- Conducting airport related studies and surveys

Projected Aviation Funding

Due to its federal funding structure and the fact that most airports throughout Alabama are direct recipients of federal funds, a great many aviation related projects are not reflected in the CPMS. For example, improvements in the CPMS for 2017 totaled approximately \$8.1 million, while over \$45 million in Airport Improvement Program (AIP) grants were received from FAA for Alabama airport improvements in 2016. The primary funding source for airports in the State of Alabama is the FAA AIP program, which provides grants for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS).

Per the FAA, airports within the state are classified as follows:

- Primary Airports – Commercial Service Airports that have more than 10,000 passenger boardings each year.
- Non-Primary Commercial Service Airports – Commercial Service Airports that have at least 2,500 and no more than 10,000 passenger boardings each year.
- Reliever Airports – Airports designated by the FAA to relieve congestion at Commercial Service Airports and to provide improved general aviation access to the overall community. These may be publicly or privately-owned.
- General Aviation Airports – Public-use airports that do not have scheduled service or have less than 2,500 annual passenger boardings (49 USC 47102(8)). Approximately 88 percent of airports included in the NPIAS are general aviation.

The majority of airports in Alabama are classified as General Aviation Airports. However, there are five Primary Airports in the state:

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- Birmingham-Shuttlesworth International
- Huntsville International-Carl T. Jones Field
- Mobile Regional
- Montgomery Regional (Dannelly Field)
- Dothan Regional

Table 5-4 presents a breakdown of the historical FAA funding through the AIP grant program in Alabama.

Table 5-4: Historical FAA AIP Funding in Alabama, 2011-2016

Facility Type	2011	2012	2013	2014	2015	2016	AVERAGE	Percentage
Primary Airports	\$ 38,837,929	\$ 41,606,405	\$ 31,485,579	\$ 23,008,265	\$ 24,311,908	\$ 26,962,455	\$ 31,035,424	51.4%
Other (Reliever and General Aviation)	\$ 25,652,329	\$ 26,517,807	\$ 39,608,160	\$ 32,906,414	\$ 32,666,298	\$ 18,492,091	\$ 29,307,183	48.6%
Total	\$ 64,490,258	\$ 68,124,212	\$ 71,093,739	\$ 55,914,679	\$ 56,978,206	\$ 45,454,546	\$ 60,342,607	
Key Facilities								
Birmingham-Shuttlesworth International	\$ 18,123,197	\$ 10,601,388	\$ 11,712,529	\$ 8,743,187	\$ 6,788,916	\$ 4,050,000	\$ 10,003,203	16.6%
Huntsville International-Carl T Jones Field	\$ 16,070,075	\$ 26,869,534	\$ 16,100,761	\$ 6,650,897	\$ 11,833,944	\$ 20,379,761	\$ 16,317,495	27.0%
Other Primary Airports	\$ 4,644,657	\$ 4,135,483	\$ 3,672,289	\$ 7,614,181	\$ 5,689,048	\$ 2,532,694	\$ 4,714,725	7.8%

Source: Federal Aviation Authority

As shown, the distribution of AIP funding to the five primary airports is slightly more than for all the remaining airports throughout the state. A key takeaway from this information is that over 40 percent of FAA AIP funding in Alabama goes to two airports – Birmingham-Shuttlesworth International Airport and Huntsville International Airport.

In order to project available funding for aviation facilities throughout Alabama through 2040, a two percent inflation factor was applied to the average AIP funding shown in Table 5-4. The result, shown in Table 5-5, is an increase in projected FAA funding to roughly \$97 million in 2040.

Table 5-5: Projected FAA AIP Funding in Alabama, 2017-2040

Facility Type	2017	2020	2030	2040
Primary Commercial Service	\$ 31,656,132	\$ 33,593,740	\$ 40,950,582	\$ 49,918,531
Other (Reliever and General Aviation)	\$ 29,893,327	\$ 31,723,038	\$ 38,670,206	\$ 47,138,765
Total	\$ 61,551,476	\$ 65,318,798	\$ 79,622,818	\$ 97,059,336

As with the previous funding projections within this report, these projections assume a consistent allocation of funds from FAA to Alabama’s airports. These projections are subject to change in response to future shifts in federal policy and priorities.

Given that AIP grants serve to address immediate needs that arise over time at facilities statewide, it is more problematic to develop funding projections to individual facilities. Nonetheless, barring significant shifts in air travel characteristics throughout the state, it can be assumed that the Birmingham and Huntsville airports will continue to receive a significant share of Alabama’s AIP funds.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

SECTION 6: FUTURE TRENDS AND ISSUES

Transportation, much like other aspects of our society, is continually evolving. As Alabama continues to grow through 2040, several trends in transportation and projected growth will influence transportation decisions. This section presents some of the issues and trends that will influence Alabama's transportation network in the future. The key issues discussed include:

- Supporting Alabama's Growth – Future growth on the overall network and its overall implications on the multimodal network.
- Projected Performance of the Current Work Program – How the roadway network is projected to function as a result of the current work program.
- Focus on the State of Good Repair – The focus on maintenance is growing as the need continues to increase due to continued expansion of the roadway network.
- Accommodating Emerging Technology – Emerging technologies will continue to influence the transportation network.
- Understanding Trends in Mode Shift – Travel trends are evolving with shifting needs.

6.1 Supporting Alabama's Growth

Based on the US Census data presented in Chapter 2, Alabama's projected population growth between 2010 and 2040 will be characterized by:

- An increase in overall population of more than 10 percent (508,847 residents), resulting in a 2040 population of 5,288,583.
- A continuation of the shift from rural to urban areas, with over 78 percent of Alabama residents living in urban areas in 2040.
- The Birmingham region remaining the most populous with 1.25 million people, while the Huntsville region experiences the largest increase in raw numbers, adding 166,792 residents to reach a population of 584,385. Baldwin County and the Auburn-Opelika area are projected to have the highest rate of growth.
- Population decline in four metropolitan areas, with Anniston and Gadsden seeing the largest decreases.

Potential issues and opportunities resulting from the projected growth, increasing urbanization, and declining populations in some areas will be discussed further in the following paragraphs. As stated at the beginning of this document, US Census data provides the foundation for the growth assessments undertaken as part of the transportation plan development process, in the travel demand model analysis, and even for the metropolitan area transportation plans upon which the SWTP builds. However, a more detailed and focused look at conditions and characteristics within Alabama is also beneficial. The University of Alabama Center for Business and Economic Research (CBER) utilizes data from the US Census and other reliable sources to provide more detailed statistics and projections specific to Alabama. These sources provide an overview of demographic and growth conditions and trends across the state. In addition, the travel demand model relies on population and employment related data to forecast existing and projected conditions on the roadway network.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Table 6-1 presents population and employment projections for 2040 developed by CBER.

Table 6-1: Population and Employment Projections from CBER

	2010	2040
Households	1,883,791	2,110,572
Population	4,803,667	5,381,960
Employment	1,844,995	3,250,061
Employ/HH Ratio	0.979	1.540
Retail Employment	232,807	430,470
Non-Retail Employment	1,612,188	2,819,591

Highlights of the 2040 CBER projections presented above include:

- The projected 2040 population for the state of Alabama derived by CBER was consistent with that of the US Census Bureau discussed in Section 2. It should be noted that the CBER estimates were developed by household and then multiplied by the average household size in Alabama to derive projected population.
- Employment per household is projected to increase by approximately 60 percent to 2040. Much of the employment growth will be in non-retail employment, which includes manufacturing industries that are more reliant on freight movement for their operations.

The projected population and employment growth was developed by subtracting the 2040 CBER projections from the 2010 US Census data by Census Tract. The projected growth of households and jobs throughout the state is provided in Figures 6-1 and 6-2.

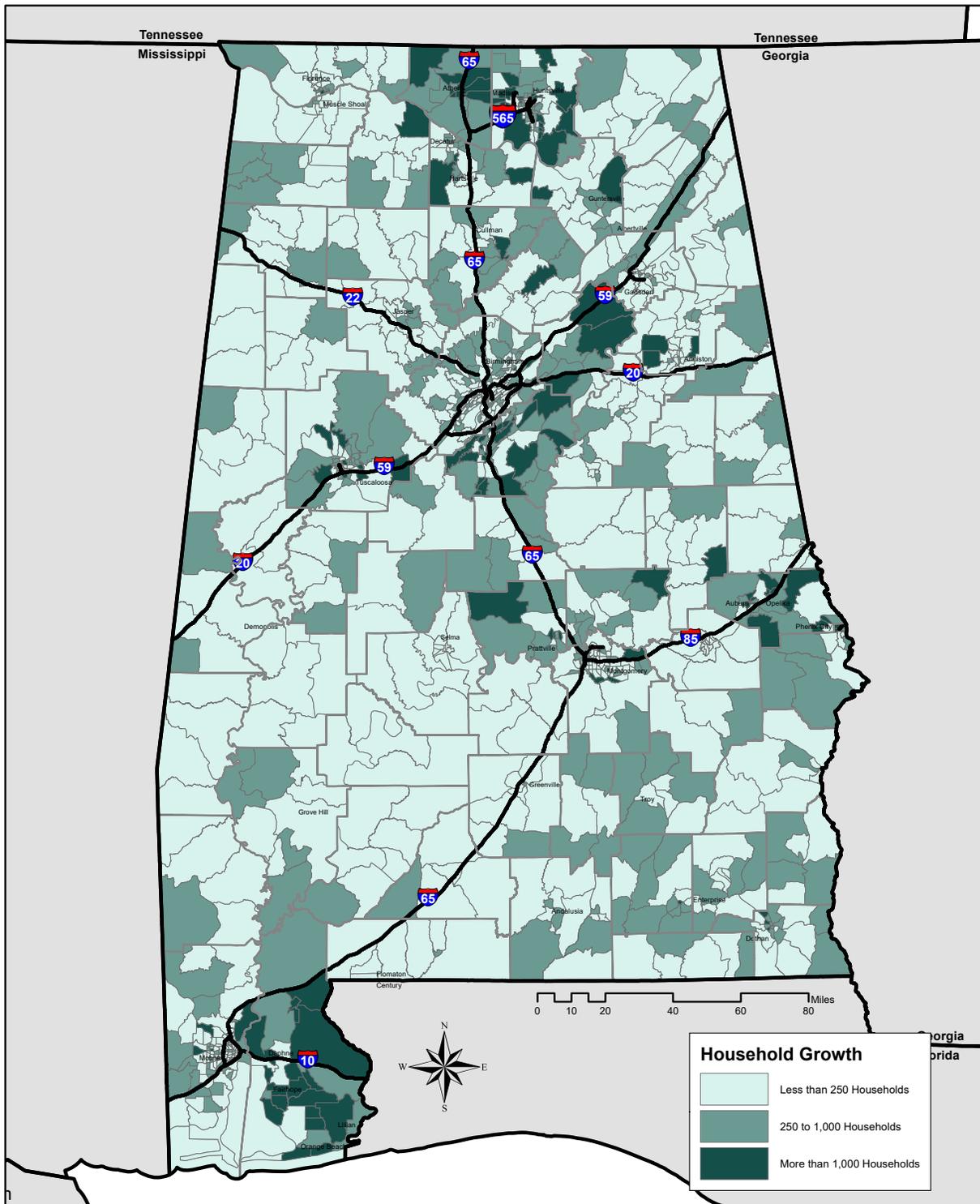
As these figures show, most of the growth projected for 2040 by CBER is in the same areas as projected through the US Census data referenced in Section 2. As such:

- Higher levels of projected household growth are found in the suburban areas of Alabama's major cities – particularly Birmingham, Huntsville, and Auburn-Opelika.
- Higher levels of employment growth are also projected in the urban areas – particularly in Huntsville, Auburn, and Birmingham.
- A significant level of growth in both households and employment is projected in Baldwin County.

The projected traffic volumes and levels of congestion for 2040 noted in Section 3 were developed from the CBER data and, accordingly, are reflective of the trends noted above.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 6.1: Projected Household Growth, 2010-2040

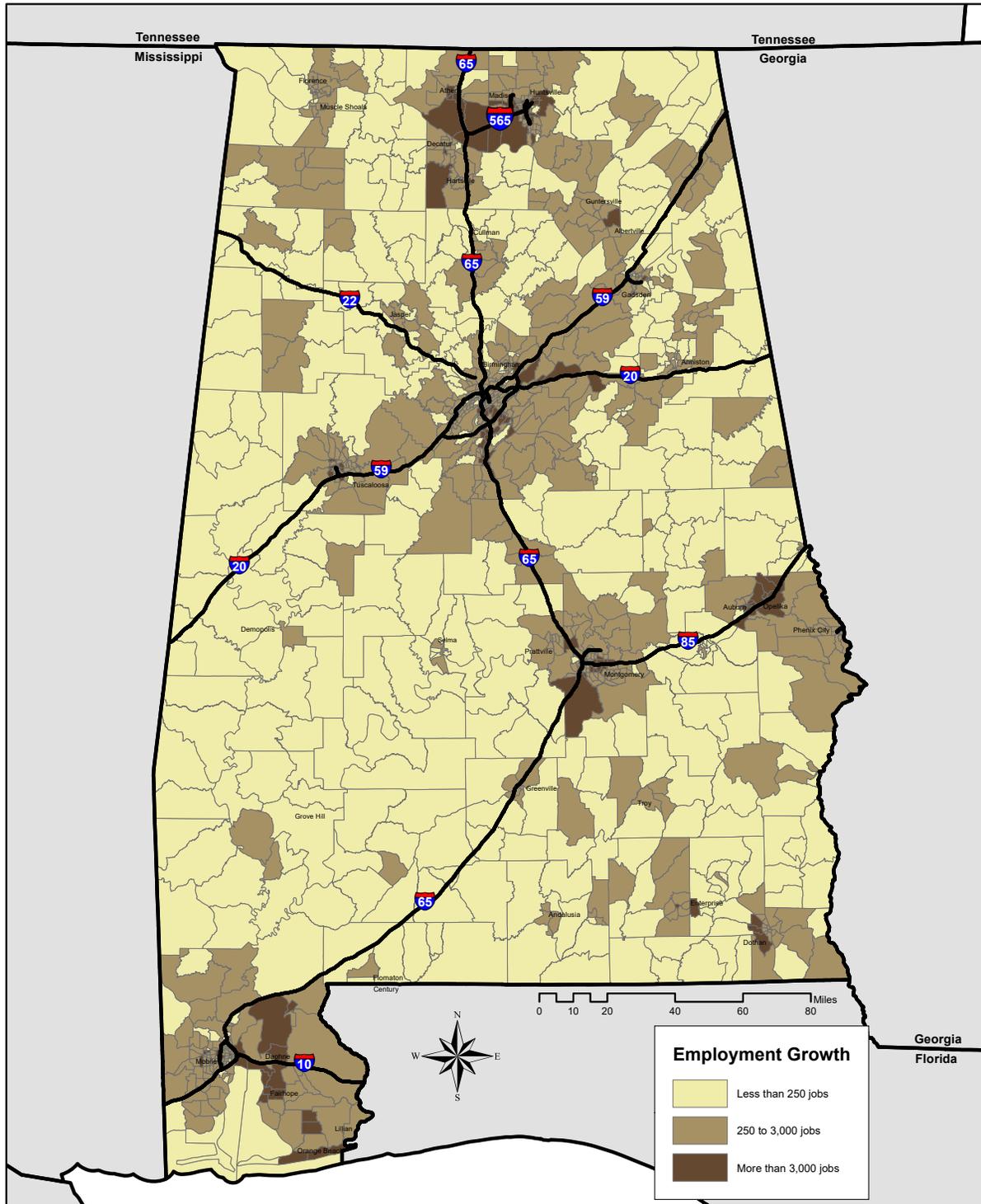


Source: US Census Bureau

NOTE: The locations shown to have minimal growth include those with negative growth projected for 2040.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN FINAL REPORT

Figure 6.2: Projected Employment Growth, 2010-2040



Source: US Census Bureau

NOTE: The locations shown to have minimal growth include those with negative growth projected for 2040.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

6.2 Projected Performance of the Current Work Program

A key benchmark of the improvement program is to measure the benefits to the statewide network derived from the projects within the ALDOT work program. As described in Section 3, this task was undertaken by using the statewide travel demand model to compare projected conditions under two scenarios:

- 2040 No Build – Reflects the population and employment projections developed by CBER along the roadway network as it now exists.
- 2040 Existing Plus Committed (E+C) – Reflects the population and employment projections developed by CBER along a future built roadway network that assumes construction of the major capacity projects planned by ALDOT through 2040.

The scenarios listed above were compared to 2010 base year conditions to reflect the change on the system. The factors assessed for this analysis included:

- Vehicle Miles Traveled (VMT) – Miles traveled by all vehicles on the roadway network in a given year. This is a good measure of the overall utilization of the network.
- Vehicle Hours Traveled (VHT) – Hours spent traveling by all vehicles on the roadway network in a given year. This is a good indicator of overall delay when compared to different scenarios.
- Truck VMT – Miles traveled by trucks in a given year. This is good reflection of the overall utilization of the roadway network by truck freight.

It should be noted that this analysis was conducted for the state’s major roadways and did not include county or local roads, some of which also carry significant traffic volumes, particularly in urban areas. The results of this analysis are provided in Table 6-2.

Table 6-2: Projected Conditions Comparison – 2040 No-Build vs. 2040 E+C

	2010 Base	2040 No-Build	2040 E+C
Households	1,883,791	2,110,572	2,110,572
Population	4,803,667	5,381,960	5,381,960
Employment	1,844,995	3,250,061	3,250,061
Emp/HH Ratio	0.979	1.540	1.540
VMT	450,554,946	523,328,110	560,947,038
VHT	58,816,469	125,770,826	104,653,242
VMT/VHT	7.7	4.2	5.4
Truck VMT	97,382,214	114,057,538	122,470,824

Key observations from the scenario comparison:

- Under the No-Build scenario, there is projected to be a 16 percent increase in overall travel on the statewide roadway network. With the capacity improvements through 2040, the increase in VMT rises to 25 percent, or a total of approximately 561 million miles traveled. The additional capacity improvements are projected to provide for an additional 38 million miles of travel.
- In terms of VHT, under the No-Build scenario, travel is projected to increase by approximately 67 million hours, or 113 percent, annually by 2040. In comparison, the E+C scenario indicates a

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

projected decrease in VHT to approximately 105 million in 2040. This reflects an overall reduction of 21 million hours of congestion throughout the state with the planned improvements.

- When comparing the vehicle miles traveled to vehicle hours traveled, the ratio of VMT to VHT reduces significantly under both the No-Build and E+C scenarios. This indicates a significant increase in congestion through 2040 regardless of improvements. However, the E+C scenario performs better than the No-Build scenario. This indicates that, although more miles are being traveled than in the No-Build, they are being done in less delay.
- As with regular traffic, the reduction of overall congestion also results in more truck miles traveled throughout the state. Increases in truck travel indicate a more favorable environment for economic development.

As noted, congestion across the state is projected to increase in 2040 under either scenario. A standard measure of congestion is called Level of Service (LOS), which is a function of travel speeds and delay. Organized on an A to F grading scale, the results can be categorized based on these general descriptions:

- LOS A-C: Little to no congestion
- LOS D: Mildly congested
- LOS E: At capacity and congested
- LOS F: Over-capacity and heavily congested

The projected LOS by the categories listed above was derived from the statewide travel demand model and is presented in Table 6-3 below. As shown, the mileage of segments within each category is similar between the No-Build and E+C scenarios, with approximately 16 percent of the state’s major roadways operating under LOS F in each. This would indicate:

- The capacity added by the improvements through 2040 will be absorbed by additional trips attracted to the improved facility.
- The severity of congestion on LOS F segments will be less under the E+C scenario than No-Build due to a reduction in delay, even with the projected increases in miles of travel.

Table 6-3: Projected Congested Segments Comparison – 2040 No-Build vs. 2040 E+C

	2010 (Existing)		2040 (No-Build)		2040 (E+C)	
	Miles	%	Miles	%	Miles	%
LOS A-C	103,594	78.1%	99,482	75.0%	99,977	75.3%
LOS D	6,353	4.8%	6,000	4.5%	6,044	4.6%
LOS E	5,306	4.0%	4,995	3.8%	5,016	3.8%
LOS F	17,335	13.1%	22,111	16.7%	21,765	16.4%

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

6.3 Focus on the State of Good Repair

As noted in Section 3, over 60 percent of the funding in the 2017 ALDOT work program is dedicated to resurfacing, bridge and safety projects, with only 23 percent set aside for capacity projects. This proportional distribution of funding is likely to continue to shift towards maintenance projects for a number of factors, including:

- Increased travel and congestion on more roadways – The significant increase in VMT and congestion projected in 2040 will create proportionally additional demands to maintain an increasing number of roadway miles and infrastructure.
- Maintenance costs last through the life of a facility – Unlike the one-time, up-front costs presented by capacity improvements or new roadways, maintenance costs must be paid over and over throughout the facility's lifespan.
- Roadway and bridge condition is critical to economic development – As with other infrastructure such as schools and sewer, the condition of roads and bridges greatly influences the potential for economic success and growth. The ability for freight to function on Alabama's roadways and efficiently deliver goods throughout the state is essential, and a well-functioning roadway network helps attract new industry.

The exact shift of funding needed to maintain Alabama's infrastructure will be better defined upon completion of the Transportation Asset Management Plan (TAMP). In addition, the TAMP will include a financial strategy to fund a work program geared to meet maintenance performance targets being developed by ALDOT.

6.4 Accommodating Emerging Technology

One aspect of transportation that will likely have a profound impact on Alabama's future transportation network is technology. While the applications are literally endless, two very prevalent areas of technology relevant to the future of Alabama's transportation network are advances in ITS (as discussed in Section 3.5) and vehicle technical advances.

Coordinated traffic signals, electronic information signs, signal priority/preemption for transit, and variable speed limit signs are all part of the ITS industry. Another component of ITS is the ability to automatically distribute real-time traffic data to websites, social media feeds, mobile apps, and local TV and radio stations. Given that the core of ITS is communication, advancements in communication technologies have potential in several areas, including:

- Greater expansion of coordinated signalization and traffic control – As the cost of equipment to obtain real-time information continues to improve, the potential for expanded coordination within urban areas will continue to increase. This is particularly true in cities with an RTMC (Birmingham, Mobile, and Montgomery), where signals can be controlled in real-time from a remote location, in turn leading to better operations along the network.
- Improved dissemination of information to system users – As mobile technologies (in-vehicle, phone, etc.) continue to improve, the benefits to drivers include travel time savings related to reduced congestion and delay and increased safety. Furthermore, better real-time information improves the efficiency of goods movement and reduces trucking delays. This includes the potential to enhance communications from ALDOT and RTMCs to mobile information providers such as Google and Wayz.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

Automobile manufacturers have increasingly used technology to improve safety by reducing driver error and help alleviate congestion. One emerging technology is connected cars. Connected technology uses wireless communication in cars to continually communicate to vehicles around them so each is aware of the other's speed, heading and direction. Connected vehicles also help to recognize and alert drivers to hazardous situations. By adding communication points in hazardous road areas and intersections, the technology extends crash-reduction capabilities by allowing automatic control of signal timing, speed management, and operation of transit and commercial vehicles. The technology currently exists and is likely to become more prevalent in the near future. An example of its application is the "self-parking" feature offered by newer vehicles.

A related but different technology is the autonomous vehicle (AV). AVs use a combination of laser technology, GPS, cameras and computer processing power to analyze possible roadway scenarios and then take appropriate action. The ultimate goal for AV technology is to make the vehicle so intelligent that no driver input is needed.

Other changes in vehicle technology that will influence the transportation network include:

- Fuel efficiency – With incentives from the federal government, automakers are continuing to make cars more fuel efficient. The rules, set by the Environmental Protection Agency and the National Highway Traffic Safety Administration, require automakers to meet year-over-year hikes in fuel efficiency in different vehicle-size categories. While all of the details for implementation are still in development, the progress means automakers are on track to meet a federal target that doubles fuel efficiency in 2025 from 2012.²⁰ This has a profound impact on future funding for roadway improvements, which are funded heavily through gas taxes.
- Electric cars – Electric cars are becoming more popular and are supported by government policy. One current drawback to electric cars is that trip distances are limited by the car's charging capability. Therefore, investment in charging stations along the interstate network would need to be made before electric cars can be used for longer distance trips.

The impacts of these and other emerging vehicle technologies on the transportation network will be monitored by ALDOT as they continue to evolve.

6.5 Understanding Trends in Mode Shift

Two trends in particular have been and are expected to continue to influence how people travel. These include increased telecommuting and more demand for active transportation.

Telecommuting

Telecommuting is defined as the substitution of technology for commuter travel. Thus, if someone works at home instead of driving to an office, they are telecommuting. According to statistics published by GlobalWorkplaceAnalytics.com, the following characterize telecommuting trends throughout the US:

- Regular work-at-home among the non-self-employed population has grown by 103 percent since 2005.
- 3.7 million employees (2.8 percent of the workforce) now work from home at least half the time.

²⁰ Scientific American, 2016. <https://www.scientificamerican.com/article/american-cars-on-track-to-double-fuel-efficiency/>

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- The employee population as a whole grew by 1.9 percent from 2013 to 2014, while the employees who telecommute population grew 5.6 percent.²¹

Furthermore, their research shows the following with respect to the potential for additional growth in telecommuting:

- 50 percent of the US workforce holds a job that is compatible with at least partial telework, and approximately 20-25 percent of the workforce teleworks at some frequency.
- 80-90 percent of the US workforce says they would like to telework at least part time.
- Surveys indicated that the most desired frequency for telecommuting is two to three days a week, which allows for a balance of concentrative work (at home) and collaborative work (at the office).

When considered in conjunction with the increasing urbanization and congestion projected throughout the state, it is reasonable to expect Alabama to likewise experience increases in telecommuting.

Active Transportation

The demand for bicycling and walking facilities is steadily increasing throughout the US. Although using these modes as a form of transportation instead of recreation is still small compared to vehicle or transit use, they are experiencing increases. According to a report submitted by the Alliance for Bicycling and Walking, the following trends support this statement:

- The journey-to-work data from the US Census indicates a gradual increase in those walking to work nationally, from 2.5 percent in 2005 to 2.8 percent in 2013. Among the most populous cities in the US (none of which is in Alabama), the percentage of commuters walking to work increased from 4.4 percent in 2005 to 5.0 percent in 2013.
- The percentage of adults biking to work has also seen an increase from 2005 to 2013, from 0.4 percent to 0.6 percent. Commuters in the large cities studied for this report saw a steeper increase during these years, from 0.7 percent in 2005 to 1.2 percent in 2013.²²

A strong push has also been made by the FHWA to promote the implementation of bicycle and pedestrian facilities throughout the states. FHWA policy guidance includes, but is not limited to, the following:

- Bicycle and pedestrian needs must be given "due consideration" under federal surface transportation law. This should include, at a minimum, a presumption that bicyclists, pedestrians, and persons with disabilities will be accommodated in the design of new and improved transportation facilities.
- In the planning, design, and operation of transportation facilities, bicyclists, pedestrians, and persons with disabilities should be included as a matter of routine, and the decision to not accommodate them should be the exception rather than the rule.

Other developments that have also led to the increase of bicycle and pedestrian travel include:

- Emergence of real-time transit mobile applications that allow greater confidence in connecting bicycle and pedestrian trips to transit trips. This is especially true with Alabama's larger transit systems in Birmingham, Montgomery, and Mobile.

²¹ GlobalWorkplaceAnalytics.com, <http://globalworkplaceanalytics.com/telecommuting-statistics>

²² Alliance for Bicycling and Walking, *Bicycling and Walking in the United States: Benchmarking Report*, 2016

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

- Bike share programs have become more prevalent. Given their linkage to transit, there is a potential for bike share programs to help provide transportation options in Alabama’s shrinking cities, such as Anniston and Gadsden, or for riders anywhere to complete “last mile” connections from transit stops. Local programs in smaller Alabama communities without transit may also provide convenient transportation alternatives to their residents.

As the demand for active transportation continues to increase throughout the state, ALDOT will continue to work with MPOs and local municipalities to ensure bicycle and pedestrian facilities are integrated into the statewide transportation network where appropriate.

Ride-Hail Services

Another aspect of transportation with the potential to impact mode choice, particularly with respect to commute trips, is ride-hail services (such as Uber and Lyft). As the costs for ride-hail services continue to become more flexible and less costly, there is increasing potential for their use:

- As a more attractive option than traditional transit trips, particularly for fixed route bus services operating in mixed traffic (such as those in the state’s larger urban areas).
- To more reliably and efficiently complete “first/last mile” connections to transit.
- As a substitute for private automobiles, especially given projected congestion levels throughout the state.

6.6 Moving Forward

Based on the assessments within this plan, the following issues face ALDOT as it moves forward in developing its policies and work programs:

- Passage of the FAST Act has ushered in an added emphasis on performance-based planning throughout the US. Per the latest federal guidance from FHWA, ALDOT and the MPOs across the state are required to establish performance targets, develop monitoring procedures, and report the performance of the statewide transportation network. The future prioritization of improvements in ALDOT’s work program and the MPO LRTPs will likely reflect a focus on meeting these system targets.
- The increased travel and congestion projected throughout the state through 2040 will result in proportional increases to the maintenance demands. The TAMP, currently being developed by ALDOT, will set performance targets for maintenance and identify funding sources for the improvements needed to meet those targets.
- A comparison of the growth projections through 2040 against the amount of funding available for capacity improvements indicates that the degree of congestion will continue to increase statewide without additional revenue sources.
- Much of the existing and projected congestion along the state’s roadways are in urban areas. Many of these urban areas also have higher population and employment densities, which are potentially more conducive to tripmaking by alternative modes such as transit, bicycling, and walking. Bicycle and pedestrian travel has garnered increased support in recent years from the general public and at the federal level. In line with FHWA guidance regarding the provision of facilities, ALDOT and the MPOs will increasingly consider the integration of bicycle and pedestrian facilities into their work programs. Similarly, the demand for more innovative transit solutions in

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

metropolitan areas such as Birmingham, Huntsville, and Mobile can be anticipated given their projected growth.

- Continued technological advances in transportation systems and mobile applications will require ALDOT to plan for and grow its transportation network to accommodate emerging technologies. The focus on ITS will also require greater investments in technology, increased training for staff, and expanded coordination with private sector entities.
- The projected increases in population and employment throughout the state will have a related growth effect on freight movement. Many of the goods moved on Alabama's roadways are destined for urbanized areas, where existing congestion is projected to worsen through 2040. As such, ALDOT will need to continue its coordination with freight providers and investigations into emerging ITS technologies to ensure freight mobility is sufficient to maintain Alabama's economic competitiveness.
- One of Alabama's key assets is its intermodal transportation infrastructure. The state's six interstates, extensive Class I and regional/short line railroad coverage, and deep-water port in Mobile combine to form a dynamic, interconnected transportation system. It is critical Alabama continues to invest in maintaining and enhancing its infrastructure system to ensure its ability to continue to support a strong economy across the state.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

APPENDIX A: PROJECT DEVELOPMENT PROCESS

A summary of the five primary steps in ALDOT's Project Development Process, as well as the activities within each step, is outlined below.

Step 1: Planning and Project Identification

The first step of the project development process is the overall identification of a project. In most cases, projects typically result from planning studies that include a comprehensive evaluation of the existing and expected future issues that identify overall transportation needs. Projects are often identified by the ALDOT regional offices through input from the jurisdictions they serve. Maintenance projects are also identified from a continual inspection process.

From a programming perspective, each MPO develops both a long-range LRTP and short-range TIP that is incorporated into the overall statewide work program. Local areas that lie outside MPOs may work directly with ALDOT to incorporate their project needs into CPMS.

Step 2: Environmental Study

Environmental studies are required by federal law on projects that use federal funding and on state funded projects where additional right-of-way is required. Typically, the amount of environmental analysis needed for a given project is determined by the scale of the project and/or the presence of environmentally sensitive areas such as wetlands, endangered species habitat, or historical structures.

Step 3: Preliminary Design

A preliminary design is developed for the selected improvement and an environmental study is then performed. The preliminary design provides the basis for the final design. Just as with the environmental process, larger scale projects such as new roadways and roadway widenings will have a higher level of preliminary design activities than small scale projects.

Step 4: Final Design and Right-of-Way Acquisition

This step includes the refined design of the transportation facility based on various constraints, including further minimization of impacts on environmental resources, unforeseen field conditions, construction phasing, and cost factors. The final design provides the detailed information required for the project's construction, including construction specifications. If needed, right-of-way is acquired.

Step 5: Construction

During this phase, the project is physically constructed. Implementing agencies, such as ALDOT, local governments and transit agencies, are responsible for establishing rules to govern the bid and selection process for contractors, and to provide oversight of the construction process. Citizens are engaged by providing up-to-date information on construction progress and soliciting concerns in order to minimize disruptions to businesses or residents.

ALABAMA 2040 STATEWIDE TRANSPORTATION PLAN

FINAL REPORT

APPENDIX B: PROJECTED FEDERAL FHWA FUNDING TO ALDOT FROM THE FAST ACT

A breakdown of federal FHWA funding to ALDOT from the FAST Act for the years 2016-2020 is provided in the table below. As the table shows, the State of Alabama is projected to receive approximately \$4 billion in federal funding through 2020. As indicated:

- Approximately 60 percent of funding is dedicated to the National Highway Performance Program (NHPP), which reflects an emphasis on improving and maintaining the NHS.
- The new National Highway Freight Program (NHFP) reflects an increased focus on moving freight, and therefore on increasing economic development.
- As the only MPO to receive CMAQ funding, the Birmingham area is estimated to be eligible for nearly \$60 million in federal funding for transit and non-motorized transportation improvements through 2020.

Projected Federal FHWA Funding to ALDOT from the FAST Act, 2016-2020

Roadway Funding by Section	2016	2017	2018	2019
National Highway Performance Program (NHPP)	\$ 455,951,000	\$ 466,071,000	\$ 474,933,000	\$ 484,665,000
Surface Transportation Block Grant - Program	\$ 209,631,000	\$ 214,942,000	\$ 219,554,000	\$ 223,798,000
Surface Transportation Block Grant - Set Aside	\$ 15,592,000	\$ 15,592,000	\$ 15,904,000	\$ 15,904,000
Surface Transportation Block Grant - Trails	\$ 1,750,000	\$ 1,750,000	\$ 1,750,000	\$ 1,750,000
Highway Safety Improvement Program (HSIP)	\$ 45,374,000	\$ 46,383,000	\$ 47,253,000	\$ 48,105,000
Railroad-Highway Crossings	\$ 4,659,000	\$ 4,762,000	\$ 4,866,000	\$ 4,970,000
Congestion Mitigation & Air Quality (CMAQ)	\$ 11,364,000	\$ 11,616,000	\$ 11,837,000	\$ 12,053,000
Metropolitan Planning	\$ 3,062,000	\$ 3,124,000	\$ 3,189,000	\$ 3,258,000
National Highway Freight Program	\$ 22,188,000	\$ 21,224,000	\$ 23,153,000	\$ 26,047,000
ANNUAL TOTAL	\$ 769,571,000	\$ 785,464,000	\$ 802,439,000	\$ 820,550,000
Roadway Funding by Section	2020	TOTAL	AVERAGE	PERCENTAGE
National Highway Performance Program (NHPP)	\$ 494,742,000	\$ 2,376,362,000	\$ 475,272,400	59.1%
Surface Transportation Block Grant - Program	\$ 229,079,000	\$ 1,097,004,000	\$ 219,400,800	27.3%
Surface Transportation Block Grant - Set Aside	\$ 15,904,000	\$ 78,896,000	\$ 15,779,200	2.0%
Surface Transportation Block Grant - Trails	\$ 1,750,000	\$ 8,750,000	\$ 1,750,000	0.2%
Highway Safety Improvement Program (HSIP)	\$ 49,081,000	\$ 236,196,000	\$ 47,239,200	5.9%
Railroad-Highway Crossings	\$ 5,073,000	\$ 24,330,000	\$ 4,866,000	0.6%
Congestion Mitigation & Air Quality (CMAQ)	\$ 12,298,000	\$ 59,168,000	\$ 11,833,600	1.5%
Metropolitan Planning	\$ 3,334,000	\$ 15,967,000	\$ 3,193,400	0.4%
National Highway Freight Program	\$ 28,941,000	\$ 121,553,000	\$ 24,310,600	3.0%
ANNUAL TOTAL	\$ 840,202,000	\$ 4,018,226,000	\$ 803,645,200	**

Note: Totals rounded to the nearest \$1000

Source: FHWA