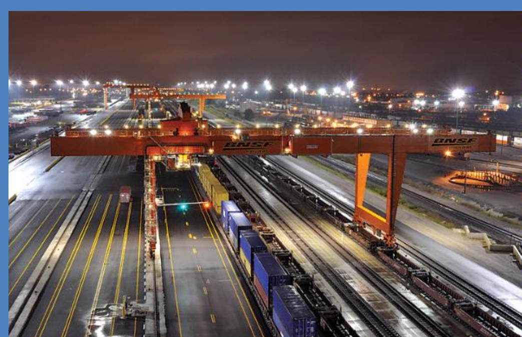
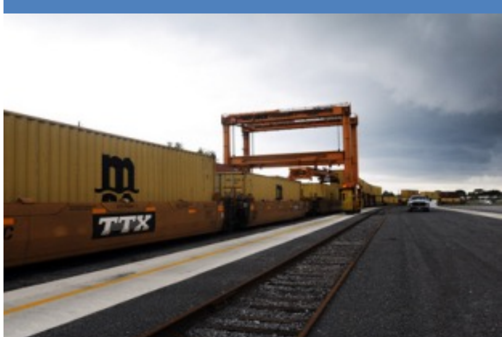
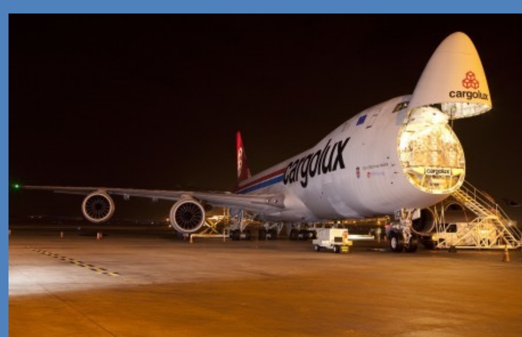
2017 Alabama Statewide Freight Plan





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COMMONLY USED TERMS AND ABBREVIATIONS

AADT	Annual Average Daily Traffic
AASHTO	American Association of State Highway and Transportation Officials
ALDOT	Alabama Department of Transportation
ASAP	Alabama Service and Assistance Patrol
ATMS	Advanced Traffic Management System
BNSF	Burlington Northern Santa Fe Railway Co.
CARE	Critical Analysis Reporting Environment
CCTV	Closed-Circuit Television
CN/IC	Canadian National Illinois Central
CPMS	Comprehensive Project Management System
CRFC	Critical Rural Freight Corridor
CSXT	CSX Transportation, Inc.
CUFC	Critical Urban Freight Corridor
DMS	Dynamic Message Sign
EPA	U. S. Environmental Protection Agency
FAC	Freight Advisory Committee
FAF 4.3	Freight Analysis Framework Version 4.3
FAST Act	Fixing America's Surface Transportation Act
FASTLANE	Fostering Advances in Shipping and Transportation for the Long-term Achievement of National Efficiencies
FHWA	Federal Highway Administration
FY	Fiscal Year
HPMS	Highway Performance Monitoring System
IFTS	Intelligent Freight Transportation Systems
INFRA	Infrastructure for Rebuilding America Grants
ITS	Intelligent Transportation Systems
LRTP	Long Range Transportation Plan
MAP-21	Moving Ahead for Progress in the 21st Century Act
MO	Maintenance and Operations
MPO	Metropolitan Planning Organization
NHFN	National Highway Freight Network
NHFP	National Highway Freight Program
NHS	National Highway System
NMFN	National Multimodal Freight Network
NPMRDS	National Performance Management Research Data Set
NS	Norfolk Southern Corporation
PFN	Primary Freight Network
PHFS	Primary Highway Freight System
RFN	Regional Freight Network
RTMC	Regional Transportation Management Center
STIP	Statewide Transportation Improvement Program
UPWP	Unified Plan Work Program
V/C Ratio	Volume to Capacity Ratio
VMT	Vehicle Miles of Travel

CHAPTER 1—INTRODUCTION AND PLAN FRAMEWORK

1.1 INTRODUCTION

The *Alabama Statewide Freight Plan* (Freight Plan) establishes the freight planning and performance monitoring activities to be undertaken throughout the state by the Alabama Department of Transportation (ALDOT). This plan is an update to the *2016 Alabama Statewide Freight Plan*, which was completed under guidance set forth in the Moving Ahead for Progress in the 21st Century Act (MAP-21). The 2017 Freight Plan considers recent policy changes at the federal level. The plan complies with the current federal transportation bill, known as the FAST Act (Fixing America's Surface Transportation Act), and aligns Alabama's freight policy with current guidance from the Federal Highway Administration (FHWA) Office of Freight Management and Operations. In addition, the plan utilizes the most recent transportation and commodity flow data available, including FHWA's Freight Analysis Framework Version 4.3 (FAF 4.3) commodity flow data and the Statewide Travel Demand Model developed during the recently completed Alabama 2040 Statewide Transportation Plan effort.

Key plan elements include:

- An overview of relevant policy that influences freight planning at the statewide level.
- A discussion of existing and projected commodity flows and freight network characteristics, which provide the baseline for identifying needs statewide.
- A profile of the Interim National Multimodal Freight Network (NMFN) within the State of Alabama.
- A summary of freight improvements of statewide significance, which forms the basis for the overall Freight Investment Plan.
- A description of the measures and procedures that will be used by ALDOT to monitor transportation system performance with respect to freight mobility.

An important element of the statewide freight planning process is the engagement of key stakeholders through the Freight Advisory Committee (FAC). As a whole, the FAC membership has direct knowledge of and connections with all freight modal networks (roadway, rail, air and water) and represents users/shippers and policymakers from both the public and private sectors. A summary of the outreach activities undertaken during the development of this plan is provided later in this chapter.

1.2 NATIONAL FREIGHT GOALS

Per H.R. 22, 70101 (b) of the FAST Act, there are 10 National Freight Goals, which are to:

1) Identify infrastructure improvements, policies, and operational innovations that—
    a) Strengthen the contribution of the National Multimodal Freight Network to the economic competitiveness of the United States.
    b) Reduce congestion and eliminate bottlenecks on the National Multimodal Freight Network.
    c) Increase productivity, particularly for domestic industries and businesses that create high-value jobs.
2) Improve the safety, security, efficiency, and resiliency of multimodal freight transportation.
3) Achieve and maintain a state of good repair on the National Multimodal Freight Network.
4) Use innovation and advanced technology to improve the safety, efficiency, and reliability of the National Multimodal Freight Network.
5) Improve the economic efficiency and productivity of the National Multimodal Freight Network.

6) Improve the reliability of freight transportation.
7) Improve the short- and long-distance movement of goods that—
   a) Travel across rural areas between population centers.
   b) Travel between rural areas and population centers.
   c) Travel from the Nation's ports, airports, and gateways to the National Multimodal Freight Network.
8) Improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address multimodal freight connectivity.
9) Reduce the adverse environmental impacts of freight movement on the National Multimodal Freight Network.
10) Pursue the goals described in this subsection in a manner that is not burdensome to State and local governments.

A description of how the Statewide Freight Plan improves the ability of the State of Alabama to meet the national freight goals described above is provided in Table 1-1.

Table 1-1: Actions of Statewide Freight Plan to Further National Freight Goals

National Freight Goal	Statewide Freight Plan Action
Identify infrastructure improvements, policies, and operational innovations that strengthen the contribution of the National Multimodal Freight Network (NMFN) to the economic competitiveness of the United States.	The ALDOT work program includes several capacity improvements and ITS applications along the NMFN.
Identify infrastructure improvements, policies, and operational innovations that reduce congestion and eliminate bottlenecks on the NMFN.	Several planned investments within the ALDOT work program address locations identified as freight bottlenecks within the state.
Identify infrastructure improvements, policies, and operational innovations that increase productivity, particularly for domestic industries and businesses that create high-value jobs.	All of the improvements within the Freight Investment Plan, to some degree, provide increased access to employment centers and/or domestic industries throughout the state.
Improve the safety, security, efficiency, and resiliency of multimodal freight transportation.	System resiliency was a factor in the identification of Critical Urban Freight Corridors (CUFCs) and Critical Rural Freight Corridors (CRFCs) throughout the state. In addition, several safety projects, rail-crossing improvements, and ITS enhancements are part of the overall Alabama work program through 2040.
Achieve and maintain a state of good repair on the NMFN.	Several resurfacing and bridge projects identified in the ALDOT work program are located along the NMFN.
Use innovation and advanced technology to improve the safety, efficiency, and reliability of the NMFN.	ALDOT continues to enhance ITS infrastructure along its interstate and arterial networks and in urban areas.
Improve the economic efficiency and productivity of the NMFN.	Improvements within the ALDOT work program serve to improve the economic efficiency and productivity of the NMFN.

National Freight Goal	Statewide Freight Plan Action
Improve the reliability of freight transportation.	Improvements within the ALDOT work program serve to improve the reliability of freight transportation throughout the state.
Improve the short- and long-distance movement of goods that travel *across* rural areas between population centers.	Several improvements in the ALDOT work program located along the NMFN in rural areas and on CRFCs will facilitate goods movement between population centers.
Improve the short- and long-distance movement of goods that travel *between* rural areas and population centers.	Same as above.
Improve the short- and long-distance movement of goods that travel from the Nation's ports, airports, and gateways to the NMFN.	Several improvements in the ALDOT work program will improve intermodal connectivity throughout the state.
Improve the flexibility of States to support multi-State corridor planning and the creation of multi-State organizations to increase the ability of States to address multimodal freight connectivity.	ALDOT considered the freight plans of neighboring states during the development of this update, and ALDOT staff frequently coordinate with the staff of neighboring states on project-related issues.
Reduce the adverse environmental impacts of freight movement on the NMFN.	Proposed improvements along the NMFN are assumed to be compliant with the NEPA approval process.
Pursue the goals described in this subsection in a manner that is not burdensome to State and local governments.	The FAC includes a variety of contacts throughout the state, including Metropolitan Planning Organization (MPO) and local government representatives.

1.3 Mission Statement and Goals of the Alabama Statewide Freight Plan

The mission statement and associated goals of the Alabama Statewide Freight Plan guide ALDOT in developing a coordinated freight policy that meets the needs of the State while adhering to FHWA policy. The mission statement and goals below were developed to be consistent with the National Freight Goals detailed in the previous subsection.

Mission Statement: To promote the efficient and safe movement of goods in a manner that increases economic competitiveness and promotes environmental responsibility throughout the State of Alabama.

- **Goal 1**: Improve reliability and reduce congestion on the National Multimodal Freight Network (NMFN) within the state.
- **Goal 2**: Improve connectivity between all modes of freight transportation throughout the state.
- **Goal 3**: Coordinate with Metropolitan Planning Organizations (MPOs) within the state as well as Departments of Transportation (DOTs) in neighboring states during the development/update of the Statewide Freight Plan.
- **Goal 4**: Ensure a state of good repair along National Multimodal Freight Network (NMFN) facilities throughout the state.
- **Goal 5**: Improve economic benefits by supporting public and private sector investment in the National Multimodal Freight Network (NMFN) within the state.

- **Goal 6**: Promote the safety, security, efficiency, and resiliency of multimodal freight transportation.
- **Goal 7:** Promote the use of ITS technologies to improve the safety, efficiency, and reliability of the National Multimodal Freight Network (NMFN).
- **Goal 8:** Promote and enhance both the human and natural environment while enhancing the performance of the National Multimodal Freight Network (NMFN).

1.4 Requirements of the Statewide Freight Plan

Under the FAST Act (H.R. 22, 70202), a Statewide Freight Plan is required to:

- Identify significant freight system trends, needs, and issues with respect to the State.
- Describe the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State.
- When applicable, list—
  - Multimodal critical rural freight facilities and corridors designated within the State under the National Multimodal Freight Network (NMFN).
  - Critical rural and urban freight corridors designated within the State under the National Highway Freight Program (NHFP).
- Describe how the plan will improve the ability of the State to meet the national multimodal freight policy goals described in the FAST Act and the National Highway Freight Program (NHFP) goals described in MAP-21.
- Describe how innovative technologies and operational strategies, including freight intelligent transportation systems (ITS) that improve the safety and efficiency of freight movement were considered.
- In the case of roadways on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate the condition of the roadways, describe improvements that may be required to reduce or impede the deterioration.
- Inventory facilities with freight mobility issues, such as bottlenecks, within the state, and for those facilities that are State owned or operated, describe the strategies the State is employing to address the freight mobility issues.
- Consider any significant congestion or delay caused by freight movements and any strategies to mitigate that congestion or delay.
- Provide a Freight Investment Plan that includes a list of priority projects and describes how funds made available would be invested and matched.
- Consult with the State Freight Advisory Committee (FAC), if applicable.

Table 1-2 contains a comparison of the contents of this Statewide Freight Plan to the FAST Act requirements.

Table 1-2: Comparison of Statewide Freight Plan Contents to FAST Act Requirements

Required Plan Content—FAST Act	Statewide Freight Plan Content
Identify significant freight system trends, needs, and issues with respect to the State.	Freight trends, issues, and needs are provided throughout Chapter 3. Key freight issues are also provided in Chapter 1 (Subsection 1.5).
Describe the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State.	Freight goals are provided in Chapter 1. Statewide performance measures and monitoring processes for freight travel are provided in Chapter 6.
When applicable, list multimodal critical rural and urban freight facilities and corridors designated within the State.	Documentation on the Critical Rural Freight Corridors (CRFCs) and Critical Urban Freight Corridors (CUFCs) is provided in Chapter 4.
Describe how the plan will improve the ability of the State to meet the national multimodal freight policy goals described in the FAST Act.	This description is provided in Table 1-1 of Chapter 1.
Describe how innovative technologies and operational strategies, including freight intelligent transportation systems, that improve the safety and efficiency of the system were considered.	An inventory of ITS applications and operational improvements along interstates in Alabama is provided in Chapter 5.
In the case of roadways on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate the condition of the roadways, describe improvements that may be required to reduce or impede the deterioration.	Several maintenance improvements along the NMFN are in the ALDOT work program, as described in Chapter 5.
Inventory facilities with freight mobility issues, such as bottlenecks, within the state, and for those facilities that are State owned or operated, describe the strategies the State is employing to address the freight mobility issues.	An inventory of freight mobility issues is provided in Chapter 4. The overall freight investment strategy is provided in Chapter 5.
Consider any significant congestion or delay caused by freight movements and any strategies to mitigate that congestion or delay.	Same as previous.
Provide a Freight Investment Plan that includes a list of priority projects and describes how funds made available would be invested and matched.	The Freight Investment Plan consists of a priority list of projects that will be funded through the National Highway Freight Program (NHFP), as well as other improvements in the ALDOT work program that will help facilitate freight movement statewide.
Consult with the State Freight Advisory Committee (FAC), if applicable.	The FAC was consulted at major milestones in the update process, as described in Chapter 1 (Subsection 1.6).

1.5 Key Freight Issues

The Statewide Freight Plan is a multimodal document. However, it is important to remember that the non-roadway modes are largely (if not entirely) controlled by the private sector. The primary freight related considerations and how they are addressed are listed below:

- Congestion Reduction/Mobility Preservation – Comparing the level of traffic and truck percentages to the location of freight chokepoints throughout the state assists to identify the areas in need of freight congestion relief.
- Intermodal Connectivity – With the passage of the FAST Act, FHWA guidance shifted from being roadway-centric to having a more multimodal focus. Therefore, access to intermodal facilities such as rail terminals and airport cargo facilities is an important freight mobility consideration.
- Infrastructure Condition – Simply stated, truck traffic generally creates more maintenance needs than average passenger automobiles, primarily due to the greater vehicle weights. Identifying facilities that carry higher levels of truck traffic helps ALDOT and other implementing agencies to prioritize their maintenance needs.
- Economic Competitiveness – Input from public and private sector stakeholders assists in understanding how freight infrastructure and improvements can better facilitate economic vitality and growth in Alabama. Modal analysis also helps in identifying intermodal connectivity opportunities.
- Safety – The identification of potential safety conflicts and congestion chokepoints throughout the state is an important step in improving the overall safety of the roadway network.
- Innovative Operational Improvements – Assessing how new technologies can be integrated into the planning process, combined with an understanding of factors such as intermodal connectivity and freight chokepoints, supports the implementation of ITS strategies.
- Intergovernmental Coordination – The FAST Act encourages intergovernmental coordination throughout the planning process. This coordination is important in identifying specific freight significant corridors and developing the overall freight investment strategies.

1.6 Stakeholder Outreach

Engaging stakeholders who represent the full diversity of freight interests in Alabama is important to fully understanding freight conditions and ensuring the reality of Alabama's freight system is presented. Input from stakeholders assists in accurately assessing existing conditions and developing a feasible plan for future implementation efforts.

In accordance with federal recommendations, ALDOT invited a small group of stakeholders representing key elements of the freight transportation community to form a Freight Advisory Committee (FAC) at the outset of the original (2016) *Alabama Statewide Freight Plan* development process. Members were selected to ensure that the FAC as a whole has direct knowledge of and connections with all freight modal networks (roadway, rail, air and water) and represents users/shippers and policymakers from both the public and private sectors. The role of the FAC is to advise ALDOT on freight-related issues and priorities, provide a forum for freight-related discussions, and promote communication, coordination and the exchange of information. The FAC is an "ongoing" committee that ALDOT will continue to engage on freight related issues into the future.

As a part of activities to update the Freight Plan, the FAC membership was reviewed and expanded to include additional freight related organizations and representatives that had come to the attention of ALDOT staff, primarily during development of the recently completed *Alabama 2040 Statewide Transportation Plan*. ALDOT reached out to the FAC at several key points in the plan update process. At the start of the effort, a welcome email was sent to re-engage the FAC. In addition to informing them that an update was underway, the primary activities associated with the update were identified. FAC members were also asked to provide information on significant freight generators, destinations, corridors and/or intermodal connectors, with particular consideration given to "last-mile" connectivity, within their geographic and/or modal focus. Prior to finalizing the updated Freight Plan, the FAC was given the opportunity to review and comment on the draft report. Stakeholder comments were incorporated into the final document as appropriate.

Appendix A provides the current ALDOT FAC membership list.

CHAPTER 2—EXISTING AND PROJECTED COMMODITY FLOW RESULTS

A basic definition for commodity flow is the movement of goods (commodities) from one place (the origin) to another (the destination). This is also the crux of freight mobility. Assessing commodity flow is a means of analyzing trends in goods movement over time. Chapter 2 provides an overview of existing and projected commodity flows throughout Alabama for the years 2012 and 2040. The types and amounts of commodities transported are presented by freight mode—truck, rail, waterway, air, and pipeline.

2.1 METHODOLOGY

Existing and projected commodity flows were developed through the statewide commodity flow assignment process, which relies on its primary data source, the Freight Analysis Framework Version 4.3 (FAF 4.3) produced by FHWA. FAF 4.3 contains freight movement data for the United States taken from the Commodity Flow Survey and additional economic and mode specific databases. The FAF 4.3 freight flow data is presented for large aggregated zones, totaling 123 zones nationwide and comprising three zones in Alabama: 1) Birmingham Area, 2) Mobile Area, and 3) Remainder of the State.

There are two distinct limitations of the FAF 4.3 data. The first is that the FAF 4.3 database does not include local delivery trips, essentially trips designated as less than 50 miles. Therefore, the commodity flow assignment is for the longer trips expected in a statewide model, not for the trips inside urban areas that are the focus of regional (MPO) travel demand models. The second limitation is that the FAF 4.3 does not include empty trucks. Therefore, there is no direct methodology to include empty trips into the assignment without making assumptions. It is important to note that this commodity flow assignment is designed to examine the tons of product moving long distance across the state or nation. More detail on the commodity flow assignment methodology is provided in Appendix B of this report.

2.2 TOP COMMODITIES BY MODE

A summary of the existing and projected top commodities by mode follows. It should be noted that the commodity flows represented are not mode-exclusive, meaning that many will transfer between different modes (e.g., truck-to-rail or truck-to-waterway) and, therefore, are likely double-counted in this material.

Table 2-1 presents a summary comparison of existing and projected commodity flows by mode based on the FAF 4.3 data. To clarify, the "multiple modes and mail" category represents commodities that move by more than one mode. Shipments reported as multiple modes can include anything from containerized cargo to coal moving from mine to railhead by truck and rail to harbor. The "mail" component recognizes that shippers who use parcel delivery services typically do not know what modes are involved after the shipment is picked up. Several points of significance indicated by the data are that:

- Overall, truck is by far the most commonly used mode of freight transportation for freight originating within and destined for Alabama.
- Pipeline is the second most commonly used mode of transport, carrying a little over 20 percent of the state's freight (in kilotons).
- Alabama imports slightly more goods than the state exports, as shown by comparing the total kilotons for origins in Alabama (exports) to destinations in Alabama (imports).
- These trends are projected to remain consistent through 2040.

Table 2-1: Freight by Mode – 2012 vs. 2040

Origins in Alabama			**Destinations in Alabama**		
2012			**2012**		
Mode	**Kilotons**	**%**	**Mode**	**Kilotons**	**%**
Truck	229,389.44	68.8%	Truck	223,982.46	63.1%
Rail	26,486.63	7.9%	Rail	39,087.06	11.0%
Water	1,493.18	0.4%	Water	8,050.35	2.3%
Air (include truck-air)	44.65	0.0%	Air (include truck-air)	68.41	0.0%
Multiple modes & mail	7,778.94	2.3%	Multiple modes & mail	5,403.22	1.5%
Pipeline	67,951.24	20.4%	Pipeline	78,470.23	22.1%
Other and unknown	65.11	0.0%	Other and unknown	4.57	0.0%
	333,209.19			**355,066.30**	
2040			**2040**		
Mode	**Kilotons**	**%**	**Mode**	**Kilotons**	**%**
Truck	322,500.88	68.7%	Truck	328,833.81	64.6%
Rail	31,469.52	6.7%	Rail	48,253.40	9.5%
Water	3,326.09	0.7%	Water	11,728.13	2.3%
Air (include truck-air)	132.45	0.0%	Air (include truck-air)	191.26	0.0%
Multiple modes & mail	14,140.47	3.0%	Multiple modes & mail	9,439.59	1.9%
Pipeline	97,539.81	20.8%	Pipeline	110,242.91	21.7%
Other and unknown	227.73	0.0%	Other and unknown	16.12	0.0%
	469,336.95			**508,705.22**	
Projected Change (2040 vs. 2012)			**Projected Change (2040 vs. 2012)**		
Mode	**+/-**	**% Change**	**Mode**	**+/-**	**% Change**
Truck	93,111.44	40.6%	Truck	104,851.35	46.8%
Rail	4,982.89	18.8%	Rail	9,166.34	23.5%
Water	1,832.91	122.8%	Water	3,677.78	45.7%
Air (include truck-air)	87.80	196.6%	Air (include truck-air)	122.85	179.6%
Multiple modes & mail	6,361.53	81.8%	Multiple modes & mail	4,036.37	74.7%
Pipeline	29,588.57	43.5%	Pipeline	31,772.68	40.5%
Other and unknown	162.62	249.8%	Other and unknown	11.55	252.7%
	136,127.76			**153,638.92**	

Source: FAF 4.3

The Uncertainty of Coal Demand

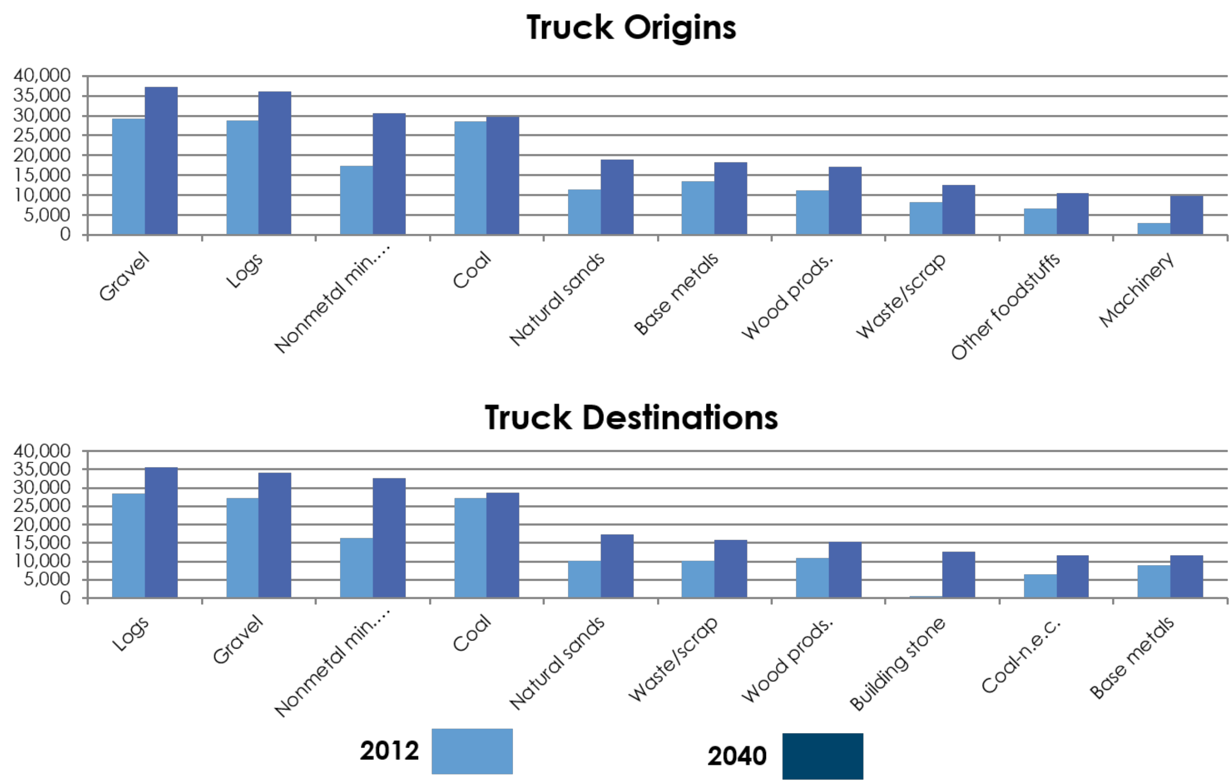
A critical issue for commodity flow projections in Alabama is the uncertainty of future demand for coal given environmental regulations recently enacted into law. Under the authority granted in the Clean Air Act, the Environmental Protection Agency (EPA) mandated power companies to utilize cleaner methods of fuel, such as solar power and wind, in efforts to reduce greenhouse gas emissions. The climate rule, dubbed the "Clean Power Plan," seeks a 32 percent cut in the power sector's carbon emissions by 2030 compared with 2005 levels. Several states (including Alabama) and power companies are challenging the EPA rule through litigation. Although the Trump Administration has indicated a desire to dismantle the Clean Power Plan, this has not occurred to date. Regardless of either outcome, the future demand for coal – as well as any changes to that demand resulting from federal legislation – remain unknown.

FAF 4.3 data projects coal to be a major commodity shipped by rail and truck in Alabama, as well as the state's largest international import and export, in 2040. Given the uncertainty of future coal demand, it is likely that the projected 2040 freight flow of this commodity is inaccurate (regardless of mode). To assess potential impacts on the roadway network, a commodity flow assessment was conducted that assumed all projected 2040 commodities minus coal. The result was a negligible reduction in projected truck traffic overall. This is primarily a result of the amount of general traffic projected in 2040 and the overall small share of truck flows projected for coal in comparison to all other commodities.

Commodity Flow by Truck

Figure 2-1 shows the total annual kilotons of the commodities most shipped by truck that originate and terminate in Alabama according to the FAF 4.3 data. The most shipped commodities by truck both inbound and outbound are gravel and logs, with approximately 57,000 kilotons of each traveling both in and out of Alabama to support a number of industries. Non-metal mineral products, coal and natural sands are also heavily shipped commodities via truck. By 2040, the amount of gravel and logs shipped by truck in and out of Alabama is projected to increase to approximately 71,000 kilotons. The amount of other heavily shipped commodities via truck is also projected to experience similar growth. The share of freight traffic shipped by truck is projected to remain at 65-70 percent through 2040.

Figure 2-1: Existing and Projected Commodity Flow – Truck

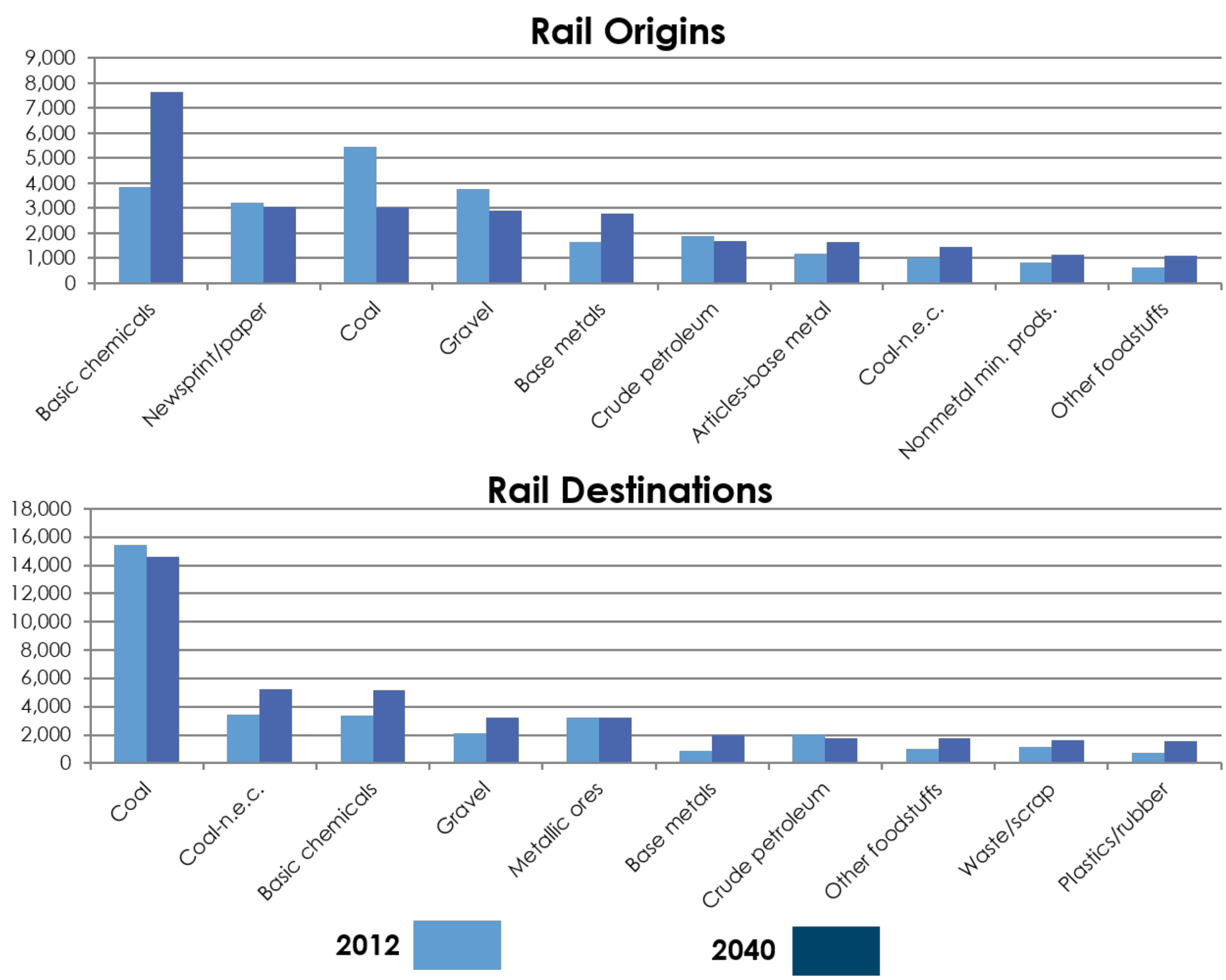


Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 4.3

Commodity Flow by Rail

According to the FAF 4.3 data, the most prevalently shipped commodity by rail in Alabama is coal, with over 20,000 kilotons originating in and destined for Alabama. Basic chemicals are the leading commodity originating by rail in Alabama at approximately 4,000 kilotons per year. Other commodities heavily shipped via rail include gravel, base metals, metallic ores, and paper. The total annual kilotons of the commodities most shipped by rail that originate and terminate in Alabama are shown in Figure 2-2. By 2040, the amount of basic chemicals shipped out of Alabama is projected to double to approximately 8,000 and become the state's leading export over coal. Coal is also projected to remain Alabama's largest import by rail, but at slightly less than current levels. The share of freight traffic shipped by rail is anticipated to increase by slightly over 20 percent from current levels by 2040.

Figure 2-2: Existing and Projected Commodity Flow – Rail

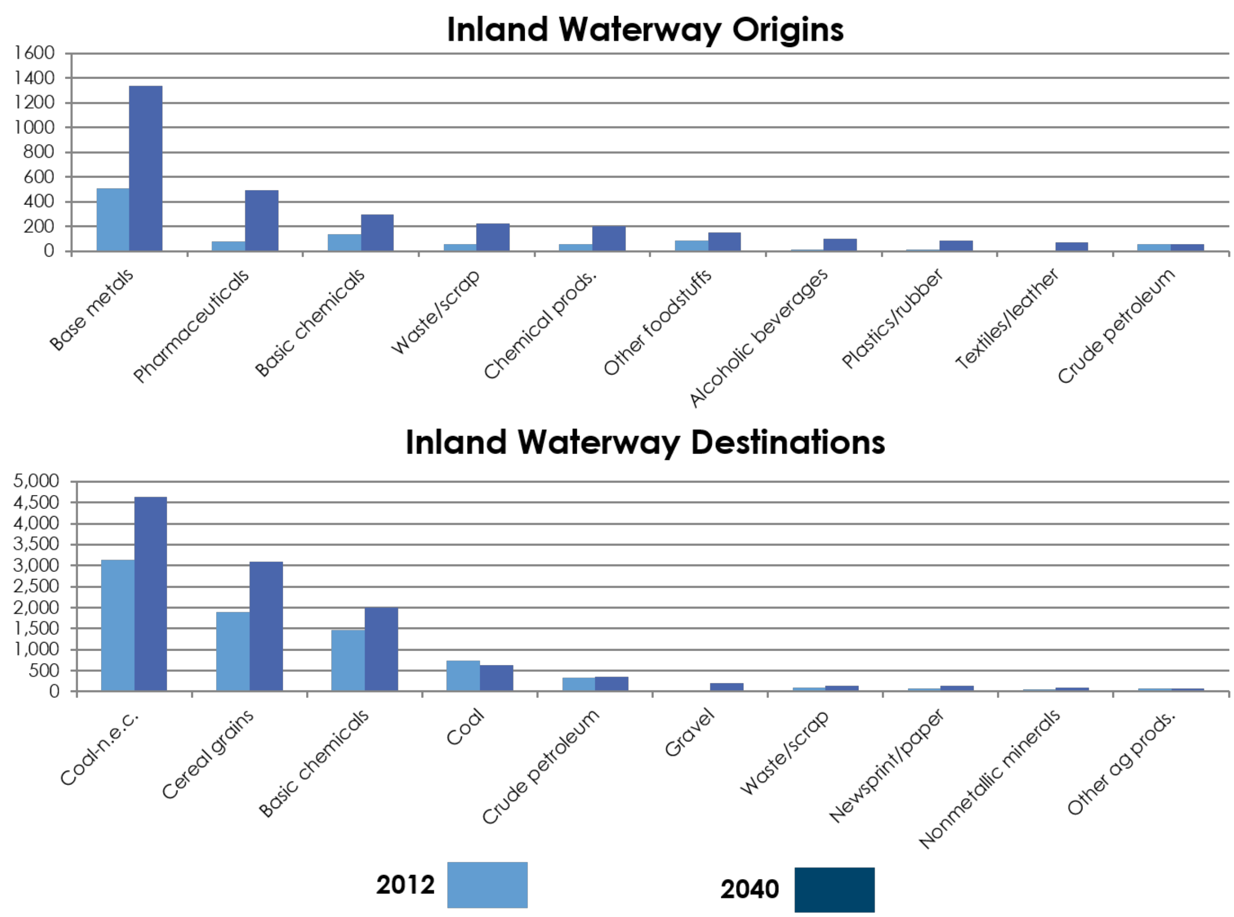


Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 4.3

Commodity Flow by Inland Waterway

Figure 2-3 shows the total annual kilotons of the commodities most shipped via inland waterway that originate and terminate in Alabama according to the FAF 4.3 data. As shown, the volume of freight traveling by inland waterway that is destined for Alabama is much larger than what originates in the state. This notwithstanding, the combined share of overall freight flow traveling via waterway in Alabama is negligible (less than 2 percent of total). The most shipped commodity inbound to Alabama is coal, with over 3,000 kilotons shipped in 2012 and over 4,500 kilotons projected to be shipped via inland waterway in 2040. The FAF 4.3 data indicates that the most shipped commodity via waterway originating in Alabama is base metals, with over 500 kilotons shipped in 2012 and a total of over 1,300 kilotons projected in 2040. It should be noted that the shipping of commodities such as basic chemicals, pharmaceuticals, and cereal grains are also projected to increase by 2040.

Figure 2-3: Existing and Projected Commodity Flow – Inland Waterway

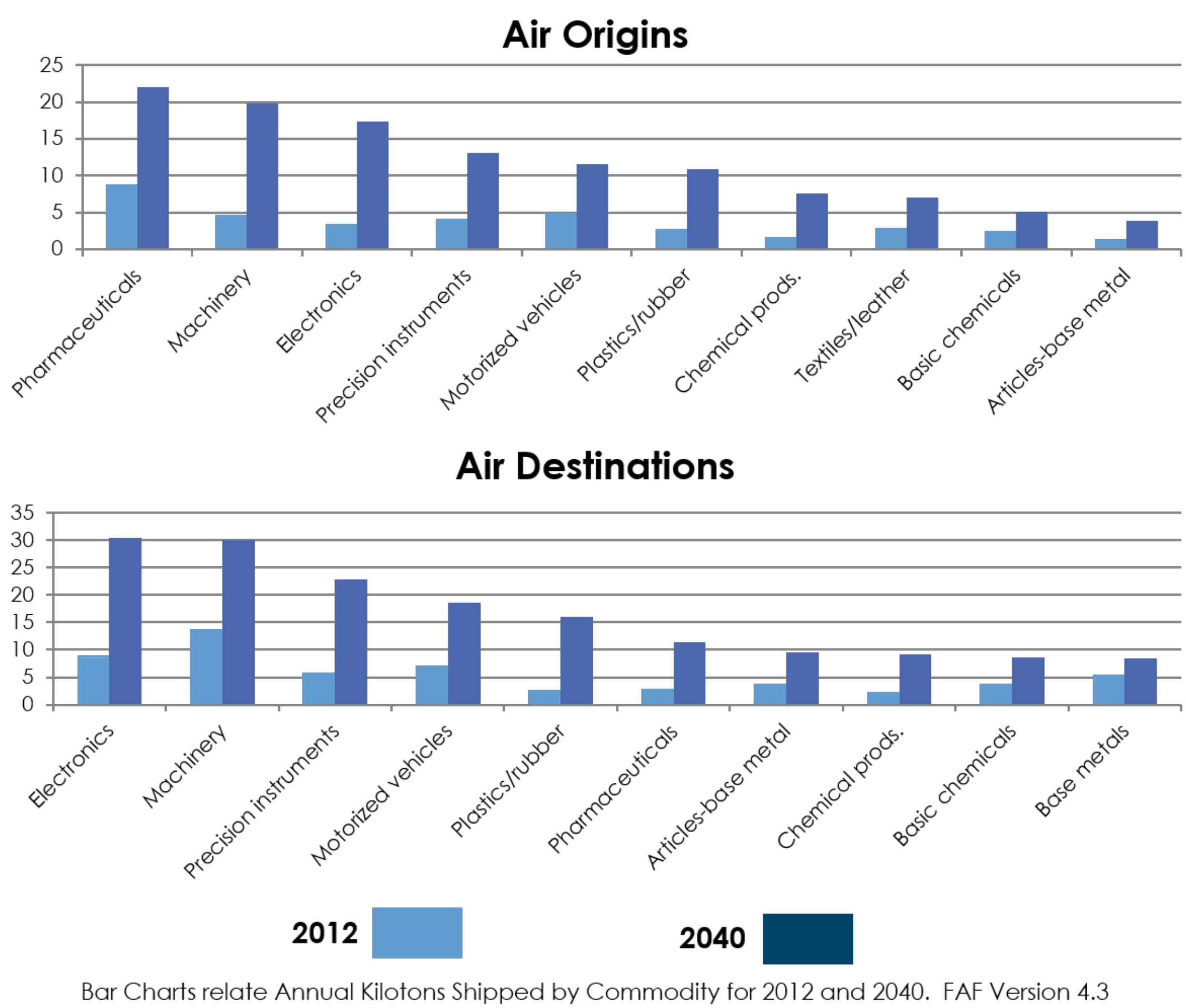


Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 4.3

Commodity Flow by Air

Given its relatively high costs in comparison to other modes, air freight is generally limited to items that are either delicate and/or perishable. Figure 2-4 shows the total annual kilotons of the commodities most shipped via air that originate and terminate in Alabama. As shown, the commodities most shipped by air are pharmaceuticals and machinery. By 2040, pharmaceuticals shipped from Alabama by air is projected to increase from approximately 9,000 kilotons to approximately 22,000 kilotons. Machinery shipments by air originating in Alabama are projected to increase almost four-fold, from approximately 5,000 kilotons to 20,000 kilotons. With respect to commodities destined to Alabama, machinery and electronics are the two most shipped by air. The total of all major commodities destined to Alabama by air is projected to at least double, with the largest increases in electronics, machinery and precision instruments. Despite overall percentage increases for origins and destinations, air travel is projected to remain the least utilized mode for freight travel by 2040.

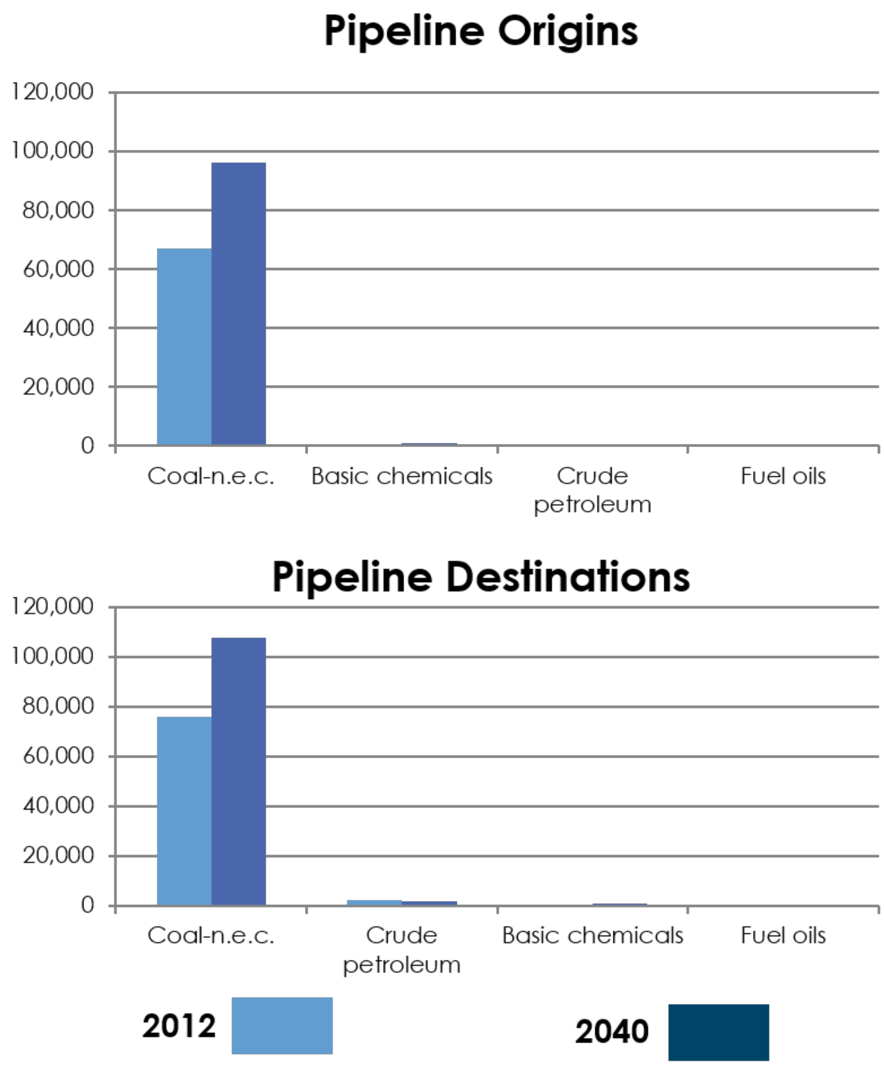
Figure 2-4: Existing and Projected Commodity Flow – Air



Commodity Flow by Pipeline

Pipeline commodity flow is controlled wholly by the private sector. The current commodity flow via pipeline per the FAF 4.3 data is provided in Figure 2-5. The commodities traveling by pipeline that originate in and/or are destined for Alabama are primarily coal byproducts, crude petroleum, basic chemicals and fuel oils. Coal byproducts are by far the most shipped commodity via pipeline in the state, with approximately 67,000 kilotons originating in the state and approximately 76,000 kilotons destined for Alabama. The only major commodity currently shipped via pipeline that is projected to increase in volume is coal byproducts, with a projected 96,000 kilotons originating in the state and approximately 108,000 kilotons destined for Alabama by 2040.

Figure 2-5: Existing and Projected Commodity Flow – Pipeline



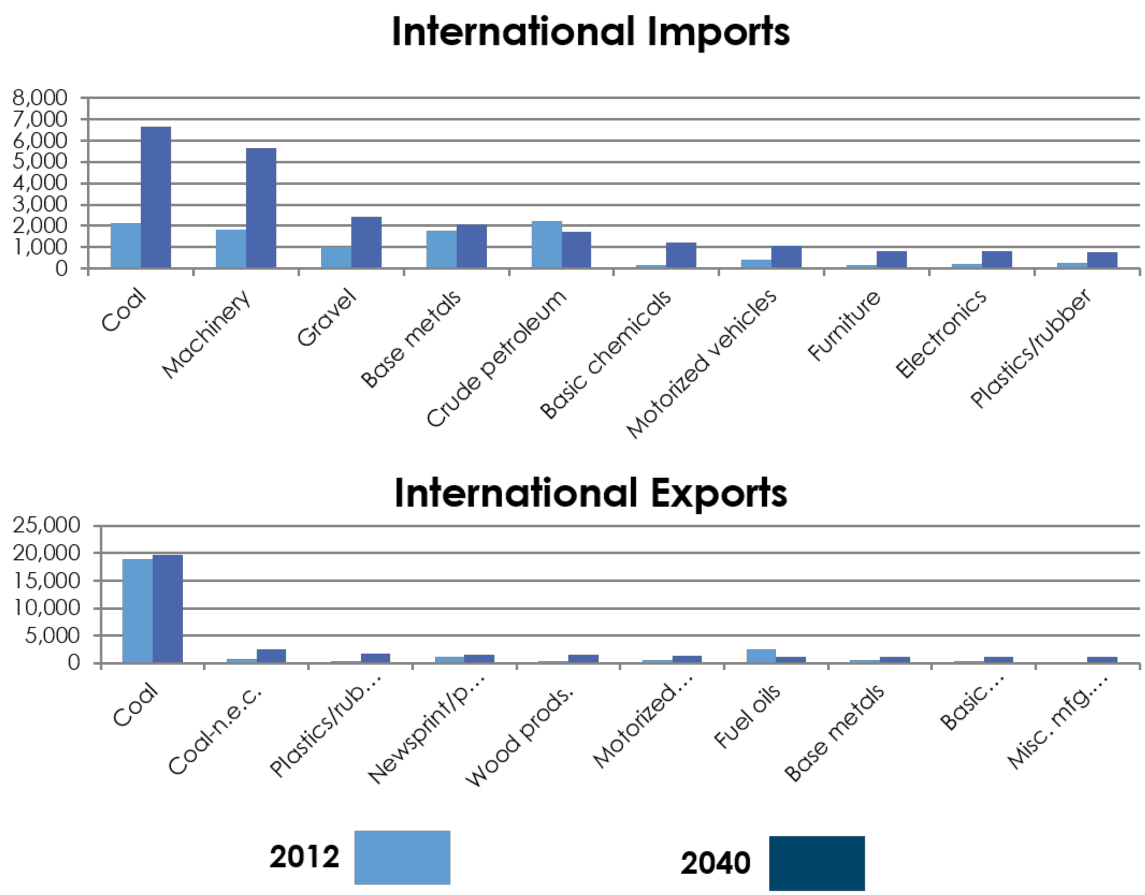
Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 4.3

2.3 INTERNATIONAL IMPORTS AND EXPORTS (PORT OF MOBILE)

Figure 2-6 shows the existing and projected kilotons of commodities internationally imported and exported via the Port of Mobile. The most imported and exported commodity via the Port of Mobile is coal, with approximately 2,000 kilotons imported and 19,000 kilotons exported in 2012. Coal exports through the Port of Mobile are projected to be relatively steady through 2040, at approximately 20,000 kilotons, while the amount of coal imported to the state will more than triple to 6,700 kilotons by 2040. As previously noted, the impacts of federal legislation on future coal demand are uncertain.

Other significant international imports to Alabama are machinery and gravel. Projections indicate machinery imports tripling to 5,700 kilotons and gravel imports doubling to 2,400 kilotons by 2040. Although negligible in comparison to coal, the tonnage of other commodities internationally exported through the Port of Mobile generally increases to 2040.

Figure 2-6: Existing and Projected International Commodity Flow



Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 4.3

2.4 Highlights of Projected Commodity Flow by Mode

Commodity flow characteristics that significantly influenced development of the Statewide Freight Plan include:

- Trucks are currently, and are projected to remain, the most utilized mode for freight movement. The projected increase in truck freight flow, in conjunction with increasingly limited funding for additional capacity infrastructure, heightens the need for an investment plan addressing Alabama's roadways.
- Although the impacts to future coal demand in response to changing federal regulations may be uncertain, the fact that coal profoundly impacts freight movement in Alabama is not. The impact of coal demand on roadways appears negligible, but the Port of Mobile and rail freight flows could be more significantly affected. Nevertheless, current projections for 2040 indicate increases in coal imports while exports remain near current levels.
- 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 freight traffic shipped by air is relatively small, but increases are projected for most major commodities shipped via air. Therefore, better roadway connections and access to major airports for freight traffic may be needed in the near future.

CHAPTER 3—EXISTING AND PROJECTED NETWORK CHARACTERISTICS

This chapter provides an overall profile of Alabama's multimodal freight network, existing and projected freight flows, and congested areas of concern throughout the state. The information presented supports the subsequent identification of key improvements to facilitate freight mobility statewide.

3.1 Overall Statewide Freight Infrastructure

The multimodal freight network consists of major roadways, railways, waterways, airports and pipelines. Of these modes, the vast majority of commodities are transported by truck and rail in Alabama.

Roadway Network

Alabama's major roadway network, consisting of Interstate highways and an extensive network of US Routes and State Routes, is illustrated in Figure 3-1. A breakdown of Alabama's roadway mileage by functional classification is provided in Table 3-1. Functional classification is a system that categorizes each roadway as a function of the mobility and access it provides. Interstates provide for the greatest mobility with the least access, while local roadways offer extensive access at the expense of quicker mobility.

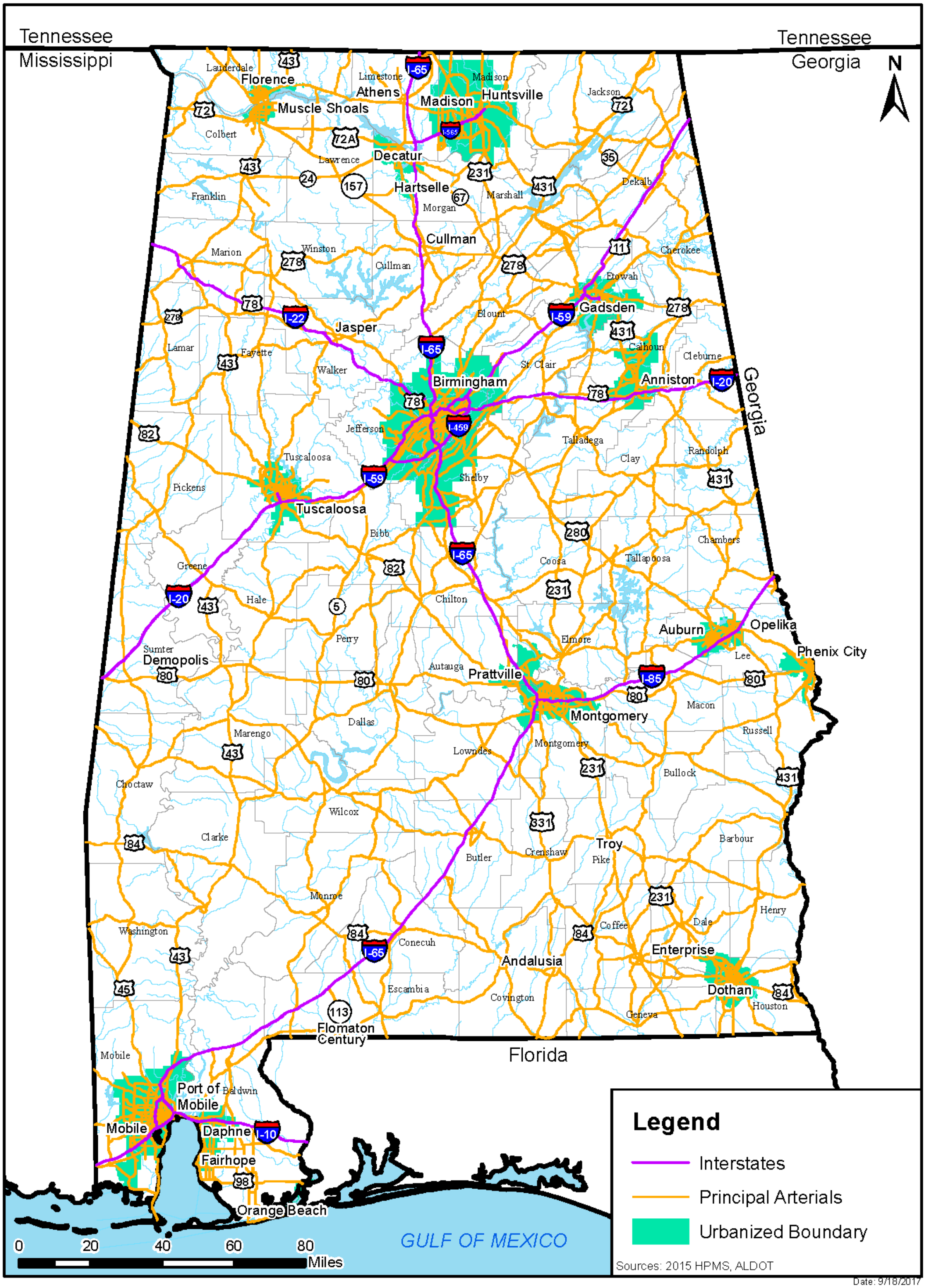
Table 3-1: Roadway Network by Functional Classification

	All Roads	ALDOT-Maintained Network	
Functional Classification	**Miles**	**Miles**	**Percent**
Interstate	1,000.74	1,000.74	100.0%
Principal Arterial-Other Fwy/Expy	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 Highway Performance Monitoring System (HPMS) Data, 2014

During its efforts to define a National Highway Freight Network (NHFN), FHWA designated all of the Interstate miles within Alabama as part of the national network, along with several specifically designated intermodal connectors. The remaining portion of the NHFN consisted of corridors critical to freight movement, as designated by ALDOT. Specific railways, waterways, port facilities, airports and other facilities were also designated, which together with the NHFN comprise an overall National Multimodal Freight Network (NMFN), which is currently considered by FHWA as the "Interim NMFN." More information on the NHFN, critical freight corridors, and Interim NMFN facilities in Alabama is provided in Chapter 4.

Figure 3-1: Alabama's Major Roadway Network



Railway Network

Alabama's freight rail network is composed of nearly 4,000 freight rail miles operated by 28 railroads. Four of the nation's seven Class I railroads have a presence in Alabama—Burlington Northern Santa Fe (BNSF), Canadian National Illinois Central (CN/IC), CSX Transportation (CSXT), and Norfolk Southern (NS)—and account for approximately 72 percent of track mileage in Alabama. A map of Alabama's freight rail network is provided in Figure 3-2.

Ports, Airports, and Pipelines

The most significant freight facility in Alabama is the Port of Mobile. There are 18 other ports throughout the state, all of which are river ports and most very small. The Alabama State Port Authority operates 11 of these ports. Most freight is transported along the Tombigbee and Tennessee rivers. Most of the air freight is transported via the state's major airports in Birmingham, Huntsville, Mobile, Montgomery, and Tuscaloosa. Pipelines, which are wholly controlled by the private sector, are located near the Port of Mobile and cross through the center portion of the state.

3.2 Intermodal Connectivity

Figure 3-3 provides known intermodal connectors, including major roads, railways, ports and airports. As the map shows, the multimodal network has a high level of connectivity. Specifically:

- Most of the rail lines and port facilities are in close proximity to or directly served by major roadway facilities (Interstates, US Routes and State Routes)
- The major airports are in close proximity to major roadways.
- Connectivity exists between the rail lines and airports; however, the need for intermodal transfers between these modes is limited by the highly time-sensitive nature of air freight as compared to rail freight.

Key Intermodal Facilities

An overview of major intermodal facilities in Alabama includes:

- Port of Mobile (Alabama State Port Authority)—The 4,000-acre, deep-water Port of Mobile complex 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. The Port's new $60 million Roll-On/Roll-Off Terminal will be completed and operational by 2019, and is anticipated to generate as many as 170,000 automobiles per year plus other associated roll-on/roll-off cargo. Port staff estimates the new terminal facility will result in an additional 20,000 trucks per year from the Port.
- 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.

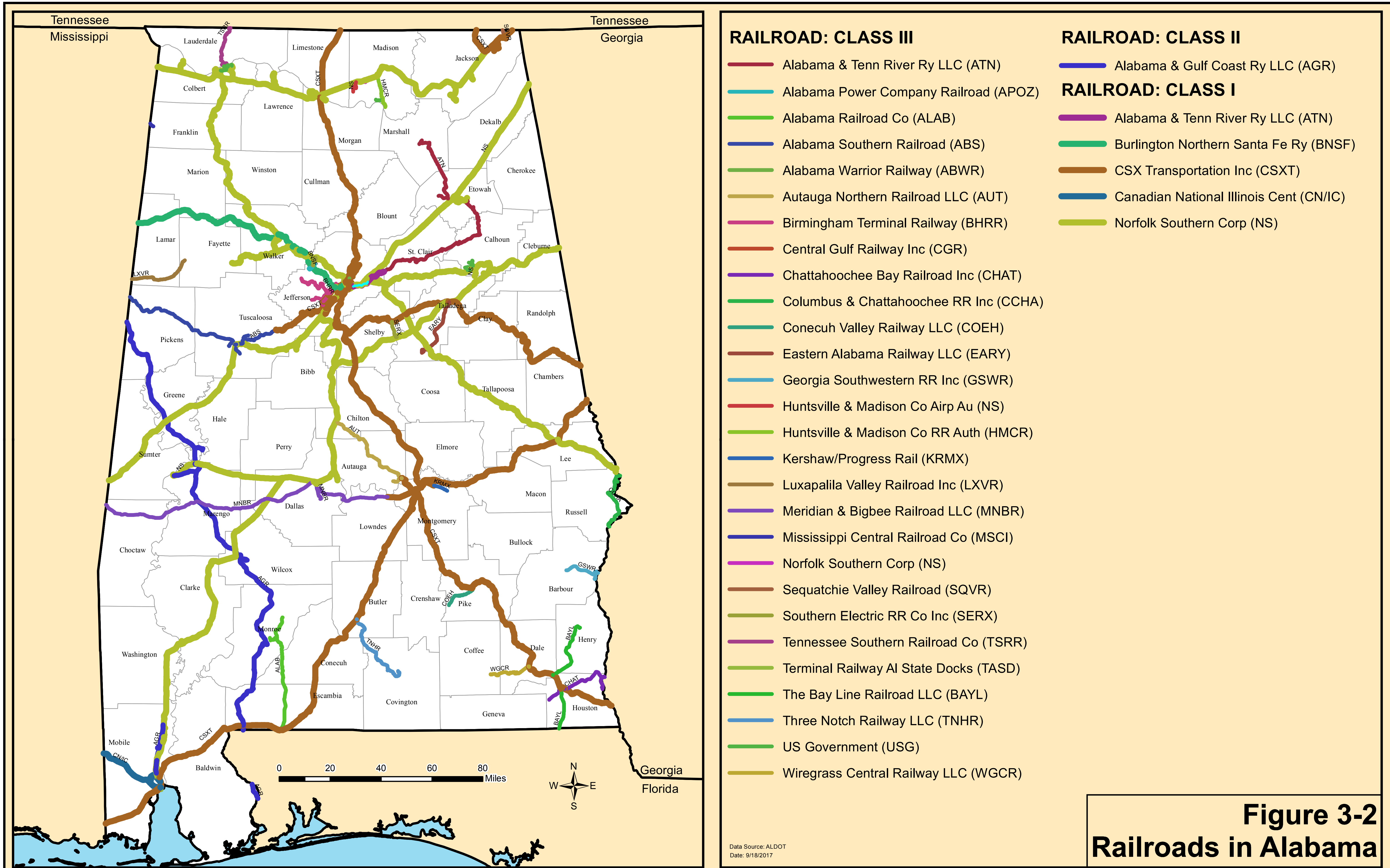
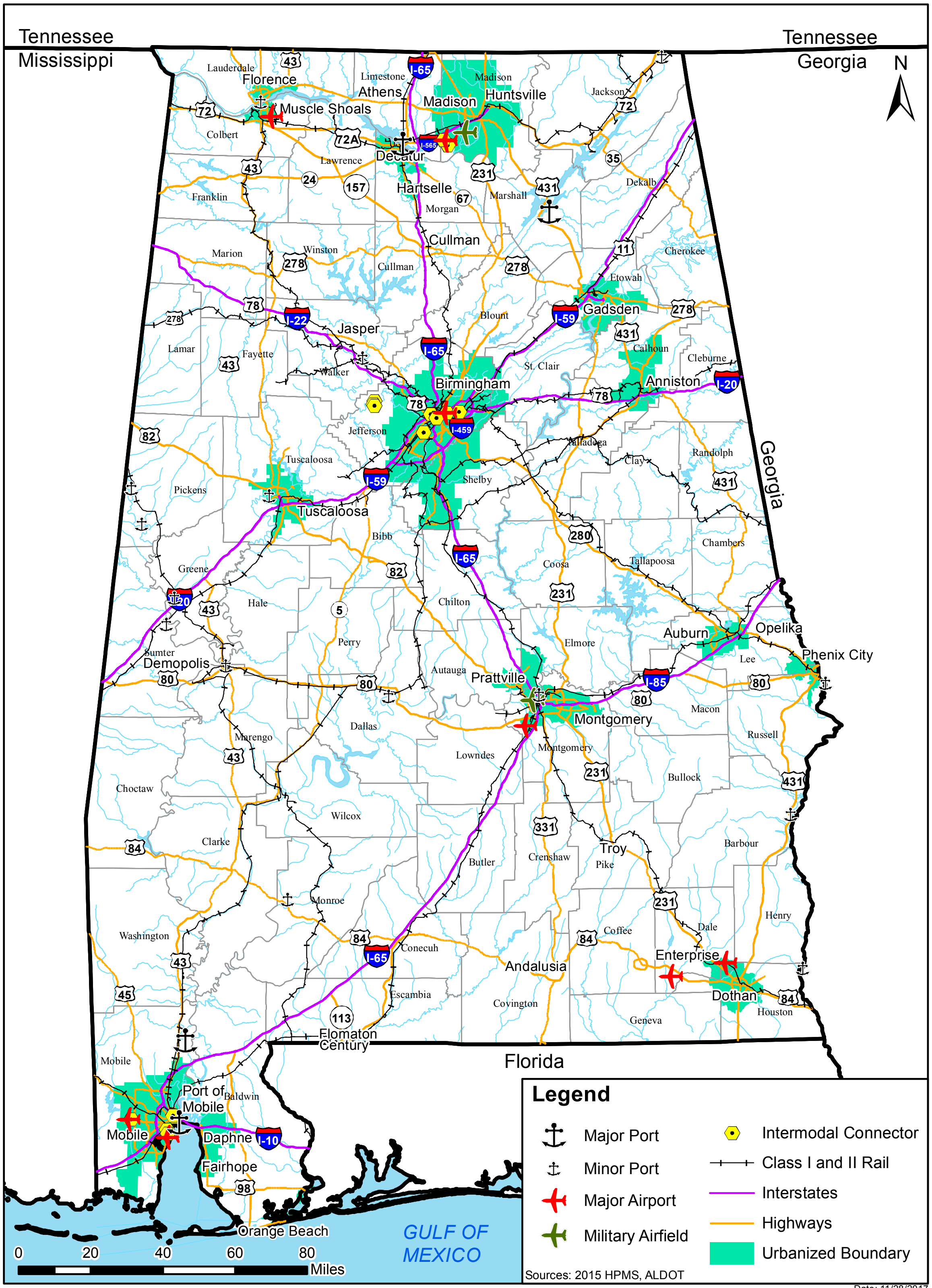


Figure 3-2
Railroads in Alabama

Figure 3-3: Known Intermodal Connectors



- 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.
- 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.

3.3 Freight Generators

There are a number of key freight generators/destinations beyond the major intermodal facilities noted above, such as large industrial and manufacturing uses throughout the state. The identification of these generators was necessary to validate employment data and truck generation factors reflected in the statewide commodity flow assessment.

In addition to stakeholder input, freight generators were identified using data from ALDOT regarding the location of grain elevators, agricultural facilities, forestry facilities, and energy facilities. Additionally, 2012 longitudinal employer-household dynamics workforce area data was used to map Census Blocks that contained 1,000 or more employees in freight related-industries based on the North American Industry Classification System (NAICS) codes. In addition, the Birmingham MPO provided data on major shippers/co-signees and freight intensive land uses within the region, which was used to identify and map freight generators in the Birmingham area.

Figure 3-4 shows the locations of major freight generators. Further focusing on intermodal connectivity, Figure 3-5 shows generators with direct rail and/or barge access. As expected, most large freight generators are concentrated near major highways (particularly Interstates) and/or railroads.

Figure 3-4: Known Freight Generators

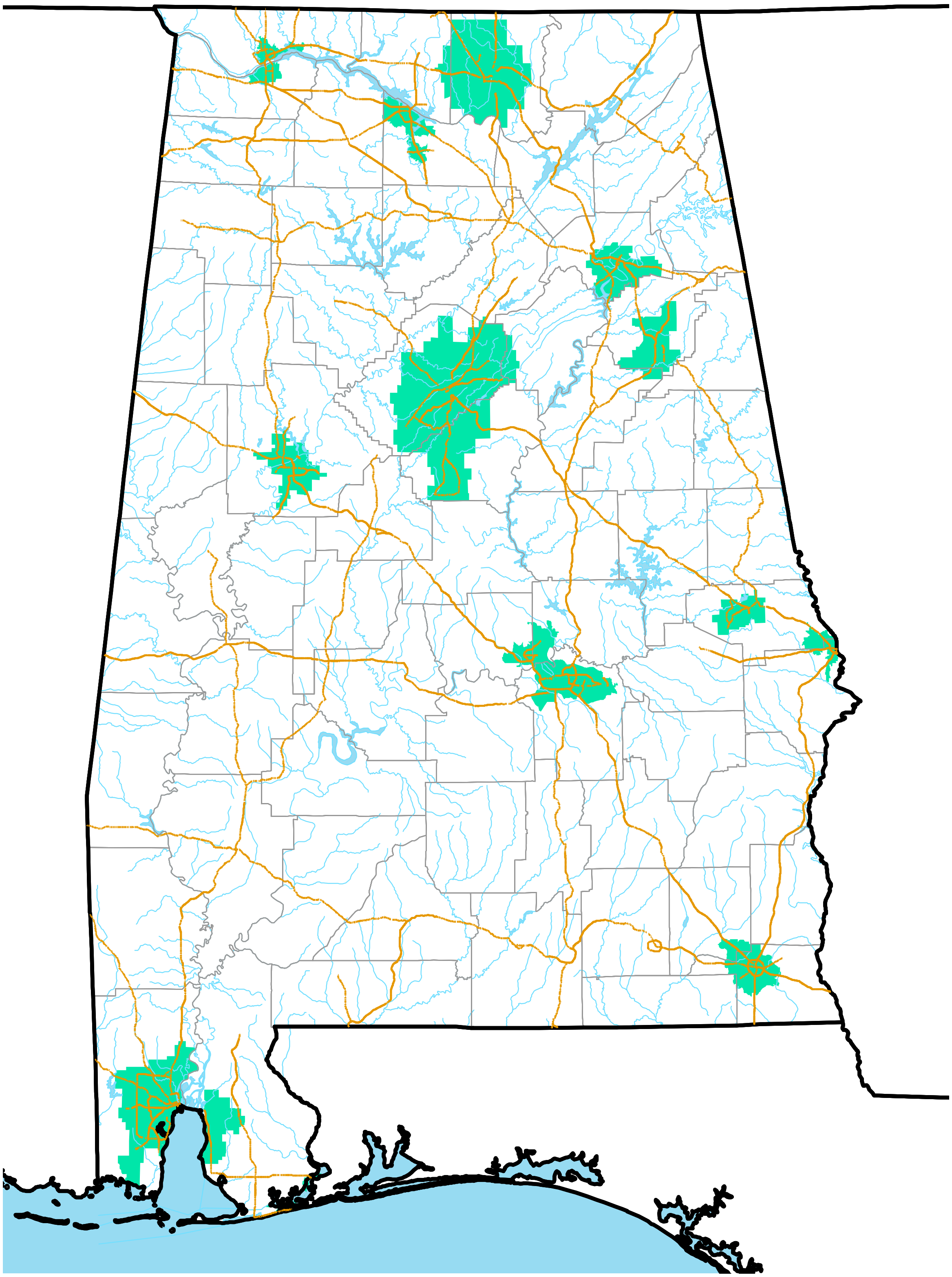
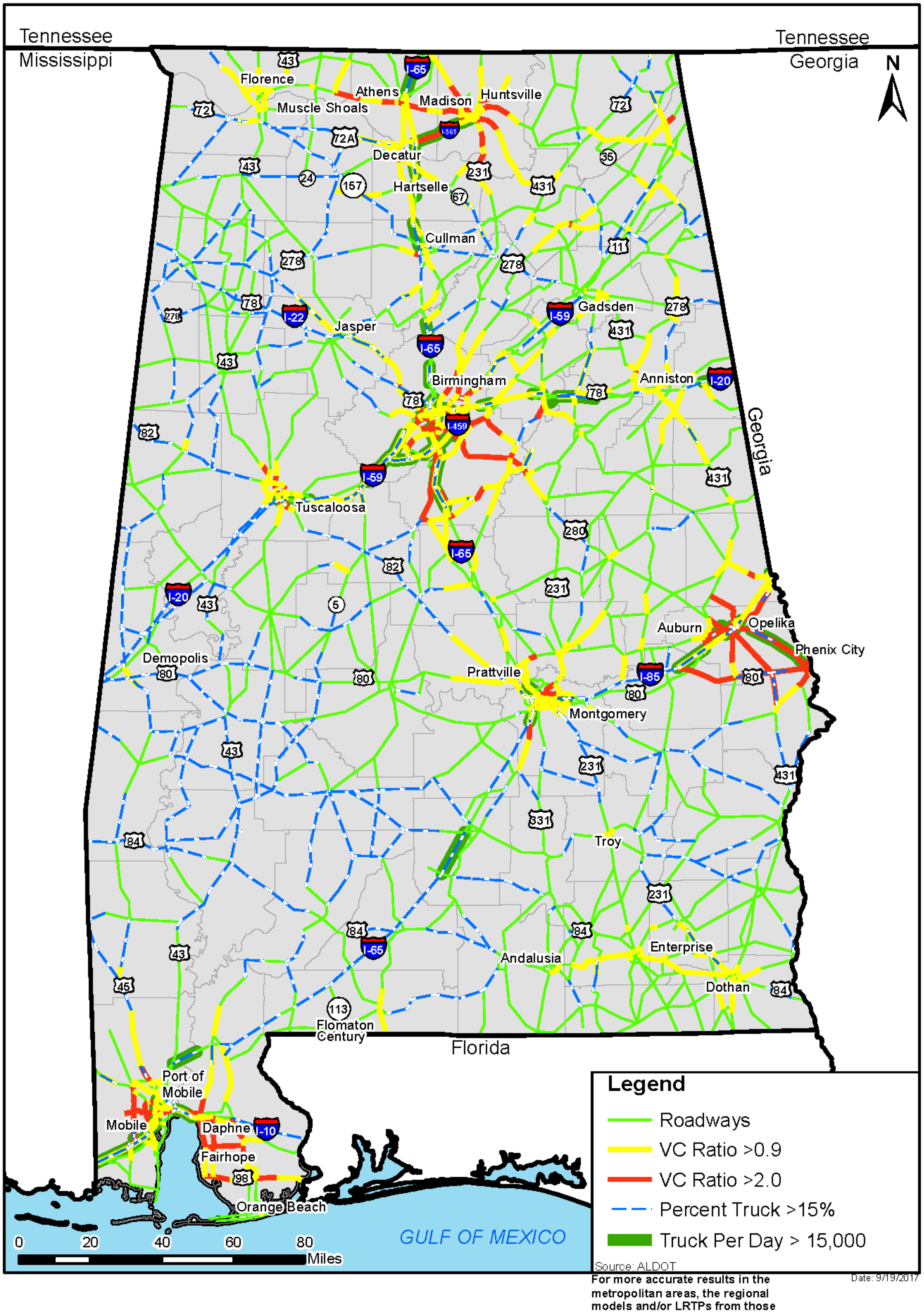


Figure 3-9: 2040 Forecasted Bottlenecks and Freight Volumes



Characteristics of the existing bottlenecks and freight volumes reflected in Figure 3-8 include:

- Nearly all existing bottlenecks are along the Interstate system.
- All of the roadway segments with 15,000 or more trucks are interstate facilities.
- The Birmingham area currently has the most facilities experiencing bottlenecks, which affect all of the Interstates as well as other major routes such as US 11 and US 280.
- The Huntsville area experiences freight bottlenecks along I-565, US 231, and US 72.
- Existing bottlenecks also occur along I-10 and I-65 in the Mobile area, along I-65 and I-85 in the Montgomery area, on I-20 near Anniston, and along I-85 in the Auburn-Opelika area.
- Many highways in rural areas carry truck traffic that equals 15 percent or more of total traffic.

With respect to the projected 2040 bottlenecks and freight volumes reflected in Figure 3-9:

- The Birmingham area will continue to have the highest levels of congestion in the state, occurring along its Interstates and the principal arterials that carry freight traffic.
- Conditions at all existing bottlenecks are projected to worsen if action is not taken.
- Smaller pockets of bottlenecks and greater freight volumes are projected to occur or worsen on non-Interstate facilities such US Alternate 72, US 231, and US 280 (which already experiences significant bottleneck conditions during peak hours).

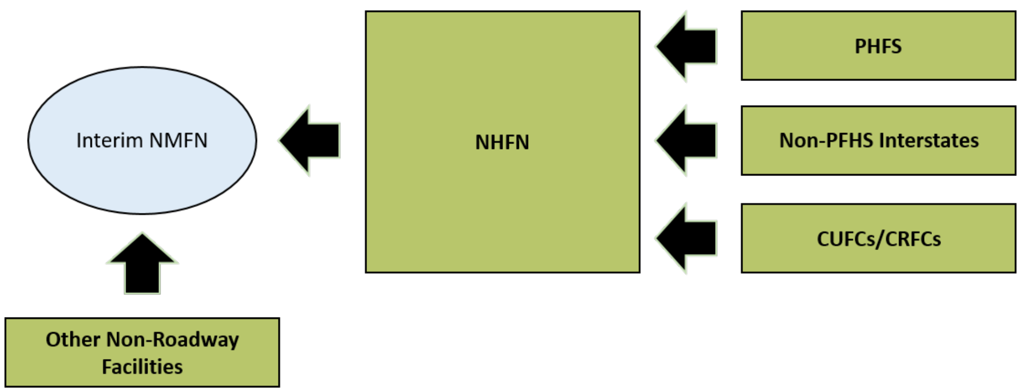
CHAPTER 4—NATIONAL FREIGHT NETWORK DESIGNATIONS IN ALABAMA

Several different federally-designated freight networks currently exist across the nation. These comprise the following freight networks:

- National Highway Freight Network (NHFN)
  - Primary Highway Freight System (PHFS)
  - Non-PHFS Interstates
  - Critical Rural Freight Corridors (CRFCs) and Critical Urban Freight Corridors (CUFCs)
- Interim National Multimodal Freight Network (NMFN)
  - Other Non-Roadway

The interrelationship between these networks is shown in Figure 4-1. As the chart indicates, the Interim National Multimodal Freight Network (NMFN) is the overarching network that includes all federally-designated freight networks. More discussion on the Interim NMFN is provided in Section 4.5.

Figure 4-1: Framework of FHWA Freight Networks



4.1 National Highway Freight Network (NHFN)

Within Alabama, a key benefit of inclusion on the NHFN is the eligibility to utilize National Highway Freight Program (NHFP) funding for improvements along NHFN facilities. This eligibility is due to the fact that Alabama contains less than 2 percent of the national PHFS mileage; states over the 2 percent threshold must invest all NHFP funds on the PHFS. More information on the NHFP is provided in Chapter 5. In accordance with the latest FHWA definitions, the NHFN is comprised of the following:

- Primary Highway Freight System (PHFS) – A network of highways identified by FHWA (with input from the State DOT) as the most critical highway portions of the US freight transportation system, as determined by measurable and objective national data.
- Other Interstate Portions Not on the PHFS – Consists of the remaining portions of US Interstate highways not included in the PHFS. These routes provide important continuity and access to freight transportation facilities.
- Critical Rural Freight Corridors (CRFCs) – Public roads not in an urbanized area which provide access and connection between the PHFS/Interstates and other important ports, public transportation facilities, or intermodal freight facilities. These are designated at the discretion of the State DOT based on FHWA criteria, as discussed in more detail in section 4.4.
- Critical Urban Freight Corridors (CUFCs) – Public roads in urbanized areas which provide access and connection between the PHFS/Interstates and other ports, public transportation facilities, or

intermodal transportation facilities. These are designated at the discretion of the State DOT in consultation with the MPOs, as discussed in more detail in section 4.4.

Figure 4-2 shows the Alabama portion of the NHFN, while the total mileage by component in Alabama is identified in Table 4-1. There are approximately 1,037 miles of NHFN facilities in Alabama, with Interstate facilities comprising approximately 97 percent (over 1,000 miles). More detailed descriptions of the NHFN components in Alabama are provided in the sections that follow. As noted in Section 4.4, no CUFCs have been designated within Alabama.

Table 4-1: NHFN Mileage in Alabama

NHFN Facility Types	Miles	Percentage
PHFS Interstates	783.8	75.6%
PHFS Intermodal Connectors	29.3	2.8%
Non-PHFS Interstates	217.9	21.0%
Critical Rural Freight Corridors	6.2	0.6%
Critical Urban Freight Corridors	0.0	0.0%
Total	**1037.1**	**100.0%**

Source: FHWA, 2017

4.2 Primary Highway Freight System (PHFS)

Within Alabama, the PHFS consists of the following types of facilities:

1) Interstates
2) Designated intermodal corridors

PHFS Interstates

There are approximately 784 miles of PHFS Interstates within the state, as identified in Table 4-2. One roadway accounts for almost half of the total mileage: I-65 stretches for over 366 miles across the entire length of the state, from I-10 in the south to the Tennessee state line in the north. I-20 accounts for another quarter of the total PHFS Interstate mileage, traveling east-west for 215 miles between Georgia and Mississippi in the central portion of the state.

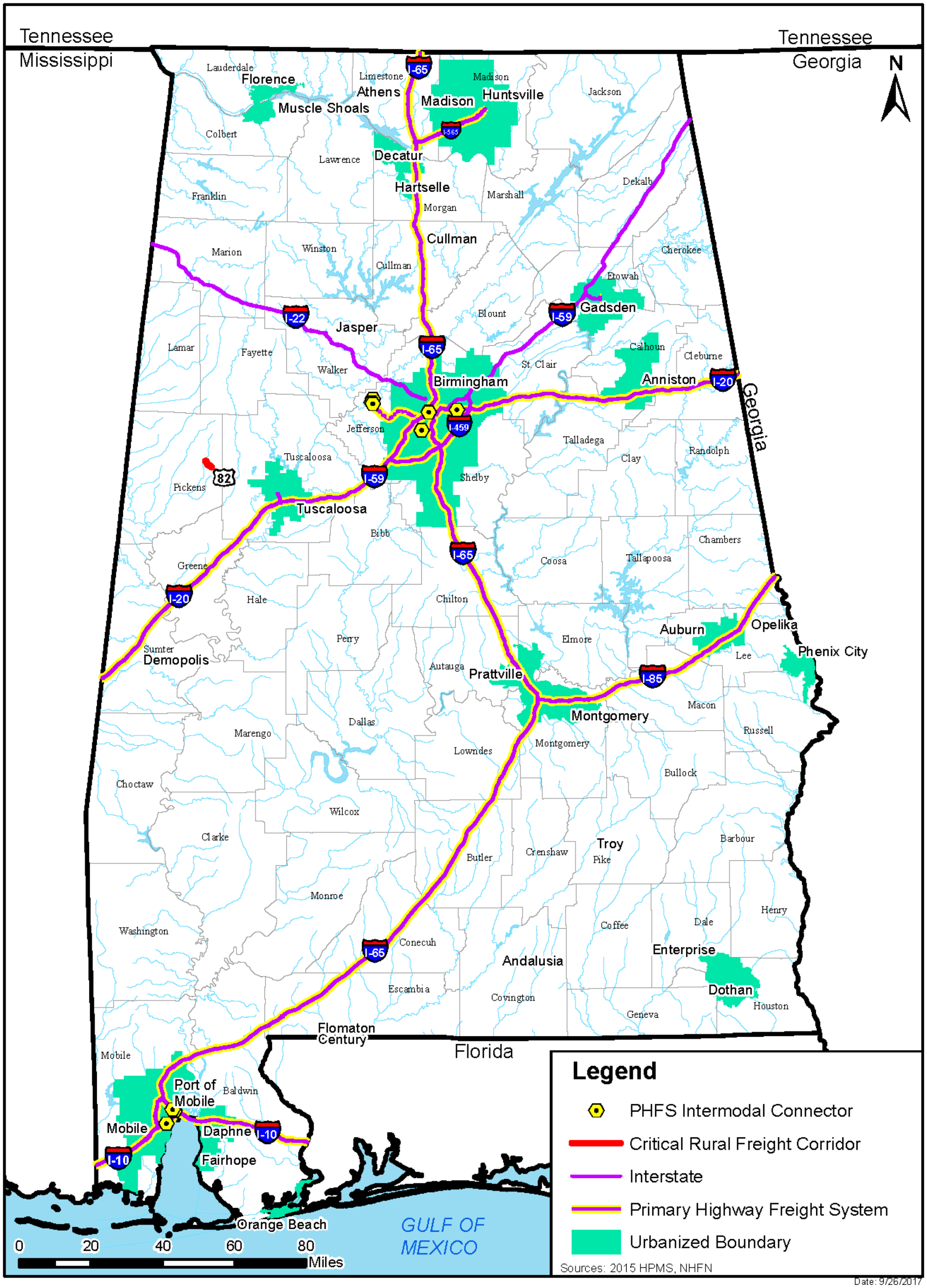
Table 4-2: PHFS Interstates in Alabama

Route No	Start Point	End Point	Length (Miles)
I-10	MS State Line	FL State Line	66.4
I-165	AL State Docks	I-65	4.8
I-20	MS State Line	GA State Line	215.0
I-459	I-20	I-20	29.3
I-565	I-65	US 72	21.9
I-65	I-10	TN State Line	366.5
I-85	I-65	GA State Line	80.0
TOTAL			**783.9**

Source: FHWA Web Site[1], Updated February 2017

[1] https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/alabama.htm

Figure 4-2: National Highway Freight Network (NHFN) in Alabama



PHFS Intermodal Connectors

There are over 29 miles of PHFS Intermodal Connectors in Alabama, as listed in Table 4-3. Mostly located in the Birmingham and Mobile metropolitan areas, they provide connectivity to major intermodal facilities such as the Alabama State Docks, Port Birmingham, and key railroad yards.

Table 4-3: PHFS Intermodal Connectors in Alabama

Facility	Type	Connector Description	Length (Miles)
Alabama State Docks (Freight Docks)	Port Terminal	Beauregard St and Robert Hope Bridge from the facility to Water St and I-165	1.7
Alabama State Docks (CSX and BN Rail/Truck)	Truck/Rail Facility	Beauregard St and Robert Hope Bridge from the facility to Water St and I-165	*0.0
Brookley Industrial Complex	Truck/Rail Facility	Michigan Ave (Ave I to I-10)	0.6
Burlington Northern RR Dixie Hub Center	Truck/Rail Facility	Finley Ave to I-65 and US 78 West	1.7
Colonial Pipeline	Truck/Pipeline Terminal	Facility to 28th St to Balsam Ave to Nabors Rd to Ishkooda Rd to Spaulding-Ishkooda Rd to I-65	4.5
Ernest Norris RR Yards	Truck/Rail Facility	Entrance at Norfolk Southern Dr to Ruffner Rd to 16th St to US 78 to Kilgore Memorial Dr to I-20	2.8
Port Birmingham - Central Terminal	Port Terminal	AL 269 (Port to I-20)	^0.2
Port Birmingham - North Terminal	Port Terminal	AL 269 (Port to I-20)	17.6
Port Birmingham - South Terminal	Port Terminal	AL 269 (Port to I-20)	^0.1
TOTAL			**29.2**

*Included in Alabama State Docks (Freight Docks)

^Included in Port Birmingham-North Terminal

Source: FHWA Web Site[2], Updated February 2017

4.3 NON-PHFS INTERSTATES

There are approximately 220 miles of Interstates within Alabama that are not included on the PHFS, as shown in Table 4-4. They include two mainline facilities (I-22 and I-59), as well as auxiliary Interstate facilities that form spurs and bypasses serving regional needs (I-359, I-459, and I-759). All Interstate facilities in Alabama are part of the NHFN and therefore have the same funding eligibility under the NHFP, regardless of their inclusion on the PHFS or not. As previously noted, this broader eligibility is due to the fact that Alabama contains less than 2 percent of the national PHFS mileage.

[2] https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/alabama.htm

Table 4-4: Non-PHFS Interstates in Alabama

Route No	Start Point	End Point	Length (Miles)
I-59	I20	GA State Line	111.0
I-22*	I-65	MS State Line	96.2
I-759	US 411	I-59	4.5
I-459	I-20	I-59	3.9
I-359	I-20	US 11	2.2
Subtotal			**217.8**

Source: FHWA Web Site[3], February 2017 and *ALDOT

4.4 Critical Rural and Urban Freight Corridors

In addition to the federally designated FHFS and Interstate networks, the FAST Act enables States (ALDOT) to identify Critical Rural Freight Corridors (CRFCs) and Critical Urban Freight Corridors (CUFCs) that provide critical connectivity to the NHFN. In establishing the CRFCs and CUFCs, FWHA imposed maximum mileage limitations on their designation in each State, which equal the greater of 150 centerline miles or 20 percent of the PHFS mileage for CRFCs and 75 centerline miles or 10 percent of the PHFS mileage for CUFCs. Alabama may designate a maximum of 162.61 centerline miles as CRFCs and a maximum of 81.30 centerline miles as CUFCs.

Eligibility

The FAST Act[4] states that a public roadway can be designated as a CRFC if it meets one or more of the following criteria:

- Is a rural principal arterial roadway with a minimum of 25 percent of the annual average daily traffic (AADT) of the road measured in passenger vehicle equivalent units from trucks.
- Provides access to energy exploration development, installation, or production areas.
- Connects the PHFS or the Interstate System to facilities that handle more than:
  - 50,000 20-foot equivalent units per year; or
  - 500,000 tons per year of bulk commodities.
- Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility.
- Connects to an international port of entry.
- Provides access to significant air, rail, water, or other freight facilities.
- Is vital to improving the efficient movement of freight of importance to the economy of the State.

A CUFC must be a public roadway that meets one or more of the following criteria:

- Connects an intermodal facility to the PHFS, the Interstate System, or an intermodal freight facility.
- Is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement.
- Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land.
- Is important to the movement of freight within the region, as determined by the MPO or the State.

[3] https://ops.fhwa.dot.gov/freight/infrastructure/ismt/state_maps/states/alabama.htm

[4] 23 U.S.C. 167(e)

In addition, the State is required to consult with the MPOs in designating CUFCs. This is particularly important in the Birmingham area as it is Alabama's only MPO with a population of more than 500,000.

Corridor Identification, Assessment, and Designation

Potential corridors were preliminarily identified through GIS-based technical analysis and FAC input. Information provided by FAC members included the locations of present and future freight generating sites as well as proposed corridor segments for inclusion. The potential corridors were then individually assessed to determine whether they satisfied one or more of the FHWA criteria for CRFC and CUFC designation, and could therefore be considered for federal freight program funding. Additionally, ALDOT decided that only State-maintained roadway segments, which includes US Routes and Alabama State Routes, would be included as candidate corridors due to their overall connectivity to the PHFS. The assessment resulted in the identification of a candidate network of approximately 214 miles of CRFCs and approximately 82 miles of CUFCs. More detail on corridor identification, analysis and results is provided in the *Technical Memorandum: Designation of Critical Rural and Urban Freight Corridors* document, which is attached to this report as Appendix C.

At this time, ALDOT has determined to restrict the total mileage of designated CRFCs and CUFCs due to the limited amount of NHFP funding available throughout the state. Only one corridor has been designated as a CRFC – a 6.2-mile segment of US 82 through Pickens County in western Alabama. An important connection between Montgomery and Mississippi, US 82 was selected based on its proximity to freight generators and its importance to Alabama's overall economy. In consultation with the Birmingham MPO, no CUFCs have been designated. Moving forward, ALDOT will continue to coordinate and consult with the MPOs and other regional and local governments to identify potential corridors for CUFC and CRFC designation as appropriate. If additional federal funding were to become available through the NHFP, additional projects for funding would be identified from the list of candidate corridors.

4.5 National Highway System (NHS) Intermodal Connectors

In addition to the PHFS intermodal connectors identified previously, FHWA also designates National Highway System (NHS) intermodal connectors.[5] Although improvements along these facilities are not eligible for NHFP funding, overall goods movement will be positively impacted by improvements to these links. The designated NHS intermodal connectors are:

- The following roadways connecting to the Birmingham Greyhound Terminal:
  - 19th Street to 8th Avenue North to 23rd Street to I-59/20
  - 18th Street to I-59/20 to I-65 South
  - I-65 to I-59/20 to 17th Street to 8th Avenue North to 19th Street
  - I-59/20 to 22nd Street to 8th Avenue North to 19th Street
- Airport Highway to I-59/20 to the Birmingham International Airport
- Glenn Hearn Boulevard from I-565 to the Huntsville International Airport Main Terminal
- Wall-Triana Highway from I-565 to the Huntsville International Intermodal Facility
- Airport Boulevard between I-65 and Mobile International Airport

[5] https://www.fhwa.dot.gov/planning/national_highway_system/intermodal_connectors/alabama.cfm

4.6 Interim National Multimodal Freight Network (NMFN)

The FAST Act directed FHWA to develop a National Multimodal Freight Network (NMFN) that would consist of the NFHN and certain other non-roadway facilities. These non-roadway facilities include:

- Freight rail systems of Class I railroads
- US public ports that have total annual foreign and domestic trade of at least 2 million short tons
- US inland and Intracoastal waterways
- The Great Lakes, the St. Lawrence Seaway, and coastal and ocean domestic freight routes
- 50 US airports with the highest annual landed weight
- Other strategic freight assets, including strategic intermodal facilities and other freight rail lines

As a first step, FHWA has developed an Interim NMFN that meets the above criteria. The Interim NMFN in Alabama includes the following non-roadway facilities (and their lengths of NMFN miles):

- Port of Mobile
- Huntsville International Airport
- Approximately 2,460 miles of railways, including:
  - Norfolk Southern (1,443 miles)
  - CSX Transportation (886 miles)
  - Burlington Northern Santa Fe (130 miles)
  - Alabama and Gulf Coast Railway (less than one mile)
- The following waterways:
  - Alabama River (271 miles)
  - Tennessee River (200 miles)
  - Tombigbee Waterway (172 miles)
  - Black Warrior River (168 miles)
  - Chattahoochee River (134 miles)
  - Gulf of Mexico Intracoastal Waterway (52 miles)
  - Mobile River (45 miles)
  - Mulberry Fork River (43 miles)
  - Coosa River (37 miles)
  - Mobile Bay (29 miles)
  - Locust Fork River (19 miles)

To date, FHWA has issued no specific guidance on the overall policy implications for facilities being part of the NMFN (such as additional funding or priorities) other than the increased funding eligibility related to the NHFN designation described previously.

At the request of the American Association of State Highway and Transportation Officials (AASHTO), ALDOT provided input into the Interim NMFN. ALDOT's comments expressed support for many of the AASHTO policy statements regarding the NMFN, including:

- The current highway portion of the NMFN is insufficient, inadequate and poorly connected.
- Multiple announcements on the freight network have been confusing and hampered the planning of states and other stakeholders.

- By using the flexibility in the statute to overcome the mileage restriction on the addition of corridors, USDOT must provide states with the flexibility to designate facilities and/or add significant mileage.
- The NMFN should include additional short line rail mileage and Amtrak rail lines.
- To accomplish the NMFN's goal of network and intermodal connectivity, it is essential that intermodal facilities be included in the NMFN.
- The most currently available data should be considered in developing the final NMFN, and additional data measures should be considered.
- A discrepancy between maps should not impact use for freight funds, and additional resources to improve the mapping and description of the NMFN and NHFN should be provided.
- USDOT should allow more time for consultation between states and stakeholders, including any stakeholders that nominate corridors or facilities for addition to the Interim NMFN.

In particular regard to the mapping of facilities, ALDOT provided the following comments:

- I-22 was not reflected on the NMFN but, as an Interstate facility, should be.
- Several mapping and table inconsistencies were reflected in the draft network.
- Not all Class I railroads were represented on the draft map.

CHAPTER 5—FREIGHT INVESTMENT PLAN

One of the most significant requirements of the FAST Act is that every Statewide Freight Plan contain a fiscally constrained work program for using National Highway Freight Program (NHFP) funding. In addition, the ALDOT work program includes several other projects benefitting freight movement that are funded through other federal programs. This section documents:

- NHFP funding eligibility
- Fiscally constrained Freight Investment Plan for NHFP funds
- Other projects along the NHFN in the ALDOT work program
  - Capacity
  - Bridge
  - Safety
  - Operations
- Rail Crossing Improvements
- Truck Parking Needs
- Freight Related ITS
- Other Funding Sources

5.1 NHFP FUNDING ELIGIBILITY

An approved State Freight Plan is necessary for a State to obligate National Highway Freight Program (NHFP) funds after December 4, 2017. A compliant State Freight Plan must also include a Freight Investment Plan. Only projects on the NHFN, as described in Chapter 4, are eligible for NHFP funds. NHFP funds may be obligated for one or more of the following:

- Development phase activities including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, and other preconstruction activities
- Construction, reconstruction, rehabilitation, acquisition of real property (including land relating to the project and improvements to land), construction contingencies, acquisition of equipment, and operational improvements directly relating to improving system performance
- Intelligent transportation systems (ITS) and other technology to improve the flow of freight, including Intelligent Freight Transportation Systems (IFTS)
- Efforts to reduce the environmental impacts of freight movement
- Environmental and community mitigation for freight movement
- Railway-highway grade separation
- Geometric improvements to interchanges and ramps
- Truck-only lanes
- Climbing and runaway truck lanes
- Adding or widening of shoulders
- Truck parking facilities eligible for funding under the Highway Safety section of MAP-21
- Real-time traffic, truck parking, roadway condition, and multimodal transportation information systems
- Electronic screening and credentialing systems for vehicles, including weigh-in-motion truck inspection technologies

- Traffic signal optimization, including synchronized and adaptive signals
- Work zone management and information systems
- Highway ramp metering
- Electronic cargo and border security technologies that improve truck freight movement
- Intelligent transportation systems that would increase truck freight efficiencies inside the boundaries of intermodal facilities
- Additional road capacity to address highway freight bottlenecks
- Physical separation of passenger vehicles from commercial motor freight
- Enhancement of the resiliency of critical highway infrastructure, including highway infrastructure that supports national energy security, to improve the flow of freight
- Highway or bridge projects to improve the flow of freight on the NHFN

Generally, the federal share for NHFP funding is 90 percent for projects on the Interstate system and 80 percent for non-Interstate projects.

5.2 Fiscally Constrained NHFP Freight Investment Plan

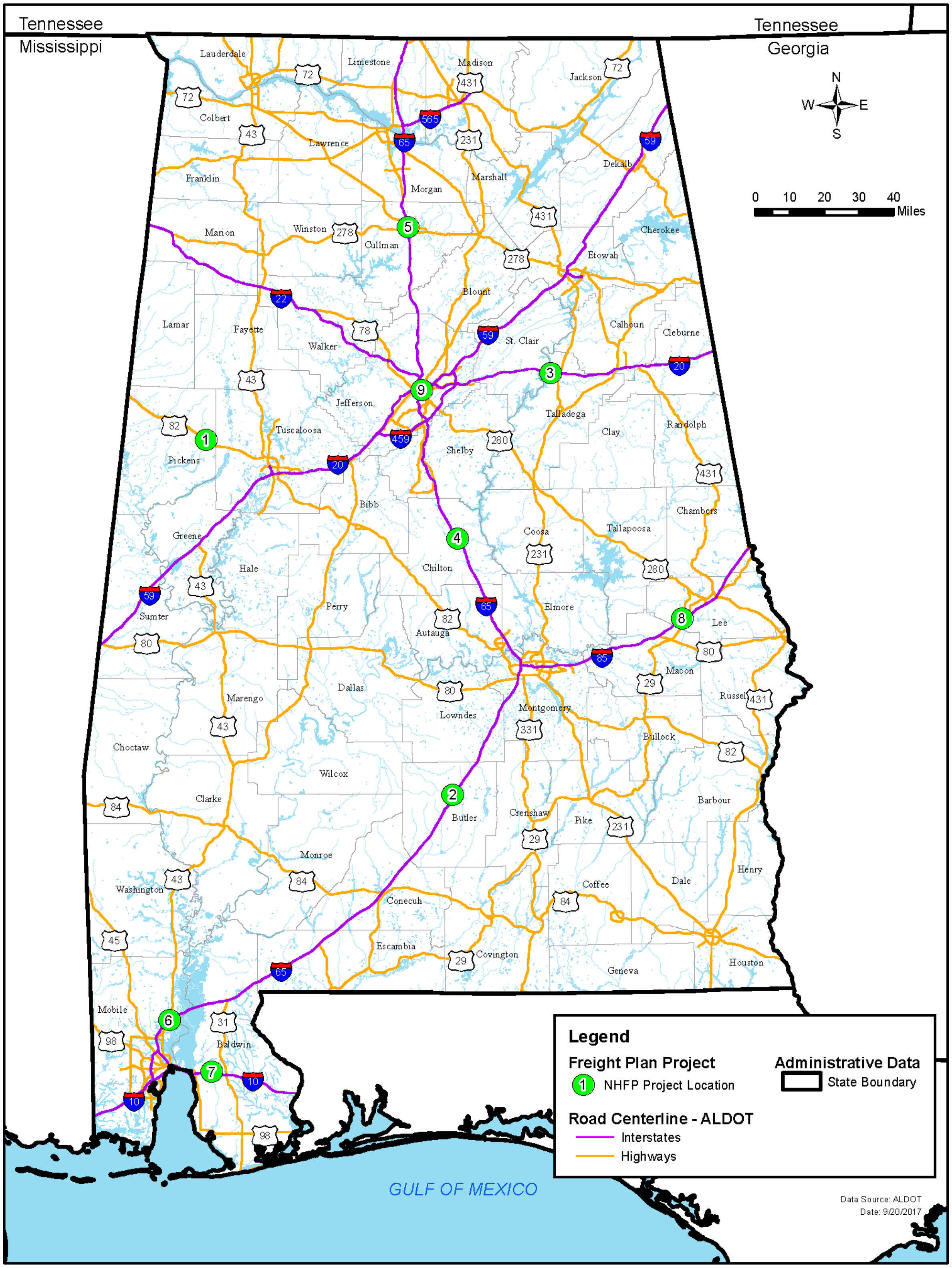
Alabama's Freight Investment Plan was prepared in accordance with the FAST Act definition and requirements, as contained in 49 U.S.C. 70202(e), which requires that a Freight Investment Plan must:

- Address the State's freight planning activities and investments (both immediate and long-range).
- Cover a five-year period.
- Be fiscally constrained.
- Contain a list of priority projects.
- Describe how the State will invest and match its NHFP funds.
- Be updated at least every five years concurrent with Freight Plan updates, but can be updated more frequently than the overall Freight Plan.

Alabama's Freight Investment Plan outlines ALDOT's planned expenditures of NHFP funding on freight projects. The projects funded through the NHFP program and in the Freight Investment Plan were identified through input from ALDOT staff based on high priority needs for freight mobility and economic development. The Freight Investment Plan projects, listed below and identified on Figure 5-1 by corresponding number, are presented in order of their projected authorization year, with the exception of the debt service (included as #9).

1. Widen and relocate US 82 to four lanes, Pickens County (2016)
2. Resurface I-65 from 0.4 mile south of CR-141 to 0.8 mile south of Beaver Creek, Butler County (2017)
3. Resurface I-20 from Coosa River to beginning of full three-lane segment, Talladega County (2017)
4. Resurface I-65 from SR-145 to just north of CR-48 overpass and resurface northbound and southbound rest areas, Chilton County (2017)
5. Resurface I-65 from US-278 to near Hurricane Creek, Cullman County (2018)
6. Improve I-65 at US-43 interchange, Mobile County (2018)
7. Widen I-10 from east of Bayway Bridge to 0.5 mile east of SR-181 from four to six lanes, Baldwin County (2020)
8. Widen I-85 bridges, Lee County (2021)

Figure 5-1: NHFP Freight Investment Plan Projects



9. Debt service related to Interstate improvements in downtown Birmingham (2017-2021)

Table 5-1 provides projected expenditures for NHFP funds through 2021, while Figure 5-2 shows the distribution of NHFP funds by project type. More detailed information on Alabama's overall Freight Investment Plan is included in Appendix D. Several highlights of the Freight Investment Plan are:

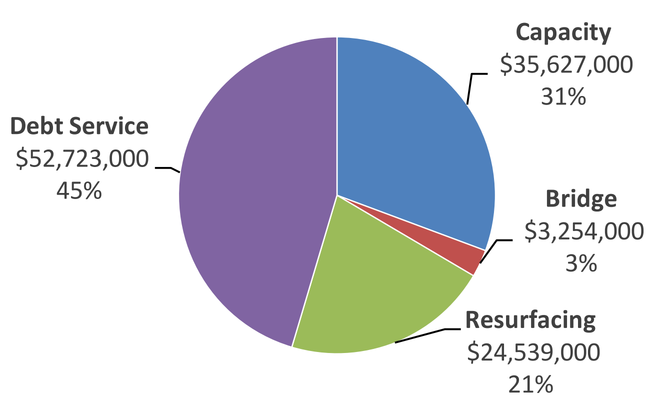
- The State of Alabama is estimated to receive approximately $121.5 million in NHFP funds through the life of the FAST Act.
- Of the NHFP funds through 2020, all but approximately $20 million has been allocated to projects and/or debt service at the time of this report.
- Two projects included in the Freight Investment Plan (#3 and #6 in the list) do not use any NHFP funding, but have been included due to their importance to freight mobility.
- The I-85 bridge widenings project and the last year of debt service in Birmingham are programmed beyond the FAST Act period; however, it is assumed that NHFP finding will remain consistent.
- Of the NHFP funding, approximately 31 percent is for capacity projects and 24 percent for maintenance and operations projects (including bridges). The remainder is for debt service.
- All but one of the Freight Investment Plan projects are on the Interstate system. The US 82 project is on a newly designated Critical Rural Freight Corridor (CRFC).

Table 5-1: NHFP Freight Investment Plan Expenditures by Year

	2016	2017	2018	2019	2020	2021*	TOTAL from FAST Act (2016-2020)	TOTAL beyond FAST Act (2021)
Annual NHFP Allocations from FAST Act	$ 22,188,355	$ 21,223,644	$ 23,153,066	$ 26,047,198	$ 28,941,332	$ 31,835,466	$ 121,553,595	$ 31,835,466
Annual Programmed Expenditure of NHFP Funds	$ 21,745,000	$ 20,665,000	$ 22,436,000	$ 11,387,000	$ 25,269,000	$ 14,641,000	$ 101,502,000	$ 14,641,000
Difference	$ 443,355	$ 558,644	$ 717,066	$ 14,660,198	$ 3,672,332	$ 17,194,466	$ 20,051,595	$ 17,194,466

*Annual allocation for 2021 (beyond the FAST Act) was estimated by applying the same increase from 2019 to 2020.

Figure 5-2: Breakdown of NHFP Funding in Freight Investment Plan



5.3 OTHER WORK PROGRAM PROJECTS ALONG THE NHFN

In addition to Freight Investment Plan projects, several projects benefitting freight mobility and located along the NHFN throughout the state are funded by other sources. To identify these projects, an inventory of planned and programmed improvements along the NHFN, which are shown in ALDOT's work program as having a construction phase scheduled prior to 2030, was prepared. The projects, listed below, are categorized as Capacity, Bridge, Resurfacing, Safety, or Operations, and were in ALDOT's work program (known as the Comprehensive Project Management System, or CPMS) as of September 14, 2017.

Capacity Projects

- A total of 14 projects along the NHFN, which includes the following significant improvements:
    - Widening I-10 from Broad Street to Mobile County line (2020) from four to eight lanes
    - Widening I-10 from CR-39 to CR-59 in Mobile County (2023) from four to six lanes
    - Widening I-59/I-20 in Tuscaloosa County (2018) and Jefferson County (2023-2025) from four to six lanes
    - Widening I-65 in Shelby County (2018) from four to eight lanes and in Cullman County (2025) from four to six lanes
    - Widening I-85 in Montgomery County (2030) and Lee County (2030) from four to six lanes
    - Extending I-22 from east of I-65 to US 31 (2025) as a new four-lane facility
- Base year and projected truck traffic characteristics indicate these improvements will address several existing and projected bottlenecks. Specifically:
    - The I-59/I-20 improvements in Tuscaloosa and Jefferson counties address both existing and projected areas of congestion and high truck traffic volumes.
    - The I-65 improvement in Shelby and Cullman counties will address both existing and projected areas of congestion and high truck traffic volumes.
    - All of the segments of I-10 through Mobile County and Spanish Fort currently experience high levels of traffic congestion and freight traffic, which are projected to worsen by 2040.

Bridge

- 14 projects along the NHFN, including:
    - A series of improvements along I-65 in Montgomery, Shelby, and Conecuh counties
    - I-10 tunnel rehabilitation in Mobile County
    - I-85 bridge widenings in Montgomery, Macon and Lee counties
    - I-20 bridge replacement over the Coosa River

Resurfacing

- 39 projects along the NHFN, including:
    - 5 projects along I-20/59 west of Birmingham in Jefferson, Tuscaloosa, and Sumter counties
    - 8 projects along the entire length of I-65 in Baldwin, Autauga, Jefferson, Cullman and Limestone counties

Safety

- 26 projects along the NHFN, including:
    - 10 median barrier and/or guardrail projects along Interstates throughout the state
    - 7 roadway or interchange lighting projects along Interstates throughout the state

Operations

- Significant improvements include:
    - I-10 interchange modifications from Texas Street to West Tunnel entrance in Mobile County
    - I-10/SR 181 interchange modification to “Diverging Diamond” in Baldwin County
    - I-459 at US 280 interchange improvements in Shelby County
    - Interstate ITS improvements in Mobile, Jefferson, and Shelby counties

5.4 RAIL CROSSINGS

Roadway capacity and maintenance and operations (MO) projects are not the only improvements with potential to facilitate freight mobility throughout the state. Although this plan recognizes all freight modes, the railroads operating throughout the state are run by private entities and, as such, a large portion of their operational characteristics information is proprietary in nature. The Railway-Highway Crossings (Section 130) Program provides funds for the elimination of hazards at railway-highway crossings. ALDOT is required to conduct and maintain a survey of all highways to identify railroad crossings that may require separation, relocation, or protective devices and to establish and implement a schedule of projects.

A review of CPMS identified 30 rail crossing safety improvements across the state. Many are located in smaller cities, including five projects in Phenix City. None of the projects are located along the NHFN, but maintaining safe railroad bridge crossings and railroad operations is critical to freight mobility statewide.

Input on problematic railroad crossings for which future improvements should be considered, in coordination with the appropriate railroad(s), was previously provided by several MPOs:

- At-grade rail crossings on many east-west roadways through Mobile; most notably, Florida Street, Hamilton Boulevard, Moffat Road, Springhill Avenue, Dauphin Street, and Government Boulevard
- The crossing of AL 119 in downtown Alabaster

5.5 TRUCK PARKING NEEDS

FHWA has identified the provision of truck parking as critical to promote safe conditions for truck drivers to rest and to avoid parking at potentially dangerous locations such as off-ramps. MAP-21 called for the USDOT to “develop a system of metrics to measure the adequacy of commercial motor vehicle parking facilities in [each] State.” Unfortunately, these metrics have not yet been developed by FHWA.

Parking for trucks is provided by public and private resources throughout the state. For the purposes of this plan, an inventory of rest stops and welcome centers provides a profile of existing public parking facilities. As shown on the map in Figure 5-3 and its accompanying chart, there are a total of 6 welcome centers and 19 rest stops across the state. A review of the projected freight volume and commodity flow maps presented in Chapter 3 shows that most of these facilities are located in areas of higher demand.

In addition to the State-run welcome centers and rest stops, private sector facilities were identified through web search. The locations of two of the larger providers, Love’s and Travel America-Petro Express, were inventoried. Much like the State-run facilities, these private sector facilities served areas across the state that experience high levels of freight travel. All 8 Travel America-Petro Express facilities, and 10 of the 12 Love’s facilities, were located along the Interstate network.

Figure 5-3: Rest Stops and Welcome Centers

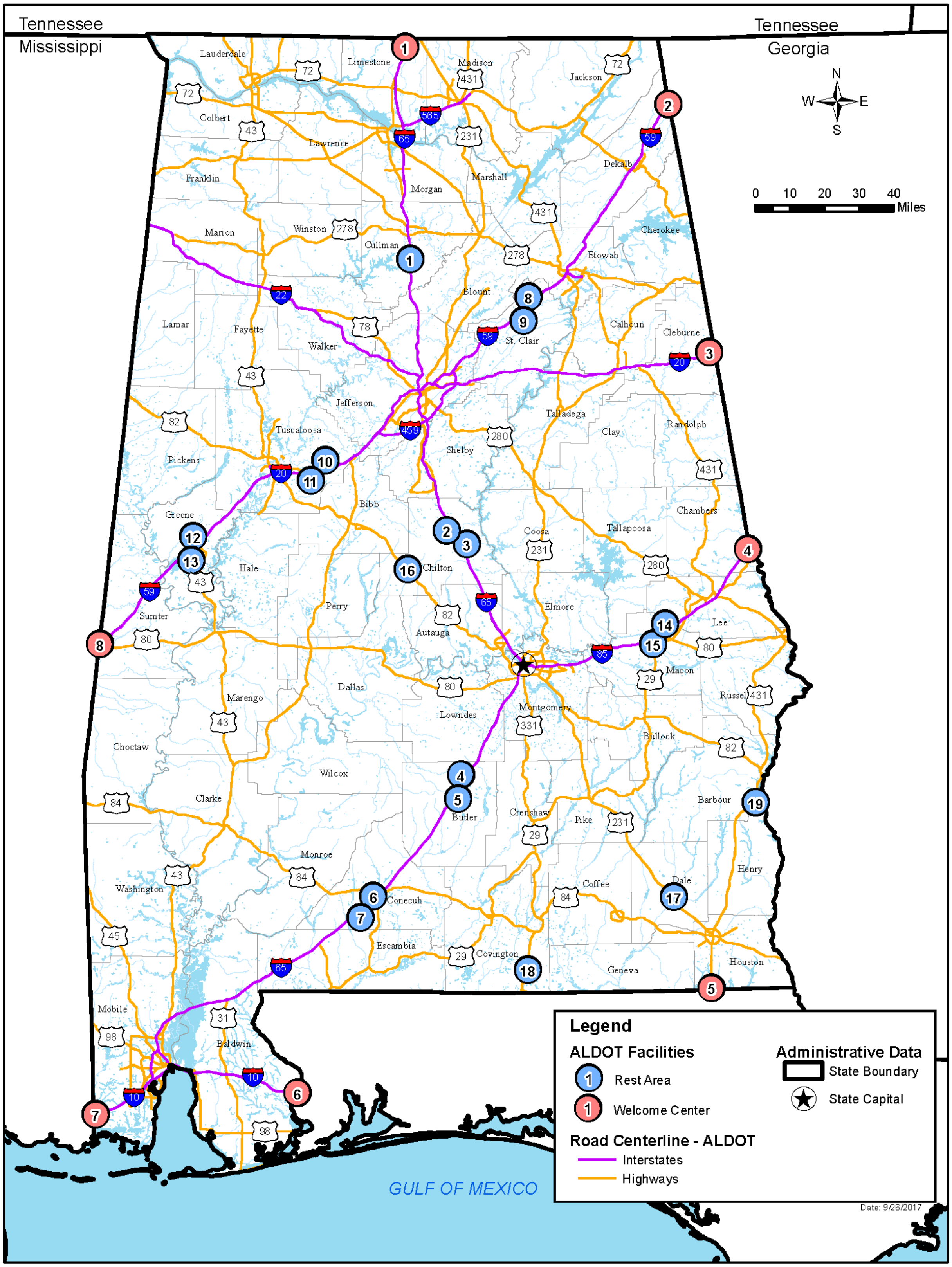


Figure 5-3 (continued): Rest Stops and Welcome Centers

Map ID	NAME OF FACILITY	COUNTY	FACILITY TYPE	ROUTE	DIRECTION	Status	Ramp/ Entrance Milepost	Dump Station	Nighttime Security
1	Ardmore Welcome Center	Limestone	Welcome Center	I-65	SB	Open	363.72	Yes	Yes
2	Dekalb County Welcome Center	DeKalb	Welcome Center	I-59	SB	Open	240.852	Yes	Yes
3	Cleburne Welcome Center	Cleburne	Welcome Center	I-20	WB	Open	213.199	No	Yes
4	Lanett Welcome Center	Chambers	Welcome Center	I-85	SB	Open	78.78	Yes	Yes
5	Houston County Welcome Center	Houston	Welcome Center	US 231	NB/SB	Open	NB - 0.706 SB - 0.592	No	Yes
6	Baldwin County Welcome Center	Baldwin	Welcome Center	I-10	WB	Open	65.8	No	Yes
7	Grand Bay Welcome Center	Mobile	Welcome Center	I-10	EB	Closed	0.485	Yes	Yes
8	Sumter County Welcome Center	Sumter	Welcome Center	I-59	NB	Closed	0.106	Yes	Yes
1	Cullman Co. Rest Area	Cullman	Rest Area	I-65	NB/SB	Open	SB - 301.283 NB - 300.506	Yes	Yes
2	Chilton County Rest Area	Chilton	Rest Area	I-65	SB	Open	213.695	Yes	Yes
3	Chilton County Rest Area	Chilton	Rest Area	I-65	NB	Open	212.915	No	Yes
4	Butler County Rest Area	Butler	Rest Area	I-65	SB	Open	133.234	Yes	Yes
5	Butler County Rest Area	Butler	Rest Area	I-65	NB	Open	132.841	Yes	Yes
6	Conecuh County Rest Area	Conecuh	Rest Area	I-65	SB	Open	89.09	Yes	Yes
7	Conecuh County Rest Area	Conecuh	Rest Area	I-65	NB	Open	84.208	Yes	Yes
8	St. Clair County Rest Area	St. Clair	Rest Area	I-59	SB	Open	167.765	Yes	Yes
9	St. Clair County Rest Area	St. Clair	Rest Area	I-59	NB	Open	164.702	Yes	Yes
10	Tuscaloosa County Rest Area	Tuscaloosa	Rest Area	I-59	SB	Open	85.203	Yes	Yes
11	Tuscaloosa County Rest Area	Tuscaloosa	Rest Area	I-59	NB	Open	84.621	Yes	Yes
12	Greene County Rest Area	Greene	Rest Area	I-59	SB	Open	39.776	Yes	Yes
13	Greene County Rest Area	Greene	Rest Area	I-59	NB	Open	37.979	Yes	Yes
14	Macon County Rest Area	Macon	Rest Area	I-85	SB	Open	44.55	Yes	Yes
15	Macon County Rest Area	Macon	Rest Area	I-85	NB	Open	43.6	Yes	Yes
16	Chilton County Rest Area	Chilton	Rest Area	US 82	WB/EB	Open	105.331	Yes	Yes
17	Dale County Rest Area	Dale	Rest Area	US 231	NB/SB	Open	SB - 37.847 NB - 37.664	Yes	Yes
18	Covington County Rest Area	Covington	Rest Area	US 331	NB/SB	Open	SB - 8.132 NB - 8.002	Yes	Yes
19	Barbour County Rest Area	Barbour	Rest Area	US 431	NB/SB	Open	SB - 58.835 NB - 58.673	Yes	Yes

5.6 Freight-Related Intelligent Transportation Systems (ITS)

One of the objectives of the FAST Act is to promote innovative solutions and the implementation of intelligent transportation systems (ITS) to facilitate freight mobility. Importantly, ITS applications that serve general mobility along the network also benefit freight mobility. An examination of existing ITS technologies indicates that those available on Alabama's highways that best serve freight mobility are:

- ALGO web site
- Regional Transportation Management Centers (RTMCs)
- Adaptive signals
- Alabama Service and Assistance Patrol (ASAP)
- Advanced Traffic Management System (ATMS) warning systems
- Dynamic message signs
- Signalized intersection railroad devices
- Traffic controllers and cabinets

- Tunnel control center
- Vehicle detection systems
- Weigh-in-motion equipment
- Weather information systems and services
- Smart work zones
- Construction zone notification

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.
- 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, I-759, 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.

Other ITS infrastructure includes:

- 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.

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 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.

While the improvements in the ITS Strategic Plan are not specific to freight, the installation of ITS along the state's Interstates and in urban areas such as Birmingham and Mobile that accommodate significant amounts of commodity flow will generally benefit freight mobility. The use of these technologies enables ALDOT and its stakeholders to better manage the transportation network; thus improving the overall safety, mobility, and commerce in the state.

5.7 OTHER FUNDING SOURCES

In addition to the NHFP, there are two funding programs specifically set out to improve freight mobility:

- Infrastructure for Rebuilding America (INFRA) Grants
- ALDOT Industrial Access Fund

INFRA Grants

Formerly the FASTLANE program, the federal INFRA program will make approximately $1.5 billion of dedicated, discretionary funding available to projects that are in line with the Administration's principles to help rebuild America's crumbling infrastructure. INFRA advances a pre-existing Fostering Advances in Shipping and Transportation for the Long-term Achievement of National Efficiencies (FASTLANE) grant program established in the FAST Act.

Eligible projects for INFRA grants include:

- Highway freight project on the National Highway Freight Network (NHFN)
- Highway or bridge project on the National Highway System (NHS), including:
  - Adding capacity to the Interstate System to improve mobility
  - In a National Scenic Area (NSA)
- Freight project that is (or will):
  - Freight intermodal or freight rail
  - Within the boundaries of a public or private freight rail, water (including ports) or intermodal facility and that is a surface transportation infrastructure project necessary to facilitate direct intermodal interchange, transfer or access into or out of the facility
  - Make a significant improvement to freight movements on the National Highway Freight Network (NHFN), that the federal share of non-highway portions of the project funds only elements of the project that provide public benefits, and that the total of federal INFRA grants for non-highway portions of these projects does not exceed $500 million for fiscal years 2016 through 2020
- Railway-highway grade crossing or grade separation[6]

Per the FAST Act regulations, the following criteria also apply to the INFRA program:

- INFRA grant may not exceed 60 percent of the total eligible project costs; an additional 20 percent of project costs may be funded with other federal assistance, bringing total federal participation in the project to a maximum of 80 percent
- Financial assistance received for a project under this program may be used for:
  - Development phase activities, including planning, feasibility analysis, revenue forecasting, environmental review, preliminary engineering and design work, and other preconstruction activities
  - Construction, reconstruction, rehabilitation, acquisition of real property (including land related to the project and improvements to the land), environmental mitigation, construction contingencies, acquisition of equipment, and operational improvements directly related to improving system performance

[6] 23 U.S.C. 117(d)

More information on the INFRA grants can be found on the FHWA website at: https://www.transportation.gov/buildamerica/infragrants.

ALDOT Industrial Access Funds

Industrial access funds are intended to provide adequate public access to new or expanding distribution, manufacturing and industrial firms. The industry must be committed to new investment and the creation of new jobs. The new access must be on public right of way for public use (state, city or county) and the project sponsor (city or county) must maintain the completed facility, unless the facility consists of turn lanes, crossovers, etc. that are located on state highways. Industrial access funds are limited to construction, construction engineering and inspection costs. The project sponsor is responsible for all preliminary engineering, right-of-way acquisition and utility relocation costs.

More information on ALDOT Industrial Access Funds is provided at the following ALDOT page: https://www.dot.state.al.us/adweb/Industrial%20Access.html.

CHAPTER 6—FREIGHT GOALS AND PERFORMANCE MEASURES

An important aspect of the FAST Act is that the performance measure requirements initiated under the MAP-21 legislation remained essentially unchanged. ALDOT is currently conducting a parallel effort to develop performance measures consistent with FHWA national performance goals. Those goals include:

- Safety – To achieve a significant reduction in traffic fatalities and serious injuries on all public roads.
- Infrastructure Condition – To maintain the highway infrastructure asset system in a state of good repair.
- Congestion Reduction – To achieve a significant reduction in congestion on the National Highway System (NHS).
- System Reliability – To improve the efficiency of the surface transportation system.
- Freight Movement and Economic Vitality – To improve the national freight network, strengthen the ability of rural communities to access national and international trade markets, and support regional economic development.
- Environmental Sustainability – To enhance the performance of the transportation system while protecting and enhancing the natural environment.
- Reduced Project Delivery Delays – To reduce project costs, promote jobs and the economy, and expedite the movement of people and goods by accelerating project completion through eliminating delays in the project development and delivery process, including reducing regulatory burdens and improving agencies' work practices.

While only one of these goals is specific to freight, promoting all of the goals will influence freight mobility directly or indirectly.

ALDOT may develop performance metrics at its own discretion. However, FHWA dictates the Truck Travel Time Reliability (TTTR) Index be utilized to assess freight movement. Highlights of this metric include:

- Reporting is divided into five periods: morning peak (6-10 a.m.), midday (10 a.m.-4 p.m.) and afternoon peak (4-8 p.m.) Mondays through Fridays; weekends (6 a.m.-8 p.m.); and overnights for all days (8 p.m.-6 a.m.).
- The TTTR ratio will be generated by dividing the 95th percentile time by the normal time (50th percentile) for each segment. Then, each segment’s largest ratio of the five periods will be multiplied by its length, and the sum of all length-weighted segments divided by the total length of Interstate to arrive at the TTTR ratio.
- The data needed by ALDOT and the MPOs is provided in FHWA’s National Performance Management Research Data Set (NPMRDS), which includes truck travel times for the full Interstate System. ALDOT and the MPOs may use an equivalent data set if they prefer.

The FAST Act states that ALDOT must establish two-year and four-year targets by May 20, 2018. Those targets will be reported in the State’s baseline performance period report, which is due by October 1, 2018. The State DOTs have the option to adjust 4-year targets in the mid-performance period progress report that is due October 1, 2020. MPOs must either support the State target or establish their own quantifiable 4-year targets within 180 days of the State establishing its target.

APPENDIX A
FREIGHT ADVISORY COMMITTEE (FAC) MEMBERSHIP

Freight Advisory Committee Contacts

Organization	Sal	Name	Title
MPOs			
Auburn-Opelika MPO/Lee-Russell Council of Governments	Ms.	Lisa Sandt	
Birmingham MPO/Regional Planning Commission of Greater Birmingham (RPCGB)	Mr.	Scott Tillman	
Birmingham MPO/Regional Planning Commission of Greater Birmingham (RPCGB)	Ms.	Lindsay Puckett	
Calhoun MPO/East Alabama Regional Planning & Development Commission (EARPDC)	Ms.	Frank Humber	
Columbus-Phenix City MPO/Columbus Consolidated Government	Ms.	Lynda Temples	
Decatur Area MPO	Mr.	Dewayne Hellums	
Dothan MPO/Southeast Wiregrass Area MPO	Mr.	Reginald Franklin	
Eastern Shore MPO	Ms.	Sarah Hart	
Gadsden Etowah MPO	Mr.	Meinrad Tabengwa	
Florida-Alabama TPO/West Florida Regional Planning Council	Ms.	Mary Beth Washnock	
Huntsville MPO/City of Huntsville Department of Urban Development Planning Division	Mr.	Dennis Madsen	
Mobile MPO/South Alabama Regional Planning Commission (SARPC)	Mr.	Kevin Harrison	
Montgomery MPO/City of Montgomery	Mr.	Kindell Anderson	
Shoals MPO/Northwest Alabama Council of Local Governments (NACOLG)	Mr.	Jesse Turner	
Tuscaloosa MPO/West Alabama Regional Commission (WARC)	Mr.	David Norris	
Modal			
Alabama State Port Authority	Mr.	Frank Fogarty	VP Trade and Development
Alabama State Port Authority	Mr.	Parish Lawler	
International Intermodal Center, Port of Huntsville	Mr.	Richard Tucker	Executive Director
Birmingham Airport Authority	Ms.	Toni Bast	Public Relations and Marketing Manager
Mobile Airport Authority	Mr.	Mark McVay	Mark McVay
Montgomery Regional Airport	Mr.	Phil Perry	Executive Director
CSX Transportation, Inc.	Ms.	Jane Covington	Resident Vice President
Norfolk Southern Railway Company	Ms.	Elizabeth Kennedy Lawlor	Manager, Government Relations
BNSF Railway	Ms.	Shundrekia Stewart	Director Public Private Partnerships
Genesee & Wyoming Inc.	Mr.	Joe Arbona	Assistant Vice President, Government Affairs
Terminal Railway Alabama State Docks (TASD)	Mr.	Mike Russell	General Manager
The Huntsville & Madison County Railroad Authority (HMCR)	Ms.	Karen Monroe	General Manager
Alabama Railway Association	Ms.	Maeci Walker	Executive Director
OnTrackNorthAmerica	Mr.	Michael Sussman	President
Alabama Trucking Association	Mr.	Tim Frazier	Director of Safety and Member Services
Coosa-Alabama River Improvement Association	Mr.	Jerry Sailors	President
Tennessee-Tombigbee Waterway Development Authority	Mr.	Mitch Mays	Administrator
Tri Rivers Waterways	Mr.	Billy Houston	Executive Director
Tennessee River Valley Association	Mr.	Cline Jones	Executive Director
Economic Development & State Agencies			
Alabama Department of Economic and Community Affairs	Ms.	Dr. Kathleen Rasmussen	CDBG Program Manager
Alabama Department of Agriculture and Industries	Mr.	John McMillan	Commissioner
Alabama Department of Commerce	Mr.	Greg Canfield	Secretary of Commerce
USDA Rural Development	Ms.	Beverly Helton	Acting State Director
Economic Development Partnership of Alabama	Mr.	Steve Spencer	President
Economic Development Association of Alabama	Mr.	Jim Searcy	Executive Director
Manufacture Alabama	Mr.	George Clark	President
Alabama Cattlemen's Association	Dr.	Billy Powell	Executive Vice President
North Alabama Industrial Development Association	Mr.	Brooks Kracke	President & CEO
Alabama Rural Development Office	Mr.	Ron Sparks	Director
Alabama Public Service Commission	The H	Scott Morris	Administrative Law Judge
Alabama Department of Public Safety	Lt.	Chris Brown	
Other (some from SWTP meetings)			
FHWA-Alabama	Mr.	Mark Bartlett	Division Administrator
FHWA-Alabama	Mr.	Brian Hogge	Asst Division Administrator
FHWA-Alabama	Mr.	Clint Andrews	Planning & Program Mgmt Team Leader
Poarch Band of Creek Indians	Ms.	Christy Huskey	Facilities Division Executive Assistant
City of Evergreen	Mr.	Larry Ryland	Asset Management
Redstone Arsenal	Ms.	Kaela Hamby	
Vulcan Materials	Mr.	Ben Steltenpohl	
Vulcan Materials	Mr.	R. S. Phillips	
Tennessee Valley Authority	Mr.	Van Wardlaw	Executive Vice President, External Relations
Baldwin County Commission	Mr.	Matthew Brown	Design Engineer, Highway Department

APPENDIX B
COMMODITY FLOW ASSIGNMENT METHODOLOGY

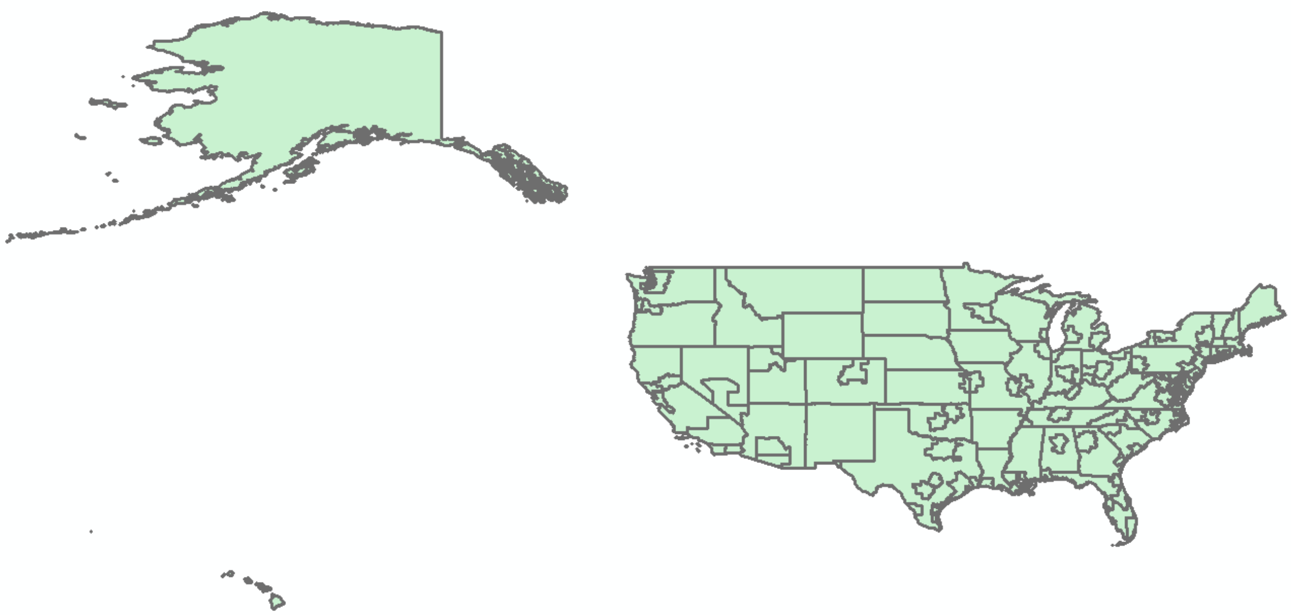
Appendix B
Commodity Flow Assignment Methodology
2017 Alabama Statewide Freight Plan

The following pages serve as a stand-alone document providing an explanation of the data sources and methodology utilized in the commodity flow assignment undertaken as part of the *2017 Alabama Statewide Freight Plan* effort.

<u>Introduction to FAF Data and the Statewide Freight Model</u>

The Freight Analysis Framework Version 4.3 (FAF 4.3) produced by the Federal Highway Administration (FHWA) contains freight movement data for the United States. The data collected and presented in the database are taken from the Commodity Flow Survey and additional economic and mode specific databases and represent flows greater than 50 miles. This is appropriate for a statewide freight model, but lacks the detail within the urban areas to effectively reflect all freight movement within a community. The freight flow data is presented using large aggregated zones, totaling 123 zones nationwide (Figure B-1). Alabama is comprised of three zones: Birmingham area, Mobile area, and the remainder of the state. The data presented in FAF 4.3 are broken out by seven modes of transport and further classified by 43 commodities.

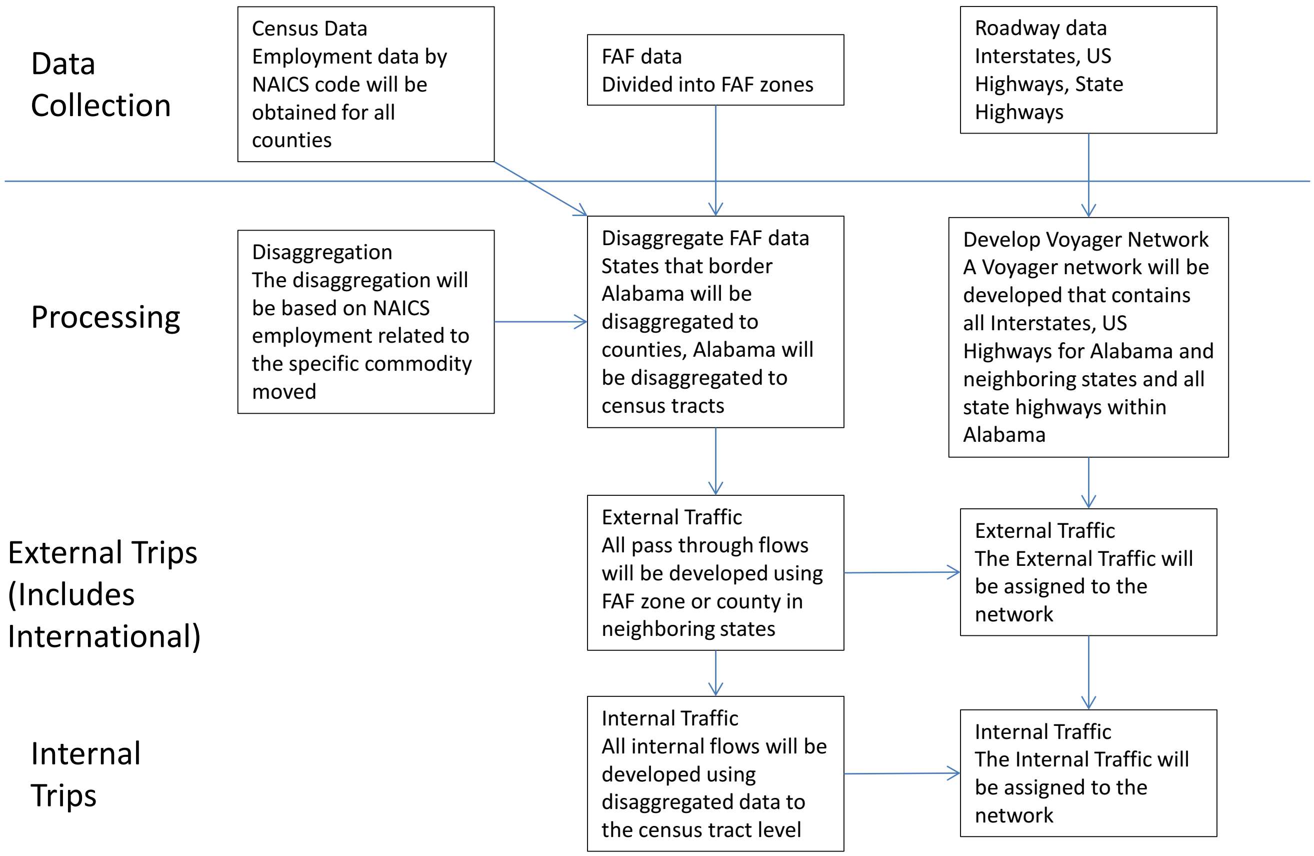
Figure B-1: FAF 4.3 Zones



This appendix discusses the process of disaggregating the data from the three-zone level to the more detailed level for use in a statewide assignment. It must be mentioned that this disaggregation and specific assignment effort were truck focused, as this mode provides direct access between shippers and receivers and is not a terminal to terminal movement, as indicative of the other modes.

The process for the development of the statewide freight flow assignment is presented in Figure B-2. The disaggregation of the truck flow data to the more detailed level was performed using a disaggregation procedure developed in the previous statewide freight plan, where the employment characteristics of a county were used as the primary disaggregation variable.

Figure B-2: Freight Flow Assignment Development Process



Specific to the Alabama assignment, the employment data at the county level, by NAICS (North American Industry Classification System) code, were collected for Alabama and all states that border Alabama (Georgia, Florida, Mississippi and Tennessee). The employment data was used to disaggregate the freight tonnage based on the employment in the county that most likely had direct influence over the freight being moved in a specific commodity. For example, for commodity 25 Logs, the freight generated by a county was a portion of the total freight generated by the region with respect the total employment in the county related to logging, forest nurseries and timber tract operation as a percentage of the total employment in the FAF 4.3 zone for those same industries. Therefore, the contribution of flow for the data in the FAF 4.3 for each of the 43 commodities was determined for each county in Alabama and each county in a state that bordered Alabama. To further refine the structure, within Alabama and those counties in neighboring states that were within 25 miles of Alabama, the data were further disaggregated to the Census tract level using total employment of the Census tract as a portion of total employment in the county as the disaggregation factor. Unfortunately, there was no way to differentiate the employment by NAICS code at the sub-county level. Table B-1 shows the commodity crosswalk between NAICS code and FAF 4.3 commodity.

Table B-1: FAF 4.3 Commodity Classes

Code	Commodity	Code	Commodity	Code	Commodity
01	Live animals/fish	15	Coal	29	Printed products
02	Cereal grains	16	Crude petroleum	30	Textiles/leather
03	Other agricultural products	17	Gasoline	31	Nonmetal mineral products
04	Animal feed	18	Fuel oils	32	Base metals
05	Meat/seafood	19	Natural gas and petroleum products	33	Articles-base metal
06	Milled grain products	20	Basic chemicals	34	Machinery
07	Other food stuffs	21	Pharmaceuticals	35	Electronics
08	alcoholic beverages	22	Fertilizers	36	Motorized vehicles
09	Tobacco products	23	Chemical products	37	Transport equipment
10	Building stone	24	Plastics/rubber	38	Precision instruments
11	Natural sands	25	Logs	39	Furniture
12	Gravel	26	Wood products	40	Misc. mfg. products
13	Nonmetallic minerals	27	Newsprint/paper	41	Waste/scrap
14	Metallic ores	28	Paper articles	43	Mixed freight
				99	Commodity unknown

Source: THE FREIGHT ANALYSIS FRAMEWORK VERSION 4, A Description of the FAF 4.3 Regional Database and How It Is Constructed.

Therefore, the zone structure for the assignment is based on a three-tiered system: Census tracts for the state of Alabama and counties within 25 miles of Alabama, counties for the states that boarder Alabama, and FAF 4.3 zone for everywhere else in the country. Figure B-3 shows the zones structure for the nation and Figure B-4 shows the zone structure closer to Alabama.

Figure B-3: Zone Structure for Alabama Assignment (Nationwide)

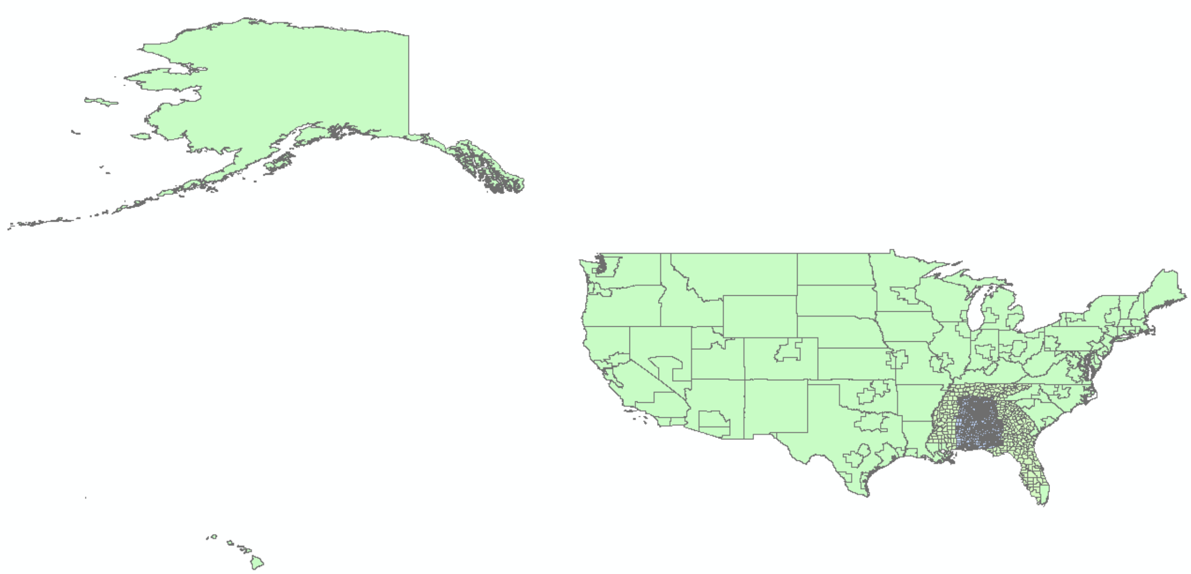
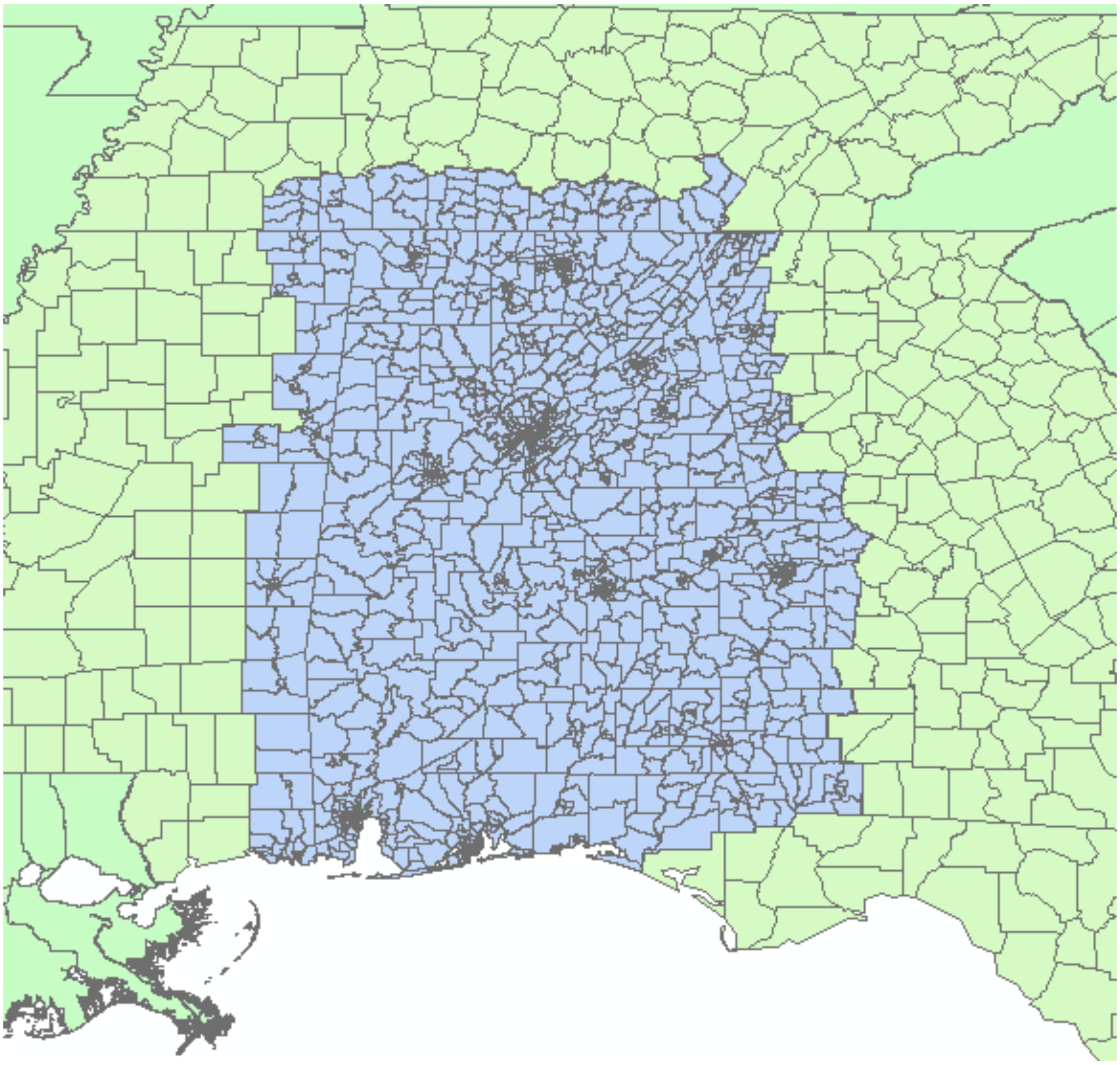
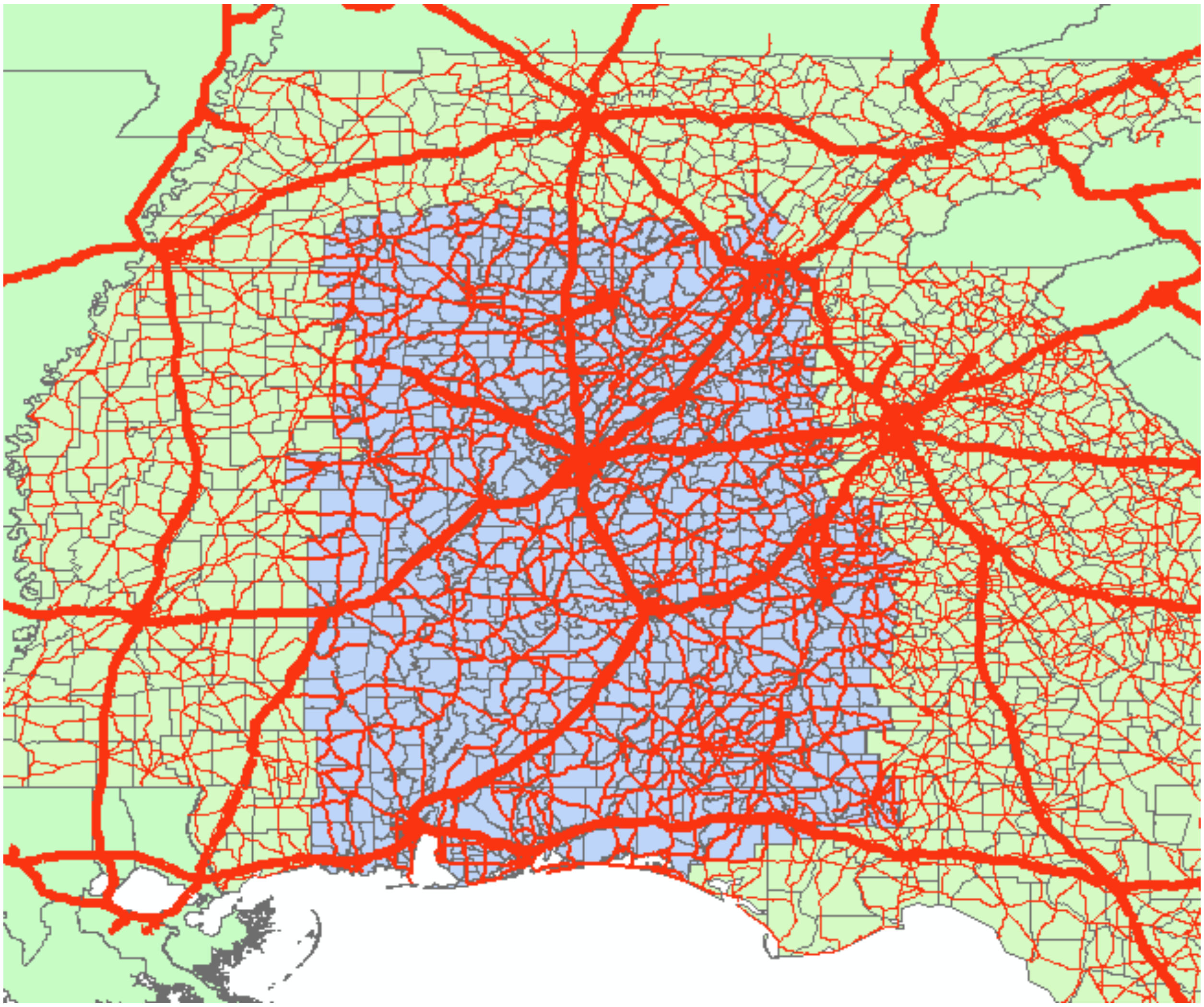


Figure B-4: Zone Structure for Alabama Assignment (Alabama and Surrounding)



The roadway network for the statewide assignment is based on the Interstate system and state highway system for Alabama. As with the zones, there is a hierarchy structure that takes into account the distance from and importance to Alabama. The further away from Alabama, only the interstates are used in the assignment. The roadways are all attributed with speed limit, distance, and travel time. The roadways are not attributed with capacity as the assignment is not assumed to be capacity limited; this is due to the limited number of roadways and alternate routes. The network is shown in Figure B-5.

Figure B-5: Roadway Network for the Alabama Assignment



It is important to recognize that the roadways in the statewide assignment network are limited, and a majority of the roadways in an urban travel demand model maintained by an MPO are absent from the statewide model. This is necessary because of the limited data available from the FAF 4.3 regarding trips less than 50 miles, or delivery trips within an urban area. Additionally, the statewide assignment is not intended to accurately predict truck traffic on each roadway within an MPO, but be a tool for determining the appropriate magnitude of the truck traffic on the fringe of the MPO boundary.

APPENDIX C
TECHNICAL MEMORANDUM:
DESIGNATION OF CRITICAL RURAL AND URBAN FREIGHT CORRIDORS

Technical Memorandum: Designation of Critical Rural and Urban Freight Corridors

Alabama Statewide Freight Plan Update

September 20, 2017

List of Acronyms and Abbreviations

CRFC – Critical Rural Freight Corridor

CUFC – Critical Urban Freight Corridor

FAST Act – Fixing America's Surface Transportation Act

FHWA – Federal Highway Administration

GIS – Geographic Information System

INFRA – Infrastructure for Rebuilding America

NHFN – National Highway Freight Network

FAST Act Freight Guidance

The 2015 federal transportation legislation, the Fixing America's Surface Transportation (FAST) Act, highlights the importance of freight movements and requires the Federal Highway Administration (FHWA) Administrator to designate a National Highway Freight Network (NHFN). This network will guide limited federal resources towards improving performance on the NHFN. The NHFN is composed of the following components:

- **Primary Highway Freight System (PHFS)** – The PHFS was designated by the FHWA, and identifies the most critical highway portions of the U.S. freight transportation system through measurable and objective national data. The network consists of a total of 41,518 centerline miles, 37,436 of which are on Interstates and 4,082 are on non-Interstate roads.
- **Other Interstate portions not on the PHFS** – This consists of all Interstate roads not included in the PHFS.

Furthermore, as part of the FAST Act, USDOT allocated additional miles to each state, based on its PHFS mileage, to designate to the NHFN. These miles are eligible for expanded use of National Highway Freight Program formula funds and Infrastructure for Rebuilding America (INFRA) grants and are referred to as:

- **Critical Rural Freight Corridors (CRFCs)** – These are public roads not in an urbanized area which provide access and connection to the PHFS and the Interstate with other important ports, public transportation facilities, or other intermodal freight facilities.
- **Critical Urban Freight Corridors (CUFCs)** – These are public roads in urbanized areas which provide access and connection to the PHFS and the Interstate with other ports, public transportation facilities, or other intermodal transportation facilities.

Alabama may designate a maximum of 162.61 miles as CRFCs and a maximum of 81.30 miles as CUFCs.

Designation of CRFCs and CUFCs

Alabama used a multi-variate Geographic Information System (GIS) based analysis tool to identify its candidate CRFCs and CUFCs. The criteria used in the analysis tool was based off guidelines provided by FHWA. Table 1 lists the FHWA guidelines for both CRFCs and CUFCs and the codes that go along with each requirement.

Only roadway segments included in the Alabama state route system were included in the GIS based analysis. Public roads not included in the Alabama state route system can still be considered for a CRFC or CUFC but would need to be considered using a methodology other than the GIS based analysis mentioned in this document.

Freight generators were identified using data from the Alabama Department of Transportation (ALDOT), including grain elevators, agricultural facilities, forestry facilities, and energy facilities. Additionally, 2012 longitudinal employer-household dynamics workforce area data was used to map census blocks that contained 1,000 more employees in freight related-industries based on the North American Industry Classification System (NAICS) codes. Data provided by the Birmingham MPO regarding major shippers and cosignees and freight intensive land uses were also used to identify and map freight generators in the Birmingham area.

As part of the process to update the Alabama Statewide Freight Plan, members of the Freight Advisory Committee (FAC) were requested to provide input on specific locations that should be considered for CRFCs and CUFCs. Several members of the FAC responded with proposed roadway corridors as well as present and future freight generating sites. This information, other than specific current freight generator data from the Birmingham MPO, was not used for the purposes of the GIS based analysis described in this document but will be taken into consideration outside of this GIS based analysis.

Table 1: CRFC and CUFC guidelines and associated codes

CRFC_ID	Route/facility descriptor
A	Rural principal arterial roadway with a minimum of 25% of the annual average daily traffic of the road measured in passenger vehicle equivalent units from trucks
B	Provides access to energy exploration development, installation, or production areas
C	Connects the PHFS or the Interstate System to facilities that handle more than: 50,000 20-foot equivalent units per year; or 500,000 tons per year of bulk commodities
D	Provides access to a grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility
E	Connects to an international port of entry
F	Provides access to significant air, rail, water, or other freight facilities
G	Corridor that is vital to improving the efficient movement of freight of importance to the economy of the State
CUFC_ID	**Route/facility descriptor**
H	Connects an intermodal facility to the PHFS, the Interstate System, or an intermodal freight facility
I	Located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement
J	Serves a major freight generator, logistic center, or manufacturing and warehouse industrial land
K	Corridor that is important to the movement of freight within the region, as determined by the MPO or the State

To identify candidate corridors for CRFCs and CUFCs, criteria consistent with the federal requirements were developed. These criteria were then applied to route segments in GIS to identify corridors that met each criteria and the total number of criteria each segment satisfied. Those corridors that met the most criteria within the federally mandated mileage limits will then be identified as candidates for CRFCs and CUFCs and will be vetted by ALDOT, freight advisory committee, and Metropolitan Planning Organizations. Table 2 shows the criteria to be used to identify the CRFC candidates and Table 3 shows the criteria to be used to identify the CUFC candidates.

Table 2: Critical Rural Freight Corridors Criteria

CRFC_ID	CRFC Criteria
A	Rural principal arterial with truck % >25%
B	Within 2 miles of an energy facility
C	Within 1 mile of a road with 2012 commodity tonnage above 500 kilotons and within 1 mile of PHFS or Interstate System
D	Within 2 miles of at least one freight intensive facility*
E	Within 1 mile of an international port of entry
F	Within 2 miles of major airport, seaport, or railyard

*Grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility

Table 3: Critical Urban Freight Corridors Criteria and Possible Points

CUFC_ID	CUFC Criteria
H	Within 1 mile of an intermodal facility and the PHFS or Interstate System
I	2012 commodity tonnage above 500 kilotons and is a parallel route to the PHFS within 25 miles
J	Within 2 miles of a freight-intensive industry with over 1,000 employees*

*Based on 2012 longitudinal employer-household dynamics workforce area data, data provided by the Birmingham MPO regarding major shippers and cosignees and freight intensive land uses

The results of the first screening analysis are shown on Map 1, which illustrates the total number of criteria met by corridor. Tables 4 and 6 break down each criteria by mileage for both the CRFC and the CUFC, respectively, Tables 5 and 7 show the total corridor criteria met by mileage for rural and urban corridors, respectively.

Table 4: Critical Rural Freight Corridors Criteria by Mileage

CRFC_ID	CRFC Criteria	Miles
A	Rural principal arterial with truck % >25%	205.05
B	Within 2 miles of an energy facility	472.82
C	Within 1 mile of a road with 2012 commodity tonnage above 500 kilotons and within 1 mile of PHFS or Interstate System	322.26
D	Within 2 miles of at least one freight intensive facility*	682.70
E	Within 1 mile of an international port of entry	-
F	Within 2 miles of major airport, seaport, or railyard	48.28

*Grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility

No segment met more than 3 of the criteria. Table 5 shows the breakdown of total criteria met by mileage.

Map 1: Critical Rural and Urban Freight Corridors by Number of Criteria Met

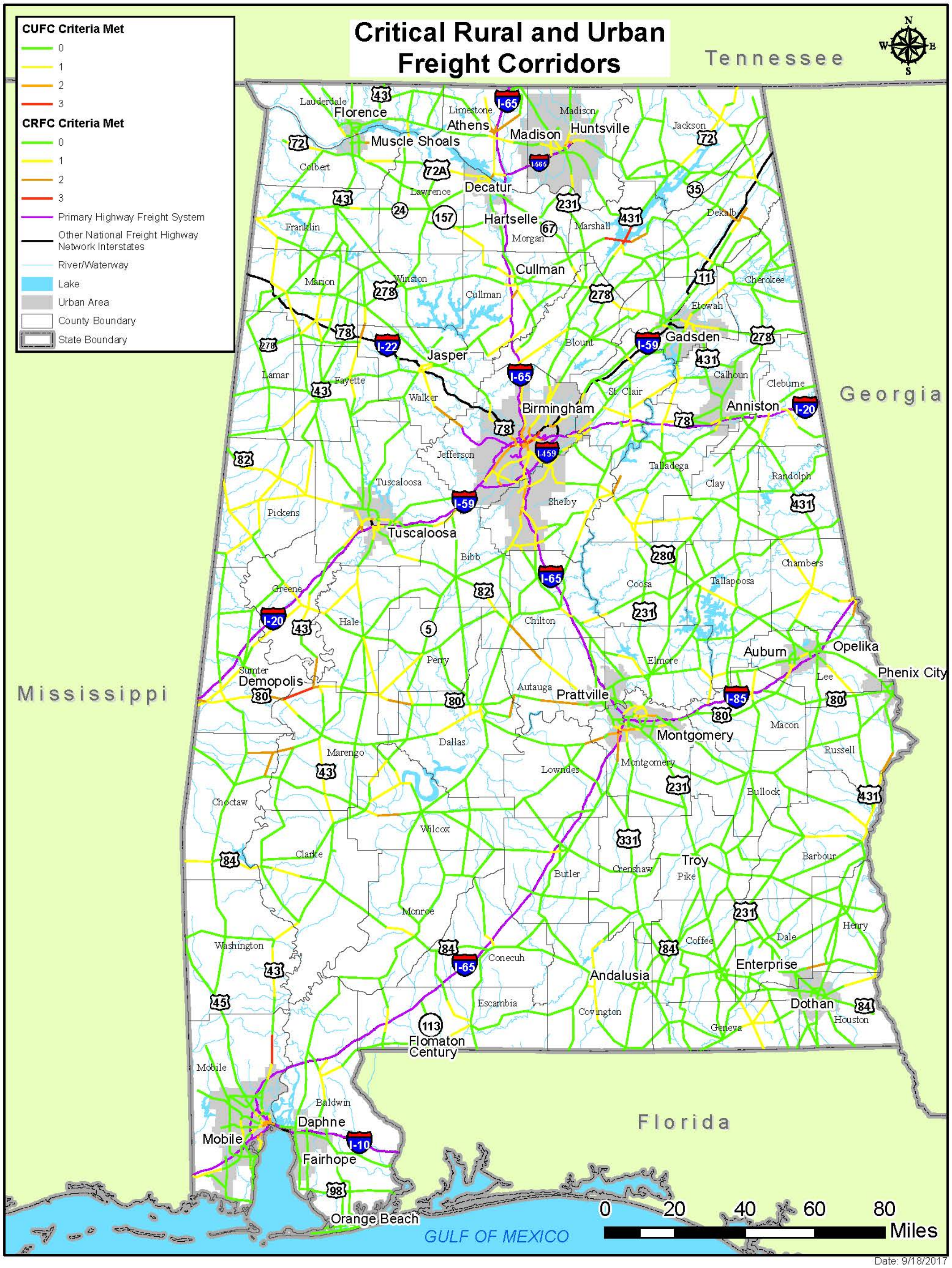


Table 5: Rural Freight Corridors Number of Criteria Met by Mileage

# of Criteria Met	Miles
0	6,575.08
1	1,269.26
2	181.52
3	32.94

Table 6: Critical Urban Freight Corridors Criteria by Mileage

CUFC_ID	CUFC Criteria	Miles
H	Within 1 mile of an intermodal facility and the PHFS or Interstate System	61.61
I	2012 commodity tonnage above 500 kilotons and is a parallel route to the PHFS within 25 miles	66.96
J	Within 2 miles of a freight-intensive industry with over 1,000 employees	413.98

Table 7 shows the breakdown of total corridor scores by mileage.

Table 7: Urban Freight Corridors Number of Criteria Met by Mileage

# of Criteria Met	Miles
0	792.62
1	370.51
2	74.96
3	7.37

Based on this analysis, it was decided that the corridors that met two or more criteria for CRFCs and CUFCs would be considered a candidate network of corridors. The initial assessment resulted in the identification of a candidate network of approximately 214 miles of CRFCs and approximately 82 miles of CUFCs. Given that the primary focus of these corridors is on last-mile connectivity, an assessment of access to the identified freight intensive uses (per FHWA definition) was undertaken for validation purposes. The results of this analysis are provided in Tables 8 and 9.

Per the information in Table 8, the 214 miles that meet the threshold for two or more CRFC descriptors include:

- 14 of 59 (24%) energy facilities within two miles of a state system rural roadway
- 32 of 65 (49%) of freight intensive facilities (grain operators, intermodal facilities, etc.) within two miles of a state rural roadway
- All major airports, seaports, or railyards accessible by rural roadways

Per the information in Table 9, the 82 miles that meet the threshold for two or more CUFC descriptors include:

- 32 of the 61 (52%) intermodal facilities within one mile of a state system urban roadway
- 11 of 26 (42%) freight intensive facilities with over 1,000 employees in urban areas within two miles of a state system urban roadway

Table 8: Accessibility of Candidate CRFCs to Freight Generators

CRFC_ID	CRFC Criteria	Number
B	Number of energy facilities within 2 miles of a link that met 2 or 3 of the CRFC criteria**	14
	Number of energy facilities not within 2 miles of a link that met 2 or 3 of the CRFC criteria	45
	Total	**59**
D	Number of freight intensive facilities within 2 miles of a link that met 2 or 3 of the CRFC criteria**	32
	Number of freight intensive facilities not within 2 miles of a link that met 2 or 3 of the CRFC criteria	33
	Total	**65**
F	Number of major airports, seaports, or railyards within 2 miles of a link that met 2 or 3 of the CRFC criteria**	6
	Number of major airports, seaports, or railyards not within 2 miles of a link that met 2 or 3 of the CRFC criteria	0
	Total	**6**

*Grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility

**Value includes some facilities actually located within urban areas that were within the specified distance from a rural link

Table 9: Accessibility of Candidate CUFCs to Freight Generators

CRFC_ID	CRFC Criteria	Number
H	Number of intermodal facilities within 1 mile of a link* that met 2 or 3 of the CUFC criteria	32
	Number of intermodal facilities not within 1 mile of a link* that met 2 or 3 of the CUFC criteria	29
	Total	**61**
J	Number of freight intensive facilities with over 1,000 employees within 2 miles of a link that met 2 or 3 of the CUFC criteria	11
	Number of freight intensive facilities with over 1,000 employees not within 2 miles of a link that met 2 or 3 of the CUFC criteria	15
	Total	**26**

*Grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility

It is important to note that many facilities not included in the above analysis may be within the specified CRFC/CUFC proximity of the federally-designated freight system (PHFS and other interstates). It should also be noted that this analysis does not include other public roadways connecting the facility to the state roadway system.

In order to further stratify their overall significance given their freight volumes and proximity to PHFS facilities, the following were identified:

- The number of miles of potential CRFCs that were within 1 mile of a road with 2012 commodity tonnage above 500 kilotons and within 1 mile of PHFS or Interstate System

- The number of miles of potential CUFCs with 2012 commodity tonnage above 500 kilotons and is a parallel route to the PHFS within 25 miles

Per the results of this analysis presented in Table 10:

- 52 of 214 (24%) of miles of potential CRFCs were within 1 mile of a road with 2012 commodity tonnage above 500 kilotons and within 1 mile of PHFS or Interstate System
- 41 of the 82 (50%) miles of potential CUFCs have 2012 commodity tonnage above 500 kilotons and are parallel routes to the PHFS within 25 miles

Table 10: **Candidate CRFCs and CUFC with High Freight Volumes in Proximity to PHFS and Non-PHFS Interstates**

CRFC Criteria	Miles
Number of miles of corridors within 1 mile of a road with 2012 commodity tonnage above 500 kilotons and within 1 mile of PHFS or Interstate System that met 2 or 3 of the CRFC criteria	52
Number of miles of corridors not within 1 mile of a road with 2012 commodity tonnage above 500 kilotons and within 1 mile of PHFS or Interstate System that met 2 or 3 of the CRFC criteria	162
Total	**214**
Number of miles of corridors with 2012 commodity tonnage above 500 kilotons and is a parallel route to the PHFS within 25 miles that met 2 or 3 of the CUFC criteria	41
Number of miles of corridors not with 2012 commodity tonnage above 500 kilotons and is a parallel route to the PHFS within 25 miles that met 2 or 3 of the CUFC criteria	41
Total	**82**

APPENDIX D
FREIGHT INVESTMENT PLAN

Alabama Statewide Freight Plan Update
Freight Investment Plan

ID # (Report)	CPMS ID	Project Description	Length	Freight Network Designation	Programmed Funding (Based on Authorization Year) 2016	2017	2018	2019	2020	2021	TOTAL from FAST Act (2016-2020)	TOTAL beyond FAST Act (2021)
1	100032474	**SR-6 (US-82) from West of Gordo to CR-33**	6.21	Critical Rural Freight Network*	**$ 57,828,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 57,828,000**	**$ -**
		National Highway Freight Program Funds			$ 21,745,000	$ -	$ -	$ -	$ -	$ -	$ 21,745,000	$ -
		NH2ME			$ 2,067,000	$ -	$ -	$ -	$ -	$ -	$ 2,067,000	$ -
		NH			$20,263,000	$ -	$ -	$ -	$ -	$ -	$ 20,263,000	$ -
		NH1			$1,978,000	$ -	$ -	$ -	$ -	$ -	$ 1,978,000	$ -
		State Funds			$ 11,775,000	$ -	$ -	$ -	$ -	$ -	$ 11,775,000	$ -
2	100055208	**Resurface I-65 from 0.4 mile south of CR-141 to 0.8 mile south of Beaver Creek**	8.73	PHFS	**$ -**	**$ 3,497,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,497,000**	**$ -**
		National Highway Freight Program Funds			$ -	$ 3,147,000	$ -	$ -	$ -	$ -	$ 3,147,000	$ -
		Other Federal Funds			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		State Funds			$ -	$ 350,000	$ -	$ -	$ -	$ -	$ 350,000	$ -
3	100060114	**Resurfacing I-20 from the Coosa River MP 164.748 to MP 173.218 (beginning of full three-lane) pavement minor rehabilitation**	8.47	PHFS	**$ -**	**$ 17,846,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 17,846,000**	**$ -**
		National Highway Freight Program Funds			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		Interstate Maintenance			$ -	$ 10,800,000	$ -	$ -	$ -	$ -	$ 10,800,000	$ -
		RP 80			$ -	$ 4,727,000	$ -	$ -	$ -	$ -	$ 4,727,000	$ -
		RP 81			$ -	$ 534,000	$ -	$ -	$ -	$ -	$ 534,000	$ -
		State Funds			$ -	$ 1,785,000	$ -	$ -	$ -	$ -	$ 1,785,000	$ -
4	100049346	**Resurface I-65 from SR-145 to just north of CR-48 overpass and resurface the north and southbound rest areas**	5.16	PHFS	**$ -**	**$ 11,492,000**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 11,492,000**	**$ -**
		National Highway Freight Program Funds			$ -	$ 10,343,000	$ -	$ -	$ -	$ -	$ 10,343,000	$ -
		Other Federal Funds			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		State Funds			$ -	$ 1,149,000	$ -	$ -	$ -	$ -	$ 1,149,000	$ -
5	100066223	**Resurface I-65 from US 278 (MP 307.500) to near Hurricane Creek (MP 315.500)**	8.00	PHFS	**$ -**	**$ -**	**$ 12,277,000**	**$ -**	**$ -**	**$ -**	**$ 12,277,000**	**$ -**
		National Highway Freight Program Funds			$ -	$ -	$ 11,049,000	$ -	$ -	$ -	$ 11,049,000	$ -
		Other Federal Funds			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		State Funds			$ -	$ -	$ 1,228,000	$ -	$ -	$ -	$ 1,228,000	$ -
6	100050694	**Interchange improvements at I-65 and SR-13 (US-43), South of Creola**	0.01	PHFS	**$ -**	**$ -**		**$ 16,700,000**	**$ -**	**$ -**	**$ 16,700,000**	**$ -**
		National Highway Freight Program Funds			$ -	$ -		$ -	$ -	$ -	$ -	$ -
		Interstate Maintenance			$ -	$ -		$ 15,030,000	$ -	$ -	$ 15,030,000	$ -
		State Funds			$ -	$ -		$ 1,670,000	$ -	$ -	$ 1,670,000	$ -
7	100055816	**Widen I-10 from East of Bayway Bridge to 0.5 mile east of SR-181**	4.07	PHFS	**$ -**	**$ -**	**$ -**	**$ -**	**$ 17,352,000**	**$ -**	**$ 17,352,000**	**$ -**
		National Highway Freight Program Funds			$ -	$ -	$ -	$ -	$ 13,882,000	$ -	$ 13,882,000	$ -
		Other Federal Funds			$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
		State Funds			$ -	$ -	$ -	$ -	$ 3,470,000	$ -	$ 3,470,000	$ -
8	100051084	**I-85 Bridge Widenings - Bridges BIN 008593 and BIN 008594 over Choctafaula Creek; Bridges BIN 007262 AND BIN 007263 over Halawakee Creek**	0.00	PHFS	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ 3,616,000**	**$ -**	**$ 3,616,000**
		National Highway Freight Program Funds			$ -	$ -	$ -	$ -	$ -	$ 3,254,000	$ -	$ 3,254,000
		State Funds			$ -	$ -	$ -	$ -	$ -	$ 362,000	$ -	$ 362,000
9	100066878	**Project to record and bill CBD Phase II debt service interest costs**	0.00	PHFS	**$ -**	**$ 8,930,000**	**$ 12,652,000**	**$ 12,652,000**	**$ 12,652,000**	**$ 12,652,000**	**$ 46,886,000**	**$ 12,652,000**
		National Highway Freight Program Funds			$ -	$ 7,175,000	$ 11,387,000	$ 11,387,000	$ 11,387,000	$ 11,387,000	$ 41,336,000	$ 11,387,000
		Interstate Maintenance			$ -	$ 862,000	$ -	$ -	$ -	$ -	$ 862,000	$ -
		State Funds			$ -	$ 893,000	$ 1,265,000	$ 1,265,000	$ 1,265,000	$ 1,265,000	$ 4,688,000	$ 1,265,000
		TOTAL PROJECT COSTS			**$ 57,828,000**	**$ 41,765,000**	**$ 24,929,000**	**$ 29,352,000**	**$ 30,004,000**	**$ 16,268,000**	**$ 183,878,000**	**$ 16,268,000**
											$ -	**$ -**
		Annual NHFP Allocations from FAST Act**			**$ 22,188,355**	**$ 21,223,644**	**$ 23,153,066**	**$ 26,047,198**	**$ 28,941,332**	**$ 31,835,466**	**$ 121,553,595**	**$ 31,835,466**
		Annual Totals for NHFP Funds			**$ 21,745,000**	**$ 20,665,000**	**$ 22,436,000**	**$ 11,387,000**	**$ 25,269,000**	**$ 14,641,000**	**$ 101,502,000**	**$ 14,641,000**
		NHFN Balance			**$ 443,355**	**$ 558,644**	**$ 717,066**	**$ 14,660,198**	**$ 3,672,332**	**$ 17,194,466**	**$ 20,051,595**	**$ 17,194,466**

* 1) Within 2 miles of at least one freight intensive facility (grain elevator, an agricultural facility, a mining facility, a forestry facility, or an intermodal facility); 2) has statewide freight significance

** Annual allocation for 2021 was estimated by applying the same increase from 2019 to 2020.