2016 Alabama Statewide Freight Plan

Prepared for
Alabama Department of Transportation
Bureau of Transportation Planning and Modal Programs

Prepared by
J. R. Wilburn and Associates, Inc.

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<td>ASAP</td>
<td>Alabama Service and Assistance Patrol</td>
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<tr>
<td>ATMS</td>
<td>Advanced Traffic Management System</td>
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<tr>
<td>BNSF</td>
<td>Burlington Northern Santa Fe Railway Co.</td>
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<tr>
<td>CARE</td>
<td>Critical Analysis Reporting Environment</td>
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<tr>
<td>CN/IC</td>
<td>Canadian National Illinois Central</td>
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<tr>
<td>CPMS</td>
<td>Comprehensive Project Management System</td>
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<td>CSXT</td>
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<td>EPA</td>
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CHAPTER 1—INTRODUCTION AND PLAN FRAMEWORK

1.1 INTRODUCTION

The 2016 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 utilizes the most current transportation and commodity flow data available and considers recent policy changes at the federal level. The Freight Plan aligns Alabama’s freight policy with the most recent federal legislation and related guidance from the Office of Freight Management and Operations in the Federal Highway Administration (FHWA). Key plan elements include:

- An overview of relevant policy that influences freight planning at the statewide level
- An update of existing and projected commodity flows and freight network characteristics which provide the baseline for identifying needs statewide
- The identification of a Statewide Primary Freight Network, based on criteria consistent with federal policy and input from stakeholders
- A summary of freight improvements of statewide significance which forms the overall Freight Investment Plan
- The initial framework for freight project prioritization and performance monitoring for ALDOT’s use and refinement over the coming years

In addition, the plan provides high-level guidance to Alabama’s Metropolitan Planning Organizations (MPOs) with regard to freight planning and performance monitoring activities consistent with federal policy and practices as set forth herein.

This document builds upon the data and findings presented in two interim deliverables:

- Interim Progress Report #1 detailed the mission and vision statements, federal guidelines regarding freight policy and emphasis areas for freight planning, and the public involvement process to be undertaken as a part of Freight Plan development. In addition, the statewide freight assignment process was outlined and a snapshot of Alabama’s 2012 freight flow characteristics was presented. This report is provided in Appendix A.
- Interim Progress Report #2 documented the baseline conditions for freight, including an overview of the multimodal freight network and detailed commodity flows by mode, as well as the freight network evaluation framework. This report is provided in Appendix B.

In addition, the methodology for the commodity flow assignment process undertaken for this effort is described in Appendix C.

An important element of the plan development process was the engagement of key stakeholders throughout the state through the Freight Advisory Committee (FAC) and regional meetings with the MPOs. The FAC membership 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. A summary of the outreach activities undertaken during the development of this plan is provided later in this chapter.
1.2 **RELEVANT POLICY FRAMEWORK**

The contents of the Statewide Freight Plan were primarily driven by the guidance set forth in the Moving Ahead for Progress in the 21st Century Act (MAP-21), the federal transportation bill in place at the time the plan was initiated. Recently, a new federal transportation bill called the Fixing America’s Surface Transportation (FAST) Act was passed into law. The freight components of the FAST Act are generally consistent with those of MAP-21. With respect to the state planning process, major changes to freight planning policy include:

- Requiring states to complete a Statewide Freight Plan or adopt a specific freight element within its Statewide Long Range Plan (these items were optional under MAP-21)
- Revisions to funding programs within the National Freight Program (detailed further in Section 5)
- Revising the national freight goals (which influence the overall plan goals and related performance measures) in order to maintain consistency with federal policy
- Amending the MAP-21 interim guidance for Statewide Freight Plan content to include additional plan requirements

Although the scope of services for this plan was developed to comply with MAP-21 requirements, the plan still meets many of the specific requirements of the FAST Act. The following subsections address how the **2016 Alabama Statewide Freight Plan** adheres to the National Freight Goals and Statewide Freight Plan requirements contained within the FAST Act. Elements of the FAST Act related to items such as Primary Freight Networks and performance monitoring are discussed in later sections of the report as applicable. Interim Progress Report #1 includes a more detailed description of MAP-21 and the initial policy direction of this Freight Plan.

1.3 **NATIONAL FREIGHT GOALS**

Per H.R. 22, 70101 (b) of the FAST Act, there are a total of 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

When compared to the National Freight Goals of MAP-21, all of the goals of the former legislation were carried forward into the FAST Act, but with the following changes:

- The overall focus of improving the “National Freight Network” (which consists of roadways) was changed to the “National Multimodal Freight Network” (which consists of roadways, railways, and ports)
- Additional goals were added to specifically call out improving reliability and goods movement (as opposed to being implicitly implied under MAP-21)
- Additional goals were added to provide greater flexibility for multi-State coordination and to not cause undue burdens at the state and local government levels to meet these goals

1.4 MISSION STATEMENT AND GOALS OF THE ALABAMA STATEWIDE FREIGHT PLAN

The mission statement and associated goals for 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.

**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 statewide Primary Freight Network
- **Goal 2:** Ensure a state of good repair along priority freight corridors through the state
- **Goal 3:** Improve economic benefits by supporting public and private sector investment in the statewide freight network
- **Goal 4:** Promote the safety and security of the freight infrastructure
- **Goal 5:** Promote the use of ITS technologies to monitor and enhance the overall performance of the freight network
- **Goal 6:** Promote and enhance both the human and natural environment while enhancing the performance of the priority freight network

Based on these goals, related performance measures were developed for utilization in the project identification and prioritization process. These performance measures are presented in Chapter 6.

The Freight Plan’s goals are consistent with all of the primary emphasis areas of federal legislation, with the exception of a specific goal to address intergovernmental coordination. That being said, the plan was developed in coordination with a FAC that included local, regional and state government agency representatives. In addition, two rounds of regional meetings were conducted with MPO representatives around the state, and the peer review of neighboring states’ freight plans included interviews with the staff responsible for managing them.
1.5 Requirements of the Statewide Freight Plan

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

- The identification of significant freight system trends, needs, and issues with respect to the State
- A description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State
- When applicable, a listing of—
  - Multimodal critical rural freight facilities and corridors designated within the State
  - Critical rural and urban freight corridors designated within the State
- A description of 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 goals described in MAP-21
- A description of 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, a description of improvements that may be required to reduce or impede the deterioration
- An inventory of facilities with freight mobility issues, such as bottlenecks, within the state, and for those facilities that are State owned or operated, a description of the strategies the State is employing to address the freight mobility issues
- Consideration of any significant congestion or delay caused by freight movements and any strategies to mitigate that congestion or delay
- A freight investment plan that includes a list of priority projects and describes how funds made available would be invested and matched
- Consultation with the State Freight Advisory Committee (FAC), if applicable

Similar to the National Freight Goals, the interim guidance in MAP-21 on items to be included in a Statewide Freight Plan was generally carried forward in the FAST Act. Additional content required by the FAST Act includes:

- A specific listing of critical rural and urban multimodal freight corridors within the state
- Consultation with a State Freight Advisory Committee throughout plan development

Table 1-1 contains a comparison of the contents of this Statewide Freight Plan to FHWA guidance. While this plan was developed under the guidance of MAP-21, it contains the elements required under the FAST Act.
<table>
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<th>Statewide Freight Plan Content</th>
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<tr>
<td>Identify significant freight system trends, needs, and issues with respect to the state</td>
<td>Identification of significant freight system trends, needs, and issues with respect to the State</td>
<td>Freight trends, issues, and needs are provided in Chapter 3</td>
</tr>
<tr>
<td>Describe freight policies, strategies, and performance measures that will guide freight-related transportation investment decisions</td>
<td>Description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State</td>
<td>Statewide freight performance measures are provided in Chapter 5 and Strategies and recommendations are provided in Chapter 6</td>
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<tr>
<td><strong>Not specifically recommended in MAP-21</strong></td>
<td>When applicable, a listing of multimodal critical rural and urban freight facilities and corridors designated within the state under section 70103 of the FAST Act</td>
<td><strong>No such urban or rural facilities in Alabama are designated on the National Freight Network (MAP-21) or National Highway Freight Network (FAST Act)</strong></td>
</tr>
<tr>
<td>Describe how the plan will improve the ability of the State to meet national freight goals established under section 167 of title 23, United States Code</td>
<td>Description of how the plan will improve the ability of the State to meet the national multimodal freight policy goals described in section 70101(b) of this title and the national highway freight program goals described in section 167 of title 23</td>
<td>A compliance assessment of MAP-21 and FAST Act National Freight Goals is provided in Table 1.1</td>
</tr>
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<td>Show evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems, that improve safety and efficiency of freight movement</td>
<td>Description of how innovative technologies and operational strategies, including freight intelligent transportation systems, that improve the safety and efficiency of the system were considered</td>
<td>An inventory of ITS applications and operational improvements along the Statewide Primary Freight Network is provided in Chapter 5</td>
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<td>Consider improvements that may be required on routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate roadways condition</td>
<td>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, a description of improvements that may be required to reduce or impede the deterioration</td>
<td>An inventory of specific maintenance projects programmed in the ALDOT work program along the Statewide Primary Freight Network occurred through this planning effort</td>
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<td>Inventory facilities with freight mobility issues, such as truck bottlenecks, within the state, and describe the strategies the State is employing to address those freight mobility issues</td>
<td>Inventory of facilities with freight mobility issues, such as bottlenecks, within the state, and for those facilities that are State owned or operated, a description of the strategies the State is employing to address the freight mobility issues</td>
<td>Bottlenecks along the Statewide Primary Freight Network were identified through modeling and/or MPO staff input, as shown in Chapter 3</td>
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### 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.
- **Infrastructure Condition** – Simply stated, truck traffic generally creates more maintenance needs than the average passenger automobile, 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 first step toward increasing 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.
- **Environmental Sustainability/Environmental Justice** – Consistent with federal guidelines, the initial performance measures presented in this report are a means to evaluate the network for...
environmental factors, including conformance with environmental justice policies. More detailed information on environmental justice is provided in Interim Progress Report #1.

- Upcoming FHWA Guidance – The recent passage of the FAST Act has brought changes requiring clear direction from FHWA to ensure consistency at the statewide and MPO levels.

1.7 Stakeholder Outreach

Engaging stakeholders representing the large diversity of freight related interests in Alabama is important to understanding conditions and ensuring the reality of Alabama’s freight system is presented. Input from stakeholders guides the study’s direction, assisting in the accurate assessment of existing conditions and development of a feasible plan for future efforts.

In accordance with MAP-21 recommendations, a small group of stakeholders representing key elements of the freight transportation community were invited to form a FAC. The role of the FAC is advisory and they are charged with:

- Advising ALDOT on freight-related issues, priorities, and funding
- Providing a forum for discussion of freight-related decisions
- Communicating and coordinating regional priorities to all parties
- Promoting the exchange of information between public and private sectors
- Participating in the development of the 2016 Alabama Statewide Freight Plan

Stakeholder committee membership lists from two previous ALDOT efforts related to freight—the Alabama Statewide Freight Study and Action Plan completed in 2010 and the more recent Alabama Statewide Rail Plan updated in 2013-2014—were used as a starting point. FAC 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. As recommended by the federal guidance, ALDOT will continue to engage with the FAC on freight related issues as they arise into the future.

Three FAC meetings occurred over the course of plan development. Each meeting included a presentation covering the meeting topic(s) as well as supporting handouts. Discussion and questions were encouraged, and notes of each meeting were prepared and distributed to all FAC members via email.

The first FAC meeting, held in June 2015, provided the opportunity to introduce the Freight Plan effort and the role of the FAC. Materials presented at the meeting included the relevant federal policies and peer review; the draft mission, vision and goals; and an overview of the commodity flow assignment effort and initial characteristics. A number of specific topics/questions circulated in advance served to prompt FAC input and discussion.

The second FAC meeting was convened in October 2015 to review the status and interim findings. Primary topics presented for FAC input and discussion were the existing and forecasted commodity flows by mode and review of the draft Primary Freight Network and draft performance measures.

The third FAC meeting was conducted on February 17, 2016. During this meeting, the key elements, findings, and products of the Freight Plan were presented in draft form for review and comment. Principal items were the Primary Freight Network and listing of existing CPMS projects through 2030 that address identified freight needs and/or enhance freight mobility.
In addition to the FAC, two rounds of regional meetings were held to solicit input from staff representatives of the MPOs, the Port of Mobile, and other key stakeholders. The first round of meetings occurred in late August-early September 2015 and were held in the Birmingham, Columbus-Phenix City, Eastern Shore/Pensacola, Huntsville, Mobile, and Montgomery areas. The purpose of the meetings was to review preliminary commodity flow data and gather input on regional freight needs. The second round of meetings was held in December 2015 in the Auburn-Opelika, Birmingham, Decatur, and Mobile regions. The purpose of these meetings was to review the results of the initial 2040 statewide freight model results and gather input on regional chokepoints, the statewide Primary Freight Network, and the framework for MPO freight planning.

At the outset of plan development activities, ALDOT staff initiated an update of the freight planning page on their website (http://cpmsweb2.dot.state.al.us/TransPlan/FreightPlanning/Default.aspx). A variety of freight related information is posted on the site, including the interim deliverables and meeting handouts for this Freight Plan development effort. Of particular interest are numerous freight related maps being developed by ALDOT staff that are available for review and download.

Appendix D provides the FAC membership list as well as the stakeholder outreach materials prepared throughout the plan development process. Among the latter are the presentations, handouts and notes from the FAC meetings and regional MPO meetings.
CHAPTER 2—EXISTING AND PROJECTED COMMODITY FLOW RESULTS

The movement of goods (commodities) from one place (the origin) to another (the destination) is a basic definition for commodity flow and 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 is presented by freight mode—truck, rail, waterway, air, and pipeline. More in depth information is provided on existing freight movement by mode in Interim Progress Report #1 (Appendix A) and on commodity flows in Interim Progress Report #2 (Appendix B).

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 3.5 (FAF3) produced by FHWA. FAF3 contains freight movement data for the United States taken from the Commodity Flow Survey and additional economic and mode specific databases. The FAF3 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) the remainder of the state. The commodity flow assignment methodology is explained in detail in Interim Progress Report #2 and separately in Appendix C.

There are two distinct limitations of the FAF3 data. The first is that the FAF3 database does not include local delivery trips, essentially trips designated as less than 50 miles. Therefore, the commodity flow assignment is for longer trips expected in a statewide model, not trips inside the urban areas which are the focus of local travel demand models. The second limitation is that the FAF3 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 tons of product moving long distance across the state or nation.

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 in that many will transfer between different modes (e.g., truck-to-rail, truck-to-waterway) and therefore are likely double-counted in this material.

Table 2-3 presents a summary comparison of existing and projected commodity flows by mode based on the FAF3 data. Overall, truck is by far the most commonly used mode of freight transportation at approximately 80 percent, followed by rail at approximately 12 percent. This trend is expected to continue through 2040.
Table 2-1: Freight by Mode—2012 vs. 2040

<table>
<thead>
<tr>
<th>Origins in Alabama</th>
<th>Destinations in Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>2012</strong></td>
<td><strong>2012</strong></td>
</tr>
<tr>
<td><strong>Kilotons</strong></td>
<td><strong>Percent</strong></td>
</tr>
<tr>
<td><strong>Mode</strong></td>
<td><strong>Truck</strong></td>
</tr>
<tr>
<td>Truck</td>
<td>356,389.21</td>
</tr>
<tr>
<td>Rail</td>
<td>55,418.88</td>
</tr>
<tr>
<td>Water</td>
<td>2,136.56</td>
</tr>
<tr>
<td>Air (include truck-air)</td>
<td>27.11</td>
</tr>
<tr>
<td>Multiple modes &amp; mail</td>
<td>10,228.45</td>
</tr>
<tr>
<td>Pipeline</td>
<td>9,673.65</td>
</tr>
<tr>
<td>Other and unknown</td>
<td>5,005.74</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>438,879.60</strong></td>
</tr>
</tbody>
</table>

| **2040**            | **2040**                |
| **Kilotons**        | **Percent**            | **Kilotons** | **Percent** |
| **Mode**            | **Truck**              | **Rail**    | **Water** | **Air (include truck-air)** | **Multiple modes & mail** | **Pipeline** | **Other and unknown** | **TOTAL** | **Mode** | **Truck**              | **Rail**    | **Water** | **Air (include truck-air)** | **Multiple modes & mail** | **Pipeline** | **Other and unknown** | **TOTAL** |
| Truck               | 520,075.79             | 81.6%       | 66,497.30  | 10.6% | 17,108.38 | 2.7% | 48.95 | 0.0% | 26,067.08 | 4.2% | 18,890.13 | 3.0% | 4,369.34 | 0.7% | **637,582.32** | **TOTAL** |
| Rail                | 71,378.67              | 11.2%       | 17,108.38  | 2.7% | 48.95 | 0.0% | 48.95 | 0.0% | 26,067.08 | 4.2% | 18,890.13 | 3.0% | 4,369.34 | 0.7% | **637,582.32** | **TOTAL** |
| Water               | 2,690.97               | 0.4%        | 17,108.38  | 2.7% | 48.95 | 0.0% | 48.95 | 0.0% | 26,067.08 | 4.2% | 18,890.13 | 3.0% | 4,369.34 | 0.7% | **637,582.32** | **TOTAL** |
| Air (include truck-air) | 53.6 | 0.0% | 48.95 | 0.0% | 48.95 | 0.0% | 48.95 | 0.0% | 26,067.08 | 4.2% | 18,890.13 | 3.0% | 4,369.34 | 0.7% | **637,582.32** | **TOTAL** |
| Multiple modes & mail | 28,844.12 | 4.5% | 26,067.08 | 4.2% | 26,067.08 | 4.2% | 26,067.08 | 4.2% | **637,582.32** | **TOTAL** |
| Pipeline            | 8,879.97               | 1.4%        | 18,890.13  | 3.0% | 18,890.13 | 3.0% | 18,890.13 | 3.0% | **637,582.32** | **TOTAL** |
| Other and unknown   | 5,659.20               | 0.9%        | 4,369.34   | 0.7% | 4,369.34 | 0.7% | 4,369.34 | 0.7% | **637,582.32** | **TOTAL** |
| **TOTAL**           | **637,582.32**         |            | **TOTAL**  | **627,107.50** | | | | | | | | | | | | | | | | | | |

<table>
<thead>
<tr>
<th><strong>Projected Change (2040 vs. 2012)</strong></th>
<th>+/-</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>163,686.58</td>
<td>45.9%</td>
</tr>
<tr>
<td>Rail</td>
<td>15,959.79</td>
<td>28.8%</td>
</tr>
<tr>
<td>Water</td>
<td>554.41</td>
<td>25.9%</td>
</tr>
<tr>
<td>Air (include truck-air)</td>
<td>26.49</td>
<td>97.7%</td>
</tr>
<tr>
<td>Multiple modes &amp; mail</td>
<td>18,615.67</td>
<td>182.0%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>-793.68</td>
<td>-8.2%</td>
</tr>
<tr>
<td>Other and unknown</td>
<td>653.46</td>
<td>13.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>198,702.72</strong></td>
<td><strong>45.3%</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Projected Change (2040 vs. 2012)</strong></th>
<th>+/-</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>150,254.41</td>
<td>43.7%</td>
</tr>
<tr>
<td>Rail</td>
<td>6,793.64</td>
<td>11.4%</td>
</tr>
<tr>
<td>Water</td>
<td>4,694.49</td>
<td>37.8%</td>
</tr>
<tr>
<td>Air (include truck-air)</td>
<td>28.45</td>
<td>138.8%</td>
</tr>
<tr>
<td>Multiple modes &amp; mail</td>
<td>9,796.32</td>
<td>60.2%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>-116.90</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Other and unknown</td>
<td>-332.30</td>
<td>-7.1%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>171,118.11</strong></td>
<td><strong>37.5%</strong></td>
</tr>
</tbody>
</table>

**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. The future demand for coal as a result of this legislation is unknown.

FAF3 data projects coal to be a major commodity shipped by rail and truck in Alabama, and also its most prevalent international import and export in 2040. Given the uncertainty of 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 end result was a negligible reduction of projected traffic overall. This is primarily a result of the amount of general traffic projected in 2040 and the overall small share of trucks transporting 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 FAF3 data. The most shipped commodity by truck both inbound and outbound is logs, with nearly 80,000 kilotons traveling both in and out of Alabama to support a number of industries. Gravel, natural sands, and non-metal mineral products are also heavily shipped commodities via truck. By 2040, the amount of logs shipped by truck in and out of Alabama is projected to increase to 110,000 kilotons. The amount of other heavily shipped commodities via truck is also projected to experience similar growth. The share of freight traffic by truck is projected to remain at 75-80 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 3.5
Commodity Flow by Rail
According to the FAF3 data, the most prevalently shipped commodity by rail both inbound and outbound is coal, with nearly 20,000 kilotons originating and approximately 35,000 kilotons arriving in Alabama. Other commodities heavily shipped via rail include basic chemicals, 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 coal shipped via rail into Alabama is projected to increase, with nearly 30,000 kilotons originating and approximately 40,000 kilotons arriving in Alabama. While the amount of most other major commodities shipped by rail is projected to remain relatively unchanged, there is a projected increase in gravel and base metals originating in Alabama by 2040. The share of rail traffic for freight is anticipated to decrease only slightly by 2040 from current levels.

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

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5
Commodity Flow by Inland Waterway

Figure 2-3 shows total annual kilotons of the commodities most shipped via inland waterway that originate and terminate in Alabama according to the FAF3 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. The most shipped commodity inbound to Alabama is cereal grains, with over 4,000 kilotons shipped in 2010 and over 10,000 kilotons projected to be shipped via inland waterway in 2040. The FAF3 data indicates that the most shipped commodity via waterway originating in Alabama is base metals, with over 800 kilotons shipped in 2012 and a projected total of over 1,200 kilotons projected in 2040. It should be noted that the shipping of commodities such as nonmetal mineral products, base chemicals, crude and fuel by waterway is projected to decrease by 2040.

**Figure 2-3: Existing and Projected Commodity Flow – Inland Waterway**
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 manufactured products and electronics. By 2040, the amount of manufactured goods originating in Alabama by air is projected to increase from approximately 4,000 kilotons to approximately 20,000 kilotons. The amount of electronics originating in Alabama by air is also projected to roughly double from approximately 4,000 kilotons to 9,000 kilotons. The amount of all of the major commodities destined to Alabama by air are projected to increase by double or more, with the largest increases in precision instruments and manufactured goods. Nevertheless, air travel is projected to remain the least utilized mode for freight travel by 2040.

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

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5
Commodity Flow by Pipeline

Pipeline commodity flow is controlled wholly by the private sector. The commodities traveling by pipeline that originate in Alabama are primarily coal, crude petroleum and basic chemicals. This is very similar to the pipeline commodities that terminate in the state, with the addition of gasoline. The current commodity flow via pipeline per the FAF3 data is provided in Figure 2-5. Given that these facilities generally operate at capacity, no significant increases in freight volume are anticipated. However, the only current major commodity currently shipped via pipeline that is projected to increase in volume per the FAF3 data is crude petroleum. All other commodities are projected to decrease 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 3.5
2.3 **INTERNATIONAL IMPORTS AND EXPORTS (PORT OF MOBILE)**

Figure 2-6 shows the existing and projected kilotons of commodities internationally imported and exported from the Port of Mobile. It should be noted that all of the commodities shown are reflected in the previous tonnage by mode. The most imported and exported commodity from the Port of Mobile is coal, with approximately 10,000 kilotons being imported and exported in 2012. The shipping of coal is projected to increase significantly by 2040, with 15,000 kilotons being imported and over 40,000 kilotons being exported. As previously noted, the uncertain impacts of recent legislation on coal demand will have a profound impact at the Port of Mobile. The amount of other significant imports such as crude petroleum, coal products, and base metals are projected to moderately increase by 2040. Similar increases in exports such as coal products, paper, and wood products are also projected.

*Figure 2-6: Existing and Projected International Commodity Flow*

**International Imports**

**International Exports**

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5
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 be, the most utilized mode for freight movement. The overall projected increase of truck freight flow, in conjunction with increasingly limited funding for additional capacity infrastructure, heightens the need for an investment plan addressing Alabama’s roadways.
- The uncertainty of the future coal demand has a profound impact on freight movement in Alabama. While the overall impact to roadways appears to be negligible, impacts to the Port of Mobile and rail freight flows could be more significant.
- Overall increases in rail and truck traffic confirm the need for continued improvements to at-grade rail crossings through the Section 130 Program.
- The share of overall freight traffic shipped by air is relatively small, but increases for most major commodities shipped via air are projected. Therefore, better freight roadway connections and access to major airports may be needed in the near future.
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. A more detailed description of the freight infrastructure can be found in Interim Progress Report #2 (Appendix B).

Roadway Network
Alabama’s major roadway network, consisting of interstate highways and an extensive network of federal and state routes, is illustrated in Figure 3-1. During its efforts to define a National Primary Freight Network under MAP-21, FHWA designated most of the interstate miles within Alabama as part of the national network. The exceptions were I-59 from Birmingham northeast toward Chattanooga, the soon-to-be-completed I-22 from Birmingham northwest toward Memphis, and most local interstate connectors (I-165, I-359, I-759, and the portion of I-459 from I-20 to I-59 east of Birmingham). As a part of the Freight Plan development activities, ALDOT staff expanded on the National Highway Freight to identify a Draft Statewide Primary Freight Network (PFN) for Alabama to include all major highways and other important freight corridors. More detail on the Statewide Primary Freight Network is provided in Chapter 4.

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. The current Alabama Rail Plan, finalized in June 2014, is available on the Rail Section page of ALDOT’s website at: https://www.dot.state.al.us/dsweb/divTed/Rail/index.html.

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, Mobile, Montgomery, Huntsville 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.
Figure 3-1: Alabama’s Major Roadway Network
Figure 3-2: Railroads in Alabama

Data Provided by ALDOT
Date: June 12, 2013
3.2 INTERMODAL CONNECTIVITY

A map of known intermodal connectors, including major roads, railways, ports and airports, is provided as Figure 3-3. As the map shows, there is a high level of connectivity related to the multimodal network. Specifically:

- Most of the rail lines and port facilities are in close proximity to or directly served by major roadway facilities such as interstates and state roads.
- The major airports throughout the state are also in close proximity to major roadways.
- While there is connectivity between rail lines and airports, the need for intermodal transfers between these modes is limited by the highly time-sensitive nature of air freight as compared to rail freight.

An overview of major intermodal facilities in Alabama includes:

- Port of Mobile (Alabama State Port Authority)—Owned and operated by the Port of Mobile, the Port handles bulk and general cargo such as coal, liquid bulk, forest products, iron, and steel products. The 4,000 acre complex includes McDuffie Island and Choctaw Point. A significant rail intermodal operation exists in the Mobile Bay area due to its location on the Gulf of Mexico. This has been enhanced by the Alabama State Port Authority’s construction of the Choctaw Point and Garrows Bend facilities at the Port of Mobile. In January 2013, the Alabama State Port Authority’s board of directors approved expenditures for the construction, inspection, and testing of a rail access bridge that will connect five Class I railroads and the Authority’s Terminal Railway to an Intermodal Container Transfer Facility, a rail intermodal facility and the second leg of the Authority’s Choctaw Point intermodal program. The Port Authority will let $11.5 million in contracts for the construction, inspection and testing of the rail access bridge into the intermodal rail facility. The Intermodal Container Transfer Facility will service import/export containerized cargoes moving through the Port, as well as domestic containerized cargoes from regional manufacturers. The project is expected to enhance the Port of Mobile’s competitive position and make shipping containerized freight more efficient and economical.

- 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 6.2 miles of industrial switching track off the Norfolk Southern spur into the International Intermodal Center. The trackage serving the International Intermodal Center has the capability to extend rail southward to any potential riverport facility, bringing total track to approximately 12 miles. 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 on site.
Figure 3-3: 2016 Alabama Known Intermodal Connectors
• Norfolk Southern’s Birmingham Regional Intermodal Facility—Located in McCalla, the $97.5 million facility was opened in 2012 on a 316-acre site 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—Finley Boulevard yard in Birmingham is an important part of the BNSF Railway’s intermodal network handling freight for the Southeast region. Together with BNSF’s East Thomas Yard on 4th Street West, these facilities handle the shipment of automobiles and a mix of carload freight. BNSF’s business strategy includes alliances with shortline (Class III) railroads that can serve any of three roles: connections with industrial centers; switching customers and interchanging revenue traffic with Class I railroads; or operate a switching or terminal service transferring cars between railroads or groups of facilities.¹

• CSX’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), providing logistics management of rail shipments nationwide.

• CSX’s Central Alabama Intermodal Container Transfer Facility—This intermodal container transfer facility is located approximately 15 miles 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. This facility 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. Alabama Power utilizes this facility for the receipt of coal and delivery to its power plant.

• 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. The two primary sources to identify key freight generators throughout the state were:

- ALDOT’s detailed database of industrial uses, developed through extensive review of land uses and verification via Google Earth and/or phone calls to the businesses
- Input from MPO staff and stakeholders throughout the state

¹ “Shortline Connection a Long-Term BNSF Strategy,” *Railway: The Employee Magazine of Team BNSF*, Winter 2013
A map of major freight generators is provided in Figure 3-4. As further analysis for intermodal connectivity, ALDOT also identified which of these generators has direct rail and/or barge access, as shown in Figure 3-5. As expected, most of the major freight generators are concentrated around major highways and/or railroads. Furthermore, most of the facilities are in proximity to interstates and major highways that are included on the Statewide Primary Freight Network (see Chapter 4).

As a part of coordination meetings with MPO staff representatives conducted during Freight Plan development activities, the following facilities were specifically identified as freight generators:

- Huntsville International Airport (Huntsville)
- Polaris (Huntsville)
- Toyota (Huntsville)
- Target Distribution Center (Huntsville)
- FedEx (Huntsville)
- UPS (Huntsville)
- NASA/RSA (Huntsville)
- GE plant (Decatur)
- Outokumpu Steel Mill (Mobile)
- Industrial Area near Theodore (Mobile)
- Mercedes Factory and Surrounding Industries (Tuscaloosa)
- Walter Energy Mines (Tuscaloosa)
- Uniroyal Goodrich (Tuscaloosa)
- Phifer Wire (Tuscaloosa)
- Brose Inc. (Tuscaloosa)
- Johnson Controls (Tuscaloosa)
- Coral Industries (Tuscaloosa)
- Nucor Steel (Tuscaloosa)
- Faurecia (Tuscaloosa)
- ZF Industries (Tuscaloosa)
- Hunt Refining (Tuscaloosa)
- Tamako (Tuscaloosa)

It should be noted that most of the freight generators identified by MPO staff and stakeholder input were included in the database of freight generators that is reflected in Figure 3-4.

### 3.4 Existing and Projected Commodity Flow by Truck

An assessment of existing and projected commodity flow along the roadways was undertaken to identify areas where future improvements could facilitate overall freight mobility. Figures 3-6 and 3-7 present existing and projected commodity flow by truck throughout the state. Corridors with high levels of commodity flow include:

- I-20/I-59 from west of Birmingham to the Mississippi state line
- I-65 from Decatur through Birmingham to US 84
- I-20 from I-59 to US 231
- I-59 from I-20 to US 278 in Gadsden
Figure 3-4: Known Freight Generators
Figure 3-5: Known Freight Generators with Intermodal Connectivity
Figure 3-6: 2012 Commodity Flows by Truck
Figure 3-7: 2040 Commodity Flows by Truck

Legend

Annual Kilotons
- 0 - 40000
- 40001 - 80000
- 80001 - 120000
- 120001 - 160000
- 160001 - 229561

Alabama
Highlights of the projected (2040) commodity flows by truck presented in Figure 3-7 include:

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

In response to stakeholder concerns that the distribution assigned too much commodity to I-59 and too little to I-20, it must be noted that the commodity flow assignment is based on national origin destination tables. As such, discrepancies in flows along particular routes might occur because of distribution patterns and trucking company route policies that are not possible to account for in a flow assignment. Therefore, the commodity flow assignment should be used as one potential tool to support decisions, with knowledge of truck volumes being used at times to override the values presented in the output.

It is also worth noting that a substantial volume of the commodity flow to and from the Port of Mobile occurs by rail, which accounts for the Mobile area’s comparatively lower volumes indicated on the previous two figures. Impacts on the roadway network from truck movements associated with the Port become mixed with local traffic in the areas adjacent to the Port.

### 3.5 Existing and Projected Bottlenecks

Another major consideration in the development of an overall freight investment plan involves existing and projected bottlenecks throughout the state. It is important to note that in many cases the bottlenecks result from general automobile traffic congestion rather than directly resulting from freight traffic. Nevertheless, corridor congestion is a challenge to freight mobility regardless of the cause.

A map of existing and projected bottlenecks and freight volumes is provided for 2012 (base year for FAF data) in Figure 3-8 and for 2040 in Figure 3-9. It should be noted that the congestion thresholds differ between the existing and projected conditions due to the increase in volume to capacity (V/C) ratios projected from 2012 to 2040. Roadway segments with over 15,000 trucks per day are identified to call attention to those facilities with greater freight volumes based on statewide characteristics.

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

- Nearly all existing bottlenecks throughout the state are along the interstate system
- All of the roadways with over 15,000 trucks per day are interstate facilities
- The Birmingham area currently has the most facilities with bottlenecks, which include interstate facilities as well as state facilities such as US 11 and US 280
- Existing bottlenecks are also located in Mobile along I-10 and I-65, Montgomery along I-65 and I-85, Huntsville along I-565, and in the Anniston and Gadsden areas
Figure 3-8: 2012 Existing Bottlenecks and Freight Volumes

Legend
- Green: Roadways
- Yellow: VC Ratio > 0.9
- Red: VC Ratio > 2.0
- Blue: Percent Truck > 15%
- Green: Truck Per Day > 15,000
- Gray: Alabama
Figure 3-9: 2040 Forecasted Bottlenecks and Freight Volumes

Legend
- Roadways
- VC Ratio > 1.5
- VC Ratio > 3.0
- Percent Truck > 25%
- Truck Per Day > 15,000
- Alabama
With respect to projected 2040 bottlenecks and freight volumes reflected in Figure 3-9:

- Freight volumes of more than 15,000 trucks per day are projected on all interstates except I-22 west of Walker County, which was not completed at the time this data was collected.
- The Birmingham area will continue to have the highest levels of congestion statewide, occurring along its interstates and the principal arterials that carry freight traffic.
- Conditions at all existing bottlenecks statewide 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 as US Alternate 72, US 231, and US 280 (which already experiences significant bottleneck conditions during peak hours).
CHAPTER 4—THE STATEWIDE PRIMARY FREIGHT NETWORK

The process for identifying the Statewide Primary Freight Network (PFN) for the Alabama Statewide Freight Plan, including an overview of the criteria used to identify the network and the federal policy guidelines that were considered in its development, is documented in this chapter. In addition, the facilities on the Statewide PFN are outlined.

4.1 POLICY BACKGROUND

The MAP-21 federal transportation bill required FHWA to establish a national freight network to assist states in strategically directing resources toward improved movement of freight on highways. FHWA published a final national highway-only Primary Freight Network (under MAP-21) on October 23, 2015, which included designation of the following roadways in Alabama: I-10, I-20, I-65, I-85, I-565, and most of I-459 (excluding a portion from I-20 to I-59).

In designating the national freight network, the U.S. Department of Transportation (USDOT) Secretary was instructed in MAP-21 to consider:

- Origins and destinations of freight movement in the United States
- Total freight tonnage and value of freight moved by highways
- Percentage of annual average daily truck traffic in the annual average daily traffic on principal arterials
- Annual average daily truck traffic on principal arterials
- Land and maritime ports of entry
- Access to energy exploration, development, installation, or production areas
- Population centers
- Network connectivity

With the passage of the FAST Act, FHWA has also developed a draft Multimodal National Freight Network that includes more roadways and also significant ports, railways, riverways, airports and intermodal facilities throughout the US. The roadway component of this multimodal freight network, renamed the National Highway Freight Network, within the state of Alabama was the same as the initial national freight Primary Freight Network developed under MAP-21.

4.2 NETWORK DEVELOPMENT PROCESS

Compared to the national network, the Statewide PFN is more extensive, including more roadways with notable freight volumes and that connect facilities of statewide significance. The purpose of Statewide PFN is to provide a prioritized network within the state on which to emphasize freight improvements.

The process for identifying Alabama’s Statewide PFN began by integrating the National PFN; all facilities identified on the National PFN are included in the Statewide PFN. Next, facilities were added to represent a more comprehensive statewide network based on facility type, truck volumes, and connectivity to known truck traffic generators. The revised network included the remaining interstate facilities and key federal and state highways. This initial draft Statewide PFN was reviewed by stakeholders and modified to include the recommendations received from MPO/FAC representatives. The Statewide PFN was then finalized based on existing and projected conditions consistent with the identified criteria.
Primary Freight Network Criteria
The criteria for inclusion on the Statewide PFN were determined based on characteristics consistent with the overall Freight Plan goals and federal policy considerations presented in section 4.1. The primary criteria developed for identification of the Statewide PFN are:

- Presence on the national highway-only Primary Freight Network as designated by FHWA
- Existing and/or projected high truck traffic volumes
- Connectivity to major freight generators and/or intermodal facilities
- Connectivity to interstates and/or major highways

Initial Draft Statewide Primary Freight Network
The initial draft Statewide PFN is provided in Figure 4-1. As shown, the network consisted of the entire interstate system and many US highways throughout the state. The only state highway included on the initial PFN was SR 113 from I-65 to US 29 due to its connectivity to US 29, access to the Pensacola metropolitan area, and status as a hurricane evacuation route.

Stakeholder Input
Input on the initial Statewide PFN was solicited during meetings with the FAC and MPOs as follows:

- FAC Meeting #2 held on October 7, 2015
- Regional meetings with MPO staff representatives
  - December 3, 2015 – Mobile MPO, Eastern Shore MPO, and Port Authority
  - December 8, 2015 – Birmingham MPO, Tuscaloosa MPO, Gadsden Etowah MPO, Calhoun Area MPO
  - December 9, 2015 – Decatur MPO, Huntsville MPO, Shoals Area MPO
  - December 10, 2015 – Auburn-Opelika MPO, Montgomery MPO, Columbus-Phenix City MPO

Revisions to the Statewide PFN recommended through the stakeholder meetings include:

- Additional facilities
  - Dothan Bypass
  - US 31 from Montgomery to Prattville
  - SR 157 from I-65 to US 72
  - SR 225 from I-565 to SR 53
  - SR 53 from SR 225 to Tennessee State Line
  - New Anniston Bypass (upon completion of construction)
- Removal of US 78 from I-22 to I-20 in Birmingham upon completion of I-22

In addition, the SR 158 corridor in the Mobile area was mentioned as a future facility, after its designation as US 98 upon completion of capacity improvements.
Figure 4-1: Initial Draft Statewide Primary Freight Network

Map by ALDOT Metropolitan Planning - 4/15/2015
Based on 2010 Census Data
Criteria Evaluation

The final step in the process was to assess all recommended facilities against the criteria for inclusion on the Statewide PFN: truck traffic volumes, overall system connectivity, and connectivity to major freight generators. The remaining US highways not already recommended for inclusion on the draft Statewide PFN were also included in the evaluation, specifically:

- US 11 throughout the state
- US 31 throughout the state
- US 78 from Birmingham to the Georgia state line
- US 90 throughout the state
- US 231 from Montgomery to Gadsden
- US 411 throughout the state

The results of the criteria evaluation were that:

- None of the US highway facilities listed immediately above were added to the Statewide PFN due to their lack of existing or projected truck volumes. Many of these facilities also run parallel to interstate facilities.
- US 29 was removed from the Statewide PFN due to its lack of connectivity to major freight destinations and low existing and projected truck traffic volumes.

Although none of the facilities that run parallel to the interstate system were shown to carry significant freight volumes (all segments were under 1,500 trucks per day), maintaining mobility along these facilities is important to ensuring the overall resiliency of the Statewide PFN in the event of interstate lane closures.

4.3 Final Statewide Primary Freight Network

The final Statewide PFN is presented in Figure 4-2. Significant characteristics include:

- There are approximately 3,050 centerline miles of roadways on the Statewide PFN
- The Statewide PFN encompasses nearly four times as many roadway miles as the Alabama portion of the national freight network, which totals 775 centerline miles
- The network contains all of the interstate facilities within the state, which comprises over 1,000 centerline miles and roughly one-third of the total Statewide PFN
- A majority of the network (roughly 60 percent) is comprised of principal arterials, totaling approximately 1,830 centerline miles

With respect to bottlenecks and congested areas:

- Only 1.3 percent of the Statewide PFN is currently operating at a V/C ratio greater than 1.0, which indicates some level of congested conditions
- By 2040, 35 percent of the Statewide PFN is projected to operate at V/C ratios greater than 1.0
- As shown previously in Figure 3-9, many facilities on the Statewide PFN will operate at V/C ratios much higher than 1.0 and are projected to be severely congested
- The growth in non-truck traffic is a major contributing factor to the significant increase in projected network V/C ratios exceeding 1.0
Figure 4-2: Final Statewide Primary Freight Network

The I-10 Mobile River Bridge project spans the Mobile River from Mobile County to Baldwin County. It is a part of the approved Mobile and Eastern Shore MPO Long Range Plan at an estimated cost of $900 million, with opening to begin in 2018 or $40 million per year for fifteen years.

Construction phases for the remainder of the Outer Loop are currently projected for 2020 and beyond. These schedules may change. Funding needs are available. Projections are estimated at $934.2 million in Year of Expenditure dollars.

Legend

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<th>Percent of Network</th>
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</thead>
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<td>32.8%</td>
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<td>37.5</td>
<td>0.9%</td>
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<td>39.7%</td>
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</tr>
<tr>
<td>Total</td>
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Source: ALDOT Metropolitan Planning Section - 1/21/2016

Based on 2010 Census Data
CHAPTER 5—FREIGHT INVESTMENT PLAN

Chapter 5 presents a representative listing of improvement projects identified as most critical for freight mobility throughout the state. The majority of improvements were gleaned from existing financially-constrained (funding identified) and visionary (unfunded) plans by ALDOT and the regional MPOs. A listing of projects under consideration for freight program funding is provided as Appendix E.

As noted in Chapter 1, development of this plan was initiated under the guidance of MAP-21 but completed after the passage of the FAST Act in December 2015. Key changes enacted by the FAST Act with respect to freight funding include:

- The provision for increased federal share (95 percent for interstate/90 percent non-interstate) for significant freight projects has been repealed
- The National Highway Freight Program (NHFP) apportions funds from the Highway Trust Fund to projects specifically to increase freight mobility
- A project must be specifically called out in a Freight Investment Plan within a Statewide Freight Plan meeting the requirements of the FAST Act to be eligible for apportioned freight funds
- It provides funding specifically for projects that serve to facilitate better intermodal freight connectivity
- States have until December 2017 to adopt a Statewide Freight Plan meeting FAST Act requirements

FHWA is in the process of developing more detailed guidance for the implementation of the FAST Act freight planning policies. More specifically, it is anticipated that clarification will be received on the following:

- The eligibility for NHFP funds for projects on the Statewide Primary Freight Network (PFN) and other facilities that are not on the National Highway Freight Network
- The specific requirements for Freight Investment Plans within Statewide Freight Plans
- The ability and procedures to transfer freight apportionments to other program areas
- Further definition of intermodal freight projects

5.1 SIGNIFICANT ALDOT WORK PROGRAM PROJECTS

To develop a baseline of improvements, planned and programmed improvements in ALDOT’s Comprehensive Project Management System (CPMS) were reviewed to inventory those located along the Statewide PFN facilities with a construction phase scheduled prior to 2030. Figure 5-1 shows the breakdown of projects by improvement type, including the number projects in each category and each category’s percentage relative to the total (170 projects).
5.2 WORK PROGRAM CAPACITY PROJECTS

Of the 170 projects planned for construction along the Statewide PFN in the ALDOT work program through 2030, a total of 27 (16 percent) are capacity improvements. Significant improvements include:

- Widening the I-10 Bayway and Mobile River bridge (2020) from Broad Street to Spanish Fort 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 (2021) and Cullman County (2025) from four to six lanes
- Widening I-85 in Montgomery County (2030) and Lee County (2030) from four to six lanes
- Widening I-565 from I-65 to US 31 (2023) as a new four-lane facility
- Widening US 98 in Mobile County from the Mississippi state line to east of Glenwood Road (2021) from two to four lanes
- Widening and relocating US 82 west of Gordo to the Tuscaloosa County line (2019) from two to four lanes
- Widening US 84 in Conecuh County from the Monroe County line to CR-7 (2030) from two to four lanes
- Widening SR 157 from SR 69 to east of US 31 in Cullman County (2020) from two to five lanes
- Widening US 72 in Madison County (2019), Limestone County (2019) and Lauderdale County (2027) from four to six lanes
- Widening US 43 in Clarke County (2020) from four to five lanes

Per base year and projected truck traffic characteristics, these improvements 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 segment of I-65 to be widened in Shelby County has been identified by MPO staff as a congested area and a critical link to freight traffic
• The segment of I-65 in Cullman County from Cullman south to the Blount County line also carries a high level of freight traffic and is projected to have congested conditions in 2040
• The segment of I-565 from downtown Huntsville to the Madison County line carries a high level of freight traffic and is projected to have congested conditions in 2040
• All of the segments of I-10 through Mobile County and Spanish Fort are currently experiencing high levels of traffic congestion and freight traffic that are projected to worsen by 2040

5.3 Visionary Capacity Projects
In reviewing MPO LRTPs statewide for projects along the Statewide PFN with great potential to improve freight mobility, the following capacity improvements with construction scheduled after 2030 (therefore unfunded and considered ‘visionary’) were identified:

- Widening/relocating SR 53 from north of Harvest Road to I-65 from two to four lanes (Huntsville MPO)
- Widening I-565 from I-65 to Wall Triana Highway (Huntsville MPO)
- Constructing Northern Beltline (SR-959) from I-59 to I-65 (Birmingham MPO)
- Widening I-59/I-20 from I-20 Interchange to Arkadelphia Road (Tuscaloosa MPO)
- Widening I-85 from SR 271 to SR 126 (Montgomery MPO)
- Widening I-459 from I-59 to Morgan Road (Birmingham MPO)

Several further improvements beyond those included in the CPMS and MPO LRTPs were identified through coordination with MPO staff. These include:

- Widening SR 53 from Jeff Road north to the Tennessee state line (Huntsville MPO)
- Improving southbound US 231 bridge over the Tennessee River (Huntsville and Decatur MPOs)
- Adding truck auxiliary lane on northbound I-65 at I-459 (Birmingham MPO)
- Widening I-20/59 from Jefferson County to Greene County (Tuscaloosa MPO)
- Improving I-20/59 at US 82 interchange (Tuscaloosa MPO)
- Extending US 11 from I-20/59 to SR 216 to provide alternate route when I-20/59 is closed (Tuscaloosa MPO)

In addition to the projects listed above, other visionary projects to improve freight movement and intermodal connectivity were identified during plan development which will likely be subject to application for federal funding from other sources, such as TIGER grants.

5.4 Areas of Concern Not Addressed in Current Plans
After comparing existing and projected bottlenecks against currently planned and programmed projects, projected deficiencies on these roadway segments along the Statewide PFN currently have no specific improvements identified to address congestion levels:

- I-65 from the I-85 interchange to SR 14 in Prattville
- I-459 from I-20 interchange to I-20/59 west of Birmingham

5.5 Significant Freight Maintenance and Operations Projects
The remaining 143 of 170 projects on the Statewide PFN with construction phases in CPMS through 2030 are maintenance and/or operations (MO) projects. For the purposes of this plan, MO projects were classified in four groups:
2016 Alabama Statewide Freight Plan

- Bridge
- Resurfacing
- Safety
- Operations

Characteristics of the MO improvements within the CPMS, as well as several key projects for each, follow.

**Bridge**
- 50 projects, comprising 35 percent of MO projects along the statewide PFN
- 14 projects are along the interstate system, including:
  - A series of improvements along I-65 within Montgomery, Shelby, and Elmore counties
  - I-10 tunnel rehabilitation in Mobile County
  - I-85 bridge widenings within Montgomery and Macon counties
  - I-65 crossings of the Tennessee River

**Resurfacing**
- 50 projects, comprising 35 percent of MO projects along the Statewide PFN
- 39 projects are along the interstate system, including:
  - 7 projects along I-20/59 west of Birmingham in Jefferson, Tuscaloosa, and Greene counties
  - 15 projects along I-65 throughout the entire length of the state, including at the intersection of SR 157 in Cullman County and from Main Street to SR 158 in Mobile County

**Safety**
- 30 projects, comprising 21 percent of MO projects along the Statewide PFN
- 25 projects are along the interstate system, including:
  - Slide correction improvements along I-20/59 within the Birmingham area
  - 13 roadway or interchange lighting projects
  - A significant non-interstate safety improvement is at the intersection of SR 20 and SR 157

**Operations**
- 13 projects, comprising 9 percent of MO projects along the Statewide PFN
- Significant improvements include:
  - I-10 interchange modifications from Texas Street to West Tunnel entrance in Mobile County
  - Interchange improvements at I-65 and US 31 in Shelby County
  - Interchange modifications at I-85 and Eastern Parkway (US 231/431) in Montgomery County
  - Access management plans along US 43 in Mobile County and US 82 in Tuscaloosa County

5.6 **Intermodal Projects**

As previously noted, projects that promote intermodal freight connectivity are eligible for FAST Act funding and encouraged through the 2016 TIGER Grant focus on economic competitiveness. Potential intermodal projects that will increase freight mobility include:
- Mobile Port Inter-Terminal Connector Road
- Theodore Port Rail On/Rail Off Terminal
• McAshen Drive improvements from I-20 to Norfolk Southern Terminal

In order to facilitate freight mobility throughout the state, ALDOT will continue to promote opportunities for intermodal connectivity and interagency coordination.

5.7 **Rail Crossings**

Roadway capacity and 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. That being said, several improvements to railroad crossings across the state (beyond those along the PFN) were identified by means of:

- Review of CPMS projects with a construction phase by 2030 that address bridge replacement over railroad facilities, railroad crossing safety improvements, new bridges over railroads, railroad restorations and intermodal facility improvements
- Input received from FAC and MPO staff members

In reviewing the CPMS, a total of 68 railroad and/or intermodal projects that contain a construction phase prior to 2030 were identified. Of these, 40 are railroad crossing safety improvements and 25 are bridge replacements or repairs over railroad facilities. The remaining projects consist of improvements to the Norfolk Southern Intermodal Facility, a new bridge on Hamilton Boulevard over the CSXT railroad crossing in Mobile County, and a railroad restoration project in Birmingham. While none of these projects are located along the Statewide PFN, maintaining safe railroad bridge crossings and railroad operations is critical to freight mobility statewide.

Several MPO representatives provided input on problematic railroad crossings within their regions for which future improvements should be considered, in coordination with the appropriate railroad(s):

- 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

5.8 **Truck Parking Needs**

One critical issue identified by FHWA is the provision of truck parking to promote safe conditions for truck drivers to rest and to avoid parking at potentially dangerous locations such as off-ramps. One of the requirements of 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 was undertaken to provide a profile of existing public parking facilities. As shown in Figure 5-2, there are a total of 6 welcome centers and 19 rest stops across the state. Of these, all but one (a rest area on US 331 in Covington County) are located along the Statewide PFN. Similarly, 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 statewide.

In addition to the State-run welcome centers and rest stops, a web search was undertaken to identify private sector facilities. The locations of two of the larger providers, Love’s and Travel America-Petro
Express, were inventoried. Much like the public sector facilities, these private sector facilities served areas with high freight travel throughout the state. More specifically, all of the facilities were located along the Statewide PFN. All 8 Travel America-Petro Express facilities, and 10 of the 12 Love’s facilities, were located along the interstate network.

5.9 **Applicable ITS Needs**

One of the objectives of both the FAST Act and MAP-21 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 those available to ALDOT that best serve freight mobility are:

- Adaptive signals
- Alabama Service and Assistance Patrol (ASAP)
- Advanced Traffic Management System (ATMS) warning systems
- Dynamic message signs
- ALDOT website
- Regional traffic management systems
- Signalized intersection railroad devices
- Traffic controllers and cabinets
- Tunnel control center
- Vehicle detection systems
- Weigh-in-motion equipment

Additional ITS infrastructure is also provided at the local and regional levels. A review of the CPMS for ITS projects scheduled for construction prior to 2030 identified a total of eight ITS improvements within the Birmingham area, including signalization and monitors throughout the region. In recognition of this emerging market in mobility solutions, ALDOT will continue to explore the implementation of ITS as technologies continue to evolve and become more cost efficient.
Figure 5-2: Rest Stops and Welcome Centers

Alabama's Welcome Centers and Rest Areas

ALDOT Contact Information

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<th>Area Offices</th>
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<td>Main Office</td>
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<tr>
<td>North Region</td>
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<td>Montgomery Area</td>
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Disclaimer of Liability

Neither the ALDOT nor the State of Alabama nor any employee thereof, makes any warranty, expressed or implied, with respect to the accuracy, completeness or usefulness of any information contained on this map.

ALDOT Facilities

- Welcome Center
- Rest Area

Administrative Data
- Region Line
- Area Line
- State Boundary
- County Boundary

Road Centerlines - ALDOT
- US Interstate
- US Highway
- State Capital
## Figure 5-2 (continued): Rest Stops and Welcome Centers

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*Note: This table lists the rest stops and welcome centers along the Alabama State Highway System. Services include restrooms, showers, and food service. Distance to the next stop is measured in miles. Comments may include additional information about each facility.*
CHAPTER 6—FREIGHT PERFORMANCE MONITORING PROCESS

MAP-21 called for the establishment of performance measures. In response, FHWA began working through the process toward a Final Rule, which is still ongoing. When complete, federal guidance on performance measures, as well as on setting performance targets and establishing an associated reporting process for states and MPOs, will be released. In the absence of federal rules, a universe of potential performance measures was identified based on available federal policy to date, a peer review process, and input from MPOs and stakeholders. No changes to the performance measures initially developed were recommended by stakeholders.

Establishing performance targets is the means by which states and MPOs can evaluate network mobility as a whole and the effectiveness of improvements towards meeting mobility goals. In turn, this ‘performance monitoring process’ informs the process by which identified improvement projects are prioritized for implementation. Given this direct linkage between performance and prioritization, performance measures were developed at two levels:

- Statewide Level – It is important to establish state metrics based on current conditions so that benchmarks can be developed to monitor improvements in statewide freight mobility.
- Corridor Level – The analysis of certain conditions such as congestion, delay, and connectivity to other major freight generators and intermodal facilities can assist policymakers to prioritize needed freight improvements throughout the state.

The performance measures developed on a statewide level for this Freight Plan should provide ALDOT with a snapshot of the overall performance of the Statewide PFN and a baseline from which to develop performance targets for freight mobility. It will be important to periodically re-evaluate the performance measures as more data becomes available, analysis tools evolve, and federal guidance is developed.

6.1 PERFORMANCE MEASURE DEVELOPMENT PROCESS

Peer Review

An early task in the plan development process involved a peer review of statewide freight plans from Florida, Georgia, Mississippi and Tennessee. The review yielded the following findings with regard to performance measures:

- All demonstrated a linkage of performance measures to federal and statewide policies as well as their goals and objectives.
- Being a statewide effort, performance measures should be kept at a very high level.
- The applicability and/or effectiveness of performance measures is inherently linked to the amount of data available at assess them.
- Input on the performance measures was provided by their respective freight advisory committees.

Based on these trends, the initial performance measures presented herein were developed in a manner consistent with those of Alabama’s bordering states. More detail on the peer review effort is provided in Interim Progress Report #1.
Review of Available Data Sources

The level of detail within performance measures is determined by the data available to evaluate them. As a result, some measures are more data-driven, or quantitative, than those relying on more qualitative assessments. The data sources available for quantitative assessments include:

- **Statewide Traffic Model** – The statewide traffic model can be a source for a number of network congestion and mobility related measures. Furthermore, factors such as delay can also impact other considerations, such as economic competitiveness and environmental sustainability (due to emissions).

- **ALDOT Pavement Management Program** – ALDOT maintains a database of pavement for all state roadways, which can be used to measure conditions statewide and assess maintenance needs along freight corridors.

- **ALDOT Bridge Program** – This program can be used to assess the number of weight-restricted bridges and/or those with a low sufficiency rating along the freight network.

- **Critical Analysis Reporting Environment (CARE)** – CARE is a data analysis tool that can be used to assess safety conditions on either a statewide or corridor level.

- **US Census Data** – This data can support the evaluation of statewide demographic measures, for example employment in freight related industries or concentrations of low income and minority populations for Environmental Justice corridor related analysis.

- **Comprehensive Project Management System (CPMS)** – The CPMS is a tool used by ALDOT to organize the implementation of transportation improvements. It can be utilized to assess the actual investment in freight related projects throughout the state.

- **Local Land Use and Environmental Data** – Usually transmitted via GIS files, this information provides a means for identifying major freight generators and environmentally sensitive resources.

Universe of Potential Performance Measures

The universe of potential performance measures for the Freight Plan is provided in Table 6-1. Of particular note:

- A direct linkage is shown between the goals, performance measures, and available data sources. With this linkage, these measures are also consistent with federal and state policy.

- Given that these performance measures are used to monitor conditions at a statewide level, they reflect the high-level assessment appropriate for statewide analysis.

- The number of measures is limited to avoid complicating the evaluation process and to make it easier for users, policymakers, and the public to understand.

As more data becomes available, analysis tools evolve, and federal guidance is developed, these performance measures will need to be periodically re-evaluated.
### Table 6-1: Universe of Potential Statewide Freight Plan Performance Measures

<table>
<thead>
<tr>
<th>Statewide Freight Plan Goals</th>
<th>Performance Measures—Statewide Level (PFN)</th>
<th>Performance Measures—Corridor Level</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Improve reliability and reduce congestion on the Statewide Primary Freight Network</td>
<td>Annual hours of truck delay along the Primary Freight Network (PFN)</td>
<td>Annual hours of truck delay</td>
<td>Statewide Traffic Model</td>
</tr>
<tr>
<td></td>
<td>Vehicle miles of travel (VMT) of truck traffic along PFN</td>
<td>VMT of truck traffic</td>
<td>Statewide Traffic Model</td>
</tr>
<tr>
<td></td>
<td>Total number of pass-thru trucks through Alabama along PFN</td>
<td>Overall truck volumes</td>
<td>Statewide Traffic Model</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Percent truck volume of total volumes</td>
<td>Statewide Traffic Model</td>
</tr>
<tr>
<td>Goal 2: Ensure a state of good repair along priority freight corridors throughout the state</td>
<td>Average pavement rating along PFN compared to statewide averages per functional class</td>
<td>Average pavement rating along corridor per statewide average per functional classification</td>
<td>ALDOT Pavement Management Program</td>
</tr>
<tr>
<td></td>
<td>Percentage of Maintenance &amp; Operations (MO) funding spent along the PFN vs. statewide (Minor Arterials and up)</td>
<td>Not applicable</td>
<td>Comprehensive Project Management System (CPMS)</td>
</tr>
<tr>
<td></td>
<td>Number of weight-restricted bridges along the PFN</td>
<td>Not applicable</td>
<td>ALDOT Bridge Program</td>
</tr>
<tr>
<td></td>
<td>Number of ALDOT low-rated bridges along the PFN</td>
<td>Not applicable</td>
<td>ALDOT Bridge Program</td>
</tr>
<tr>
<td>Goal 3: Improve economic benefits by supporting public and private sector investment in the statewide freight network</td>
<td>Annual hours of truck delay along the PFN</td>
<td>Annual hours of truck delay</td>
<td>Statewide Traffic Model</td>
</tr>
<tr>
<td></td>
<td>Statewide annual funds invested by ALDOT for freight-related projects vs. overall projects (capacity and MO)</td>
<td>Not applicable</td>
<td>Comprehensive Project Management System (CPMS)</td>
</tr>
<tr>
<td></td>
<td>Number of major generators within 15 miles of PFN</td>
<td>Number of active freight generators within 15 miles of the corridor</td>
<td>ALDOT Major Freight Generators</td>
</tr>
<tr>
<td></td>
<td>Percentage of Alabama workforce employed in freight-related industries</td>
<td>Not applicable</td>
<td>US Census American Community Survey</td>
</tr>
</tbody>
</table>
### Statewide Freight Plan Goals

<table>
<thead>
<tr>
<th>Performance Measures—Statewide Level (PFN)</th>
<th>Performance Measures—Corridor Level</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statewide annual crashes, injuries, and fatalities involving heavy trucks</td>
<td>Not applicable</td>
<td>Critical Analysis Reporting Environment (CARE)</td>
</tr>
<tr>
<td>Level of safety infrastructure along at-grade crossings along the PFN</td>
<td>Level of safety infrastructure along at-grade crossings</td>
<td>ALDOT Section 130 Program</td>
</tr>
</tbody>
</table>

| Performance Measures—Statewide Level (PFN) | Performance Measures—Corridor Level | Data Source(s) |
| Number of ITS implementation and/or operations-based projects identified in the Statewide Transportation Improvement Program (STIP) | Presence of ITS infrastructure components (e.g., Dynamic Message Signs, signal coordination, Traffic Management Center) | CPMS (Statewide) Project Sponsor (Corridor) |
| Percentage of total freight improvement costs dedicated to ITS implementation and/or operations-based improvements compared to statewide levels | Amount of investment of proposed project dedicated to ITS enhancements | CPMS (Statewide) Project Sponsor (Corridor) |
| Annual hours of truck delay along high priority freight network | Annual hours of truck delay | Statewide Traffic Model |
| Annual percentage of freight projects (identified in the Statewide Freight Plan) receiving environmental clearance without requiring the completion of an Environmental Impact Statement (EIS) | Qualitative assessment of NEPA issues along corridor (river crossings, swamps, historical features) | ALDOT (Statewide) GIS Data (Corridor) |
| Percentage of all plans developed through ALDOT administered funds with freight components that address Title VI compliance (includes Statewide Freight Plan, STIP, Regional Transportation Improvement Plans and LRTPs, regional freight plans, and local transportation plans) | Concentration of low income and minority populations along the corridor | ALDOT (Statewide) US Census American Community Survey (Corridor) |

### Federal Guidance

While specific FHWA guidance has not yet been developed, MAP-21 does call for the establishment of performance measures related to the following items:

- Pavement condition on the Interstate System and on the remainder of the National Highway System (NHS)
- Performance of the Interstate System and the remainder of the NHS
- Bridge condition on the NHS
- Fatalities and serious injuries (both number and rate per vehicle mile traveled) on all public roads
• Traffic congestion
• On-road mobile source emissions
• Freight movement on the Interstate System

These measures were not changed with the passage of the FAST Act. Given their direct lineage to federal freight policy, the performance measures serve to evaluate network performance in manner consistent with federal objectives.

6.2 PROPOSED MONITORING AND REPORTING PROCESS

One of the key aspects of MAP-21 was “the establishment of a performance- and outcome-based program. The objective of this performance- and outcome-based program is for States to invest resources in projects that collectively will make progress toward the achievement of the national goals.” With the establishment of performance measures comes the need to set targets for performance over time and to develop monitoring procedures. The key point in monitoring performance is to provide a basis for comparison of how the expenditure of funds has collectively improved the overall performance of the transportation network. Specific guidance on monitoring procedures, including how often targets are measured, is forthcoming. The FAST Act does not change the performance monitoring aspect of MAP-21; however, it does change the number of reporting cycles after which penalties are imposed for not meeting performance targets from two to one.

The FAST Act specifically calls for the update of the Statewide Freight Plan every five years, which could serve as an initial benchmark for developing monitoring procedures. Otherwise, there is currently no specific federal guidance regarding the frequency of performance monitoring and/or reporting.

6.3 PRIORITIZATION FRAMEWORK

The performance measures developed for this plan also contain corridor-specific measures that can serve as a means to educate decision makers in project prioritization. The corridor-specific measures address the same major areas of emphasis as the overall statewide measures for potential use to set performance targets. As a result, the utilization of these corridor-specific measures for prioritization should serve to enhance the overall performance of the network against the statewide measures.

6.4 MPO EVALUATION FRAMEWORK AND GUIDANCE

MPOs are also required by MAP-21 and the FAST Act to set targets for freight performance. However, no specific FHWA guidelines for performance monitoring have been developed for MPOs at either a network or corridor level at this time. Furthermore, there is no specific requirement that MPOs adopt a regional freight plan or element within their LRTPs. In the absence of specific guidance, it was presumed that principles guiding regional policy should be consistent with those at the statewide level.

Specific items called out for Statewide Freight Plans include:
• Identification of a state-designated freight network
• Establishment of an advisory committee on freight issues
• Development of a freight investment plan
• Development of performance measures and monitoring process
Based on these requirements, the recommended steps for MPOs with respect to freight planning are to develop:

- A recognized network that is critical to regional freight mobility
- A means for coordinating on regional freight issues
- Regional performance measures and monitoring procedures for freight mobility

The recommended steps at the MPO level are discussed in the following paragraphs.

**Developing a Draft Regional Freight Network**

While freight traffic occurs throughout an entire regional network at some level, there are certain facilities that carry higher levels due to their access to manufacturing and retail centers, connectivity throughout the region, and overall capacity and freight accommodations. Under the latest federal guidance, the need to formally establish a regional freight network is at the discretion of each MPO and should depend on the prevalence of freight within their respective regions. While a separate freight plan is not required, most regional MPOs include a specific freight element or address freight at some level within their respective LRTPs. Whether or not a formally recognized network is developed, regionally significant facilities for freight mobility should be acknowledged within the planning process to:

- Properly recognize the overall impact of freight on the mobility of the region
- Establish consistency with the Statewide Freight Plan
- Provide a baseline for MPOs to monitor freight mobility once federal rules are published by FHWA

Whether formally recognized or not, the recommended criteria for a prioritized network is:

- Presence on the Statewide PFN
- Serves existing and/or projected high truck traffic volumes
- Connectivity to major freight generators and/or intermodal facilities
- Connectivity to interstates and/or major highways

These measures are consistent with those used to establish the Statewide PFN.

**Develop a Means for Freight Coordination**

There are two primary means recommended for MPOs to coordinate on freight issues:

- Establish a regional freight advisory committee
- Integrate freight planning issues into existing coordination processes

Many MPOs throughout the US have established an advisory committee to assist with identifying and/or verifying freight issues throughout their specific regions. This group can also be engaged to validate the regional freight network, performance measures and monitoring processes. It is recommended that this committee consist of members from both the public sector (e.g., port and airport representatives, engineers, planners) and private sector (e.g., railroad representatives, freight logistics personnel, major business owners). The frequency of freight advisory committee meetings should depend on the size of the overall MPO and the prevalence of freight within their respective region.

For smaller MPOs, the establishment of a specific committee to address freight issues may not be necessary. All of the state’s MPOs have established technical and citizens committee structures within their planning process. Input on freight processes can be received through the inclusion of freight-related items on meeting agendas and by inviting representatives from freight-related agencies and industries to
participate. This would allow periodic input on freight issues while minimizing the commitment from private-sector representatives.

**Develop Regional Performance Measures and Monitoring Procedures**

A significant issue with the passage of MAP-21 and subsequently carried forward into the FAST Act is the requirement for MPOs to monitor performance of their planning program. In addition, MPOs need to develop criteria in a manner consistent with overall federal guidelines to prioritize projects. A universe of potential performance measures for Alabama MPOs, consistent with the overall goals of the Statewide Freight Plan, is included in Table 6-2. The level of staffing, significance of freight, and availability of data for analysis are key considerations in developing MPO performance measures.

Similarly, the level of available staffing is also a key consideration for MPO monitoring procedures. The frequency of the monitoring process will depend on the overall size and freight characteristics within each MPO. Ideally, each MPO should undergo the monitoring/evaluation process to coincide with those being undertaken by ALDOT so that the information provided through the ALDOT processes can be incorporated to maximize its utility at the MPO level. At a minimum, the monitoring process would occur during the LRTP update process.

Just as with the statewide procedures, formal development of performance targets and monitoring procedures for MPOs should not occur until the publication of federal guidance from FHWA. In the interim, some of the performance measures in Table 6-2 can be utilized to inform decision makers at the MPO level on the performance of their regional networks.
## Table 6-2: Universe of Potential MPO Freight Performance Measures

<table>
<thead>
<tr>
<th>Federal Policy Emphasis Areas</th>
<th>Statewide Freight Plan Goals</th>
<th>Potential MPO Performance Measures</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congestion Reduction/Mobility Preservation</td>
<td>Goal 1: Improve reliability and reduce congestion on the Statewide Primary Freight Network</td>
<td>Regional Measures for System Evaluation</td>
<td>Corridor Measures for Prioritization</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Annual hours of truck delay along regional freight network (RFN)</td>
<td>Annual hours of truck delay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>VMT of truck traffic along RFN</td>
<td>VMT of truck traffic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Overall truck volumes</td>
<td>Percent truck volume of total volumes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>AM and PM peak level of service (Volume to Capacity Ratio, V/C)</td>
<td></td>
</tr>
<tr>
<td>Infrastructure Condition</td>
<td>Goal 2: Ensure a state of good repair along priority freight corridors throughout the state</td>
<td>Average pavement rating along RFN compared to statewide averages per functional class</td>
<td>Average pavement rating along corridor per statewide average per functional classification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of weight-restricted bridges along RFN</td>
<td>Number of weight-restricted bridges along RFN</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Number of ALDOT low-rated bridges along RFN</td>
<td>Number of ALDOT low-rated bridges along RFN</td>
</tr>
<tr>
<td>Economic Competitiveness</td>
<td>Goal 3: Improve economic benefits by supporting public and private sector investment in the statewide freight network</td>
<td>Annual hours of truck delay along the RFN</td>
<td>Annual hours of truck delay</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Annual funds invested within MPO area for freight-related projects vs. overall projects (capacity and MO)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Freight related land uses within the corridor</td>
<td></td>
</tr>
<tr>
<td>Safety</td>
<td>Goal 4: Promote the safety and security of the freight infrastructure</td>
<td>Annual crashes, injuries, and fatalities involving heavy trucks throughout region</td>
<td>Annual crashes, injuries, and fatalities involving heavy trucks along corridor</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Level of safety infrastructure along at-grade crossings along RFN</td>
<td>Level of safety infrastructure along at-grade crossings</td>
</tr>
</tbody>
</table>
### Federal Policy Emphasis Areas

<table>
<thead>
<tr>
<th>Statewide Freight Plan Goals</th>
<th>Potential MPO Performance Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Innovative Operational Improvements</strong></td>
<td><strong>Regional Measures for System Evaluation</strong></td>
</tr>
<tr>
<td>Goal 5: Promote the use of ITS technologies to monitor and enhance the overall performance of the freight network</td>
<td>Number of ITS implementation and/or operations-based projects along RFN identified in TIP</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| **Environmental Sustainability/Environmental Justice** | | |
| Goal 6: Promote and enhance both the human and natural environment while enhancing the performance of the priority freight network | Annual hours of truck delay along RFN | Annual hours of truck delay | Regional Travel Demand Model Project Sponsor² |
| | | Potential impacts to natural environment along corridor | | |
| | | Concentration of low income and minority populations along corridor | | |

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1. Investment tracking tool would need to be developed by MPO
2. Means of evaluation to be developed by MPO
Appendix A
Interim Progress Report #1
June 11, 2015
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1.0 Introduction

This interim delivery summarizes activities conducted to date under Tasks 1, 2 and 3 of the scope of work to develop the 2016 Alabama Statewide Freight Plan (Freight Plan). The first three tasks, as outlined in the scope of services, are as follows:

Task 1: Review all MAP-21 and other federal and state laws and regulations pursuant to preparation of a statewide freight plan.

Task 2: Review all Title VI programs, processes, and procedures, and summarize state and MPO activities in a section entitled, “Title VI in the Preparation of the Statewide Freight Plan.”

Task 3: Develop a public involvement process for the Plan, consistent with state and federal requirements, and to include reengaging the Statewide Freight Advisory Committee.

The scope of services outlines this interim deliverable as follows:

Interim Progress Report 1: Includes draft Mission and Vision statements, MAP-21 requirements, regulatory authority, Title VI program compliance, and public involvement process compliance, which also includes progress toward reviving a Statewide Freight Advisory Committee. (Tasks 1-3)

In addition, several activities preparatory to subsequent tasks were also initiated. Most specifically, these activities relate to travel demand modeling and the identification of freight flows, as well as freight ITS technologies and applications.

2.0 Mission and Vision Statements

The draft mission statement and associated goals for the Alabama Statewide Freight Plan are presented below. These will guide ALDOT in developing a coordinated freight policy that meets the needs of the state while adhering to FHWA policy.

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: Ensure a state of good repair along priority freight corridors through the state
- Goal 2: Improve reliability and reduce congestion on the priority freight corridors
- Goal 3: Promote and enhance both the human and natural environment while enhancing the performance of the priority freight network
- Goal 4: Improve economic benefits by supporting public and private sector investment in the statewide freight network
- Goal 5: Promote the safety and security of the freight infrastructure

Based on the goals listed above, related performance measures will be developed for utilization in the project identification and prioritization process.

Vision Statement: The State of Alabama desires a safe, robust freight transportation system that supports the economic vitality of the State’s residents and businesses, provides increased transportation mobility and accessibility, and facilitates the efficient, integrated and safe movement of goods throughout the state.
3.0 MAP-21 Requirements and Regulatory Authority

3.1 National Freight Goals

MAP-21 establishes a policy to improve the condition and performance of the national freight network to provide the foundation for the United States to compete in the global economy and achieve the following goals (§1115; 23 USC 167):

- Invest in infrastructure improvements and implement operational improvements that:
  - Strengthen the contribution of the national freight network to the economic competitiveness of the United States
  - Reduce congestion
  - Increase productivity, particularly for domestic industries and businesses that create high-value jobs
- Improve the safety, security, and resilience of freight transportation
- Improve the state of good repair of the national freight network
- Use advanced technology to improve the safety and efficiency of the national freight network
- Incorporate concepts of performance, innovation, competition, and accountability into the operation and maintenance of the national freight network
- Improve the economic efficiency of the national freight network
- Reduce the environmental impacts of freight movement on the national freight network

3.2 National Freight Plan Requirements

In the absence of FHWA rulemaking, the goals for the National Freight Network, performance measures for the overall transportation network, and requirements of the National Freight Plan (§1115; 23 USC 167(f)(1)) provide the best policy guidance to ALDOT in moving forward with freight planning activities.

- Assess the condition and performance of the national freight network
- Identify highway bottlenecks that cause significant freight congestion
- Forecast freight volumes
- Identify major trade gateways and national freight corridors
- Assess barriers to improved freight transportation performance
- Identify routes providing access to energy areas
- Identify best practices for improving the performance of the national freight network and mitigating the impacts of freight movement on communities
- Provide a process for addressing multistate projects and strategies to improve freight intermodal connectivity

3.3 Interim Guidance for Statewide Freight Plans

Section 1118 of MAP-21 encourages each state to develop a comprehensive statewide freight plan for guiding state freight transportation investments. Specific elements recommended by MAP-21 include:

- Identify significant freight system trends, needs, and issues with respect to the state
- Describe freight policies, strategies, and performance measures that will guide freight-related transportation investment decisions
• Describe how the plan will improve the ability of the state to meet national freight goals established under section 167 of title 23, United States Code
• Show evidence of consideration of innovative technologies and operational strategies, including intelligent transportation systems that improve safety and efficiency of freight movement
• Consideration of improvements that may be required on routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment, and timber vehicles) is projected to substantially deteriorate roadways condition
• An inventory of facilities with freight mobility issues, such as truck bottlenecks, within the state, and a description of the strategies the State is employing to address those freight mobility issues

3.4 Enhanced Federal Share and Project Eligibility

MAP-21 allows the USDOT to increase the maximum federal share up to 95 percent for projects on the Interstate System, and up to 90 percent for other projects that are consistent with Section 1116(a) and (c) under 23 U.S.C. 167. Projects must be identified in a State Freight Plan and demonstrate improvements to freight movements, including making progress to freight performance targets established by a state pursuant to 23 U.S.C. 150(d).

Eligible projects for increased funding under MAP-21 are identified within Section 1116(c) under 23 U.S.C. 167 and listed below:

• Construction, reconstruction, rehabilitation, and operational improvements directly relating to improving freight movement high crash location (segment or intersection)
• Intelligent transportation systems and other technology to improve the flow of freight
• Efforts to reduce the environmental impacts of freight movement on the primary freight network
• Geometric improvements to interchanges and ramps,
• Railway-highway grade separation
• Truck-only lanes
• Climbing and runaway truck lanes
• Truck parking facilities eligible for funding within Section 1401 under 23 USC 137
• Real-time traffic, truck parking, roadway condition, and multimodal transportation information systems
• Improvements to freight intermodal connectors
• Improvements to truck bottlenecks

Since the enhanced match funds come from the same pool of FHWA dollars that ALDOT receives for all its projects statewide, there is currently no interest by ALDOT leadership in exercising the enhanced match option. However, the projects identified through the planning process would be eligible for this match in the event of a policy change.

3.5 Plan Ability to Meet National Freight Goals

In the absence of FHWA policy in developing freight performance measures or guidance to the states with respect to development of their individual State Freight Plans, ALDOT must rely on the National Freight Goals and National Freight Plan to provide guidance in meeting the overall objectives of MAP-21. With that said, there are several items already in the current scope of services that lend to meeting MAP-21 goals:
• Assessment of freight conditions throughout the state to reinforce and/or re-evaluate the importance
  the National Freight Network of in the movement of goods and commodities
• Continued identification of improvements to alleviate congestion and/or operational deficiencies
  throughout the state that impact freight movement and coordination with implementing agencies
  (ALDOT, MPOs, et. al.) to prioritize improvements that alleviate these needs
• Establishing criteria for the Statewide Freight Network that are consistent to those of the National
  Freight Network
• Soliciting specific economic development sector input from FAC members to understand potential
  emerging industries and associated freight movement trends

4.0 Title VI

Title VI refers to the entirety of statutory, regulatory, and other directives related to the prohibition of
discrimination in federally-funded programs, including the requirements to address Environmental Justice (EJ).
As a recipient of federal funding, ALDOT considered and incorporated Title VI requirements and Environmental
Justice principles during the development of the Statewide Freight Plan.

4.1 Environmental Justice Legislation

Title VI created the foundation for future Environmental Justice regulations. The Civil Rights Act of 1964, 42
USC 2000d, et seq. 42 USC 2000d prohibits exclusion from participation in any federal program on the basis of
race, color, or national origin, age, sex, disability, or religion. The implementing regulations of Title VI are found
at 49 CFR 21 and 23 CFR 200. In particular, 23 CFR 200.5(p) includes other civil rights provisions of federal
statues and related authorities that prohibit discrimination in programs and activities receiving federal
assistance.

The National Environmental Policy Act of 1969 (NEPA) addresses both social and economic impacts of EJ. NEPA
stresses the importance of providing safe, healthful, productive, and aesthetically pleasing surroundings for all
Americans, and provides a requirement for taking a “systematic, interdisciplinary approach” to aid in
considering environmental and community factors in decision making. Other significant legislation includes:

• **Rehabilitation Act of 1973** (29 USC 794) is the law prohibiting discrimination on the basis of a
disability, and in terms of access to the transportation planning process.
• **The Civil Rights Restoration Act of 1987** further expanded Title VI to include all programs and activities
  of Federal aid recipients, sub-recipients, and contractors whether those programs and activities are
  federally funded or not.
• **Americans with Disabilities Act of 1990** (42 U.S.C. 12131), which prohibits discrimination on the basis
  of disability by public entities and applies to all services, programs, and activities provided or made
  available by public entities.
• **Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations
  and Low-Income Populations** was signed by President Clinton in 1994. This piece of legislation
  directed every Federal agency to make Environmental Justice part of its mission by identifying and
  addressing all programs, policies, and activities that affect human health or the environment so as to
  identify and avoid disproportionately high and adverse effects on minority and low income
  populations. Federal, state, local, and tribal agencies must be proactive when it comes to determining
  better methods to serve the public who rely on transportation systems and services to increase their
quality of life. Transportation agencies that take a more proactive approach to the implementation of Title VI will reduce potential conflicts while simultaneously complying with other legislation.

- **Order on Environmental Justice (DOT Order 5610.2)** was issued by the United States Department of Transportation (DOT) in April 1997. DOT Order 5610.2 summarized and expanded upon the requirements of Executive Order 12989 to include all policies, programs, and other activities that are undertaken, funded, or approved by the Federal Highway Administration (FHWA), the Federal Transit Administration (FTA), or other USDOT components.

- **FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (DOT Order 6640.23)** was issued by the FHWA in December 1998. DOT Order 6640.23 mandated the FHWA and all its subsidiaries to implement the principles of Executive Order 12898 and DOT Order 5610.2 into all of its programs, policies, and activities.

- **Implementing Title VI Requirement in Metropolitan and Statewide Planning** was issued jointly by the FHWA and FTA in October 1999. This memorandum provides clarification for field offices on how to ensure Environmental Justice is considered during current and future planning certification reviews. The intent of this memorandum was for planning officials to understand that Environmental Justice is equally as important during the planning stages as it is during the project development stages.

- **Executive Order 13166: Improving Access to Services for Persons with Limited English Proficiency** was signed by President George W. Bush in 2000. The Executive Order requires Federal agencies to examine the services they provide, identify any need for services to those with limited English proficiency (LEP), and develop and implement a system to provide those services so LEP persons can have meaningful access to them. A subsequent Department of Justice policy document set forth compliance standards for LEP populations under the Title VI of the Civil Rights Act of 1964.

### 4.2 Environmental Justice Principles

The Statewide Freight Plan will work to uphold the following FHWA EJ principles to improve transportation decision making:

- Avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects, including social and economic effects, on minority populations and low-income populations
- Ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.
- Prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority and low-income populations
- Make better transportation decisions that meet the needs of all people
- Design transportation facilities that fit more harmoniously into communities
- Enhance the public involvement process, strengthen community-based partnerships, and provide minority and low-income populations with opportunities to learn about and improve the quality and usefulness of transportation in their lives
- Improve data collection, monitoring, and analysis tools that assess the needs of, and analyze the potential impacts on, minority and low-income populations
- Partner with other public and private programs to leverage transportation agency resources to achieve a common vision for communities
- Avoid disproportionately high and adverse impacts on minority and low income populations
• Minimize and/or mitigate unavoidable impacts by identifying concerns early in the planning phase and providing offsetting initiatives and enhancement measures to benefit affected communities and neighborhoods

4.3 Title VI in the Preparation of the Statewide Freight Plan

Based on the principles listed above, the following steps can be made to ensure the 2016 Alabama Freight Plan furthers the overall intent of the EJ legislation:

• Gather input from MPO representatives on the FAC to guide the development of the plan on specific EJ issues along significant freight corridors
• Conduct a high-level assessment (Census data survey) of proposed improvement areas to identify if potential EJ issues exist

ALDOT will continue to explore additional opportunities throughout the planning process.

5.0 Peer Review of Freight Plans and Policy

A review of peer freight plans was undertaken to provide useful information that may influence potential modifications to the Alabama Statewide Freight Plan. This review also serves to assist ALDOT in being more compliant with the latest MAP-21 legislation while continuing to meet the needs specific to the state. For the purpose of this analysis, the following plans from adjacent states were surveyed:

• Florida Mobility and Trade Plan (FMTP), Florida Department of Transportation (FDOT)
• Georgia Statewide Freight and Logistics Plan, Georgia Department of Transportation (GDOT)
• Mississippi Statewide Freight Plan, Mississippi Department of Transportation (MDOT)
• Tennessee Statewide Multimodal Freight Plan, Tennessee Department of Transportation (TDOT)

Within these plans, the following elements were surveyed:

• Goals and objectives developed to influence the overall direction of the plan
• Overview of the development of performance measures used to evaluate potential freight projects
• Procedures implemented for project prioritization

In addition to reviewing the contents of these plans, interviews were conducted with the key staff from FDOT, GDOT, MDOT, and TDOT who led these efforts.

5.1 Florida Mobility and Trade Plan (FMTP)

Completed in June 2013, the Florida Mobility and Trade Plan (FMTP) is a two-part document that contains a Policy Element and an Investment Element. The Policy Element serves to establish specific freight policy for the state based on other policies throughout the state and established freight needs, and document consistency with MAP-21 in order to meet FHWA criteria for State Freight Plans. The Investment Element calls out funding strategies and identifies a specific list of prioritized freight projects for the state.

5.1.1 Goals and Objectives

The FMTP has the following objectives:

• Objective 1: Capitalize on the freight transportation advantages of Florida through collaboration on economic development, trade, and logistics programs
• Objective 2: Increase operational efficiency of goods movement
• Objective 3: Minimize costs in the supply chain
• Objective 4: Align public and private efforts for trade and logistics
• Objective 5: Raise awareness and support for freight movement investments
• Objective 6: Develop a balanced transportation planning and investment model for all forms of transportation
• Objective 7: Transform FDOT’s organizational culture to include consideration of supply chain and freight movement issues

The Policy Element of the FMTP includes a comparison of these objectives to the goals of MAP-21.

The FMTP also identified the role of the State of Florida in planning for freight:

• Identification of significant freight system trends, needs and issues with respect to the State
• Description of the freight policies, strategies, and performance measures that will guide the freight-related transportation investment decisions of the State
• Description of how the plan will improve the ability of the State to meet the national freight goals established under Section 167 of Title 23, United States Code
• Evidence of consideration of innovative technologies and operational strategies, including Intelligent Transportation Systems, that improve the safety and efficiency of freight movement
• In the case of routes on which travel by heavy vehicles (including mining, agricultural, energy cargo or equipment and timber vehicles) is projected to substantially deteriorate the condition of roadways, description of improvements that may be required to reduce or impede the deterioration
• Inventory of facilities with freight mobility issues, such as truck bottlenecks, within the state
• Description of the strategies the State is employing to address those freight mobility issues

5.1.2 Performance Measures

FDOT’s Statistics Office developed the Florida Multimodal Mobility Performance Measures Source Book, which is a collection of current and historical data and analysis describing the performance of Florida’s transportation system. It is intended to be the primary source of mobility performance measure results for the State of Florida. Mobility is broadly defined as the movement of people and goods, and there are four dimensions related to travel:

• Quantity – How much freight is moved and how many people are served
• Quality – How good or bad the travel experience is
• Accessibility – Ease in engaging in activities
• Utilization – How much of the transportation system is used/available

Measures are structured to four areas: highway, aviation, rail, and seaport.

5.1.3 Project Prioritization

The FMTP has a detailed prioritization process based on their objectives. The prioritization process consists of five steps:

• Development of Florida freight project prioritization criteria
• Rating of projects according to selected criteria
Incorporation of criterion importance weighting
Compilation of project scores and prioritization grouping
Evaluation of return on investment

Projects are evaluated based on the following 27 criteria:

- Addresses a specific transportation challenge for an Enterprise Florida identified targeted industry
- Improves access to/from an existing or developing freight hub
- Improves Intermodal Logistics Center’s (ILCs) export capability/capacity
- Supports/strengthens the unique niche of a seaport, airport, spaceport, rail freight terminal, or Intermodal Logistics Center (ILC)
- Is in response to an identified market need
- Is on a facility designated as the Florida Freight Network
- Eliminates a freight bottleneck
- Provides a dedicated freight facility or freight shuttle that restores capacity for freight movement
- Uses Information Technology Systems (ITS) technology to improve system operations
- Improves a truck parking situation
- Improves safety and security at rest stops/layover areas/other facilities
- Stimulates use of marine highways/short-sea shipping
- Reduces empty backhaul movements to cut shipping costs
- Improves access to Compressed Natural Gas (CNG)/Liquefied Natural Gas (LNG) or other alternative fuels
- Minimizes costs through the entire supply chain to support manufacturing
- Private funding (applicant to provide percentage of private funding proposed)
- Is in a local freight plan (applicant must cite the local freight plan and any applicable project priority)
- Is consistent with a statewide modal plan (applicant must cite the statewide modal plan and any applicable project priority)
- Supports an emerging freight facility (spaceport, marine highway, etc.)
- Benefits taxpayers (applicant to provide detailed list of benefits)
- Provides significant intermodal benefits (multiple freight modes)
- Total cost (applicant to provide detailed total project cost estimate)
- Funding status (applicant to provide the current status of any non-FDOT sources of revenue committed or eligible—full/partial/eligible/unfunded)
- Timing and readiness (applicant to provide project status)
- TIP/STIP inclusion (applicant must cite the plan)
- Dependency (applicant to provide list of any associated projects)

5.2 Georgia Statewide Freight and Logistics Plan

Completed in 2012, the Georgia Statewide Freight and Logistics Plan was primarily a strategy to increase the efficiency of goods movement based on projected growth to promote economic development. Although developed prior to MAP-21, GDOT has since completed in-house revisions to the plan that have resulted in its recognition by FHWA as being compliant with MAP-21.
5.2.1 Goals and Objectives

The Plan does not call out specific goals and objectives. However, given its purpose of evaluating and prioritizing improvements to improve the overall economy of the state and prioritizing major corridors, it is inherently consistent with MAP-21.

5.2.2 Performance Measures

There are no specific performance measures except benefit cost. The plan used the following methodologies to identify needed projects throughout the state:

<table>
<thead>
<tr>
<th>Marine Port Projects</th>
<th>Recent reports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rail Projects – Crescent Corridor</td>
<td>Previous analysis</td>
</tr>
<tr>
<td>Rail Projects – Other improvements</td>
<td>Top-down estimate using previous reports</td>
</tr>
<tr>
<td>Highway Projects – Add capacity to long-haul interstates</td>
<td>GDOT statewide travel demand model</td>
</tr>
<tr>
<td>Highway Projects – Improve interstate interchanges</td>
<td>“Off-model” analytical technique</td>
</tr>
<tr>
<td>Highway Projects – Develop urban “bypasses”</td>
<td>GDOT statewide travel demand model</td>
</tr>
<tr>
<td>Highway Projects – Add capacity to rural freight corridors</td>
<td>GDOT statewide travel demand model</td>
</tr>
<tr>
<td>Highway Projects – Develop safety projects</td>
<td>“Off-model” analytical technique</td>
</tr>
<tr>
<td>Air Cargo Projects</td>
<td>Qualitative descriptions from discussions with airport staff</td>
</tr>
</tbody>
</table>

5.2.3 Project Prioritization/Evaluation Procedures

Basically, the plan uses a benefit cost analysis to evaluate all project types. Highway projects were grouped into packages based on geographic location along priority highway corridors in the state.

Five types of highway improvement projects were identified as part of the GDOT Plan:

- Long-haul interstate corridors
- Interstate interchanges
- Urban bypasses
- Smaller urban and rural freight corridors
- Highway safety projects

5.3 Mississippi Statewide Freight Plan

The Mississippi Statewide Freight Plan (MSFP) was completed in February 2015. It is the first plan completed by the state and was developed in response to the MAP-21 legislation.

5.3.1 Goals, Objectives and Performance Measures

The MSFP goals, objectives and performance measures are tied specifically to national freight policy goals noted in MAP-21 and Mississippi’s overall transportation goals within its statewide transportation plan (MULTIPLAN 2035). The MSFP also demonstrates how they are directly linked to one another to meet the overall objectives of MDOT and FHWA, as demonstrated below.
<table>
<thead>
<tr>
<th>MDOT Statewide Plan Goals</th>
<th>MDOT Statewide Freight Goals</th>
<th>MDOT Freight Objectives</th>
<th>MDOT Freight Performance Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Development: Provide a transportation system that encourages and supports Mississippi’s economic development</td>
<td>Improve economic benefits of the statewide freight network</td>
<td>Increase public investment to facilitate freight system improvements that generate jobs and enhance Mississippi’s competitive position</td>
<td>Statewide annual funds invested by MDOT for freight-related projects through its Multi-Modal Transportation Improvement Program</td>
</tr>
<tr>
<td>Accessibility and Mobility: Improve accessibility and mobility for Mississippi’s people, commerce and industry</td>
<td>Improve reliability and reduce congestion on the priority freight corridors</td>
<td>Provide reliable and predictable travel times along identified freight corridors by reducing time delays</td>
<td>Annual hours of truck delay (AHTD) on the MFN Tier I and Tier II highway corridors</td>
</tr>
<tr>
<td>Safety: Ensure high standards of safety in the transportation system</td>
<td>Protect the safety and security of freight infrastructure</td>
<td>Reduce the number and rate of freight-movements related fatalities and injuries</td>
<td>Statewide annual crashes, injuries, and fatalities involving heavy trucks</td>
</tr>
<tr>
<td>Maintenance and Preservation: Maintain and preserve Mississippi’s transportation system</td>
<td>Maintain the MS freight network infrastructure in a state of good repair</td>
<td>Continuously improve infrastructure conditions that affect freight bottlenecks and reliability issues</td>
<td>Percentage of the MFN highway pavement in good condition based on the International Roughness Index (IRI)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Number of posted weight-restricted highway bridges on the MS Freight Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Statewide percent of rail network supporting 286k weight limits</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Channel depth for MS coastal ports (maintain authorized depth) and river ports (response time to recover to 12’ minimum depth after a drought or flood)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Volume to capacity ratio (V/C) on the airports serving MFN: (Jackson-Evers International Airport (JAN) and Gulfport-Biloxi International Airport (GPT) (capacity includes the total storage space for air cargo, ramp space and capacity in tonnage; volume refers to cargo volumes in tonnage)</td>
</tr>
<tr>
<td>Environmental Stewardship: Ensure that transportation system development is sensitive to Human and Natural Environmental Concerns</td>
<td>Protect and enhance the environment while enhancing the freight network performance</td>
<td>Implement freight-specific environmental stewardship programs to reduce impact of freight movement in the state’s communities</td>
<td>Statewide annual number of hazmat spills across he MFN.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(Future measure) Designated MS nonattainment areas for all criteria pollutants.</td>
</tr>
</tbody>
</table>
5.3.2 Project Prioritization/Evaluation

In order to provide a rationale for the identification and prioritization of projects, MDOT established principles for consideration that were consistent with the overall goals and objectives of the plan. They are as follows:

- Safety Improvements – MDOT’s overall departmental goals place very high priority on public safety. Freight safety projects directed at high-crash locations or sections of road or railroad have promise of returning high public safety benefits relative to project cost and directly reflect MDOT’s priority for protecting public safety.
- Investment (Infrastructure) Preservation – Overall MDOT goals also place high priority on infrastructure investment preservation. Failure to provide adequate maintenance for infrastructure preservation invariably leads to higher future costs, as routine maintenance is replaced by much more costly reconstruction. Poor infrastructure condition also affects freight carrier operating costs, in terms of vehicle/rolling stock maintenance and travel time.
- Operational Efficiency Enhancement – MDOT has an active program for implementing high-tech traffic management strategies based on ITS technologies. Elements such as Weigh-in-Motion truck weight stations lower regulatory costs and improve freight carriers operations. Enhanced deployments with additional commercial vehicle applications, such as real-time travel information to avoid delays and increase reliability, can be cost-effective when incorporated into broader regional applications.
- Reliability Enhancement – For freight carriers, reliability is directly related to capacity and levels of congestion. Congestion occurs at a corridor level, affecting both commercial carriers and the general traveling public, and is a function of highway or rail line capacity and restrictions that are presented by vertical or horizontal clearance for freight vehicles. Congestion also occurs in focused bottlenecks such as congested highway interchanges, intermodal yards, or “last-mile” access to major freight generators or intermodal facilities such as ports. Of the various freight improvement strategies, reliability enhancement driven by increased capacity is generally the most expensive and time-consuming to implement.

Input from the MSFP Freight Advisory Committee also played a role in the project identification and prioritization process.

5.4 Tennessee Statewide Freight Plan

The Tennessee Statewide Multimodal Freight Plan is still in draft form and has not yet been released to the public. It is the first plan completed by the state and was developed in response to the MAP-21 legislation. The plan is expected to be finalized in late summer. While the plan is still in draft form, TDOT staff did participate in the peer review interviews, as detailed in the next section.

5.5 Implications for Alabama Statewide Freight Plan

The following can be gleaned from the review of the statewide freight plans of adjacent states.

5.5.1 Florida Mobility and Trade Plan

- Plan objectives are consistent with the overall intent of MAP-21 and should be considered for the development of the overall vision of prioritization criteria utilized by the ALDOT plan.
• The FMTP provides a wide menu of potential measures that can be implemented for freight assessment over time.
• The “Quantity, Quality, Accessibility, and Utilization” preliminary framework is a solid basis for developing performance measures for the ALDOT plan.

5.5.2 Georgia Statewide Freight and Logistics Plan

• The most important takeaway from the Georgia plan is the utilization of high-level assessment to develop the performance measures for the state, which appears to be in line with the data available for the ALDOT effort.
• The improvement types utilized by GDOT may also serve as a useful means of project organization.
• The travel demand model was a key tool in the project evaluation process.

5.5.3 Mississippi Statewide Freight Plan

• MDOT’s methodology of linking the freight goals, objectives, and performance measures should be considered for the ALDOT update. Through demonstrating this linkage, ALDOT provides a clear understanding of how the plan meets the needs of the state while adhering to the overall policy direction of FHWA.
• Developing a project identification and prioritization process that is directly related to the plan provides a transparent rationale for stakeholders and policy makers.

5.6 Peer Review Interview Results

In order to supplement the review of the plans listed above, interviews were conducted with key staff from the respective DOTs. Interviewees included:

• FDOT – Ed Lee
• GDOT – Tom McQueen, Stanton Reecy
• MDOT – Trung Trinh
• TDOT – Bob Rock

Interviewees were asked specific questions to guide the discussion, as listed below:

• How have the results of the freight plan impacted DOT practices and/or programs? Is your state implementing the 90-95% match on specific freight improvements?
• What data sources did you find were the most intuitive for identifying and assessing your statewide freight network?
• Briefly describe the level of coordination with the MPOs throughout the state. What type of information (if any) did they provide as assistance in the effort?
• How effective was engaging the private sector in the planning process? Which participants were the most active? What type of information did they provide?
• What were some of your biggest challenges in completing your plan?
• How was Title VI incorporated into your plan?

It should also be noted that the interviewees agreed to assist ALDOT with any additional questions or inquiries during plan development.
A summary of the input received is provided below. The notes from each of the individual interviews is appended to this document.

- In all of the peer states, the freight plan has resulted in overall shifts in their respective work programs with regard to project prioritization. In Florida, several additional actions have taken place, including:
  - Assignments have been made to agencies throughout the State government to facilitate the plan’s recommendations given their respective responsibilities (workforce training, job placement, etc.) based on the implementation guide within the FMTP.
  - FDOT established the full-time positions of District Freight Coordinators to assist in addressing more regional and localized freight issues.
  - FDOT has instituted an internal educational program that consists of courses taught by private sector logistics professionals.
  - FDOT has integrated more freight-related measures, design standards and practices in their overall work program.

- All of the peer states are moving forward with pursuing the increased federal share (90-95% match) for freight related projects. Their rationale was primarily to provide more flexibility for allocating their state funds. With that said, concerns have been raised in Mississippi and Tennessee on how the higher utilization of these FHWA funds may potentially impact their overall work programs.

- MDOT is currently in the process of incorporating freight measures into the overall project prioritization process for the state as a result of the plan.

- All of the states utilized the IHS Transearch Global Insights data for their planning efforts.

- FAF data was referenced as a secondary data source by FDOT and GDOT. It was not utilized for the MDOT effort due to the use of HPMS data from a regional perspective.

- TDOT also utilized data from the American Transportation Research Institute (ATRI) for truck travel information.

- All of the peer states involved their respective MPOs at varying levels. GDOT, MDOT, and TDOT included all of the MPOs within their respective FACs. GDOT also conducted interviews with and presented to various MPOs throughout the state. While FDOT doesn’t have a designated FAC, MPOs were engaged several different ways:
  - At the beginning of the process, listening sessions were held throughout the state (Tampa, Miami, etc.) to gather input from both public and private sector interests.
  - Stakeholder Working Group meetings were held at plan development milestones that allowed any interested party, including MPO staff, to call in and participate.
  - Visioning sessions were held throughout the state to gauge both public and private opinions on where Florida and their perspective regions will be in 2050 in order to provide FDOT direction in developing its recommendations. Roughly 100 people from MPO staff and advisory councils participated in the event.
  - Individual meetings and/or briefings were also held with individual MPOs as needed.

- The most valuable contribution from the MPOs is input with respect to bottleneck locations.

- All of the peer regions had active coordination with the private sector. All had FAC representatives from various rail, trucking, and logistics professionals. In Florida, additional visioning sessions and working group meetings were held with private sector interests.
In general, input from the trucking industry sometimes was perceived as a bit fragmented given the proprietary nature of their data, but was supplemented with publicly-available data from FHWA.

To some degree, all peer states faced a challenge in developing consensus for a prioritized freight improvement list amongst the different stakeholders and interests.

Another major challenge faced by most peer states was keeping the study at a statewide scope and not delving into details in specific urbanized areas, such that MPOs can take their detailed look at freight movement in their areas, especially in freight-intensive MPOs. The exception was Florida, whose plan also focused in detail on last mile connections.

Title VI was not specifically addressed in any of the plans from the peer states; however, all of the interviewees reiterated a commitment from their respective states to comply with Title VI during the implementation of their projects, programs, and policies.

### 6.0 Public Involvement Process and the Statewide Freight Advisory Committee

#### 6.1 Purpose, Role and Charge

The public involvement process for the 2016 Alabama Statewide Freight Plan will focus outreach efforts on a broad base of public and private sector stakeholders directly involved in all modes of freight transportation—trucking, rail, ports, inland waterways, pipeline, and aviation. A significant portion of freight transportation in Alabama is a private sector enterprise, with improvements and investments made by each operator to address its specific needs and business goals. Aside from its primary charge of maintaining the highway transportation system, ALDOT’s role is to support the operators to the best of its ability, within the limits of its authority and means.

In accordance with MAP-21 recommendations, a Freight Advisory Committee (FAC) composed of a cross section of public and private sector experts and stakeholders, will be established. The charge of the freight advisory committee will be:

- Advising ALDOT on freight-related issues, priorities, and funding
- Providing a forum for discussion of freight-related decisions
- Communicating and coordinating regional priorities to all parties
- Promoting the exchange of information between public and private sectors
- Participating in the development of the 2016 Alabama Statewide Freight Plan

Coordination with the FAC will be key at the following milestones:

- Review of Draft Freight Network, including modal and intermodal resources
- Review of Freight Improvement Strategies and known Performance Measures
- Review of Draft 2016 Alabama Freight Plan

#### 6.2 FAC Composition

As a whole, the FAC membership will have direct knowledge of and connections with all freight modal networks (roadway, rail, air, and water), and represent users/shippers and policymakers from both the public and private sectors. As is the case historically and with other ALDOT modal plans, the role of the FAC will be advisory only. The consultants will also maintain a general stakeholders list that includes a much broader representation of relevant freight and interested organizations and/or individuals.
A preliminary draft list of entities to be represented on the FAC was compiled and reviewed with ALDOT staff. In preparing the preliminary list of FAC invitees, the consultant team reviewed the membership of the Statewide Freight Advisory Committee originally established for the 2010 Alabama Statewide Freight Study and Action Plan, as well as the stakeholder list for the recently completed 2014 Alabama Rail Plan. In addition, the consultant team also researched the composition of other states’ FACs for their recently completed or underway State Freight Plans. During the discussions with ALDOT staff, it was determined that 15-20 organizations would be targeted for invitation on the FAC.

A final list of invitees was prepared and submitted to ALDOT staff for concurrence. That list includes:

- State agencies and Tribal governments
  - Alabama Department of Economic and Community Affairs
  - Alabama Public Service Commission
  - Alabama Department of Public Safety
  - Poarch Band of Creek Indians
- Regional governments
  - Birmingham MPO (Regional Planning Commission of Greater Birmingham)
  - Mobile MPO (South Alabama Regional Planning Commission)
  - Florida-Alabama TPO
- Ports/Intermodal/Trucking
  - Alabama State Port Authority
  - International Intermodal Center, Port of Huntsville
  - Alabama Trucking Association
- Rail
  - Alabama Railway Association
  - CSX Transportation, Inc. (Class I railroad)
  - Norfolk Southern Corporation (Class I railroad)
  - Genesee & Wyoming, Inc. (Class II and III railroads)
- Industry
  - Chamber of Commerce Association of Alabama
  - Business Council of Alabama

After review and approval by ALDOT staff, an invitation letter, on ALDOT letterhead and signed by Mr. Jilla, was sent by US mail to the recommended member organizations. Several days later, a follow-up invitation identical in content to the letter was sent via email to those whose email address was available. The initial contact was addressed to the head of each organization (director level), except in a few instances where a more appropriate contact was known (e.g., regional director level). The invitation requested that each organization provide the name and contact information for a specific FAC designee. Each organization will be represented by only one individual on the FAC, although additional contacts will be added to the stakeholders list to be kept abreast of Freight Plan development activities.

Of the initial 16 organizations invited to participate on the FAC, 9 have responded to date. Telephone contact is currently underway with the organizations who have not responded.
6.3 FAC Meeting #1

The initial FAC meeting is scheduled for Thursday, June 25 at 1:30 PM at the ALDOT Central Office. An internal JRWA/ALDOT team meeting preparatory to the FAC meeting is scheduled for Wednesday, July 17.

Items to be covered during the initial FAC meeting include:

- Review project purpose and FAC role
- Receive comments on preliminary Statewide Freight Network and input on localized freight mobility and economic development factors
- Review and comment on preliminary Freight Plan goals and performance measures
- Discuss key points/elements of freight improvement strategy

6.4 Fact Sheet and Website

A general fact sheet for the Freight Plan effort was developed and submitted to ALDOT staff for review. The content of the fact sheet will serve as the initial information about the Statewide Freight Plan effort on ALDOT’s Freight Planning webpage (http://cpmsweb2.dot.state.al.us/TransPlan/FreightPlanning/Default.aspx). Additional materials prepared during plan development, including network maps, meeting materials and draft interim deliverables, will also be made available for posting on the website.

In addition, an ALDOT email address has been established for stakeholders and the general public to provide comments and request to be kept informed: PLAN@DOT.STATE.AL.US. The email will be accessed from a link on the Bureau of Transportation Planning and Modal Programs website main page, with appropriate text to direct visitors to the Freight Planning site and available plan materials. Emails sent to this email address will be automatically distributed to Victor Jordan and Bryan Fair at ALDOT and Carla Bamatraf with the consultant team.

7.0 Statewide Modeling Effort Overview

The statewide freight modeling process is outlined in the following graphic. The process will focus on the disaggregation of Freight Analysis Framework, Version 3.5 data into county and census tracts using employment data obtained from the Business Census. The roadway network will be developed using Interstates, US Highways and Alabama Highways. The individual commodities will be assigned to the network independently and aggregated to determine the total freight volume projected for each roadway.
8.0 Alabama 2012 Freight Flow Characteristics

The data presented in this section represents the 2012 snapshot of freight flow in Alabama. The forecast (future year) freight flow and comparison of freight activity is being developed and will be included in a later interim report. Additionally, a comparison of future trends will also be added at a later date as the statewide freight model focuses on the forecast of freight.

The total number of freight tonnages for 2012 which related to the state of Alabama is 515,498.5612 kilo tons. The number includes not only domestic freight flow, but also imported and exported freight flow in Alabama. It is necessary to classify the total tonnage according to the specific characteristics. This interim report sets up certain standards and classifies the total freight tonnage as specific types of freight tonnage. All of the numbers of freight movements herein are extracted from Freight Analysis Framework version 3.5.

8.1 Criteria

The freight flow can be assorted as domestic freight flow and international freight flow. International freight flow can be further classified as imported freight flow and exported freight flow. The term “domestic freight flow” is defined as the freight flow produced and/or consumed in the state of Alabama. The term “imported freight flow” is defined as internationally imported freight cargoes to the U.S. with the final destination in the state of Alabama; “exported freight flow” means that the freight flow originated from the U.S and the freight volume was exported via Alabama.
Each classified flow can then be divided as internal flow, inbound flow, and outbound flow based on freight activities in Alabama. “Internal flow” means that the freight flows within Alabama. “Inbound flow” is defined as freight flow that originated from out-of-state and is destined to Alabama. On the other hand, “outbound flow” is defined as freight flow that originated from Alabama and is destined to out-of-state.

8.2 Overview

Table 1: Overall Freight Activities in Alabama

<table>
<thead>
<tr>
<th>Type</th>
<th>Freight Flow in Alabama</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>515,498.5612</td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td>466,272.5893</td>
<td>90.45%</td>
</tr>
<tr>
<td>Imported</td>
<td>26,114.0954</td>
<td>5.07%</td>
</tr>
<tr>
<td>Exported</td>
<td>23,111.8765</td>
<td>4.48%</td>
</tr>
</tbody>
</table>

The total freight flow in Alabama is 515,498.5612 kilo tons. The domestic freight flow is 466,272.5893 kilo tons, or approximately 90 percent of total freight volume. International trade freight volume (imported and exported) occupies only less than 10 percent of total freight volume in Alabama.

Table 2: Freight Tonnage by Activity Type

<table>
<thead>
<tr>
<th>Type</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>515,498.5612</td>
<td>100%</td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>252,184.3574</td>
<td>48.92%</td>
</tr>
<tr>
<td>Inbound</td>
<td>120,937.7716</td>
<td>23.46%</td>
</tr>
<tr>
<td>Outbound</td>
<td>93,150.4603</td>
<td>18.07%</td>
</tr>
<tr>
<td>Exported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>13,676.2080</td>
<td>2.65%</td>
</tr>
<tr>
<td>Inbound</td>
<td>5,065.3511</td>
<td>0.98%</td>
</tr>
<tr>
<td>Outbound</td>
<td>4,370.3174</td>
<td>0.85%</td>
</tr>
<tr>
<td>Imported</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Internal</td>
<td>13,765.8408</td>
<td>2.67%</td>
</tr>
<tr>
<td>Inbound</td>
<td>7,354.8885</td>
<td>1.43%</td>
</tr>
<tr>
<td>Outbound</td>
<td>4,993.3661</td>
<td>0.97%</td>
</tr>
</tbody>
</table>

Approximately half of freight flow related to the state of Alabama is domestic internal flow. In other words, half of freight volume is produced and consumed in Alabama.
8.3 Domestic Freight Flow

Domestic freight flow indicates the freight volume is produced and consumed in the U.S. The freight volume is not exported or imported with international trade partners.

8.3.1 Domestic Internal Freight Flow

Domestic internal freight flow represents that the freight volume is produced and consumed in the state of Alabama. The volume is not imported and exported with other states and international trade partners. The freight volume is only transported within Alabama.

### Table 3: Domestic Internal Freight Volume

<table>
<thead>
<tr>
<th>Origin/Destination</th>
<th>Birmingham</th>
<th>Mobile</th>
<th>Remainder of Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birmingham</td>
<td>54,726.3366</td>
<td>974.392</td>
<td>17,242.7788</td>
</tr>
<tr>
<td>Mobile</td>
<td>356.3935</td>
<td>11,144.7382</td>
<td>2,092.5327</td>
</tr>
<tr>
<td>Remainder of Alabama</td>
<td>13,898.0161</td>
<td>3,063.7063</td>
<td>148,715.4632</td>
</tr>
</tbody>
</table>

The Table 3 shows the origin/destination freight flow matrix (O/D matrix).

### Table 4: Domestic Internal Freight Volume by Modes

<table>
<thead>
<tr>
<th>Origin</th>
<th>Birmingham</th>
<th>Mobile</th>
<th>Remainder of Alabama</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destination</td>
<td>BIRM(MOB)</td>
<td>REM</td>
<td>BIRM(MOB) REM</td>
</tr>
<tr>
<td>Truck</td>
<td>46,389.95</td>
<td>584.58</td>
<td>16,962.74 1,894.59</td>
</tr>
<tr>
<td>Rail</td>
<td>5,674.11</td>
<td>371.49</td>
<td>44.99     111.14</td>
</tr>
<tr>
<td>Water</td>
<td>0.00</td>
<td>0.74</td>
<td>2.33      65.72 0.31</td>
</tr>
<tr>
<td>Air</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00      0.00 0.00</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>55.97</td>
<td>15.92</td>
<td>71.79     2.11 2.14</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0.01</td>
<td>0.54</td>
<td>0.41      5.36 770.04</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>2,606.30</td>
<td>1.12</td>
<td>160.51   0.04 27.72 1.14</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00      0.00 0.00</td>
</tr>
</tbody>
</table>

Truck is the most used freight shipping mode in Alabama.

### Table 5: Top 10 Internal Freight Flow by Commodity Types (kilo tons)

<table>
<thead>
<tr>
<th>Origin</th>
<th>011 (Birmingham)*</th>
<th>012 (Mobile)*</th>
<th>019 (Remainder of Alabama)*</th>
<th>Total</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Destin.</td>
<td>011</td>
<td>012</td>
<td>019</td>
<td>011</td>
<td>012</td>
</tr>
<tr>
<td>25**</td>
<td>3,348.66</td>
<td>0.01</td>
<td>2.17</td>
<td>0.01</td>
<td>1,828.61</td>
</tr>
<tr>
<td>12</td>
<td>11,197.08</td>
<td>337.92</td>
<td>3,183.50</td>
<td>0.11</td>
<td>723.99 0.67</td>
</tr>
<tr>
<td>31</td>
<td>6,801.43</td>
<td>91.57</td>
<td>1,599.51</td>
<td>38.07</td>
<td>1,318.79</td>
</tr>
<tr>
<td>15</td>
<td>14,298.05</td>
<td>0.00</td>
<td>2,573.69</td>
<td>0.00</td>
<td>2.63 0.00</td>
</tr>
<tr>
<td>41</td>
<td>3,725.23</td>
<td>219.36</td>
<td>1,528.33</td>
<td>207.34</td>
<td>1,276.45</td>
</tr>
<tr>
<td>26</td>
<td>607.48</td>
<td>2.10</td>
<td>1,115.12</td>
<td>8.62</td>
<td>428.33 239.45</td>
</tr>
</tbody>
</table>
Interim Progress Report #1
2016 Alabama Statewide Freight Plan

<table>
<thead>
<tr>
<th>Origin</th>
<th>011 (Birmingham)*</th>
<th>012 (Mobile)*</th>
<th>019 (Remainder of Alabama)*</th>
<th>Total</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>2,472.79</td>
<td>0.54</td>
<td>345.27</td>
<td>3,053</td>
<td>3.14%</td>
</tr>
<tr>
<td>17</td>
<td>2,204.01</td>
<td>2.25</td>
<td>1,315.25</td>
<td>3,831</td>
<td>2.89%</td>
</tr>
<tr>
<td>11</td>
<td>1,423.86</td>
<td>1.14</td>
<td>90.43</td>
<td>1,514</td>
<td>1.93%</td>
</tr>
<tr>
<td>32</td>
<td>897.97</td>
<td>57.03</td>
<td>484.71</td>
<td>1,541</td>
<td>1.84%</td>
</tr>
</tbody>
</table>

* 011 represents Birmingham Area, 012 represents Mobile Area, and 019 represents remainder of Alabama. These numbers represent FAF zone system. Hereafter, FAF3 zones in Alabama are represented as the numbers.

** The numbers mean 2-digit Standard Classification of Transported Goods (SCTG) classes used by the 2007 US Commodity Flow Survey (CFS). Following table shows SCTG codes matching with commodities.

The most transported commodity in Alabama is logs. On the other hand, coal is the most heavily transported commodity in the Birmingham area.

Table 6: FAF3 Commodity Classes

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

Source: THE FREIGHT ANALYSIS FRAMEWORK VERSION 3, A Description of the FAF3 Regional Database and How It Is Constructed.

Table 7: Freight Volume Produced and Consumed in Alabama (kilo tons)

<table>
<thead>
<tr>
<th>Type</th>
<th>011 (Birmingham)</th>
<th>012 (Mobile)</th>
<th>019 (Remainder of AL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produced</td>
<td>Tonnage</td>
<td>59,926.4405</td>
<td>9,037.3609</td>
</tr>
<tr>
<td></td>
<td>Ratio</td>
<td>28.97%</td>
<td>4.37%</td>
</tr>
<tr>
<td>Consumed</td>
<td>Tonnage</td>
<td>58,419.2816</td>
<td>10,509.1808</td>
</tr>
<tr>
<td></td>
<td>Ratio</td>
<td>28.25%</td>
<td>5.08%</td>
</tr>
</tbody>
</table>

Approximately 29 percent of freight volume is produced in the Birmingham area, and 67 percent in the Remainder of Alabama area. Even though the Mobile area is the most important international trade area, it only represents around 5 percent of domestic internal freight volume produced or consumed.
8.3.2 Domestic Inbound Freight Flow

Domestic inbound freight flow means that the freight volume produced in the U.S. except Alabama is transported to the Alabama region and consumed.

Table 8: Top 10 Domestic Inbound Freight Flow by Origins (kilo tons)

<table>
<thead>
<tr>
<th>Origin</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>17,120.6685</td>
<td>14.16%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>11,726.3081</td>
<td>9.70%</td>
</tr>
<tr>
<td>Kentucky</td>
<td>9,454.5202</td>
<td>7.82%</td>
</tr>
<tr>
<td>Wyoming</td>
<td>9,451.7770</td>
<td>7.82%</td>
</tr>
<tr>
<td>Texas</td>
<td>7,910.8874</td>
<td>6.54%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>7,716.4595</td>
<td>6.38%</td>
</tr>
<tr>
<td>Florida</td>
<td>6,166.2708</td>
<td>5.10%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>5,444.5901</td>
<td>4.50%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>4,492.1587</td>
<td>3.71%</td>
</tr>
<tr>
<td>Illinois</td>
<td>4,479.3044</td>
<td>3.70%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>83,962.9447</td>
<td>69.43%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>120,937.7716</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

The state of Georgia transports the largest volume of freight to Alabama. Most of the top ten are states adjacent to Alabama or located on Midwest region.

Table 9: Top 10 Inbound Freight Flow by Commodity Types (kilo tons)

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 (Coal)</td>
<td>19,089.3006</td>
<td>15.78%</td>
</tr>
<tr>
<td>19 (Natural Gas and Petroleum Products)</td>
<td>11,473.1138</td>
<td>9.49%</td>
</tr>
<tr>
<td>41 (Waste/Scrap)</td>
<td>9,992.6167</td>
<td>8.26%</td>
</tr>
<tr>
<td>20 (Basic Chemicals)</td>
<td>7,735.7936</td>
<td>6.40%</td>
</tr>
<tr>
<td>32 (Base Metals)</td>
<td>7,145.5926</td>
<td>5.91%</td>
</tr>
<tr>
<td>02 (Cereal Grains)</td>
<td>6,445.8691</td>
<td>5.33%</td>
</tr>
<tr>
<td>12 (Gravel)</td>
<td>5,128.8139</td>
<td>4.24%</td>
</tr>
<tr>
<td>17 (Gasoline)</td>
<td>5,069.7074</td>
<td>4.19%</td>
</tr>
<tr>
<td>31 (Nonmetal Mineral Products)</td>
<td>4,827.2155</td>
<td>3.99%</td>
</tr>
<tr>
<td>26 (Wood Products)</td>
<td>4,275.9996</td>
<td>3.54%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>81,184.0228</td>
<td>67.13%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>120,937.7716</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Coal is the largest commodity Alabama receives from other states, with natural gas and petroleum products ranking second. Coal accounts for approximately 81 percent of the commodities from Wyoming, which is roughly 40 percent of the total imported coal from out-of-state.
Table 10: Domestic Inbound Freight Flow by Modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>49,792.98</td>
<td>41.17%</td>
</tr>
<tr>
<td>Rail</td>
<td>37,043.73</td>
<td>30.63%</td>
</tr>
<tr>
<td>Water</td>
<td>11,326.34</td>
<td>9.37%</td>
</tr>
<tr>
<td>Air</td>
<td>18.349</td>
<td>0.02%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>10,618.11</td>
<td>8.78%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>11,330.27</td>
<td>9.37%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>807.99</td>
<td>0.67%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Truck is the most used transportation for inbound freight flow, followed by rail. Most coal is transported by rail mode.

8.3.3 Domestic Outbound Freight Flow

Domestic outbound freight flow represents domestic freight flow produced in Alabama and consumed out-of-state.

Table 11: Domestic Outbound Freight Flow by Destinations (kilo tons)

<table>
<thead>
<tr>
<th>Destinations</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Georgia</td>
<td>15,709.9349</td>
<td>16.87%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>11,783.1483</td>
<td>12.65%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>8,843.4208</td>
<td>9.49%</td>
</tr>
<tr>
<td>Florida</td>
<td>7,419.2324</td>
<td>7.96%</td>
</tr>
<tr>
<td>Texas</td>
<td>6,598.4990</td>
<td>7.08%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>3,828.2383</td>
<td>4.11%</td>
</tr>
<tr>
<td>South Carolina</td>
<td>3,635.8122</td>
<td>3.90%</td>
</tr>
<tr>
<td>California</td>
<td>3,544.5580</td>
<td>3.81%</td>
</tr>
<tr>
<td>North Carolina</td>
<td>3,303.2209</td>
<td>3.55%</td>
</tr>
<tr>
<td>Illinois</td>
<td>3,019.7194</td>
<td>3.24%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>67,685.7842</td>
<td>72.66%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>93,150.4603</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

The state of Georgia is also the biggest partner for the domestic outbound freight flow.

Table 12: Domestic Outbound Freight Flow by Commodity Types (kilo tons)

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>32 (Base Metals)</td>
<td>11,918.8627</td>
<td>12.87%</td>
</tr>
<tr>
<td>31 (Nonmetal Mineral Products)</td>
<td>10,496.9304</td>
<td>11.34%</td>
</tr>
<tr>
<td>19 (Natural Gas and Petroleum Products)</td>
<td>91,609.392</td>
<td>9.89%</td>
</tr>
<tr>
<td>27 (Newsprint/Paper)</td>
<td>8,212.3933</td>
<td>8.87%</td>
</tr>
<tr>
<td>20 (Basic Chemicals)</td>
<td>7,993.2875</td>
<td>8.63%</td>
</tr>
</tbody>
</table>
In contrast with the inbound freight flow, base metal is the biggest exporting commodity in Alabama to out-of-state.

### Table 13: Domestic Outbound Freight Flow by Modes

<table>
<thead>
<tr>
<th>Mode</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>56,296.2772</td>
<td>60.44%</td>
</tr>
<tr>
<td>Rail</td>
<td>21,542.0067</td>
<td>23.13%</td>
</tr>
<tr>
<td>Water</td>
<td>2,151.1767</td>
<td>2.31%</td>
</tr>
<tr>
<td>Air</td>
<td>20.0649</td>
<td>0.02%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>4,670.4061</td>
<td>5.01%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>7,438.9398</td>
<td>7.99%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>1,031.5889</td>
<td>1.11%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Truck is the most used transportation for outbound freight flow. Approximately 60 percent of outbound freight volume is transported by trucks.

### 8.4 Imported Freight Flow

Imported freight flow can be classified as two categories. The first is the freight imported via the Port of Mobile or other international trade facilities in Alabama and consumed in Alabama. The second is freight imported via international trade facilities in other states and finally transported to Alabama. For example, freight imported through the Los Angeles/Long Beach (LA/LB) port and transported by domestic mode to Alabama would be the second category.

#### 8.4.1 Imported Freight Flow via Alabama

### Table 14: Imported Freight Flow via Alabama by Trade Partners (kilo tons)

<table>
<thead>
<tr>
<th>Zone*</th>
<th>Volume</th>
<th>Ratio</th>
<th>011 (Birmingham)</th>
<th>012 (Mobile)</th>
<th>019 (Remainder of AL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>801 (Canada)</td>
<td>109.9676</td>
<td>0.59%</td>
<td>0</td>
<td>109.9676</td>
<td>0</td>
</tr>
<tr>
<td>802 (Mexico)</td>
<td>856.6593</td>
<td>4.57%</td>
<td>0</td>
<td>856.6593</td>
<td>0</td>
</tr>
<tr>
<td>803 (Rest of Americas)</td>
<td>11,831.9250</td>
<td>63.07%</td>
<td>0.0326</td>
<td>11,831.8920</td>
<td>0.0004</td>
</tr>
<tr>
<td>804 (Europe)</td>
<td>1,418.2599</td>
<td>7.56%</td>
<td>0.0006</td>
<td>1,373.6690</td>
<td>44.5903</td>
</tr>
<tr>
<td>805 (Africa)</td>
<td>2,438.1354</td>
<td>13.00%</td>
<td>0</td>
<td>2,438.1354</td>
<td>0</td>
</tr>
<tr>
<td>806 (Southern-Central-Western Asia)</td>
<td>793.6042</td>
<td>4.23%</td>
<td>0</td>
<td>793.6042</td>
<td>0</td>
</tr>
</tbody>
</table>
The table shows that 803 area (Rest of Americas) is the biggest importing trade partner with Alabama. Also, almost all imported freight arrives at the Mobile area. From this, it can be assumed that one of the biggest international trade facilities, the Port of Mobile, is in the Mobile area.

**Table 15: FAF3 International Analysis Zone Codes**

<table>
<thead>
<tr>
<th>Zone</th>
<th>Context</th>
</tr>
</thead>
<tbody>
<tr>
<td>801</td>
<td>Canada</td>
</tr>
<tr>
<td>802</td>
<td>Mexico</td>
</tr>
<tr>
<td>803</td>
<td>Rest of Americas</td>
</tr>
<tr>
<td>804</td>
<td>Europe</td>
</tr>
<tr>
<td>805</td>
<td>Africa</td>
</tr>
<tr>
<td>806</td>
<td>Southern-Central-Western Asia</td>
</tr>
<tr>
<td>807</td>
<td>Eastern Asia</td>
</tr>
<tr>
<td>808</td>
<td>South-Eastern Asia and Oceania</td>
</tr>
</tbody>
</table>

**Table 16: Imported Freight Flow Ratio via Alabama by Trade Partners and by Modes**

<table>
<thead>
<tr>
<th>Transportation</th>
<th>801 Canada</th>
<th>802 Mexico</th>
<th>803 Rest of Americas</th>
<th>804 Europe</th>
<th>805 Africa</th>
<th>806 S-C-W Asia</th>
<th>807 Eastern Asia</th>
<th>808 S-E Asia &amp; Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>0.001%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Rail</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Water</td>
<td>0.585%</td>
<td>4.566%</td>
<td>63.072%</td>
<td>7.322%</td>
<td>12.997%</td>
<td>4.230%</td>
<td>6.086%</td>
<td>0.900%</td>
</tr>
<tr>
<td>Air</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.238%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.001%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
</tbody>
</table>

Approximately 99.8 percent of imported freight volume uses waterway. As mentioned before, the Mobile area has the Port of Mobile, one of the biggest international trade facilities in the U.S.

**Table 17: Imported Freight Flow via Alabama by Commodity Types (kilo tons)**

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 (Coal)</td>
<td>10,551.8214</td>
<td>56.25%</td>
</tr>
<tr>
<td>16 (Crude Petroleum)</td>
<td>3,820.3578</td>
<td>20.37%</td>
</tr>
<tr>
<td>32 (Base Metals)</td>
<td>792.3793</td>
<td>4.22%</td>
</tr>
</tbody>
</table>
The major imported commodities in Alabama are coal and crude petroleum. They equal almost 77 percent of the total imported freight volume.

**Table 18: Top 10 Imported Freight Flow via Alabama by Final Destinations**

<table>
<thead>
<tr>
<th>Final Destination</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>13,765.8408</td>
<td>73.38%</td>
</tr>
<tr>
<td>Florida</td>
<td>1,236.3985</td>
<td>6.59%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>1,211.5869</td>
<td>6.46%</td>
</tr>
<tr>
<td>Georgia</td>
<td>889.0947</td>
<td>4.74%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>269.8580</td>
<td>1.44%</td>
</tr>
<tr>
<td>Ohio</td>
<td>209.7162</td>
<td>1.12%</td>
</tr>
<tr>
<td>Missouri</td>
<td>177.7989</td>
<td>0.95%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>176.5324</td>
<td>0.94%</td>
</tr>
<tr>
<td>Texas</td>
<td>165.1552</td>
<td>0.88%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>135.0756</td>
<td>0.72%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>18,237.0572</td>
<td>97.22%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>18,759.2069</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Approximately 73 percent of imported freight volume is consumed in Alabama, with only 27 percent transported to other states. The freight volume transported to the top 10 destinations is roughly 97 percent of total volume.

### 8.4.2 Imported Internal Freight Flow via Alabama

Imported internal freight flow represents the freight flow imported via international trade facilities in Alabama and consumed in Alabama.

**Table 19: Imported Freight Volume by Area**

<table>
<thead>
<tr>
<th>Destination</th>
<th>801 Canada</th>
<th>802 Mexico</th>
<th>803 Rest of Americas</th>
<th>804 Europe</th>
<th>805 Africa</th>
<th>806 S-C-W Asia</th>
<th>807 Eastern Asia</th>
<th>808 S-E Asia &amp; Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>011 (Birmingham)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>012 (Mobile)</td>
<td>60.2068</td>
<td>799.9337</td>
<td>8271.372</td>
<td>520.5487</td>
<td>2256.587</td>
<td>785.5099</td>
<td>938.2966</td>
<td>88.7956</td>
</tr>
</tbody>
</table>
The most used transportation for imported freight flow is rail, although truck also occupies roughly 32 percent. Most of imported coal is transported by rail from Mobile to Birmingham, and coal equals approximately 97 percent of total freight volume heading to Birmingham from Mobile.

8.4.3 **Imported Outbound Freight Flow via Alabama**

<table>
<thead>
<tr>
<th>Final Destinations</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>1,236.3985</td>
<td>24.76%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>1,211.5869</td>
<td>24.26%</td>
</tr>
<tr>
<td>Georgia</td>
<td>889.0947</td>
<td>17.81%</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>269.8580</td>
<td>5.40%</td>
</tr>
<tr>
<td>Ohio</td>
<td>209.7162</td>
<td>4.20%</td>
</tr>
<tr>
<td>Missouri</td>
<td>177.7989</td>
<td>3.56%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>176.5324</td>
<td>3.54%</td>
</tr>
<tr>
<td>Texas</td>
<td>165.1552</td>
<td>3.31%</td>
</tr>
<tr>
<td>New Jersey</td>
<td>135.0756</td>
<td>2.71%</td>
</tr>
<tr>
<td>Michigan</td>
<td>124.5995</td>
<td>2.50%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>4,595.8159</td>
<td>92.04%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>4,993.3661</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

More than half of imported freight volume via Alabama is transported to adjacent states including Florida, Mississippi, and Georgia.
Table 22: Imported Outbound Freight Flow via Alabama by Modes (kilo tons)

<table>
<thead>
<tr>
<th>Transportation</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>3,509.1112</td>
<td>70.28%</td>
</tr>
<tr>
<td>Rail</td>
<td>812.7153</td>
<td>16.28%</td>
</tr>
<tr>
<td>Water</td>
<td>0.0023</td>
<td>0.00%</td>
</tr>
<tr>
<td>Air</td>
<td>0.0116</td>
<td>0.00%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>602.2922</td>
<td>12.06%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>57.4522</td>
<td>1.15%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>11.7813</td>
<td>0.24%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Approximately 70 percent of the imported freight volume is transported by truck, with 16 percent transported by rail.

Table 23: Imported Outbound Freight Flow via Alabama by Commodity Types (kilo tons)

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 (Coal)</td>
<td>2,846.3585</td>
<td>57.00%</td>
</tr>
<tr>
<td>32 (Base Metals)</td>
<td>652.9732</td>
<td>13.08%</td>
</tr>
<tr>
<td>27 (Newspaper)</td>
<td>450.4635</td>
<td>9.02%</td>
</tr>
<tr>
<td>13 (Nonmetallic Minerals)</td>
<td>231.8991</td>
<td>4.64%</td>
</tr>
<tr>
<td>14 (Metallic Ores)</td>
<td>186.2367</td>
<td>3.73%</td>
</tr>
<tr>
<td>20 (Basic Chemicals)</td>
<td>164.4068</td>
<td>3.29%</td>
</tr>
<tr>
<td>33 (Articles-Based Metal)</td>
<td>143.2774</td>
<td>2.87%</td>
</tr>
<tr>
<td>26 (Wood Products)</td>
<td>113.6719</td>
<td>2.28%</td>
</tr>
<tr>
<td>16 (Crude Petroleum)</td>
<td>57.4522</td>
<td>1.15%</td>
</tr>
<tr>
<td>24 (Plastics/Rubber)</td>
<td>34.1865</td>
<td>0.68%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>4,880.9258</td>
<td>97.75%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>4,993.3661</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Coal represents the majority of imported freight via Alabama, with base metals a distant second.

8.4.4 Imported Freight Flow via Other States to Alabama

Imported freight flow via other states to Alabama indicates that the freight volume is imported via other states and transported to Alabama by domestic modes.

Table 24: Imported Inbound Freight Flow by Trading Partners (kilo tons)

<table>
<thead>
<tr>
<th>Importing Partners</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>801 (Canada)</td>
<td>1,463.5416</td>
<td>19.90%</td>
</tr>
<tr>
<td>802 (Mexico)</td>
<td>2,720.6132</td>
<td>36.99%</td>
</tr>
<tr>
<td>803 (Rest of Americas)</td>
<td>1,305.4661</td>
<td>17.75%</td>
</tr>
<tr>
<td>804 (Europe)</td>
<td>535.9660</td>
<td>7.29%</td>
</tr>
<tr>
<td>805 (Africa)</td>
<td>372.7942</td>
<td>5.07%</td>
</tr>
<tr>
<td>806 (Southern-Central-Western Asia)</td>
<td>121.8184</td>
<td>1.66%</td>
</tr>
</tbody>
</table>
 Mostly the freight volume imported from Canada and Mexico is transported to Alabama via other states.

**Table 25: Imported Inbound Freight Flow by Foreign Modes (kilo tons)**

<table>
<thead>
<tr>
<th>Foreign Modes</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>436.6789</td>
<td>5.94%</td>
</tr>
<tr>
<td>Rail</td>
<td>1,101.5231</td>
<td>14.98%</td>
</tr>
<tr>
<td>Water</td>
<td>5,777.1024</td>
<td>78.55%</td>
</tr>
<tr>
<td>Air</td>
<td>0.7686</td>
<td>0.01%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>38.8139</td>
<td>0.53%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>0.0016</td>
<td>0.01%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Similar to Alabama, most freight volume is transported to the U.S. by waterway mode. However, freight imported from adjacent countries such as Canada and Mexico is mostly transported by truck or rail.

**Table 26: Imported Inbound Freight Flow by Domestic Modes (kilo tons)**

<table>
<thead>
<tr>
<th>Domestic Modes</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>3,205.1484</td>
<td>43.58%</td>
</tr>
<tr>
<td>Rail</td>
<td>1,949.9894</td>
<td>26.51%</td>
</tr>
<tr>
<td>Water</td>
<td>130.5040</td>
<td>1.77%</td>
</tr>
<tr>
<td>Air</td>
<td>0.7347</td>
<td>0.01%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>1,769.7973</td>
<td>24.06%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>294.4500</td>
<td>4.00%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>4.2647</td>
<td>0.06%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Approximately 70 percent of the imported inbound freight volume is transported by truck or rail mode. In addition, the freight transported by multiple modes ratio is more than 24 percent, which is relatively high.

**Table 27: Imported Inbound Freight Flow by Domestic Transit Area**

<table>
<thead>
<tr>
<th>Domestic Transit Area</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>2,065.2428</td>
<td>28.08%</td>
</tr>
<tr>
<td>South Carolina</td>
<td>1,310.0690</td>
<td>17.81%</td>
</tr>
<tr>
<td>Texas</td>
<td>842.4849</td>
<td>11.45%</td>
</tr>
<tr>
<td>Minnesota</td>
<td>648.4236</td>
<td>8.82%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>579.1122</td>
<td>7.87%</td>
</tr>
<tr>
<td>California</td>
<td>562.5410</td>
<td>7.65%</td>
</tr>
<tr>
<td>Michigan</td>
<td>342.5851</td>
<td>4.66%</td>
</tr>
<tr>
<td>Georgia</td>
<td>275.4570</td>
<td>3.75%</td>
</tr>
</tbody>
</table>
Florida is the biggest imported freight transit area to Alabama.

8.5 Exported Freight Flow

Exported freight flow means the freight flow exported to foreign countries. Similar to imported freight, the flow can be classified as two categories. The first category is freight flow exported via Alabama, including the freight produced in Alabama and produced out-of-state. The other category is freight produced in Alabama that is exported via out-of-state trade facilities.

8.5.1 Exported Freight Flow via Alabama

Table 28: Exported Freight Flow via Alabama by Trade Partners (kilo tons)

<table>
<thead>
<tr>
<th>Trade Partners</th>
<th>Volume</th>
<th>Ratio</th>
<th>11 (Birmingham)</th>
<th>12 (Mobile)</th>
<th>19 (Remainder of AL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>801 (Canada)</td>
<td>54.7590</td>
<td>0.29%</td>
<td>0</td>
<td>54.7590</td>
<td>0</td>
</tr>
<tr>
<td>802 (Mexico)</td>
<td>3,945.4271</td>
<td>21.05%</td>
<td>0</td>
<td>3,945.4271</td>
<td>0</td>
</tr>
<tr>
<td>803 (Rest of Americas)</td>
<td>3,709.3054</td>
<td>19.79%</td>
<td>0</td>
<td>3,709.3054</td>
<td>0</td>
</tr>
<tr>
<td>804 (Europe)</td>
<td>5,986.2241</td>
<td>31.94%</td>
<td>0</td>
<td>5,949.7936</td>
<td>36.4305</td>
</tr>
<tr>
<td>805 (Africa)</td>
<td>1,613.0326</td>
<td>8.61%</td>
<td>0</td>
<td>1,612.9429</td>
<td>0.0897</td>
</tr>
<tr>
<td>806 (Southern-Central-Western Asia)</td>
<td>1,206.9499</td>
<td>6.44%</td>
<td>0</td>
<td>1,206.9499</td>
<td>0</td>
</tr>
<tr>
<td>807 (Eastern Asia)</td>
<td>1,981.8686</td>
<td>10.57%</td>
<td>0</td>
<td>1,981.8686</td>
<td>0</td>
</tr>
<tr>
<td>808 (South-Eastern Asia and Oceania)</td>
<td>243.9924</td>
<td>1.30%</td>
<td>0</td>
<td>243.9924</td>
<td>0</td>
</tr>
</tbody>
</table>

The Europe area is the biggest trade partner of Alabama, with approximately 32 percent of exported freight volume that predominantly uses the Mobile area in Alabama. Then, 21 percent of the freight is exported to Mexico, and roughly 20 percent to other America countries.

Table 29: Exported Freight Flow Ratio via Alabama by Trade Partners and Foreign Modes (kilo tons)

<table>
<thead>
<tr>
<th>Mode</th>
<th>801 Canada</th>
<th>802 Mexico</th>
<th>803 Rest of Americas</th>
<th>804 Europe</th>
<th>805 Africa</th>
<th>806 S-C-W Asia</th>
<th>807 Eastern Asia</th>
<th>808 S-E Asia &amp; Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Rail</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Water</td>
<td>0.292%</td>
<td>21.052%</td>
<td>19.792%</td>
<td>31.747%</td>
<td>8.606%</td>
<td>6.440%</td>
<td>10.575%</td>
<td>1.302%</td>
</tr>
<tr>
<td>Air</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.194%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
<td>0.000%</td>
</tr>
</tbody>
</table>
Almost 99.8 percent of exported freight volume is transported by waterway via the Port of Mobile.

**Table 30: Top 10 Exported Freight Flow via Alabama by Commodity Types (kilo tons)**

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 (Coal)</td>
<td>9,408.8335</td>
<td>50.20%</td>
</tr>
<tr>
<td>19 (Natural Gas and Petroleum Products)</td>
<td>2,594.0223</td>
<td>13.84%</td>
</tr>
<tr>
<td>02 (Cereal Grains)</td>
<td>1,730.0995</td>
<td>9.23%</td>
</tr>
<tr>
<td>27 (Newsprint/Paper)</td>
<td>1,218.2152</td>
<td>6.50%</td>
</tr>
<tr>
<td>20 (Basic Chemicals)</td>
<td>804.9085</td>
<td>4.29%</td>
</tr>
<tr>
<td>05 (Meat/Seafood)</td>
<td>682.3744</td>
<td>3.64%</td>
</tr>
<tr>
<td>26 (Wood Products)</td>
<td>598.5276</td>
<td>3.19%</td>
</tr>
<tr>
<td>03 (Other Agricultural Products)</td>
<td>556.0477</td>
<td>2.97%</td>
</tr>
<tr>
<td>28 (Paper Articles)</td>
<td>273.6392</td>
<td>1.46%</td>
</tr>
<tr>
<td>22 (Fertilizers)</td>
<td>205.5291</td>
<td>1.10%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>18,072.1970</td>
<td>96.43%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>18,741.5591</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

More than 50 percent of exported inbound freight volume is coal.

**Table 31: Top 10 Exported Freight Flow via Alabama by Domestic Freight Origins (kilo tons)**

<table>
<thead>
<tr>
<th>Domestic Freight Origins</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>13,676.2080</td>
<td>72.97%</td>
</tr>
<tr>
<td>Ohio</td>
<td>1,566.5683</td>
<td>8.36%</td>
</tr>
<tr>
<td>Florida</td>
<td>429.4106</td>
<td>2.29%</td>
</tr>
<tr>
<td>Kansas</td>
<td>361.5928</td>
<td>1.93%</td>
</tr>
<tr>
<td>Georgia</td>
<td>303.7568</td>
<td>1.62%</td>
</tr>
<tr>
<td>Texas</td>
<td>288.1917</td>
<td>1.54%</td>
</tr>
<tr>
<td>Connecticut</td>
<td>279.7684</td>
<td>1.49%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>244.8309</td>
<td>1.31%</td>
</tr>
<tr>
<td>Washington</td>
<td>240.1154</td>
<td>1.28%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>236.1958</td>
<td>1.26%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>17,626.6387</td>
<td>94.05%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>18,741.5388</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Approximately 73 percent of exported freight volume is originated in Alabama. Ohio is the biggest customer for exporting facilities in Alabama.

8.5.2 Exported Internal Freight Flow via Alabama

Exported internal freight flow represents the freight flow exported via Alabama to international trade facilities.
Table 32: Exported Internal Freight Flow by Departing Area

<table>
<thead>
<tr>
<th>Origin</th>
<th>801 Canada</th>
<th>802 Mexico</th>
<th>803 Rest of Americas</th>
<th>804 Europe</th>
<th>805 Africa</th>
<th>806 S-C-W Asia</th>
<th>807 Eastern Asia</th>
<th>808 S-E Asia &amp; Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>011 (Birmingham)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>012 (Mobile)</td>
<td>47.6831</td>
<td>2,974.92</td>
<td>3064.119</td>
<td>4,934.847</td>
<td>633.180</td>
<td>1,059.035</td>
<td>723.2934</td>
<td>202.6106</td>
</tr>
<tr>
<td>019 (Remainder of AL)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>36.4305</td>
<td>0.0897</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Most of exported freight volume uses the Port of Mobile. Only rare freight volume uses other areas.

Table 33: Exported Internal Freight Flow by Produced Area (kilo tons)

<table>
<thead>
<tr>
<th></th>
<th>801 Canada</th>
<th>802 Mexico</th>
<th>803 Rest of Americas</th>
<th>804 Europe</th>
<th>805 Africa</th>
<th>806 S-C-W Asia</th>
<th>807 Eastern Asia</th>
<th>808 S-E Asia &amp; Oceania</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>011</td>
<td>0.7765</td>
<td>75.3765</td>
<td>1,689.9993</td>
<td>1,568.352</td>
<td>181.5192</td>
<td>876.5908</td>
<td>0.8025</td>
<td>0.665</td>
<td>4394.0820</td>
</tr>
<tr>
<td>012</td>
<td>46.2898</td>
<td>2,667.191</td>
<td>97.4212</td>
<td>115.5033</td>
<td>47.7448</td>
<td>1.8516</td>
<td>320.991</td>
<td>120.0705</td>
<td>3417.0631</td>
</tr>
<tr>
<td>019</td>
<td>0.6168</td>
<td>232.3522</td>
<td>1,276.6989</td>
<td>3,287.422</td>
<td>404.0059</td>
<td>180.5925</td>
<td>401.4999</td>
<td>81.8751</td>
<td>5865.0629</td>
</tr>
</tbody>
</table>

The table shows the exported freight O/D matrix. For example, a total of 4,394.082 kilo tons of freight is produced in the Birmingham area, then approximately 1,700 kilo tons of freight is exported to the Rest of America countries.

Table 34: Exported Internal Freight Flow by Domestic Modes (kilo tons)

<table>
<thead>
<tr>
<th>Area\Mode</th>
<th>Truck</th>
<th>Rail</th>
<th>Water</th>
<th>Air</th>
<th>Multiple</th>
<th>Pipeline</th>
<th>Other/Unknown</th>
<th>No Domestic Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>011 (Birmingham)</td>
<td>3,649.985</td>
<td>743.9965</td>
<td>0</td>
<td>0</td>
<td>0.0656</td>
<td>0</td>
<td>0.0352</td>
<td>0</td>
</tr>
<tr>
<td>012 (Mobile)</td>
<td>2,930.101</td>
<td>73.7384</td>
<td>122.7454</td>
<td>0</td>
<td>249.193</td>
<td>34.6551</td>
<td>6.6303</td>
<td>0</td>
</tr>
<tr>
<td>019 (Remainder of AL)</td>
<td>1,518.226</td>
<td>4,344.539</td>
<td>1.1468</td>
<td>0</td>
<td>0.6799</td>
<td>0</td>
<td>0.4711</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>8,098.312</td>
<td>5,162.274</td>
<td>123.8922</td>
<td>0</td>
<td>249.9385</td>
<td>34.6551</td>
<td>7.1366</td>
<td>0</td>
</tr>
</tbody>
</table>

More than half of freight flow in Alabama is transported to the Port of Mobile by trucks. The main commodity which is transported by rail from the Remainder of Alabama is coal, and it is approximately 95 percent of total railroad freight volume.

8.5.3 Exported Inbound Freight Flow via Alabama

Exported inbound freight flow means that the freight produced in other states is transported domestically to Alabama and exported via Alabama international trade facilities.

Table 35: Exported Inbound Freight Flow by Origins

<table>
<thead>
<tr>
<th>Freight Origins</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ohio</td>
<td>1,566.5683</td>
<td>30.93%</td>
</tr>
<tr>
<td>Florida</td>
<td>429.4106</td>
<td>8.48%</td>
</tr>
<tr>
<td>Kansas</td>
<td>361.5928</td>
<td>7.14%</td>
</tr>
</tbody>
</table>
Nearly one-third of exported inbound freight flow from Alabama originates in Ohio.

**Table 36: Exported Inbound Freight Flow by Domestic Mode**

<table>
<thead>
<tr>
<th>Domestic Mode</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>1,785.3783</td>
<td>35.25%</td>
</tr>
<tr>
<td>Rail</td>
<td>681.4574</td>
<td>13.45%</td>
</tr>
<tr>
<td>Water</td>
<td>3.9272</td>
<td>0.08%</td>
</tr>
<tr>
<td>Air</td>
<td>0.0018</td>
<td>0.00%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>2,580.1443</td>
<td>50.94%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0</td>
<td>0.00%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>14.4421</td>
<td>0.29%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

**Table 37: Exported Inbound Freight Flow by Commodity Types**

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 (Cereal Grains)</td>
<td>1,730.0943</td>
<td>34.16%</td>
</tr>
<tr>
<td>05 (Meat/Seafood)</td>
<td>672.8964</td>
<td>13.28%</td>
</tr>
<tr>
<td>03 (Other Agricultural Products)</td>
<td>550.3261</td>
<td>10.86%</td>
</tr>
<tr>
<td>27 (Newspaper/Paper)</td>
<td>434.9129</td>
<td>8.59%</td>
</tr>
<tr>
<td>20 (Basic Chemicals)</td>
<td>395.2620</td>
<td>7.80%</td>
</tr>
<tr>
<td>26 (Wood Products)</td>
<td>285.6681</td>
<td>5.64%</td>
</tr>
<tr>
<td>15 (Coal)</td>
<td>215.8375</td>
<td>4.26%</td>
</tr>
<tr>
<td>32 (Base Metals)</td>
<td>193.9591</td>
<td>3.83%</td>
</tr>
<tr>
<td>22 (Fertilizers)</td>
<td>192.9883</td>
<td>3.81%</td>
</tr>
<tr>
<td>28 (Paper Articles)</td>
<td>166.6644</td>
<td>3.29%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>4,838.6091</td>
<td>95.52%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>5,065.3511</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Approximately one-third of exported inbound freight flow from Alabama travels by truck, while approximately half goes by multiple modes. The largest portion of exported inbound freight from Alabama is cereal grains, followed by meat/seafood and other agricultural products.
8.5.4  Exports Freight Flow via Other States from Alabama

Exported freight flow via other states from Alabama indicates that the freight produced in Alabama is transported from Alabama by domestic modes and exported via other states.

Table 38: Exported Outbound Freight Flow by Domestic Destination (kilo tons)

<table>
<thead>
<tr>
<th>Domestic Destination</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>1,171.7294</td>
<td>26.81%</td>
</tr>
<tr>
<td>Georgia</td>
<td>661.2966</td>
<td>15.13%</td>
</tr>
<tr>
<td>New York</td>
<td>595.6755</td>
<td>13.63%</td>
</tr>
<tr>
<td>Michigan</td>
<td>519.9130</td>
<td>11.90%</td>
</tr>
<tr>
<td>South Carolina</td>
<td>297.9475</td>
<td>6.82%</td>
</tr>
<tr>
<td>North Dakota</td>
<td>228.9990</td>
<td>5.24%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>204.2686</td>
<td>4.67%</td>
</tr>
<tr>
<td>Florida</td>
<td>185.4617</td>
<td>4.24%</td>
</tr>
<tr>
<td>California</td>
<td>181.1881</td>
<td>4.15%</td>
</tr>
<tr>
<td>Mississippi</td>
<td>87.7590</td>
<td>2.01%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>4,134.2384</td>
<td>94.60%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>4,370.3174</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Approximately 70 percent of freight volume via Texas is exported to Mexico. Also, New York and Michigan have inland borders with Canada and, therefore, most of exported freight to Canada uses these two states as transit areas.

Table 39: Exported Outbound Freight Flow O/D matrix

<table>
<thead>
<tr>
<th>Origin</th>
<th>801 Canada</th>
<th>802 Mexico</th>
<th>803 Rest of Americas</th>
<th>804 Europe</th>
<th>805 Africa</th>
<th>806 S-C-W Asia</th>
<th>807 Eastern Asia</th>
<th>808 S-E Asia &amp; Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texas</td>
<td>0.1881</td>
<td>752.1739</td>
<td>28.1087</td>
<td>336.0334</td>
<td>0.5225</td>
<td>3.9663</td>
<td>48.8274</td>
<td>1.9091</td>
</tr>
<tr>
<td>Georgia</td>
<td>0.0032</td>
<td>0.4216</td>
<td>33.4425</td>
<td>287.1296</td>
<td>19.6237</td>
<td>71.486</td>
<td>218.0867</td>
<td>31.1033</td>
</tr>
<tr>
<td>New York</td>
<td>568.9198</td>
<td>0.2767</td>
<td>0.0079</td>
<td>26.4483</td>
<td>0</td>
<td>0.0086</td>
<td>0.0142</td>
<td>0</td>
</tr>
<tr>
<td>Michigan</td>
<td>519.1992</td>
<td>0.0123</td>
<td>0</td>
<td>0.5291</td>
<td>0</td>
<td>0.0445</td>
<td>0.1211</td>
<td>0.0068</td>
</tr>
</tbody>
</table>

Table 40: Exported Outbound Freight Flow by Domestic Modes

<table>
<thead>
<tr>
<th>Domestic Mode</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truck</td>
<td>1,751.9595</td>
<td>40.09%</td>
</tr>
<tr>
<td>Rail</td>
<td>1,743.5779</td>
<td>39.90%</td>
</tr>
<tr>
<td>Water</td>
<td>0.0059</td>
<td>0.00%</td>
</tr>
<tr>
<td>Air</td>
<td>1.7241</td>
<td>0.04%</td>
</tr>
<tr>
<td>Multiple and Mail</td>
<td>824.5997</td>
<td>18.87%</td>
</tr>
<tr>
<td>Pipeline</td>
<td>0.0575</td>
<td>0.00%</td>
</tr>
<tr>
<td>Other and Unknown</td>
<td>48.3928</td>
<td>1.11%</td>
</tr>
<tr>
<td>No Domestic Mode</td>
<td>0</td>
<td>0.00%</td>
</tr>
</tbody>
</table>
Truck mode and rail mode transport approximately 40 percent of exported freight each.

### Table 41: Exported Outbound Freight Flow by Commodity Types

<table>
<thead>
<tr>
<th>SCTG/Commodity</th>
<th>Volume</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>20 (Basic Chemicals)</td>
<td>626.6382</td>
<td>14.34%</td>
</tr>
<tr>
<td>36 (Motorized Vehicles)</td>
<td>619.7994</td>
<td>14.18%</td>
</tr>
<tr>
<td>27 (Newspaper/Paper)</td>
<td>608.1614</td>
<td>13.92%</td>
</tr>
<tr>
<td>32 (Base Metals)</td>
<td>357.0744</td>
<td>8.17%</td>
</tr>
<tr>
<td>28 (Paper Articles)</td>
<td>261.4965</td>
<td>5.98%</td>
</tr>
<tr>
<td>14 (Metallic Ores)</td>
<td>229.7829</td>
<td>5.26%</td>
</tr>
<tr>
<td>13 (Nonmetallic Minerals)</td>
<td>218.1392</td>
<td>4.99%</td>
</tr>
<tr>
<td>24 (Plastics/Rubber)</td>
<td>210.8990</td>
<td>4.83%</td>
</tr>
<tr>
<td>26 (Wood Products)</td>
<td>198.4042</td>
<td>4.54%</td>
</tr>
<tr>
<td>03 (Other Agricultural Products)</td>
<td>123.1470</td>
<td>2.82%</td>
</tr>
<tr>
<td>Sub-Total for Top 10</td>
<td>3,453.5422</td>
<td>79.02%</td>
</tr>
<tr>
<td>Grand Total</td>
<td>4,370.3174</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Basic chemicals, motorized vehicles and newsprint/paper are the most exported commodities in Alabama.

#### 9.0 Freight ITS

There are numerous criteria which can be applied to categorize freight ITS. Freight ITS can be classified by performance dimensions, such as safety and security, effectiveness and efficiency, and environmental performance. On the other hand, freight ITS can be classified as nine systems by operation types (MirzabeikiVahid 2013). In this abstract, the nine classified Freight ITS are introduced in the following.

#### 9.1 Traffic Control and Monitoring Systems

The systems are developed to control and manage traffic flow by providing information of traffic conditions on networks, such as incidents, congestions, and/or travel speeds. The information is generally provided by Variable Message Signs (VMS), radio, or Internet. The systems can be helpful to manage fleets, ports, and terminal operations.

![Traffic Control and Monitoring Systems](https://www.wti.com/userimages/traffic-app-vms-648.png)
9.2 Weigh-in-Motion (WIM) Systems

The systems are used to control and weigh vehicles to increase transportation safety and reduce damages on the road. WIM can be used to enforce over-weighted vehicles and to collect truck information, such as truck volumes and truck types, for assisting in pavement design and management.

http://media.mt.com/dam/Industrial/Terminals/96351.jpeg

9.3 Delivery Space Booking Systems

The delivery space booking systems help to book the parking space for a specific vehicle to load or unload freight during a specific time period. The systems are helpful to reduce fuel consumption, environmental impacts and network congestion, specifically in urban area. In addition, the systems can be used for intermodal terminals to improve efficiency performance.

(Patier, et al. 2014)
9.4 Vehicle Location and Condition Monitoring Systems

The systems provide real time information of vehicle’s location. The typical sensor installed on the vehicle or the container is Global Positioning System (GPS) and GPS transmits location information via satellite. The systems are used in improvements of fleet management, hazardous material transport, and freight security. In addition, the systems allow to estimate expecting arrival time or delay time using the information.


9.5 Route Planning Systems

Route planning systems are utilized in planning transportation routes in response to traffic condition, such as congestion, road works, or incidents.

http://www.autologic-systems.co.uk/
9.6 Driving Behavior Monitoring and Control Systems

The systems are used to identify driving behaviors such as travel speed, acceleration, or drowsy driving. The system analyzes driving condition and feedback information to reduce fuel consumption and improve driving safety.

(WuJian-Da, ChenTuo-Rung 2008)

9.7 Crash Preventing Systems

The systems use technologies such as sensors to reduce the probability of accidents. Sensors installed on the truck give a driver warning message when the truck gets too close to some object like a passenger car.

(Nodine and Najm 2012)
9.8 Freight Location Monitoring Systems

Using Radio Frequency Identification (RFID), the systems record and control the freight movements. With automatic identification systems, users are able handle large numbers of RFID tags at the same time and to decrease the number of errors.


9.9 Freight Status Monitoring Systems

The systems measure the physical attributes of goods, such as temperature, humidity, impact level, light level and vibration level using the installed sensors. The systems can control freight conditions for perishable foods, medicine or hazardous materials, and also improve safety and security of transported goods.
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Interim Progress Report #2
September 17, 2015
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1.0 Introduction

This interim delivery summarizes activities conducted to date under Tasks 4 and 5 of the scope of work to develop the 2016 Alabama Statewide Freight Plan (Freight Plan) for the Alabama Department of Transportation (ALDOT). These tasks, as outlined in the scope of services, are as follows:

Task 4: Determine and define the statewide freight network, to include all modal and intermodal elements of the various systems.

Task 5: Develop a statewide freight improvement strategy. This strategy should include any Freight Performance Measures levied as requirements on the state DOTs by FHWA and as published in the Federal Register.

The scope of services outlines this interim deliverable as follows:

Interim Progress Report 2: Assessment of all existing networks, and recommendations for a modal/intermodal plan development strategy. (Tasks 4-5)

This document, Interim Progress Report #2, serves as the second deliverable in the development of the Freight Plan. Interim Progress Report #1 identified the mission, vision, and goals; provided a detailed description of the federal guidelines regarding freight policy and emphasis areas for freight planning; and detailed the public involvement process to be undertaken in the planning process. In addition, the statewide freight commodity flow assignment process was outlined, and a snapshot of Alabama’s 2012 freight flow characteristics was presented.

The purpose of this report is to document the baseline conditions for freight and the framework for which freight mobility will be evaluated throughout the state of Alabama. As such, this report addresses all modes of freight movement, including roadway, rail, waterway, air and pipeline. This report provides:

• An overview of the key considerations used to monitor and plan for freight
• A description of the information used to develop the overall baseline analysis, including input from stakeholders
• A profile of the multimodal statewide freight network, including its connectivity to major freight generators
• A description of the freight flows by mode
• An overview of the factors that influence the development of performance measures for freight
• A list of next steps in the development of the Statewide Freight Plan

The information presented herein will be used to finalize the Statewide Primary Freight Network (PFN), identify the greatest freight needs, and develop an overall improvement strategy to increase freight mobility throughout the state.
2.0 Key Freight Considerations

The Freight Plan is a multimodal document. However, it is important to remember that the non-roadway modes are largely controlled by the private sector. The following presents the primary freight related considerations and how they are addressed:

- Congestion Reduction/Mobility Preservation – An overview of the level of traffic and truck percentages along Alabama’s roadways is presented. By comparing these characteristics to the location of freight chokepoints throughout the state (to be determined later in the study), the areas in need of freight congestion relief will be identified.

- Infrastructure Condition – Simply stated, truck traffic generally creates more maintenance needs than the average passenger automobile, primarily due to the greater vehicle weights. Identifying facilities that carry higher levels of truck traffic will help ALDOT and other implementing agencies to prioritize their maintenance needs.

- Economic Competitiveness – Input will be collected from public and private sector stakeholders continuously throughout the plan development process to assist in understanding how freight infrastructure and improvements can better facilitate economic vitality and growth in Alabama. The modal analyses contained herein will also help identify intermodal connectivity opportunities.

- Safety – The identification of potential safety conflicts and congestion chokepoints throughout the state is an important first step toward increasing the overall safety of the roadway network.

- Innovative Operational Improvements – Assessing how new technologies can be integrated into the planning process will be a key outcome of the Freight Plan. Understanding factors such as intermodal connectivity and freight chokepoints will support the strategic implementation of ITS strategies.

- Environmental Sustainability/Environmental Justice – Consistent with federal guidelines, the initial performance measures presented in this report are a means to evaluate the network for environmental factors, including conformance with environmental justice policies. More information on environmental justice can be found in Interim Progress Report #1.

3.0 FAF3 and the Statewide Freight Commodity Flow Assignment

The statewide freight commodity flow assignment process, outlined in Figure 1, relies as its primary data source on the Freight Analysis Framework Version 3.5 (FAF3) produced by the Federal Highway Administration (FHWA). FAF3 contains freight movement data for the United States taken from the Commodity Flow Survey and additional economic and mode specific databases. The FAF3 freight flow data is presented for large aggregated zones totaling 123 zones nationwide, with Alabama comprised of three zones: 1) Birmingham area, 2) Mobile area, and 3) remainder of the state. Figure 2 shows the FAF3 zones. The data presented in FAF3 are broken out by seven modes of transport and further classified by 43 commodities. Interim Progress Report #1 presented an overview of the FAF3 data for the entire state and its three zones.
Interim Progress Report #2
2016 Alabama Statewide Freight Plan

Figure 1: Freight Flows Assignment Process

Data Collection
- Census Data
  Employment data by NAICS code will be obtained for all counties
- FAF data
  Divided into FAF zones
- Roadway data
  Interstates, US Highways, State Highways

Processing
- Disaggregation
  The disaggregation will be based on NAICS employment related to the specific commodity moved
- Disaggregate FAF data
  States that border Alabama will be disaggregated to counties, Alabama will be disaggregated to census tracts
- Develop Voyager Network
  A Voyager network will be developed that contains all Interstates, US Highways for Alabama and neighboring states and all state highways within Alabama

External Trips
  (Includes International)
- External Traffic
  All pass through flows will be developed using FAF zone or county in neighboring states
- External Traffic
  The External Traffic will be assigned to the network

Internal Trips
- Internal Traffic
  All internal flows will be developed using disaggregated data to the census tract level
- Internal Traffic
  The Internal Traffic will be assigned to the network

Figure 2: FAF3 Zones
The assignment process will focus on the disaggregation of FAF3 data into county and census tracts using employment data obtained from the Business Census. The roadway network will be developed using Interstates, US Highways and Alabama Highways. The individual commodities will be assigned to the network independently and aggregated to determine the total freight volume projected for each roadway.

The FAF3 data represent flows greater than 50 miles, which is at an appropriate level for a statewide freight commodity flow assignment. However, the resulting lack of detail within urban areas limits the ability to effectively reflect all freight movement within a community.

This report discusses the process of disaggregating the three-zone level data to a more detailed level for use in a statewide commodity flow 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 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.

Specific to the Alabama process, the employment data at the county level, by NAICS code, were collected for Alabama and all the 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. Using commodity 25 Logs as an example, the freight generated by a county was a portion of the total freight generated by the region. That portion was determined according to the total employment in the county related to logging, forest nurseries and timber tract operation as a percentage of the total employment in the FAF3 zone for those same industries. This process was applied to each of the 43 commodities to determine the contribution of flow 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. The chart that shows the commodity crosswalk between NAICS code and FAF3 commodity is shown in Appendix A.

Therefore, the zone structure for the Alabama statewide commodity flow assignment is based on a three tiered system – 1) US Census tracts for the state of Alabama and counties within 25 miles of Alabama; 2) counties for the states that boarder Alabama and 3) FAF3 zone for everywhere else in the country. Figure 3 shows the zones structure for the nation, and Figure 4 shows the zone structure closer to Alabama.
Figure 3: FAF Zonal Structure for Alabama Statewide Commodity Flow Assignment (US)

Figure 4: FAF Zonal Structure for Alabama Statewide Commodity Flow Assignment (Alabama)
The roadway network for the statewide commodity flow 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. Further away from Alabama, only the interstates are used in the flow assignment. The roadways are all attributed with speed limit, distance, and travel time. The roadways are not attributed with capacity as the flow assignment does not assume capacity limitations. This is due to the limited number of roadways and alternate routes. The network is shown in Figure 5.

**Figure 5: Statewide Freight Network**

It is important to recognize that the roadways in the statewide freight network are limited, and a majority of the roadways in an urban travel demand model maintained by an MPO are absent from the statewide freight network. This is necessary because of the limited data available from the FAF3 regarding trips less than 50 miles or delivery trips within an urban area. Additionally, the statewide commodity flow assignment is not intended to accurately predict truck traffic on each roadway within a particular urban area, but to be a tool for determining the appropriate magnitude of the truck traffic on the fringe of an MPO boundary.
4.0 Overall Statewide Freight Infrastructure

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

4.1 Roadway Network

The major roadway network consists of five interstate highways and an extensive network of federal and state routes (see Figure 6). During its efforts to define a National Freight Network, FHWA designated all of the interstates within the state as part of the national network, with the exception of I-59 from Birmingham to Chattanooga and the soon to be completed I-22 from Birmingham to Memphis.

In 2015, ALDOT staff expanded on the National Freight Network to identify a Draft Primary Freight Network for Alabama to include all major highways (including I-59 and I-22) and other important freight corridors. This draft network is shown in Figure 7. Following the identification of existing and projected freight flows and major freight connectivity needs throughout the state later in this planning effort, the initial Draft Primary Freight Network will likely be expanded to include some of the other roadways shown in Figure 6.

Figure 6: Major Roadways and Railways throughout Alabama
Figure 7: Draft 2016 Alabama Primary Freight Network

Draft 2016 Alabama Primary Freight Network

Map by ALDOT Metropolitan Planning - 6/6/2015
Based on 2010 Census Data
4.2 **Railway Network**

The rail network in Alabama consists of 3,973 freight rail miles operated by 28 Class I, II and III railroads, although most of the freight is carried on the Class I network. Four 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). The Class I rail lines account for approximately 72 percent of track mileage in Alabama. The rail lines in Alabama operated by Class I railroads are shown on Figure 6.

4.3 **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. Table 1 identifies all Alabama ports, including location and operator.

**Table 1: Port Facilities in Alabama**

<table>
<thead>
<tr>
<th>Name</th>
<th>Port Authority</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bevill-Hook Port</td>
<td>Aliceville Industrial Development Board</td>
<td>Aliceville, AL</td>
</tr>
<tr>
<td>Crossroads of America Port</td>
<td>Greene County Economic and Industrial Board</td>
<td>Boligee, AL</td>
</tr>
<tr>
<td>Port of Bridgeport</td>
<td>Alabama State Port Authority</td>
<td>Bridgeport, AL</td>
</tr>
<tr>
<td>Barry Electric Generating Plant</td>
<td>AL Power</td>
<td>Bucks, AL</td>
</tr>
<tr>
<td>Port of Claiborne</td>
<td>Alabama State Port Authority</td>
<td>Claiborne, AL</td>
</tr>
<tr>
<td>Port of Columbia</td>
<td>Alabama State Port Authority</td>
<td>Columbia, AL</td>
</tr>
<tr>
<td>Port of Cordova</td>
<td>Alabama State Port Authority</td>
<td>Cordova, AL</td>
</tr>
<tr>
<td>Port of Decatur</td>
<td>Decatur Transit, Inc.</td>
<td>Decatur, AL</td>
</tr>
<tr>
<td>Port of Demopolis</td>
<td>Alabama State Port Authority</td>
<td>Demopolis, AL</td>
</tr>
<tr>
<td>Port of Epes</td>
<td>Industrial Board of Sumter County</td>
<td>Epes, AL</td>
</tr>
<tr>
<td>Port of Eufaula</td>
<td>Alabama State Port Authority</td>
<td>Eufaula, AL</td>
</tr>
<tr>
<td>Port of Florence</td>
<td>Florence - Lauderdale County Port Authority</td>
<td>Florence, AL</td>
</tr>
<tr>
<td>Port of Guntersville</td>
<td>American Commercial Barge Line</td>
<td>Guntersville, AL</td>
</tr>
<tr>
<td>Port of Mobile</td>
<td>Alabama State Port Authority</td>
<td>Mobile, AL</td>
</tr>
<tr>
<td>Port of Montgomery</td>
<td>Alabama State Port Authority</td>
<td>Montgomery, AL</td>
</tr>
<tr>
<td>Port of Phoenix City</td>
<td>Alabama State Port Authority</td>
<td>Phoenix City, AL</td>
</tr>
<tr>
<td>Pickens County Port</td>
<td>Pickens County Port Authority</td>
<td>Pickensville, AL</td>
</tr>
<tr>
<td>Port of Selma</td>
<td>Alabama State Port Authority</td>
<td>Selma, AL</td>
</tr>
<tr>
<td>Port of Tuscaloosa</td>
<td>Alabama State Port Authority</td>
<td>Tuscaloosa, AL</td>
</tr>
</tbody>
</table>

Source: World Port Source

Most of the air freight is transported via the state’s major airports in Birmingham, Mobile, Montgomery, Huntsville and Tuscaloosa.

The location of pipelines, which are wholly owned by the private sector, are shown on Figures 8 and 9. More information about pipelines, and the original versions of these maps, can be found at the following links:

http://www.pipeline101.com/where-are-pipelines-located

Figure 8: Liquids Pipelines
Figure 9: Natural Gas Pipelines

Source: American Energy Mapping (AEM) 2013
4.4 Intermodal Connectivity

A map of known intermodal connectors, including major roads, railways, ports, and airports, was developed by the ALDOT planning staff and is provided as Figure 10. As more information is collected from stakeholders and local representatives, the contents of this map will be amended accordingly. As the map shows, there is a high level of connectivity related to the multimodal network. More specifically:

- Most of the rail lines and port facilities are in close proximity to or directly served by major roadway facilities such as interstates and state roads.
- The major airports throughout the state are also in close proximity to major roadways.
- While there is connectivity between rail lines and airports, the need for intermodal transfers between these modes is limited by the highly time sensitive nature of air freight as compared to rail freight.

A brief overview of major intermodal facilities in Alabama is provided below:

- Port of Mobile (Alabama State Port Authority)—Owned and operated by the Port of Mobile, the port handles bulk and general cargo such as coal, liquid bulk, forest products, iron and steel products. The 4,000 acre complex includes McDuffie Island and Choctaw Point. A significant rail intermodal operation exists in the Mobile Bay area due to its location on the Gulf of Mexico. This has been enhanced by the Alabama State Port Authority’s construction of the Choctaw Point and Garrows Bend facilities at the Port of Mobile. In January 2013, the Alabama State Port Authority’s board of directors approved expenditures for the construction, inspection, and testing of a rail access bridge that will connect five Class I railroads (AGR/BNSF, CN/KCS, CSXT, NS) and the Authority’s Terminal Railway (TASD) to an Intermodal Container Transfer Facility (ICTF), a rail intermodal facility and the second leg of the Authority’s Choctaw Point intermodal program. The Port Authority will let $11.5 million in contracts for the construction, inspection and testing of the rail access bridge into the intermodal rail facility. The ICTF will service import/export containerized cargoes moving through the Port, as well as domestic containerized cargoes from regional manufacturers. The project is expected to enhance the Port of Mobile’s competitive position and make shipping containerized freight more efficient and economical.

- 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 (IIC) 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 (HMAQ) owns and operates 6.2 miles of industrial switching track off the NS spur into the IIC. The trackage serving the IIC has the capability to extend rail southward to any potential riverport facility, bringing total track to approximately 12 miles. The IIC also features a US Customs & Border Protection Port of Entry with Customs Officials, US Department of Agriculture Inspectors, and Custom Brokers on site.

- Norfolk Southern’s Birmingham Regional Intermodal Facility (BRIMF)—Located in McCalla, the $97.5 million facility was opened in 2012 on a 316-acre site adjacent to the Jefferson Metropolitan Logistics Park. The facility is a critical component of NS’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.
Figure 10: Draft 2016 Alabama Known Intermodal Connectors

Draft 2016 Alabama Known Intermodal Connectors
• BNSF’s Finley Boulevard Yard—Finley Boulevard yard in Birmingham is an important part of the BNSF intermodal network handling freight for the Southeast region. Together with BNSF’s East Thomas Yard on 4th Street West, these facilities handle the shipment of automobiles and a mix of carload freight. BNSF’s business strategy includes alliances with shortline (Class III) railroads that can serve any of three roles: connections with industrial centers; switching customers and interchanging revenue traffic with Class I railroads; or operate a switching or terminal service transferring cars between railroads or group of facilities.  

• CSXT’s Boyles Yard—This major rail yard for CSXT located in Birmingham offers TRANSFLO terminal services (for transferring liquid and dry products between transportation modes), providing logistics management of rail shipments nationwide.

• CSXT’s Central Alabama Intermodal Container Transfer Facility (CAICTF)—This intermodal container transfer facility is located approximately 15 miles southwest of Birmingham in Bessemer, with service to international customers between CACTF 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 (BHRR, formerly Birmingham Southern Railway) at the Locust Fork of the Black Warrior River. This facility handles the transshipment of coal and iron ore. Additionally, Alabama Power (APOZ) operates an intermodal facility on the Locust Fork at its James H. Miller Steam Plant. Alabama Power utilizes this facility for the receipt of coal and delivery to its power plant.

• 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.

5.0 Baseline Conditions and Base Year Commodity Flow Results

The following subsections describe the amounts and types of commodities transported throughout the state by truck, rail, waterway, air and pipeline. The analysis of base year conditions and commodity flows was undertaken at various levels for the different modes in the FAF3 database. For trucks, which have direct shipper to receiver access, the detailed commodity flow assignment process discussed previously will be used and presented. For the other modes, limited disaggregation and summary tables will be presented to identify which commodities are using the specific mode and their impact on the state. It should be noted that some of this information was presented in Interim Progress Report #1.

5.1 Truck Commodity Flow

The truck commodities on the roadway system as defined by FAF3 for the base year 2012 were analyzed using both a summary statewide and with the assignment process presented previously. Figure 11 shows the total annual kilotons of each commodity for the statewide commodities that originate in Alabama. Figure 12 shows the total annual kilotons of each commodity that terminate in Alabama. The most shipped commodity by truck both inbound and outbound is logs to support a number of industries, with nearly 80,000 kilotons traveling both in and out of Alabama. Gravel, natural sands and non-metal mineral products are also heavily shipped commodities via truck throughout the state.

1 “Shortline Connection a Long-Term BNSF Strategy,” Railway: The Employee Magazine of Team BNSF, Winter 2013
Figure 11: Commodities Originating in Alabama by Truck


Figure 12: Commodities Terminating in Alabama by Truck

Truck flow from the statewide commodity flow assignment was developed as indicated previously, with the total truck flow for the state shown in Figure 13. The width of the roadway segment is proportional to the freight tonnage on the roadway. Additionally, for the four largest urbanized areas in Alabama, a commodity flow was developed to identify the commodities with the greatest tonnage on the roadways in the community. These results are shown in Table 2.

*Figure 13: Commodity Flow through Alabama by Truck*
Table 2: Top 10 Commodities by Region by Truck

<table>
<thead>
<tr>
<th>Rank</th>
<th>Birmingham</th>
<th>Huntsville</th>
<th>Mobile</th>
<th>Montgomery</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coal</td>
<td>Non-metallic Minerals</td>
<td>Coal</td>
<td>Logs</td>
</tr>
<tr>
<td>2</td>
<td>Non-metallic Minerals</td>
<td>Wood products</td>
<td>Coal Products</td>
<td>Non-metallic Minerals</td>
</tr>
<tr>
<td>3</td>
<td>Waste and Scrap</td>
<td>Waste and scrap</td>
<td>Non-metallic Minerals</td>
<td>Wood Products</td>
</tr>
<tr>
<td>4</td>
<td>Gravel and crushed stone</td>
<td>Base metals</td>
<td>Logs</td>
<td>Gravel and Crushed Stone</td>
</tr>
<tr>
<td>5</td>
<td>Base metals</td>
<td>Pulp</td>
<td>Waste and scrap</td>
<td>Waste and Scrap</td>
</tr>
<tr>
<td>6</td>
<td>Gasoline</td>
<td>Logs</td>
<td>Wood Products</td>
<td>Base Metals</td>
</tr>
<tr>
<td>7</td>
<td>Wood products</td>
<td>Motorized and other vehicle (parts)</td>
<td>Natural Sand</td>
<td>Pulp</td>
</tr>
<tr>
<td>8</td>
<td>Articles of base metals</td>
<td>Gravel</td>
<td>Basic Chemicals</td>
<td>Motorized Vehicles</td>
</tr>
<tr>
<td>9</td>
<td>Mixed Freight</td>
<td>Mixed Freight</td>
<td>Pulp</td>
<td>Coal and Petroleum Products</td>
</tr>
<tr>
<td>10</td>
<td>Basic Chemicals</td>
<td>Unknown commodity</td>
<td>Base Metals</td>
<td>Gasoline</td>
</tr>
</tbody>
</table>

Source: FAF Data 3.5

5.2 Rail Commodity Flow

The commodities on the state’s rail system have been analyzed using unique areas of the state. The first two are direct FAF3 zones, representing counties around Birmingham and Mobile. The remaining four are based on employment in the various counties that comprise the different portions of the remainder of the state, divided east-west by I-65 and north-south by I-20. For more information on overall rail commodity flow throughout the state, please refer to Interim Progress Report #1.

5.2.1 Birmingham Area

For the Birmingham area, the annual kilotons of each commodity moved by rail that originate in the area are shown in Figure 14. Figure 15 shows the annual kilotons of each commodity that terminate in the Birmingham area. The predominant commodity shipped through the Birmingham area via rail is coal. Of particular note, the amount of coal originating in the area is roughly 6,000 kilotons compared to approximately 20,000 kilotons terminating in the area.
Figure 14: Commodities Originating in Birmingham by Rail

Total KTons in 2012 (Originating in Birmingham by Rail)

Figure 15: Commodities Terminating in Birmingham by Rail

Total KTons in 2012 (Terminating in Birmingham by Rail)
5.2.2 Mobile Area

The annual kilotons of each commodity moved by rail that originate and terminate in the Mobile area are shown in Figures 16 and 17. The most common commodity shipped by rail in the area is coal, with approximately 6,000 kilotons originating and 5,200 kilotons terminating in the area. Other commodities originating in the area include basic chemicals and base metals.

*Figure 16: Top Commodity Flows Originating in the Mobile Area by Rail*

![Total KTons in 2012 (Originating in Mobile by Rail)](image)

*Figure 17: Top Commodity Flows Terminating in the Mobile Area by Rail*

![Total KTons in 2012 (Terminating in Mobile by Rail)](image)
5.2.3 Northeast Alabama Area

The annual kilotons of each commodity moved by rail that originate and terminate in the Northeast Alabama area are shown in Figures 18 and 19. The most common commodities shipped by rail in the area are coal and basic chemicals. The most common commodity coming into the area is coal, with approximately 900 kilotons terminating in the area per year. Basic chemicals make up the largest commodity shipped from the area by rail at approximately 1,600 kilotons shipped in 2012.

**Figure 18: Top Commodity Flows Originating in Northeast Alabama by Rail**

![Total KTons in 2012 (Originating in Northeast AL by Rail)](image)

**Figure 19: Top Commodity Flows Terminating in Northeast Alabama by Rail**

![Total KTons in 2012 (Terminating in Northeast AL by Rail)](image)
5.2.4 Southeast Alabama Area

The most common commodity shipped by rail in the area is coal, with approximately 2,000 kilotons originating in the area and over 1,800 kilotons terminating in the area. Another significant commodity shipped by rail was basic chemicals, with approximately 2,000 kilotons originating and 600 kilotons shipped into the area in 2012. The annual kilotons of each commodity moved by rail that originate and terminate in the Southeast Alabama area are shown in Figures 20 and 21.

Figure 20: Top Commodity Flows Originating in Southeast Alabama by Rail

Figure 21: Top Commodity Flows Terminating in Southeast Alabama by Rail
5.2.5 Southwest Alabama Area

The annual kilotons of each commodity moved by rail that originate and terminate in the Southwest Alabama area are shown in Figures 22 and 23. The most common commodity shipped by rail in the area is coal, with approximately 1,600 kilotons originating in the area and nearly 1,400 kilotons terminating in the area. Another significant commodity shipped by rail originating from the area was paper products, with nearly 1,200 kilotons in 2012.

**Figure 22: Top Commodity Flows Originating in Southwest Alabama by Rail**

**Figure 23: Top Commodity Flows Terminating in Southwest Alabama by Rail**
5.2.6 Northwest Alabama Area

The most common commodity shipped by rail in the area is coal, with approximately 3,500 kilotons originating and nearly 3,000 kilotons terminating in the area. Basic chemicals and base metals were also significant commodities shipped by rail originating in 2012 from the area. The annual kilotons of each commodity moved by rail that originate and terminate in the Northwest Alabama area are shown in Figures 24 and 25.

*Figure 24: Top Commodity Flows Originating in Northwest Alabama by Rail*

*Figure 25: Top Commodity Flows Terminating in Northwest Alabama by Rail*
5.3 Waterways Other than the Port of Mobile

The commodities moving into and out of Alabama using the waterway data are analyzed on a statewide basis. This is due to the fact that the waterways are isolated and the commodities shipped to and from these locations are not necessarily directly related to the employment near the ports. The Port of Mobile is not included in this analysis.

For the ports internal to Alabama excluding the Port of Mobile, the total annual kilotons that are shipped that originate in Alabama are shown in Figure 26. The total annual kilotons that terminate at the ports in Alabama other than Mobile are shown in Figure 27. The most common commodities shipped from these ports were base metals and chemical products, whereas the most common imports were cereal grains, gasoline and basic chemicals.

Figure 26: Commodity Flows by Water Originating in Alabama Ports Other than Mobile

![Figure 26: Commodity Flows by Water Originating in Alabama Ports Other than Mobile](image)

Figure 27: Commodity Flows by Water Terminating in Alabama Ports Other than Mobile

![Figure 27: Commodity Flows by Water Terminating in Alabama Ports Other than Mobile](image)
5.4 Air Commodities

Annual kilotons of selected commodities in air freight moving into and out of Alabama are shown in Figures 28 and 29. Most freight by air is transported as cargo on commercial passenger flights and via couriers such as UPS and FedEx. When compared to other modes, the weight of commodities is much lower than other modes and is typically much more expensive.

*Figure 28: Commodity Flows by Air Originating in Alabama*

*Figure 29: Commodity Flows by Air Terminating in Alabama*
5.5 Pipeline Commodities

Pipeline commodity flow is controlled wholly by the private sector. Annual kilotons of selected commodities pipeline originating and terminating in Alabama by pipeline are shown in Figures 30 and 31. Commodities by pipeline originating in Alabama are primarily coal and fuel related commodities and other chemical products. This is very similar to pipeline commodities terminating in the state, with the exception of gasoline.

**Figure 30: Commodity Flows by Pipeline Originating in Alabama**

**Figure 31: Commodity Flows by Pipeline Terminating in Alabama**
6.0 Freight Network Evaluation Framework

Based on the federal guidance and key freight considerations noted previously, an important component of the Freight Plan will be the development of performance measures to evaluate freight mobility throughout the state. Being a statewide effort, the evaluation framework must be completed at two levels:

- Statewide Level – It is important to establish state metrics based on current conditions so benchmarks can be developed to monitor the improvement of statewide freight mobility.
- Corridor Level – The analysis of certain conditions such as congestion, delay, and connectivity to other major freight generators and intermodal facilities can assist policymakers to prioritize needed freight improvements throughout the state.

Another early task in plan development was a peer review of statewide freight plans from Florida, Georgia, Mississippi and Tennessee. With regard to performance measures, the review yielded the following findings:

- All demonstrated a linkage of performance measures to federal and statewide policies as well as their goals and objectives.
- Being a statewide effort, performance measures should be kept at a very high level.
- The applicability and/or effectiveness of performance measures is inherently linked to the amount of data available at assess them.
- Input on the performance measures from their respective freight advisory committees.

Based on these trends, the initial performance measures presented herein were developed in a manner consistent with those of our bordering states.

6.1 Goals and Performance Measure Development Process

The overall mission statement and goals for the Freight Plan were established based on relevant federal and state policies.

**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.

**Goals:**

- Goal 1: Improve reliability and reduce congestion on the statewide Primary Freight Network
- Goal 2: Ensure a state of good repair along priority freight corridors through the state
- Goal 3: Improve economic benefits by supporting public and private sector investment in the statewide freight network
- Goal 4: Promote the safety and security of the freight infrastructure
- Goal 5: Promote the use of ITS technologies to monitor and enhance the overall performance of the freight network
- Goal 6: Promote and enhance both the human and natural environment while enhancing the performance of the priority freight network

In order to ensure consistency with the overall mission statement, the performance measures developed for the plan must be consistent with its overall goals. This also serves to ensure that monitoring and project evaluation processes throughout the state are consistent with federal and state guidelines.
The level of detail within performance measures is determined by the data available to evaluate them. As a result, some measures will be more data-driven, or quantitative, than those that rely on more qualitative assessments. The data sources available for more quantitative assessments are:

- **Statewide Traffic Model** – The statewide traffic model can be utilized as a source for a number of statewide measures regarding congestion and mobility on the network. Furthermore, factors such as delay also impact other considerations, such as economic competitiveness and environmental sustainability (due to emissions).
- **ALDOT Pavement Management Program** – ALDOT maintains a database of pavement for all state roadways, which can be used to measure conditions statewide and assess maintenance needs along freight corridors.
- **ALDOT Bridge Program** – This program can be used to assess the number of weight-restricted bridges and/or those with a low sufficiency rating along the freight network.
- **Critical Analysis Reporting Environment (CARE)** – CARE is a data analysis tool that can be used to assess safety conditions on either a statewide or corridor level.
- **US Census Data** – This data can support the evaluation of statewide measures such as employment in freight related industries or concentrations of low income and minority populations for Environmental Justice corridor related analysis.
- **Comprehensive Project Management System (CPMS)** – The CPMS is a tool used by ALDOT to organize the implementation of transportation improvements. It can be utilized to assess the actual investment in freight related projects throughout the state.
- **Local Land Use and Environmental Data** – Usually transmitted via GIS files, this information provides a means for identifying major freight generators and environmentally sensitive resources.

Thus far in the plan development process, little input has been received from the Freight Advisory Committee (FAC) regarding potential performance measures. However, the initial performance measures described herein will be presented to the FAC for comment.

More detail on the development of the mission statement and goals, the peer review results and findings, and coordination with the FAC can be found in Interim Progress Report #1.

### 6.2 Initial Performance Measures

The initial performance measures for the Plan are provided in Table 3. Of particular note:

- A direct linkage is shown between the goals, performance measures, and available data sources. With this linkage, these measures are also consistent with federal and state policy.
- Given that these performance measures are used to monitor conditions at a statewide level, they reflect a high level assessment appropriate for statewide analysis.
- The number of measures are limited to avoid complications with the evaluation process and to make it easier to understand for users, policymakers, and the public.

As more data becomes available and analysis tools evolve, these performance measures will need to be periodically re-evaluated.
### Table 3: Initial Freight Plan Performance Measures

<table>
<thead>
<tr>
<th>Draft Goals</th>
<th>Draft Performance Measures - Statewide (PFN)</th>
<th>Draft Performance Measures - Corridor</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Improve reliability and reduce congestion on the statewide Primary Freight Network</td>
<td>Annual hours of truck delay along the Primary Freight Network (PFN)</td>
<td>Annual hours of truck delay</td>
<td>Statewide Freight Model</td>
</tr>
<tr>
<td>VMT of truck traffic along PFN</td>
<td>VMT of truck traffic</td>
<td>VMT of truck traffic</td>
<td>Statewide Freight Model</td>
</tr>
<tr>
<td>Total number of pass-thru trucks through Alabama along PFN</td>
<td>Overall truck volumes</td>
<td>Percent truck volume of total volumes</td>
<td>Statewide Freight Model</td>
</tr>
<tr>
<td>Goal 2: Ensure a state of good repair along priority freight corridors through the state</td>
<td>Average pavement rating along PFN compared to statewide averages per functional class</td>
<td>Average pavement rating along corridor per statewide average per functional classification</td>
<td>ALDOT Pavement Management Program</td>
</tr>
<tr>
<td>Percentage of MO funding spent along the PFN vs. statewide (Minor Arterials and up)</td>
<td>Not applicable</td>
<td></td>
<td>CPMS</td>
</tr>
<tr>
<td>Number of weight-restricted bridges along the PFN</td>
<td>Not applicable</td>
<td></td>
<td>ALDOT Bridge Program</td>
</tr>
<tr>
<td>Number of ALDOT low-rated bridges along the PFN</td>
<td>Not applicable</td>
<td></td>
<td>ALDOT Bridge Program</td>
</tr>
<tr>
<td>Goal 3: Improve economic benefits by supporting public and private sector investment in the statewide freight network</td>
<td>Annual hours of truck delay along PFN</td>
<td>Annual hours of truck delay</td>
<td>Statewide Freight Model</td>
</tr>
<tr>
<td>Statewide annual funds invested by ALDOT for freight-related projects vs. overall projects - capacity and MO</td>
<td>Not applicable</td>
<td></td>
<td>CPMS</td>
</tr>
<tr>
<td>Number of major generators within 15 miles of PFN</td>
<td>Number of active freight generators within 15 miles of the corridor</td>
<td></td>
<td>ALDOT Major Freight Generators</td>
</tr>
<tr>
<td>Percent of Alabama workforce employed in freight-related industries</td>
<td>Not applicable</td>
<td></td>
<td>US Census American Community Survey</td>
</tr>
<tr>
<td>Goal 4: Promote the safety and security of the freight infrastructure</td>
<td>Statewide annual crashes, injuries, and fatalities involving heavy trucks</td>
<td>Not applicable</td>
<td>CARE</td>
</tr>
<tr>
<td>Level of safety infrastructure along at-grade crossings along the PFN</td>
<td>Level of safety infrastructure along at-grade crossings</td>
<td></td>
<td>ALDOT Section 130</td>
</tr>
<tr>
<td>Goal 5: Promote the use of ITS technologies to monitor and enhance the overall performance of the freight network</td>
<td>Number of ITS implementation and/or operations-based projects identified in STIP</td>
<td>Presence of ITS infrastructure components (DMS, signal coordination, TMC)</td>
<td>CPMS (Statewide), Project sponsor (Corridor)</td>
</tr>
<tr>
<td>Percentage of total freight improvement costs dedicated towards ITS implementation and/or operations-based improvements compared to statewide levels</td>
<td>Amount of investment of proposed project dedicated to ITS enhancements</td>
<td></td>
<td>CPMS (Statewide), Project sponsor (Corridor)</td>
</tr>
<tr>
<td>Goal 6: Promote and enhance both the human and natural environment while enhancing the performance of the priority freight network</td>
<td>Annual hours of truck delay along high priority freight network</td>
<td>Annual hours of truck delay</td>
<td>Statewide Freight Model</td>
</tr>
<tr>
<td>Annual percentage of freight projects (identified in the Statewide Freight Plan) receiving environmental clearance without requiring the completion of an Environmental Impact Statement (EIS).</td>
<td>Qualitative assessment of NEPA issues along corridor (river crossings, swamps, historical features)</td>
<td></td>
<td>ALDOT (Statewide); GIS data (Corridor)</td>
</tr>
<tr>
<td>Percent of all plans developed through ALDOT administered funds with freight components that address Title VI compliance (Includes Statewide Freight Plan, STP, UPWPs, TIPs, LRTPs, regional freight plans, and local CTPs)</td>
<td>Concentration of low income and minority populations along the corridor</td>
<td></td>
<td>ALDOT (Statewide); US Census, American Community Survey (Corridor)</td>
</tr>
</tbody>
</table>
7.0 Major Findings and Next Steps

The following items represent some of the major findings of this report:

- It is important to recognize that the roadways in the statewide freight commodity flow assignment are limited, and that the majority of roadways in the urban MPO travel demand models are absent from the statewide freight network. As such, the statewide freight commodity flow assignment process is not intended to accurately predict truck traffic on each roadway within a particular urban area, but to be a tool for determining the appropriate magnitude of truck traffic throughout the state.
- The statewide multimodal freight network is well connected in that most railways, ports, and airports are in proximity to major roadways. Most ports are also served by rail.
- Most freight travels throughout the state via truck and/or rail.
- The most shipped commodity by truck both inbound and outbound is logs to support a number of industries, with nearly 80,000 kilotons traveling by truck both in and out of Alabama. Gravel, natural sands, and non-metal mineral products are also heavily shipped commodities via truck throughout the state.
- Coal is the commodity most shipped by rail throughout the state. A notable amount of basic chemicals are also shipped by rail, with higher levels originating in the northeast and southeast portions of the state.
- A high level of freight traffic travels through the Birmingham area. The greatest volumes of truck freight flow along the area’s interstates, which include I-65, I-20, I-59, I-459, and the soon to be completed I-22.
- The draft performance measures have been developed to address the major emphasis areas of federal freight policy and are consistent with the overall goals for freight mobility. They are also consistent with those freight plans from Alabama’s neighboring states and will be finalized after review and comment from the FAC.

The establishment of the commodity flow modes and amounts throughout the state and development of the statewide assignment network has set the baseline. Developing the main components of the overall planning document will occur through the following upcoming activities:

- Identification of Major Freight Generators – The project team will complete the identification of major freight generators throughout the state in order to validate the employment densities in the base year 2012 statewide freight assignment. ALDOT has already created a draft map of these locations, which will be compared to input received from the MPOs and other stakeholders. This will result in a more accurate origins and destinations analysis for freight travel.
- Identification of Chokepoints – The base year flow assignment will be used to develop an initial assessment of congested areas for freight statewide. These chokepoints will also include areas where roadways with high levels of truck traffic conflict with highly used freight railroads at at-grade crossings. This information will also be validated through input from MPOs and stakeholders.
- Development of 2040 Projected Conditions – The statewide commodity flow assignment will use 2040 population and employment projections and projected freight volumes to forecast future congestion levels and connection needs throughout the state.
- Identification of Universe of Freight Improvements – Based on existing and projected conditions, a list of potential projects will be developed to alleviate freight deficiencies, to include capacity and
operations improvements as well as ITS treatments. It is expected that many of the projects identified through these analysis activities will already be included on the ALDOT work program.

- **Finalization of Initial Performance Measures** – The draft evaluation criteria will be presented to the FAC and finalized based on their input.
- **Development of Overall Investment Strategy** – The universe of freight improvements will be evaluated against the final performance measures to prioritize potential improvements, including maintenance needs, in order to develop an overall improvement strategy for freight mobility.
Appendix C

Commodity Flow Assignment Methodology
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 2016 Alabama Statewide Freight Plan effort. Portions of this information can also be found within sections of the interim summary report documents, which are included as Appendix A and Appendix B of the 2016 Alabama Statewide Freight Plan.

Introduction to FAF Data and the Statewide Freight Model

The Freight Analysis Framework Version 3.5 (FAF3) 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. As mentioned in Interim Summary Report #1, the freight flow data is presented using large aggregated zones, totaling 123 zones nationwide (Figure C-1). Alabama is comprised of three zones: Birmingham area, Mobile area, and the remainder of the state. The data presented in FAF3 are broken out by seven modes of transport and further classified by 43 commodities.

Figure C-1: FAF3 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.
Appendix C
Commodity Flow Assignment Methodology
2016 Alabama Statewide Freight Plan

The process for the development of the statewide freight flow assignment was presented in the first interim report, and repeated here as Figure C-2 for discussion purposes. 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 C-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 to the total employment in the county related to logging, forest nurseries and timber tract operation as a percentage of the total employment in the FAF3 zone for those same industries. Therefore, the contribution of flow for the data in the FAF3 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
Appendix C
Commodity Flow Assignment Methodology
2016 Alabama Statewide Freight Plan

way to differentiate the employment by NAICS code at the sub-county level. Table C-1 shows the commodity crosswalk between NAICS code and FAF3 commodity.

Table C-1: FAF3 Commodity Classes

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

Source: THE FREIGHT ANALYSIS FRAMEWORK VERSION 3, A Description of the FAF3 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 FAF3 zone for everywhere else in the country. Figure C-3 shows the zones structure for the nation and Figure C-4 shows the zone structure closer to Alabama.

Figure C-3: Zone Structure for Alabama Assignment (Nationwide)
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 C-5.
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 FAF3 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 D

Stakeholder Outreach Materials
<table>
<thead>
<tr>
<th>Organization</th>
<th>Name</th>
<th>Title</th>
<th>Agency</th>
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<tbody>
<tr>
<td>Mobile MPO</td>
<td>Chris Miller</td>
<td>Executive Director</td>
<td>South Alabama Regional Planning Commission</td>
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<tr>
<td>Birmingham MPO</td>
<td>Scott Tillman</td>
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<td>Regional Planning Commission of Greater Birmingham</td>
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<tr>
<td>Florida-Alabama TPO</td>
<td>Jill Lavender</td>
<td>Regional Planner, Special Projects Coordinator</td>
<td>West Florida Regional Planning Council</td>
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<tr>
<td>Alabama State Port Authority</td>
<td>Frank Fogarty</td>
<td>VP Trade and Development</td>
<td>Alabama State Port Authority</td>
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<tr>
<td>Alabama Railway Association</td>
<td>Maeci Walker</td>
<td>Executive Director</td>
<td>Alabama Railway Association</td>
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<tr>
<td>Alabama Trucking Association</td>
<td>Tim Frazier</td>
<td>Director of Safety and Member Services</td>
<td>Alabama Trucking Association</td>
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<td>Alabama Public Service Commission</td>
<td>Scott Morris</td>
<td>Administrative Law Judge</td>
<td>Alabama Public Service Commission</td>
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<td>Alabama Department of Economic and Community Affairs</td>
<td>Brenda Jones</td>
<td>Community &amp; Economic Development Division</td>
<td>Alabama Department of Economic and Community Affairs</td>
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<td>Alabama Department of Public Safety</td>
<td>Chris Brown</td>
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<tr>
<td>CSX Transportation, Inc.</td>
<td>Jane Covington</td>
<td>Resident Vice President</td>
<td>CSX Transportation, Inc.</td>
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<tr>
<td>Norfolk Southern Railway Company</td>
<td>Elizabeth Kennedy Lawlor</td>
<td>Manager, Government Relations</td>
<td>Norfolk Southern Railway Company</td>
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<td>BNSF Railway</td>
<td>Shundrekia Stewart</td>
<td>Director Public Private Partnerships</td>
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<td>Genesee &amp; Wyoming Inc.</td>
<td>Joe Arbona</td>
<td>Assistant Vice President, Government Affairs</td>
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<td>Genesee &amp; Wyoming Inc.</td>
<td>Bill Jasper</td>
<td>Senior Vice President, Southern Region</td>
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<td>Poarch Band of Creek Indians</td>
<td>Stephanie Bryan</td>
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<td>Poarch Band of Creek Indians</td>
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<td>Business Council of Alabama</td>
<td>William J. Canary</td>
<td>President and CEO</td>
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<td>Mark Bartlett</td>
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<td>ALDOT Freight Plan Team</td>
<td>Jim Doolin</td>
<td>Sr Transportation Planner, Metropolitan Planning</td>
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<tr>
<td>ALDOT</td>
<td>Robert J. Jilla, P.E.</td>
<td>Bureau Chief, Transportation Planning and Modal Programs</td>
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<td>ALDOT</td>
<td>Steve Williams</td>
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<td>Bryan Fair</td>
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<td>Jason Levandoski</td>
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<tr>
<td>ALDOT</td>
<td>Donna Lee</td>
<td>Engineering Assistant, Rail-Highway Safety Section, Modal Programs</td>
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<td>Sam Poole</td>
<td>Transportation Manager, Safety Section, Modal Programs</td>
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<td>ALDOT</td>
<td>Tim Barnett, PE, PTOE</td>
<td>State Safety Operations Engineer, Office of Safety Operations, Modal Programs</td>
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<tr>
<td>ALDOT</td>
<td>Stuart Manson</td>
<td>Office of Safety Operations, Modal Programs</td>
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<td>Randy Stroup</td>
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<td>ALDOT</td>
<td>Ronny Pouncey</td>
<td>Assistant Bureau Chief, Surveying and Mapping Section</td>
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<td>Randy Braden</td>
<td>Assistant State Maintenance Engineer, Vehicle Weight Enforcement Section, Maintenance Bureau</td>
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<td>ALDOT</td>
<td>Evelyn Pao</td>
<td>Rail Section Manager, Modal Programs</td>
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<tr>
<td>ALDOT</td>
<td>Frank Farmer</td>
<td>Aeronautics Bureau</td>
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ALDOT Statewide Freight Plan
Freight Advisory Committee Meeting
June 25, 2015 – 1:30 PM

Presentation Agenda

- Welcome and Introductions
- Freight Planning Purpose and Guidance
- Statewide Modeling Effort Overview
- Topics/Questions for FAC Input and Discussion
- Next Steps
Overview of Freight Plan

- **Purpose**
  - Align Alabama’s freight policy with MAP-21 and related guidance
  - Provide guidance to MPOs on performance monitoring

- The 2016 Alabama Statewide Freight Plan will identify:
  - Alabama Statewide Freight Network and methodology
  - Motor freight movement characteristics
  - Deficiencies on Freight Network (congestion, safety, other)
  - MAP-21 and Title VI consistency and compliance
  - Goals and performance measures specific to motor freight

- **Previous Efforts**
  - 2010 Alabama Statewide Freight Study and Action Plan
  - 2013 Alabama Rail Plan and Rail Directory

MAP-21 Interim Guidance for Statewide Freight Plans

- Identify significant freight system trends, needs, and issues
- Describe freight policies, strategies, and performance measures that will guide freight-related transportation investment decisions
- Describe how the plan will improve ability to meet national freight goals
- Show evidence of consideration of innovative technologies and operational strategies
- Consider improvements required on routes where heavy vehicle travel is projected to substantially deteriorate roadways condition
- Inventory facilities with freight mobility issues and describe strategies to address those freight mobility issues
Draft Mission and Vision Statements

- **Mission**
  - 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

- **Vision**
  - The State of Alabama desires a safe, robust freight transportation system that supports the economic vitality of the State’s residents and businesses, provides increased transportation mobility and accessibility, and facilitates the efficient, integrated and safe movement of goods throughout the state

FAC Role and Expectations

- Small but key group of freight transportation stakeholders
  - Direct knowledge of/connections with all freight modes
  - Represent users/shippers and policymakers from public and private sectors

- Guide study direction

- Assist in assessing existing conditions and developing feasible plan

- Role is advisory
  - Advise on freight-related issues, priorities, and funding
  - Provide forum for discussion of freight-related decisions
  - Communicate and coordinate regional priorities to all parties
  - Promote exchange of information between public and private sectors
  - Participate in development of 2016 Alabama Statewide Freight Plan

- Materials distributed on study webpage
Peer Review

- Reviewed Statewide Freight Plans
- Interviewed key DOT staff
- Adjacent states
  - Florida Mobility and Trade Plan (FMTP), FDOT
  - Georgia Statewide Freight and Logistics Plan, GDOT
  - Mississippi Statewide Freight Plan, MDOT
  - Tennessee Statewide Multimodal Freight Plan, TDOT

Summary Flow Characteristics

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<th>Origin/ Destination</th>
<th>2012</th>
<th>2040</th>
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<td>Freight Flow in Alabama</td>
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<td>Total</td>
<td>515,498.56</td>
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<td>Domestic</td>
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<tr>
<td>Exported</td>
<td>23,111.88</td>
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<th>Volume 2040</th>
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<th>Ratio</th>
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<td>41.17%</td>
<td>77,763.6444</td>
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<td>Rail</td>
<td>37,043.7328</td>
<td>30.63%</td>
<td>26,850.4950</td>
<td>18.71%</td>
<td>-11.92%</td>
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<th>State</th>
<th>Volume (2012)</th>
<th>Volume (2040)</th>
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<td>Georgia</td>
<td>15,709,934</td>
<td>31,554,776</td>
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<td>Mississippi</td>
<td>11,783,148</td>
<td>19,881,817</td>
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<td>Tennessee</td>
<td>8,843,420</td>
<td>19,020,694</td>
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<td>Illinois</td>
<td>3,019,719</td>
<td>17,252,758</td>
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<td>Florida</td>
<td>7,419,232</td>
<td>13,214,923</td>
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<td>12,605,333</td>
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<td>Logs</td>
<td>1,106,595</td>
<td>10,994,172</td>
<td>993.59%</td>
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<tr>
<td>Coal</td>
<td>19,089,300</td>
<td>10,721,448</td>
<td>56.16%</td>
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Statewide Modeling Effort Overview

Data Collection
- Census Data: Employment data by NAICS code will be obtained for all counties
- FAF data: Divided into FAF zones
- Roadway data: Interstates, US Highways, State Highways

Processing
- Disaggregation: The disaggregation will be based on NAICS employment related to the specific commodity moved
- Disaggregate FAF data: States that border Alabama will be disaggregated to counties, Alabama will be disaggregated to census tracts
- Develop Voyager Network: A Voyager network will be developed that contains all Interstates, US Highways for Alabama and neighboring states and all state highways within Alabama

External Trips (Includes International)
- External Traffic: All pass through flows will be developed using FAF zone or county in neighboring states
- External Traffic: The External Traffic will be assigned to the network

Internal Trips
- Internal Traffic: All internal flows will be developed using disaggregated data to the census tract level
- Internal Traffic: The Internal Traffic will be assigned to the network

Sample Report Mapping

Analysis for Future Year Truck Traffic
ALDOT Freight Planning Website

www.dot.state.al.us

Bureaus drop-down box on lower right

“Transportation Planning and Modal Programs”

ALDOT Mapping
Topics/ Questions for FAC Input

- Which portions of the roadway network:
  - Are most important to freight movement?
  - Experience freight related congestion or delay?
  - Are problematic for truck movements?
  - Are most in need of maintenance (pavement, restriping, etc.)?

- Where are there specific bridges or overpasses that present obstacles to truck and/or rail operations?

- Are there any anticipated changes in your primary commodity types or volumes?

- Are there any anticipated changes in your use of intermodal facilities?

- What kinds of technologies are anticipated to assist with freight movement and logistics?

- What types of real time information do you use for tracking freight?

- Do you schedule logistics to take advantage of off-peak hours?

Next Steps

- Identify Statewide Freight Network
- Develop performance measures
- Identify freight projects and prioritize
1) Welcome and Introductions
2) Overview of Freight Plan Effort
3) FAC Role and Expectations
4) Relevant Policies and Peer Review
5) Draft Mission, Vision and Goals
6) Overview of the Statewide Modeling Effort and Freight Flow Characteristics
7) Topics/Questions for FAC Input/Discussion
   a) Which portions of the roadway network:
      i) Are most important to freight movement?
      ii) Experience freight related congestion or delay?
      iii) Are problematic for truck movements?
      iv) Are most in need of maintenance (pavement, restriping, etc.)?
   b) Where are there specific bridges or overpasses that present obstacles to truck and/or rail operations?
   c) Are there any anticipated changes in your primary commodity types or volumes?
   d) Are there any anticipated changes in your use of intermodal facilities?
   e) What kinds of technologies are anticipated to assist with freight movement and logistics?
   f) What types of real time information do you use for tracking freight?
   g) Do you schedule logistics to take advantage of off-peak hours?
8) Other Discussion Topics as Desired by FAC Members
9) Next Steps
Purpose
The Alabama Department of Transportation (ALDOT) has initiated an effort to develop the 2016
Alabama Statewide Freight Plan. The Freight Plan seeks to align Alabama’s freight policy with the latest
federal transportation bill (the Moving Ahead for Progress in the 21st Century Act, or MAP-21) and
related guidance from the Federal Highway Administration’s (FHWA’s) Office of Freight Management
and Operations. The Freight Plan will also serve to provide guidance to Metropolitan Planning
Organizations (MPOs) throughout the state to assist them in meeting their performance monitoring
requirements per MAP-21.

Study Team
ALDOT has contracted with J. R. Wilburn and Associates, Inc. to undertake this effort. The consultant
team has worked extensively with Alabama’s transportation network and freight transportation
dynamics. ALDOT representatives will guide the consultant team and oversee the study’s progress.
Extensive stakeholder outreach will occur throughout the study.

Schedule, Activities and Deliverables
Plan development activities were initiated in spring 2015 and are scheduled for completion at the end of
2015. The scope of services consists of the following major tasks:

Task 1: Review MAP-21 and other federal and state laws and regulations pursuant to preparation of
a statewide freight plan. Conduct peer review of plans/practices from neighboring states.

Task 2: Review all Title VI programs, processes, and procedures, and summarize state and MPO
activities in a section entitled, “Title VI in the Preparation of the Statewide Freight Plan.”

Task 3: Develop a public involvement process for the Plan, consistent with state and federal
requirements, and to include reengaging the Statewide Freight Advisory Committee.

Task 4: Determine and define the statewide freight network, to include all modal and intermodal
elements of the various systems.

Task 5: Develop a statewide freight improvement strategy. This strategy should include any Freight
Performance Measures levied as requirements on the state DOTs by FHWA and as published
in the Federal Register.

Task 6: Prepare a Statewide Motor Carrier Freight Model based on the most recently available
Freight Analysis Framework data (FAF3 or better).

Task 7: Prepare a draft 2016 Alabama Statewide Freight Plan.

The primary deliverable is the 2016 Alabama Statewide Freight Plan document. The Plan will identify:

- Alabama Statewide Freight Network and the methodology used in its development
- Current motor freight movement characteristics based on the Statewide Freight Model
- Deficiencies along the Statewide Freight Network with respect to congestion, safety, or other
goods movement factors
- MAP-21 consistency and compliance
- Goals and performance measures specific to motor freight transportation, as well as the
methodology for their development/refinement
Three interim summary reports (covering Tasks 1-3, 4-5, and 6) will document activities and findings as the study progresses. The summary reports and draft/final Freight Plan will be made available for review on ALDOT’s website (http://cpmsweb2.dot.state.al.us/TransPlan/FreightPlanning/Default.aspx) as the documents are approved for release.

**Role of the Stakeholders**

Engaging stakeholders representing the large diversity of freight related interests in Alabama is important to understanding conditions and ensuring the reality of Alabama’s freight system is presented. Input from stakeholders guides the study’s direction, assisting in the accurate assessment of existing conditions and development of a feasible plan for future efforts. Stakeholder input will be engaged at key milestones in the study schedule. As the study progresses, materials will periodically be placed on the study website. Anyone expressing interest in the Freight Plan is added to the stakeholder list and will be notified when materials are added to website.

In accordance with MAP-21 recommendations, a small group of stakeholders representing key elements of the freight transportation community will be invited to form a Freight Advisory Committee (FAC). As a whole, the FAC membership will have direct knowledge of and connections with all freight modal networks (roadway, rail, air, and water), and represent users/shippers and policymakers from both the public and private sectors. The role of the FAC will be advisory, and they will be charged with:

- Advising ALDOT on freight-related issues, priorities, and funding
- Providing a forum for discussion of freight-related decisions
- Communicating and coordinating regional priorities to all parties
- Promoting the exchange of information between public and private sectors
- Participating in the development of the *2016 Alabama Statewide Freight Plan*

**Contact Information**

For more information on the Freight Plan or to be added to the stakeholder list, please contact:

Ms. Carla Bamatraf, JRWA, (404) 307-0605, bamatraf@comcast.net

Mr. Jim Doolin, ALDOT Bureau of Transportation Planning and Modal Programs, (334) 242-6097, doolinj@dot.state.al.us
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<td>Task 1: Review all MAP-21 and other federal and state laws and</td>
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- **Start Date (April 15, 2015)**
- **In Effect and Available on Website (January 2, 2016)**
- **Final Deliverable**
Draft Mission and Vision Statements

- **Mission**
  - 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

- **Vision**
  - The State of Alabama desires a safe, robust freight transportation system that supports the economic vitality of the State’s residents and businesses, provides increased transportation mobility and accessibility, and facilitates the efficient, integrated and safe movement of goods throughout the state
MAP-21 National Freight Plan Requirements

- Assess condition and performance of national freight network
- Identify highway bottlenecks that cause significant congestion
- Forecast freight volumes
- Identify major trade gateways and national freight corridors
- Assess barriers to improved freight transportation performance
- Identify routes providing access to energy areas
- Identify best practices for improving performance of national freight network and mitigating impacts of freight movement
- Provide process for addressing multistate projects and strategies to improve freight intermodal connectivity
MAP-21 National Freight Goals

- Invest in **infrastructure improvements** and implement operational improvements that:
  - Strengthen contribution of national freight network to **economic competitiveness** of U.S.
  - Reduce **congestion**
  - Increase **productivity**, particularly for domestic industries and businesses that create high-value jobs

- Improve **safety, security, and resilience** of freight transportation

- Improve **state of good repair** of national freight network

- Use **advanced technology** to improve safety and efficiency

- Incorporate **performance, innovation, competition, and accountability** into operation and maintenance of national freight network

- Improve **economic efficiency**

- Reduce **environmental impacts** of freight movement
# Draft Statewide Freight Plan Goals

<table>
<thead>
<tr>
<th>Draft Goals</th>
<th>Emphasis Area(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Ensure a state of good repair along priority freight corridors</td>
<td>• Infrastructure Condition</td>
</tr>
<tr>
<td>through the state</td>
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</tr>
<tr>
<td>Goal 2: Improve reliability and reduce congestion on the priority freight</td>
<td>• Congestion Reduction/Mobility Preservation</td>
</tr>
<tr>
<td>corridors</td>
<td>• Freight Movement and Economic Vitality</td>
</tr>
<tr>
<td>Goal 3: Promote and enhance both the human and natural environment while</td>
<td>• Environmental Justice</td>
</tr>
<tr>
<td>enhancing the performance of the priority freight network</td>
<td>• Environmental Sustainability (Natural)</td>
</tr>
<tr>
<td>Goal 4: Improve economic benefits by supporting public and private sector</td>
<td>• Economic Competitiveness</td>
</tr>
<tr>
<td>investment in the statewide freight network</td>
<td></td>
</tr>
<tr>
<td>Goal 5: Promote the safety and security of the freight infrastructure</td>
<td>• Safety</td>
</tr>
<tr>
<td></td>
<td>• Congestion Reduction/Mobility Preservation</td>
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</tbody>
</table>
Topics/Questions for FAC Input

- Which portions of the roadway network:
  - Are most important to freight movement?
  - Experience freight related congestion or delay?
  - Are problematic for truck movements?
  - Are most in need of maintenance (pavement, restriping, etc.)?

- Where are there specific bridges or overpasses that present obstacles to truck and/or rail operations?

- Are there any anticipated changes in your primary commodity types or volumes?

- Are there any anticipated changes in your use of intermodal facilities?

- What kinds of technologies are anticipated to assist with freight movement and logistics?

- What types of real time information do you use for tracking freight?

- Do you schedule logistics to take advantage of off-peak hours?
Mr. Victor Jordan (ALDOT) opened the meeting by welcoming everyone. He stated that this is the first FAC meeting, with later communication to occur through email and/or physical meetings. The Freight Plan is scheduled for completion by the end of this year. Everyone present introduced themselves.

Mr. Rod Wilburn, AICP (JRWA) then stepped up and provided an overview of the meeting agenda with a PowerPoint and handouts. He told the attendees to feel free to raise any questions they may have as we proceed through the presentation, unless they prefer to hold them until the end. He stressed that the team welcomes any comments attendees have on the materials presented today, such as the mission and vision, after they have had an opportunity to review the materials in more detail. In addition, FAC members are encouraged to share this and other study information with others in their organizations, as well as with their memberships if applicable, and to let them know that all comments are welcomed.

Mr. Wilburn then began through the PowerPoint slides. He briefly covered the following slides:

- Presentation Agenda
- Overview of Freight Plan
- MAP-21 Interim Guidance for Statewide Freight Plans
- Draft Mission and Vision Statements
- FAC Role and Expectations
- Peer Review

Questions raised during/after Mr. Wilburn’s presentation included:

- **Will megaregions be touched on?** The team will look at where the federal government (FHWA) is on this issue. The analysis process for the Freight Plan comes from FHWA data, which is not tied to megaregions.

- **Will trucks be modeled?** Yes, at the statewide level. The analysis will look at all modes of the network, including how each mode works internally (within Alabama) as well as how it touches other parts of the region and the nation. The team anticipates preparing a ‘briefing paper’ to provide suggestions at the MPO level to carry this information into their metropolitan work.

- **Will technologies be included?** Yes, with regard to the state of it industry wide and nationally. The industries themselves (e.g., trucking) are the most informed on the applicability and cost/benefit of available technologies. The team also hopes to capture changes modally and intermodally.

Mr. Wilburn then turned the presentation over to Dr. Michael Anderson, P.E. (JRWA). Dr. Anderson indicated that he is responsible for the technical aspects. He stated that the analysis will rely on data from FHWA’s most recent Freight Analysis Framework (FAF), Version 3.5, which was released in early May 2015. This data has FHWA’s ‘seal of approval’ for the future forecast based on existing commodity movements (gathered through an extensive survey process).
Dr. Anderson stressed that it is important for the stakeholders to review the FAF data, which details FHWA’s projections for 2040 based on existing commodity movements. He noted that the interim Summary Report #1 covering Freight Plan tasks 1-3 presents the existing conditions data from FAF3.5 in numerous tables, and that this interim deliverable will be available for stakeholder review after ALDOT has reviewed the document and submitted their comments to the team to address. Stakeholders are asked to forward any comments and/or contradictory information for the team to review.

The slides covered by Dr. Anderson, including a brief summary of his comments, include:

- **Summary Flow Characteristics**—This slide shows four different tables that provide an overview of the data. It is important to note that these tables show only limited selections of the available data. For example, the FAF distributes movements across eight different modes, and commodities are identified by 43 different NAICS codes. For this presentation, only the top several were selected. Complete information for the existing conditions (2012) is available in the interim Summary Report #1, with future projections to be presented in the next interim deliverable.
  - The Origin/Destination table shows the change in kilotons moved from 2012 (the base year) to 2040 (the horizon year). In total, a 60% increase is expected, with imports/exports through the Port of Mobile to increase 250%-300%.
  - The Mode table shows an increase in trucks, with a slight decrease in rail.
  - The State table, not surprisingly, shows that most of the top 5 destinations for Alabama freight are adjacent states.
  - The Commodity table shows a significant increase in logs, a doubling of cereal grains, and a modest increase in coal. It should be noted that manufacturing does not make the top 3.

- **Statewide Modeling Effort Overview**—This slide shows the key steps in the process of taking the FAF data, which is at a statewide level, and disaggregating it to the local level using Census employment data and the network infrastructure.

- **Sample Report Mapping**—This slide is an example of where the data analysis can take us. This slide was taken from the previous Alabama Statewide Freight Study and Action Plan, completed in 2010. Overlaying the data highlights locations with high truck traffic per lane and locations with high volume to capacity (V/C) ratios, thereby helping to identify locations where truck related improvements may be warranted to mitigate overall roadway congestion.

- **ALDOT Freight Planning Website**—Ms. Carla Bamatraf (JRWA) showed attendees how to access ALDOT’s new Freight Planning webpage, which is still in development. Detailed instructions are provided on this slide for future reference. In addition, a specific email address for comments can be accessed from the website (alabamastatwidefreightplan@dot.state.al.us).

- **ALDOT Mapping**—Dr. Anderson and Ms. Bamatraf showed the draft maps that ALDOT has prepared and posted to the freight planning webpage. Mr. Jordan reiterated that these are draft maps and that ALDOT welcomes any comments. Additional maps will be posted as they are prepared.
Topics/Questions for FAC Input—Attendees were asked to provide any input or comments on the topics/questions, which also accompanied the reminder email sent in advance of the meeting.

Questions raised during/after Dr. Anderson’s presentation included:

- **Is river/barge traffic included?** Yes. The slides are only an overview, and only the top few are presented for demonstration purposes.

- **Will 2040 be translated into modes?** Yes, the same as for existing (2012) – by tonnage per commodity per industry. The consultant team is responsible for loading that data onto the network and mode using a particular methodology.

- **Will the database be made available?** The deliverables associated with the Freight Plan include interim summary reports, the final plan, and appendices/supplements as appropriate. Included in the appendices/supplements will be the data files. As with all data from similar statewide efforts, requests for specific information and/or data should be directed to the appropriate ALDOT staff (Victor Jordan).

- **What were the criteria for freight generators on that ALDOT map?** This initial draft version utilized available data. Please forward any additions you think should be considered.

- **Will EDPA (Economic Development Partnership of Alabama) be contacted regarding marketing and megasites throughout the state?** The team wants your contacts, so please forward any you have so that we can reach out to them.

- **Is GPS archive data on origins/destinations for trucks available?** Yes, the majority of larger trucking companies have this information from their dispatch systems. Contacts to them about getting some of this data or findings might yield results.

The next steps presented on the final slide were quickly reviewed prior to closing the meeting. It was again stressed that we want to hear comments and input from a large group of stakeholders and contributors, and attendees were again asked to disseminate the Freight Plan information within their organizations.

At the request of the Birmingham and Mobile MPOs, the JRWA team committed to continuing coordination with them, in one-on-one meetings if necessary, in order for them to provide more detailed information regarding their specific freight conditions and needs.
Meeting Agenda

- Welcome and Introductions
- Website Update
- Commodity Flow Comparisons
- MPO Meetings Recap
- Draft Performance Measures
- Draft Primary Freight Network
- Next Steps
Overview of Freight Plan

- **Purpose**
  - Align Alabama’s freight policy with MAP-21 and related guidance
  - Provide guidance to MPOs on performance monitoring

- **The 2016 Alabama Statewide Freight Plan will identify:**
  - Alabama Statewide Freight Network and methodology
  - Motor freight movement characteristics
  - Deficiencies on Freight Network (congestion, safety, other)
  - MAP-21 and Title VI consistency and compliance
  - Goals and performance measures specific to motor freight
  - Statewide improvement strategy for freight mobility

- **Previous Efforts**
  - 2010 Alabama Statewide Freight Study and Action Plan
  - 2013 Alabama Rail Plan and Rail Directory
Commodity Flow Analysis

- Focus on statewide commodities moved
  - 2012 versus 2040
- Freight Analysis Framework data
  - 43 commodities
  - Different modes
  - Kilotons moved
- Looking to FAC for confirmation or questions

Anticipated results will be a growth in commodities being moved
No drastic change in commodities
Just increases

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5
Coal remains the dominate commodity – especially for the destination.

FAF predicts Alabama origin commodities of chemicals to decrease while gravel is expected to see a large increase.

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5

Expect significant growth in Manufactured Products and Precision Instruments.

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5
Biggest change will be cereal grains coming to Alabama on the inland waterways.

Origins will remain much lower than destinations.

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5

Large increase in Coal exports through the Port.

Small increases in other exports and all imports.

Bar Charts relate Annual Kilotons Shipped by Commodity for 2012 and 2040. FAF Version 3.5
MPO Regional Meetings

- Six meetings held – Columbus (GA), Montgomery, Mobile (2), Birmingham, and Huntsville
- Purpose was to gain regional perspective on freight issues
- All MPOs participated with the exception of Auburn and Dothan
- Representatives from Port Authority, Birmingham Airport, BNSF Railroad and other logistics staff also participated

Highlights from Meetings

- Presented base year commodity flows
- Gathered input on:
  - Overall Freight Mobility Trends
  - Freight Chokepoints
  - Key Freight Generators
  - Priority Freight Improvements
  - Ports Authority Expansion Plans
- Information to be used for:
  - Primary Freight Network, Model Validation, Improvement Strategy
Draft Primary Freight Network

- Prioritized Network for Freight Improvements and Strategies
- Required by MAP-21
- Draft network developed by ALDOT based on previous commodity flows, network connectivity
- To be finalized upon FAC comment and projected 2040 conditions

Draft Performance Measures

- Linked to Freight Mobility Goals
- Addresses key MAP-21 emphasis areas:
  - Congestion Reduction/ Mobility Preservation
  - Infrastructure Condition
  - Economic Competitiveness
  - Safety
  - Innovative Operational Improvements
  - Environmental Sustainability/ Environmental Justice
- Influenced by available data sources
- Corridor and Statewide levels
Next Steps

- Validate and complete statewide model
- Finalize Primary Freight Network
- Complete freight performance measures
- Develop freight improvement strategy
AGENDA
FREIGHT ADVISORY COMMITTEE (FAC) MEETING #2
2016 Alabama Statewide Freight Plan
Wednesday, October 7, 2015 at 1:30 p.m.
ALDOT Central Office, Conference Rooms 5-6

1) Welcome and Introductions
2) Project Status Update
3) ALDOT Freight Website Update
4) Commodity Flows by Mode
   a) 2012 vs. 2040 Commodities
      i) Truck
      ii) Rail
      iii) Waterways
      iv) Air
      v) Pipelines
   b) Overall Trends
   c) FAC Discussion
5) Summary of MPO Regional Meetings
6) Draft Primary Freight Network
   a) Overview
   b) FAC Input
7) Review of Performance Measures
   a) Overview
   b) FAC Input
8) Next Steps
   a) Finalize Statewide Freight Network
   b) Identify Freight Hotspots and Network Needs
   c) Freight Improvement Strategy (Project Identification and Prioritization)
<table>
<thead>
<tr>
<th>Freight Plan Update</th>
<th>Draft Goals</th>
<th>Draft Performance Measures - Statewide (PFN)</th>
<th>Draft Performance Measures - Corridor</th>
<th>Data Source(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal 1: Improve reliability and reduce congestion on the statewide Primary Freight Network</td>
<td>Annual hours of truck delay along the Primary Freight Network (PFN)</td>
<td>Annual hours of truck delay</td>
<td>Statewide Freight Model</td>
<td></td>
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<tr>
<td></td>
<td>VMT of truck traffic along PFN</td>
<td>VMT of truck traffic</td>
<td>Statewide Freight Model</td>
<td></td>
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<tr>
<td></td>
<td>Total number of pass-thru trucks through Alabama along PFN</td>
<td>Overall truck volumes</td>
<td>Statewide Freight Model</td>
<td></td>
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<tr>
<td></td>
<td>Percent truck volume of total volumes</td>
<td>Statewide Freight Model</td>
<td></td>
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<tr>
<td>Goal 2: Ensure a state of good repair along priority freight corridors through the state</td>
<td>Average pavement rating along PFN compared to statewide averages per functional class</td>
<td>Average pavement rating along corridor per statewide average per functional classification</td>
<td>ALDOT Pavement Management Program</td>
<td></td>
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<tr>
<td></td>
<td>Percentage of MO funding spent along the PFN vs. statewide (Minor Arterials and up)</td>
<td>Not applicable</td>
<td>CPMS</td>
<td></td>
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<td></td>
<td>Number of weight-restricted bridges along the PFN</td>
<td>Not applicable</td>
<td>ALDOT Bridge Program</td>
<td></td>
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<tr>
<td></td>
<td>Number of ALDOT low-rated bridges along the PFN</td>
<td>Not applicable</td>
<td>ALDOT Bridge Program</td>
<td></td>
</tr>
<tr>
<td>Goal 3: Improve economic benefits by supporting public and private sector investment in the statewide freight network</td>
<td>Annual hours of truck delay along PFN</td>
<td>Annual hours of truck delay</td>
<td>Statewide Freight Model</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statewide annual funds invested by ALDOT for freight-related projects vs. overall projects - capacity and MO</td>
<td>Not applicable</td>
<td>CPMS</td>
<td></td>
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<tr>
<td></td>
<td>Number of major generators within 15 miles of PFN</td>
<td>Number of active freight generators within 15 miles of the corridor</td>
<td>ALDOT Major Freight Generators</td>
<td></td>
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<tr>
<td></td>
<td>Percent of Alabama workforce employed in freight-related industries</td>
<td>Not applicable</td>
<td>US Census American Community Survey</td>
<td></td>
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<tr>
<td>Goal 4: Promote the safety and security of the freight infrastructure</td>
<td>Statewide annual crashes, injuries, and fatalities involving heavy trucks</td>
<td>Not applicable</td>
<td>CARE</td>
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<td></td>
<td>Level of safety infrastructure along at-grade crossings along the PFN</td>
<td>Level of safety infrastructure along at-grade crossings</td>
<td>ALDOT Section 130</td>
<td></td>
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<tr>
<td>Goal 5: Promote the use of ITS technologies to monitor and enhance the overall performance of the freight network</td>
<td>Number of ITS implementation and/or operations-based projects identified in STIP</td>
<td>Presence of ITS infrastructure components (DMS, signal coordination, TMC)</td>
<td>CPMS (Statewide), Project sponsor (Corridor)</td>
<td></td>
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<tr>
<td></td>
<td>Percentage of total freight improvement costs dedicated towards ITS implementation and/or operations-based improvements compared to statewide levels</td>
<td>Amount of investment of proposed project dedicated to ITS enhancements</td>
<td>CPMS (Statewide), Project sponsor (Corridor)</td>
<td></td>
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<tr>
<td>Goal 6: Promote and enhance both the human and natural environment while enhancing the performance of the priority freight network</td>
<td>Annual hours of truck delay along high priority freight network</td>
<td>Annual hours of truck delay</td>
<td>Statewide Freight Model</td>
<td></td>
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<td></td>
<td>Annual percentage of freight projects (identified in the Statewide Freight Plan) receiving environmental clearance without requiring the completion of an Environmental Impact Statement (EIS).</td>
<td>Qualitative assessment of NEPA issues along corridor (river crossings, swamps, historical features)</td>
<td>ALDOT (Statewide); GIS data (Corridor)</td>
<td></td>
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<tr>
<td></td>
<td>Percent of all plans developed through ALDOT administered funds with freight components that address Title VI compliance (includes Statewide Freight Plan, STIP, UPWPs, TIPs, LRTPs, regional freight plans, and local CTPs)</td>
<td>Concentration of low income and minority populations along the corridor</td>
<td>ALDOT (Statewide); US Census, American Community Survey (Corridor)</td>
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The last section of the Memphis - Birmingham segment of I-22 (US 79), terminating at I-65, will open to traffic in 2019. ALDOT has twice requested that the segment be added to the National Primary Freight Network due to its regional connectivity and imminent opening.

The I-10 Mobile River Bridge project spans the Mobile River from Mobile County to Baldwin County. It is in the approved Mobile and Eastern Shore MPO Long Range Plans at an estimated cost of $850 million, with spending to begin in 2018 at $80 million per year for fifteen years.

Construction phases for the Outer Loop are currently projected for year 2020 and beyond. This schedule may change if funding becomes available. Projections are estimated at $554.2 million in Year of Expenditure dollars.

The Northern Beltline in Birmingham is a visionary project with no current spending allocation. It is expected to be built once funding becomes available, at an unknown future date.

I-59 Birmingham - Chattanooga is included in the National Network due to its regional connectivity, linking the two major urban centers and providing service to the Gadsden area, Fort Payne area, and Northeast Alabama.

Source: ALDOT Metropolitan Planning Section - 8/31/2015
Based on 2010 Census Data
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes

Summary

The following represents a summary of the meetings with representatives from staff from MPOs, Ports Authority and other representatives from other interested parties throughout the state. The meetings served to gather input on regional freight issues. The agenda for these meetings is presented below. Meeting attendees are provided in Appendix A.

I. Introductions
II. Review of Freight Flow and Commodity Data
III. Chokepoints for Freight
IV. Major Freight Generators
V. High Priority Freight Needs/Projects
VI. Other Freight Issues
VII. Next Steps

Discussion Highlights

The following represents some of the discussion. For ease of review they have been organized by the regions to which they pertain. The input below will be used to validate the statewide model, finalize the primary freight network, develop the overall freight improvement strategy, provide guidance to MPOs on regional performance measures and/or provide overall policy guidance into the Statewide Freight Plan.

General

- It should be noted that improving major chokepoints for overall congestion will also have a positive impact for freight mobility.
- All of the MPOs will look to see if they can get information from their local port representatives regarding freight traffic.
- It was suggested to overlay chokepoints with freight flow to identify more freight-related issues along the roadway network.
- The Freight Plan needs to consider ITS technologies.
- A good source for truck travel information is data from the American Transportation Research Institute (ATRI).
• With respect to the draft commodity flow results, it would appear that the freight flow along I-59 was overstated in comparison to I-20.
• The freight plan needs to have more attention on the railroads and identify conflict points along high volume freight railways. The project team will look at the Statewide Rail Plan to identify these areas.
• Overall there is still a great deal of uncertainty among the MPOs on how to address freight.
• While hazardous materials need to be addressed, emergency management officials are often very reluctant to share that information.
• Coordination with locals will be needed to validate the statewide model.
• The project team needs to coordinate with the local MPOs to compare the results of the statewide model, particularly for Mobile, Birmingham, and Huntsville.
• The project team will be developing a white paper to assist MPOs throughout the state to assist in freight planning activities.
• More emphasis should be given to the waterway travel.
• The ALDOT website address will be sent to the MPOs for distribution to local governments.
• The private sector could probably tell you more about future projections; however, they are hesitant to release this information due to competitive needs.

Port-Related

• A major issue from both a statewide and local perspective is the development of the intermodal container transfer facility at the state port. The facility is being developed in two phases. During the first phase, containers will be transported from APM Container Terminal via truck along Ezra Trice Boulevard to the ICTF facility. During the second phase, a truck flyover will be constructed connecting the two facilities. The construction of the ICTF will allow direct transfer to rail upon completion. When completed, the intermodal facility will have the capacity of 200,000 TEUs. The facility currently handles 32,000 containers per year. Note: TEU stands for Twenty-Foot Equivalent Unit which can be used to measure a ship’s cargo carrying capacity. The dimensions of one TEU are equal to that of a standard 20’ shipping container. 20 feet long, 8 feet tall. Usually 9-11 pallets are able to fit in one TEU.
• The current capacity of APM Container Terminal is 350,000 TEUs. Phase II of construction is currently underway and once complete will increase capacity to 500,000 teu’s. At full build out, the container terminal will have the capacity to move 1,500,000 teu’s. (Note, full build out is not anticipated for several years and would only be completed as volumes dictate).
• The effective radius for truck traffic from the port is approximately 350 miles. Beyond that distance commodities are being shipped by rail or enter via some other port.
• A more detailed commodity flow analysis will be developed that better links the commodities to specific modes. Once that is completed the project team will complete ‘what-if’ scenarios and schedule a follow-up meeting with the Port staff to discuss.
• The MPO tried to utilize Airsage data that is generated via cell phones to monitor port activity but it was very inconclusive.
Mobile Area

- A great deal of hazardous materials are shipped along Cochran Bridge Road.
- With respect to the draft commodity flow results:
  - The flow along I-165 north is much higher than represented.
  - For the Mobile region, a flow diagram needs to be created that takes out external to external trips in order to get a better understanding of local trends.
  - The commodity flows will be checked with ALDOT classification counts and more specific zonal data from the Mobile MPO model and revised accordingly.
- The most significant chokepoints for freight are:
  - The I-10 tunnels, particularly west of the bay
  - The US 98/I-65 interchange
  - Westbound I-10, south of McDonald Street
- The most significant freight generator (other than the Port) is the Outokumpu Steel Mill. Also, a new industrial park is being developed in Theodore that currently houses Nippon Steel and FedEx.
- At-grade rail crossings are a problem for many east-west roadways through Mobile, particularly along the Canadian National line, which enters the city limits in the northwest and traverses town southeast prior to terminating at McDuffie coal terminal at the Alabama State Port Authority. The worst locations are along Florida Street (CN) and Hamilton Boulevard (CSX). This presents a problem at many grade crossings throughout town, including but not limited to, Moffat Road, Springhill Ave, Dauphin St, Florida St and Government Blvd. Additionally, the CSX crossing at Hamilton Blvd in south Mobile (Theodore area) presents a problem as well.
- At-grade rail crossings are a problem for many east-west roadways through Mobile, particularly along the BNSF line. The worst locations are along Florida Street (BNSF) and Hamilton Boulevard (CSX).
- The greatest freight need in the region is a new bridge over Mobile Bay.

Huntsville

- A map of chokepoints within Huntsville was provided by Huntsville staff. The major chokepoints are I-565 southwest to Decatur and Greenbrier Boulevard.
- Major freight generators in the Huntsville area that contribute to congestion include:
  - The Airport
  - Polaris
  - Toyota
  - Target Distribution Center
  - FedEx
  - UPS
  - NASA/RSA (Redstone Arsenal)
- High priority needs or improvements for Huntsville are:
  - The widening of US 72 west between Providence Main and Mooresville Road
- The widening of US 72 east from Moores Mill Road to Jackson County
- The widening of I-565 from I-65 to SR 255
- A northern bypass around Huntsville
- Memorial Boulevard south of Lilly Flagg Road
- SR 53 from Jeff Road north to the Tennessee state line
- The southbound US 231 bridge over the Tennessee River
- Memorial Parkway north of Sparkman Drive

- The City of Huntsville is actively investigating the potential for commuter rail.

**Birmingham**

- A truck auxiliary lane is needed on northbound I-65 near I-459 to allow trucks to climb the steep grade. The project is in the LRTP as a visionary project since no funding is available.
- The airport is currently updating its Master Plan, which was initially completed in 2002. The plan included several improvements to expand the freight cargo facilities. Most of the freight operations are package carriers and limited belly cargo on passenger flights. The airport is actively working to expand its freight traffic with various shippers. There are no significant issues with freight accessing the airport.
- One major rail-related chokepoint is the crossing of AL 119 in downtown Alabaster.
- The new intermodal facility has created issues on McAshan Road off of I-20/59. The roadway will eventually need to be rebuilt due to the amount of trucks on the roadway.

**Montgomery**

- Most of the draft flow data appeared to be accurate.
- MPO staff will work with the TCC members to develop a map of freight chokepoints. The major chokepoint is the I-85/I-65 interchange.
- Many of the freight generators are located along US 80. There is also a lot of new development occurring on that corridor.
- The employment data in the regional model should be a good indicator of key generators.

**Columbus/Phenix City**

- With respect to the draft commodity flow results:
  - The flow along the northern US 80 bypass is much higher than represented. Likewise, the commodity flow through the middle of Columbus is overstated.
  - The split of commodity flow between US 80 and US 280 in Phenix City needs to be re-examined. It would appear that the freight traffic along US 280 is understated and the freight flow on US 80 is overstated.
- The most pressing freight issue is the operations along the US 280/431 bypass in Phenix City. The number of signals creates delays for trucks. This is particularly true at the interchange of US 280 (westbound to Dothan) and US 431 and the intersection of US 80 (westbound to Montgomery).
• The major freight generators are Heatcraft and Wagoneer.
• Of the commodities listed, the movement of cars and auto parts needs to be examined given the presence of KIA.

Anniston

• One of the biggest needs in the Anniston area is the bridge over the Coosa River on I-20. Otherwise, there are very few issues related to freight mobility. Given the grade of the new bypass, it is likely that trucks will continue to use Quintard Avenue through town.

Gadsden

• The main choke points in the GEMPO area are:
  o Intersection of Meighan Blvd (US431) and Hood Avenue in Gadsden;
  o US 431 and US 11 (at the viaduct) in Attalla; and
  o Railroad crossing at Hwy 77 and US 11 in Attalla;
• The steep incline on US 431 North between Attalla and Boaz can be a problem for larger trucks.

Tuscaloosa

• There are very few options for north-south freight movements in Tuscaloosa.

Decatur

• A major freight need is a new bridge parallel to SR 20 to relieve current freight traffic to the river port. Others include:
  o Improvements to SR 20 throughout Decatur
  o The rerouting of SR 36 north of downtown Hartselle
• The major area chokepoint is anything near the port, including SR 20 and US Alternate 72.
• SR 20 and SR 36 are the main freight chokepoints with respect to rail crossings in the Decatur area.
• The GE plant is a major freight generator in the Decatur area.

Shoals

• Within the Shoals area the major chokepoints for freight traffic are:
  o The Port
  o US 72
  o SR 133
  o Shoals Industrial Park
• The largest need for freight mobility in the Shoals area are improvements to US 72 east of Florence.
## Appendix A. Meeting Attendees

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<tr>
<th>Name</th>
<th>Agency</th>
<th>Phone</th>
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<th>Meeting Attended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mike Kaczorowski</td>
<td>RPC of Greater Birmingham</td>
<td>205-264-8444</td>
<td><a href="mailto:kaz@rpcgb.org">kaz@rpcgb.org</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Harry He</td>
<td>RPC of Greater Birmingham</td>
<td>205-264-8435</td>
<td><a href="mailto:hhe@rpcgb.org">hhe@rpcgb.org</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Ehsan Doustomohammadi</td>
<td>RPC of Greater Birmingham</td>
<td>None Provided</td>
<td><a href="mailto:edoustomohammadi@rpcgb.org">edoustomohammadi@rpcgb.org</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Fenn Church</td>
<td>Church Transportation</td>
<td>205-243-0097</td>
<td><a href="mailto:fennchurch@churchtransportation.net">fennchurch@churchtransportation.net</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Mike Thompson</td>
<td>Birmingham Airport Authority</td>
<td>205-599-0545</td>
<td><a href="mailto:mthompson@flybirmingham.com">mthompson@flybirmingham.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Tony Bast</td>
<td>Birmingham Airport Authority</td>
<td>205-599-0514</td>
<td><a href="mailto:ambast@flybirmingham.com">ambast@flybirmingham.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Brad Weston</td>
<td>Birmingham Airport Authority</td>
<td>205-599-0515</td>
<td><a href="mailto:bweston@flybirmingham.com">bweston@flybirmingham.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Jim Payne</td>
<td>Birmingham Airport Authority</td>
<td>205-599-0747</td>
<td><a href="mailto:jpayne@flybirmingham.com">jpayne@flybirmingham.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Meinrad Tabengwa</td>
<td>Gadsden-Etowah MPO</td>
<td>256-549-4519</td>
<td><a href="mailto:mtabengwa@cityofgadsden.com">mtabengwa@cityofgadsden.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Jack Plunk</td>
<td>East Alabama RPDC</td>
<td>256-237-6741</td>
<td><a href="mailto:jack.plunk@earpdc.org">jack.plunk@earpdc.org</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Jill Hannah</td>
<td>West Alabama Regional Commission</td>
<td>205-333-2990</td>
<td><a href="mailto:jill.hannah@westal.org">jill.hannah@westal.org</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Nicholas Konen</td>
<td>BNSF Railway</td>
<td>817-324-3329</td>
<td><a href="mailto:nicholas.konen@bnsf.com">nicholas.konen@bnsf.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Jason King</td>
<td>TLS Incorporated</td>
<td>205-226-5500</td>
<td><a href="mailto:jason@tlsincorp.com">jason@tlsincorp.com</a></td>
<td>Birmingham</td>
</tr>
<tr>
<td>Rick Jones</td>
<td>Columbus Consolidated Government</td>
<td>706-225-3936</td>
<td><a href="mailto:rjones@columbusga.org">rjones@columbusga.org</a></td>
<td>Columbus-Phenix City</td>
</tr>
<tr>
<td>Lynda Temples</td>
<td>Columbus Consolidated Government</td>
<td>706-225-3938</td>
<td><a href="mailto:ltemples@columbusga.org">ltemples@columbusga.org</a></td>
<td>Columbus-Phenix City</td>
</tr>
<tr>
<td>Walter &quot;Doc&quot; Dorsey</td>
<td>Columbus Consolidated Government</td>
<td>706-225-3957</td>
<td><a href="mailto:dddorsey@columbusga.org">dddorsey@columbusga.org</a></td>
<td>Columbus-Phenix City</td>
</tr>
<tr>
<td>Parrish Lawlor</td>
<td>Alabama State Port Authority</td>
<td>251-441-7146</td>
<td><a href="mailto:plawlor@asdd.com">plawlor@asdd.com</a></td>
<td>Mobile/Port Authority</td>
</tr>
<tr>
<td>Kevin Harrison</td>
<td>Mobile MPO/South Alabama RPC</td>
<td>251-706-4635</td>
<td><a href="mailto:kccarrison@asdd.com">kccarrison@asdd.com</a></td>
<td>Mobile/Port Authority</td>
</tr>
<tr>
<td>Anthony Johnson</td>
<td>Mobile MPO/South Alabama RPC</td>
<td>251-706-4683</td>
<td><a href="mailto:ajohnson@asdd.com">ajohnson@asdd.com</a></td>
<td>Mobile/Port Authority</td>
</tr>
<tr>
<td>Robert Smith</td>
<td>Montgomery MPO</td>
<td>334-625-2218</td>
<td><a href="mailto:rsmith@montgomeryal.gov">rsmith@montgomeryal.gov</a></td>
<td>Montgomery</td>
</tr>
<tr>
<td>Kindell Anderson</td>
<td>Montgomery MPO</td>
<td>334-625-2754</td>
<td><a href="mailto:kindell@montgomeryal.gov">kindell@montgomeryal.gov</a></td>
<td>Montgomery</td>
</tr>
<tr>
<td>Tyler Ashmore</td>
<td>Alabama Department of Transportation</td>
<td>334-241-8548</td>
<td><a href="mailto:ashmore@dot.state.al.us">ashmore@dot.state.al.us</a></td>
<td>Montgomery</td>
</tr>
<tr>
<td>David Bollie</td>
<td>Alabama Department of Transportation</td>
<td>334-241-8535</td>
<td><a href="mailto:bollie@dot.state.al.us">bollie@dot.state.al.us</a></td>
<td>Montgomery</td>
</tr>
<tr>
<td>Kevin Boone</td>
<td>Elmore County</td>
<td>334-567-1162</td>
<td><a href="mailto:kbchd@elmore.rr.com">kbchd@elmore.rr.com</a></td>
<td>Montgomery</td>
</tr>
<tr>
<td>Patrick Dunson</td>
<td>City of Montgomery</td>
<td>334-625-2695</td>
<td><a href="mailto:pdunson@montgomeryal.gov">pdunson@montgomeryal.gov</a></td>
<td>Montgomery</td>
</tr>
<tr>
<td>Jill Lavender</td>
<td>West Florida RPC/Pensacola MPO</td>
<td>850-332-7976</td>
<td><a href="mailto:jill.lavender@wfrpc.org">jill.lavender@wfrpc.org</a></td>
<td>Eastern Shore/Pensacola</td>
</tr>
<tr>
<td>Sarah Hart</td>
<td>Eastern Shore MPO</td>
<td>251-213-3709</td>
<td><a href="mailto:sart@baldwincountyal.gov">sart@baldwincountyal.gov</a></td>
<td>Eastern Shore/Pensacola</td>
</tr>
<tr>
<td>Dennis Madsen</td>
<td>City of Huntsville/Huntsville Area MPO</td>
<td>256-427-5188</td>
<td><a href="mailto:dennis.madsen@huntsvilleal.gov">dennis.madsen@huntsvilleal.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Paige Colburn</td>
<td>City of Huntsville/Huntsville Area MPO</td>
<td>256-427-5188</td>
<td><a href="mailto:paige.colburn@huntsvilleal.gov">paige.colburn@huntsvilleal.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Ken Newberry</td>
<td>City of Huntsville/Huntsville Area MPO</td>
<td>256-427-5112</td>
<td><a href="mailto:ken.newberry@huntsvilleal.gov">ken.newberry@huntsvilleal.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Tanjie Kling</td>
<td>City of Huntsville/Huntsville Area MPO</td>
<td>256-427-5100</td>
<td><a href="mailto:tanjie.kling@huntsvilleal.gov">tanjie.kling@huntsvilleal.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Michelle Jordan</td>
<td>City of Huntsville</td>
<td>256-427-5411</td>
<td><a href="mailto:michelle.jordan@huntsvilleal.gov">michelle.jordan@huntsvilleal.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Dewayne Hellums</td>
<td>Decatur Area MPO</td>
<td>256-341-4717</td>
<td><a href="mailto:dhellums@decatur-al.gov">dhellums@decatur-al.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Lee Terry</td>
<td>Decatur Area MPO</td>
<td>256-341-4717</td>
<td><a href="mailto:jterry@decatur-al.gov">jterry@decatur-al.gov</a></td>
<td>Huntsville</td>
</tr>
<tr>
<td>Joseph Holt</td>
<td>Shoals Area MPO</td>
<td>256-389-0517</td>
<td><a href="mailto:jholt@nacolg.org">jholt@nacolg.org</a></td>
<td>Huntsville</td>
</tr>
</tbody>
</table>
Mr. Jim Doolin (ALDOT) opened the meeting with a welcome and individual introductions. Mr. Rod Wilburn, AICP (JRWA) then reminded the group that this was the second meeting of the FAC. As before, this meeting’s materials and notes will be distributed to FAC members and added to ALDOT’s Freight Plan webpage. The study team has recently distributed the draft Summary Report #2 and hopes FAC members will take some time to review the document and provide review comments. The draft Freight Plan is scheduled for completion by December 31 of this year. The team will distribute available information and/or documents as soon as we can so that FAC members have an opportunity to review and comment.

The team held a round of small group meetings in six regions of the state, mostly with stakeholders representing the MPOs and Port of Mobile, in August and September. As of the end of the month, the team will have completed modeling onto the network and, by early November, should begin to assess the implications on the infrastructure network, both current and potential future.

Mr. Bryan Fair (ALDOT) walked everyone through ALDOT’s latest Freight Planning webpage. Most of the completed mapping, as well as meeting summaries and materials and interim documentation, can be found under the appropriate drop-down options (categorized into “Modal Sections” and “Current Information” on the left and “Mapping” on the right), on that webpage. The link is: http://cpmsweb2.dot.state.al.us/TransPlan/FreightPlanning/Default.aspx

After today’s presentation and questions/suggestions, the team will provide an opportunity for each participant to tell us the key information from this effort that will be helpful to your program. It is a statewide effort, and we’ll continue to grapple with how to relate the findings to the MPOs. We don’t want to imply that we know everything; it’s important for us to integrate stakeholder data and information with what we use to guide us.

Mr. Wade Carroll then began at the “Overview of Freight Plan” slide. He reminded everyone that this plan’s purpose is to address freight needs and position Alabama to move forward, align with federal requirements and identify a Primary Freight Network. The draft performance measures (included in the handouts for review and comment) will ultimately tie the analysis to the final improvement strategy and ways to monitor freight. The Statewide Freight Model is the tool to identify deficiencies and chokepoints.

Dr. Michael Anderson (JRWA) provided a summary of the commodity flow analysis and preliminary findings. This information identifies what is actually moving and includes all modes. The material presented in the first FAC meeting was the “big picture”—total freight in 2012 and growth to 2040. The information presented now is in more detail, identifying which actual commodities are moving according to the 43 categories identified in the FAF. The summary slides do not show data for all 43 commodities but for the main ones and those with significant change. The data is provided in kilotons moved annually. It’s important to remember that we are presenting the information that we have from the FAF. Please provide comments if you have any questions or concerns about what you see.

Truck movements are presented first. It’s important to note this shows only those moving into and out of Alabama, not internal movements. The FAF projections do not show a drastic change. One important
topic of discussion involved coal. Although the FAF projections show movements increasing, it was noted from several stakeholders (most notably the Public Service Commission and the Port of Mobile) that their information indicates an actual decrease in coal in the future. Many coal plants will permanently close within the next five years. This is even more important with regard to the rail movements, which rail dominates now and is show to do even more so in the future.

An important point to note when looking at the air movements is that they represent much lower tonnage numbers than we saw with trucks and rail. Precision instruments and manufactured projects are the two largest commodities moved, and they a projected to have about a 5 times increase to 2040 on outbound movements and even more on inbound. As expected for air, these movements represent lower weight, higher value items.

The inland waterways, which does NOT include the Port of Mobile, shows that cereal grains will have the largest increase to 2040. For origins, base metals and chemical products both show an increase to 2040 while the others are projected to decrease. The Port of Mobile information is captured on the International Imports/Exports slide. As you can see, coal is the dominant commodity and is shown to increase very significantly (from about 9,000 KT to over 40,000 KT) to 2040. As mentioned previously, several stakeholders disagree with this data due to anticipated changes in the industry and environmental regulations. The consultant team will undertake a more aggressive literature search on coal. We ask stakeholders to send any suggestions on sources (local contacts or literature) so that we can insert that information into the findings and plan documentation.

With the exception of trucking, the data from FAF is not modeled, but instead collected and assessed to understand the implications and whether or not we agree with the findings. Trucking movements are included in a travel demand model and are therefore given a more detailed analysis. The data is disaggregated down to the Census tract level, then input into the modeling to identify tonnage on different roadways. Most of the data has been analyzed, both statewide and interstate, on FAF. The study team may want to do a variation of “what if” scenario for the future given different data to see the changes. If we extract that data from the disaggregation, we can do a better job of loading it on a kilotons basis. One final note is that although these slides only present the origins/destination information, internal movements WILL be included; however, this will NOT include delivery trucks and shorter range (local) movements.

The study team asked the FAC to think about their respective areas (by geography, model and/or commodity) and to tell us what you think the 2-3 things are that will significantly change over the next 25 years, along with anything you are hearing from your regular contacts. For example, we see an increase/decrease in X and Y commodities.

Wade Carroll then provided a brief overview of the regional meetings held primarily with the MPOs. There was good participation at the meetings, with only Dothan and Auburn not participating (the team is reaching out to them as well). Importantly, this was an opportunity to identify overall needs at the regional level, which adds to our knowledge from the model data. The meeting summaries are provided in your handout materials. Input and feedback included trends, chokepoints, and generators, as well as
the most critical improvements in coming years. They also helped to refine the Primary Freight Network by identifying key facilities. This information served to validate some of the model results (e.g., chokepoints). The study team asked the FAC members to review and comment/follow up on these meeting notes.

The Primary Freight Network is still in draft form as shown on the map from ALDOT. It is based on the generators and flow information, which can also be seen on other maps. Again, it provides a statewide perspective.

The draft Performance Measures are also included in the handouts. In the first FAC meeting, we noted the draft goals, which are shown along with the performance measures to ensure consistency, and therefore consistency with federal MAP-21 goals as well. You’ll see that the measures are both statewide and corridor specific.

Some additional items that were discussed in the questions period included:

- Delay information can be gained from the model, but remember the statewide perspective. Additional data is available for purchase from a variety of sources, but it’s important to make sure the data costs yield good benefits. The Texas Transportation Institute data now covers most cities and includes a large number of data sources. TTI’s information is more local MPO/city focused whereas our data is statewide.

- When looking at congestion, the chokepoint information doesn’t differentiate what is attributed to freight, but the type of improvement options may vary. For example, one strategy is to encourage traffic to move from congested interstates to nearby arterials with available capacity. Also, it often helps the public to understand the need for an improvement when you can tie the problem to the costs. Some of the MPO plans already have improvements identified for particular freight and/or chokepoint deficiencies, although they may be in the long term. The Freight Plan will look to identify the top chokepoints statewide, with particular emphasis on those that include large truck percentages as well as those that are most important to the state’s economy and growth.

- The trucks within MPO models is not a true truck factor. It might give capacity, but it requires another step for external-external movements.

- An important concern regarding freight truck volumes is the driver shortage, which is getting worse and will limit the growth of truck freight. ATRI has good numbers.

The study team’s next step is to disaggregate the data, looking at key generators, and then load it to the networks (including connectors for rail, etc.). We’re also reviewing the current CPMS to identify improvements that already exist for identified deficiencies. There are two important questions—what does it mean, and what can be done? The final improvement strategy will include policies as well as projects, and will look at operations and maintenance (including ITS) and not just capacity improvements. The team will also develop a “briefing paper” on how our work on the statewide level can give MPOs help in their regional freight planning efforts.

Finally, the study team wants to hear from you! PLEASE contact us with any comments or input!
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes
August 26, 2015 – 11:00 AM (EST)
Columbus/Phenix City MPO

Meeting Purpose: The purpose of the meeting was to review preliminary commodity flow data and gather input on freight needs for the Columbus-Phenix City region.

Attendees:

- Rick Jones, Columbus-Phenix City MPO
- Lynda Temples, Columbus-Phenix City MPO
- Doc Dorsey, Columbus-Phenix City MPO
- Steve Williams, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

- With respect to the draft commodity flow results:
  - The flow along the northern US 80 bypass is much higher than represented. Likewise, the commodity flow through the middle of Columbus is overstated.
  - The split of commodity flow between US 80 and US 280 in Phenix City needs to be re-examined. It would appear that the freight traffic along US 280 is understated and the freight flow on US 80 is overstated.
- The most pressing freight issue is the operations along the US 280/431 bypass in Phenix City. The number of signals creates delays for trucks. This is particularly true at the interchange of US 280 (westbound to Dothan) and US 431 and the intersection of US 80 (westbound to Montgomery).
- The major freight generators are Heatcraft and Wagoneer.
- Of the commodities listed, the movement of cars and auto parts needs to be examined given the presence of KIA.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes
August 26, 2015 – 2:00 PM
Montgomery MPO Offices

Meeting Purpose: The purpose of the meeting was to review preliminary commodity flow data and gather input on freight needs for the Montgomery region.

Attendees:

- Robert Smith, Montgomery MPO
- Kindell Anderson, Montgomery MPO
- Tyler Ashmore, Alabama Department of Transportation
- David Bollie, Alabama Department of Transportation
- Victor Jordan, Alabama Department of Transportation
- Kevin Boone, Elmore County
- Patrick Dunson, City of Montgomery
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General

- The project team will be developing a white paper to assist MPOs throughout the state to assist in freight planning activities.
- More emphasis should be given to the waterway travel.
- The ALDOT website address will be sent to the MPOs for distribution to local governments.
- The private sector could probably tell you more about future projections; however, they are hesitant to release this information due to competitive needs.

Montgomery Area

- Most of the draft flow data appeared to be accurate.
• MPO staff will work with the TCC members to develop a map of freight chokepoints. The major chokepoint is the I-85/I-65 interchange.
• The employment data in the regional model should be a good indicator of key generators.
• Many of the freight generators are located along US 80. There is also a lot of new development occurring on that corridor.
Meeting Purpose: The purpose of the meeting was to review preliminary commodity flow data and gather input on freight needs for the Mobile region and the Port of Mobile.

Attendees:

- Kevin Harrison, Mobile MPO
- Anthony Johnson, Mobile MPO
- Parrish Lawlor, Alabama State Port Authority
- Bryan Fair, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General Comments

- A good source for truck travel information is data from the American Transportation Research Institute (ATRI).

Port-Related

- A major issue from both a statewide and local perspective is the development of the intermodal container transfer facility at the state port. The facility is being developed in two phases. During the first phase, containers will be transported from APM Container Terminal via truck along Ezra Trice Boulevard to the ICTF facility. During the second phase, a truck flyover will be constructed connecting the two facilities. The construction of the ICTF will allow direct transfer to rail upon completion. When completed, the intermodal facility will have the capacity of 200,000 TEUs. The facility currently handles 32,000 containers per year. Note: TEU stands for Twenty-Foot Equivalent Unit which can be used to measure a ship’s cargo carrying capacity. The dimensions of one TEU are...
equal to that of a standard 20’ shipping container. 20 feet long, 8 feet tall. Usually 9-11 pallets are able to fit in one TEU.

- The current capacity of APM Container Terminal is 350,000 TEUs. Phase II of construction is currently underway and once complete will increase capacity to 500,000 teu’s. At full build out, the container terminal will have the capacity to move 1,500,000 teu’s. (Note, full build out is not anticipated for several years and would only be completed as volumes dictate).
- The effective radius for truck traffic from the port is approximately 350 miles. Beyond that distance commodities are being shipped by rail or enter via some other port.
- A more detailed commodity flow analysis will be developed that better links the commodities to specific modes. Once that is completed the project team will complete ‘what-if’ scenarios and schedule a follow-up meeting with the Port staff to discuss.
- The MPO tried to utilize Airsage data that is generated via cell phones to monitor port activity but it was very inconclusive.

Mobile Area

- A great deal of hazardous materials are shipped along Cochran Bridge Road.
- With respect to the draft commodity flow results:
  - The flow along I-165 north is much higher than represented.
  - For the Mobile region, a flow diagram needs to be created that takes out external to external trips in order to get a better understanding of local trends.
  - The commodity flows will be checked with ALDOT classification counts and more specific zonal data from the Mobile MPO model and revised accordingly.
- The most significant chokepoints for freight are:
  - The I-10 tunnels, particularly west of the bay
  - The US 98/I-65 interchange
  - Westbound I-10, south of McDonald Street
- The most significant freight generator (other than the Port) is the Outokumpu Steel Mill. Also, a new industrial park is being developed in Theodore that currently houses Nippon Steel and FedEx.
- At-grade rail crossings are a problem for many east-west roadways through Mobile, particularly along the Canadian National line, which enters the city limits in the northwest and traverses town southeast prior to terminating at McDuffie coal terminal at the Alabama State Port Authority. The worst locations are along Florida Street (CN) and Hamilton Boulevard (CSX). This presents a problem at many grade crossings throughout town, including but not limited to, Moffat Road, Springhill Ave, Dauphin St, Florida St and Government Blvd. Additionally, the CSX crossing at Hamilton Blvd in south Mobile (Theodore area) presents a problem as well.
• At-grade rail crossings are a problem for many east-west roadways through Mobile, particularly along the BNSF line. The worst locations are along Florida Street (BNSF) and Hamilton Boulevard (CSX).
• The greatest freight need in the region is a new bridge over Mobile Bay.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes
August 27, 2015 – 2:00 PM
ALDOT District Offices

**Meeting Purpose:** The purpose of the meeting was to review preliminary commodity flow data and gather input on freight needs for the Eastern Shore and Pensacola MPO areas.

**Attendees:**
- Jill Lavender, Pensacola MPO
- Sarah Hart, Eastern Shore MPO
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

**Discussion Highlights:**

- With respect to the draft commodity flow results:
  - Most of the flow data appeared to be accurate for both Eastern Shore and Pensacola.
  - It appears that the amount of commodity flow to the southwest of downtown Pensacola may be overstated and needs to be looked at more closely.
- A list of chokepoints was provided by the Eastern Shore MPO. These include:
  - I-10 from the Baldwin County line to SR 181
  - US 31 from US 98 to SR 59
  - US 98 from CR 48 to US 31
  - SR 59 from the MPO southern boundary to I-10
- A map of key freight generators was provided by Baldwin County. The key area for freight in Baldwin County is along SR 59 north of I-10.
- The Pensacola MPO has completed a *Regional Freight Network Plan* that includes a map of major freight generators and needs.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes
August 28, 2015 – 9:30 AM
Birmingham MPO Offices

Meeting Purpose: The purpose of the meeting was to review preliminary commodity flow data and gather input on freight needs for the Birmingham, Tuscaloosa, Gadsden, and Anniston metropolitan areas.

Attendees:

- Mike Kaczorowski, Regional Planning Council of Greater Birmingham
- Harry He, Regional Planning Council of Greater Birmingham
- Ehsan Doustmohammadi, Regional Planning Council of Greater Birmingham
- Fenn Church, Church Transportation
- Mike Thompson, Birmingham Airport Authority
- Toni Bast, Birmingham Airport Authority
- Brad Weston, Birmingham Airport Authority
- Jim Payne, Birmingham Airport Authority
- Meinrad Tabengwa, Gadsden-Etowah MPO
- Jack Plunk, East Alabama Regional Planning and Development Commission
- Jill Hannah, West Alabama Regional Commission
- Jason King, TLS Incorporated
- Nicholas Konen, BNSF Railway
- Victor Jordan, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates
Discussion Highlights:

General Comments

- With respect to the draft commodity flow results, it would appear that the freight flow along I-59 was overstated in comparison to I-20.
- The freight plan needs to have more attention on the railroads and identify conflict points along high volume freight railways. The project team will look at the Statewide Rail Plan to identify these areas.
- Overall there is still a great deal of uncertainty among the MPOs on how to address freight.
- While hazardous materials need to be addressed, emergency management officials are often very reluctant to share that information.
- Coordination with locals will be needed to validate the statewide model.
- The project team needs to coordinate with the local MPOs to compare the results of the statewide model, particularly for Mobile, Birmingham, and Huntsville.

MPO Specific Comments

Birmingham

- A truck auxiliary lane is needed on northbound I-65 near I-459 to allow trucks to climb the steep grade. The project is in the LRTP as a visionary project since no funding is available.
- The airport is currently updating its Master Plan, which was initially completed in 2002. The plan included several improvements to expand the freight cargo facilities. Most of the freight operations are package carriers and limited belly cargo on passenger flights. The airport is actively working to expand its freight traffic with various shippers. There are no significant issues with freight accessing the airport.
- One major rail-related chokepoint is the crossing of AL 119 in downtown Alabaster.
- The new intermodal facility has created issues on McAshan Road off of I-20/59. The roadway will eventually need to be rebuilt due to the amount of trucks on the roadway.

Anniston

- One of the biggest needs in the Anniston area is the bridge over the Coosa River on I-20. Otherwise, there are very few issues related to freight mobility. Given the grade of the new bypass, it is likely that trucks will continue to use Quintard Avenue through town.
Gadsden

- The main choke points in the GEMPO area are:
  - Intersection of Meighan Blvd (US431) and Hood Avenue in Gadsden;
  - US 431 and US 11 (at the viaduct) in Attalla; and
  - Railroad crossing at Hwy 77 and US 11 in Attalla;
- The steep incline on US 431 North between Attalla and Boaz can be a problem for larger trucks.

Tuscaloosa

- There are very few options for north-south freight movements in Tuscaloosa.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes
September 3, 2015 – 2:00 PM
Huntsville MPO

Meeting Purpose: The purpose of the meeting was to review preliminary commodity flow data and gather input on freight needs for the Huntsville, Decatur, and Shoals regions.

Attendees:

- Dennis Madsen, City of Huntsville/Huntsville Area MPO
- Paige Colburn, City of Huntsville/Huntsville Area MPO
- Ken Newberry, City of Huntsville/Huntsville Area MPO
- Tanjie Kling, City of Huntsville/Huntsville Area MPO
- Michelle Jordan, City of Huntsville
- Dewayne Hellums, Decatur Area MPO
- Lee Terry, Decatur Area MPO
- Joseph Holt, Shoals Area MPO
- Jason Levandoski, Alabama Department of Transportation
- Michael Anderson, J.R. Wilburn and Associates
- Stan Cauthen, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General

- It should be noted that improving major chokepoints for overall congestion will also have a positive impact for freight mobility.
- All of the MPOs will look to see if they can get information from their local port representatives regarding freight traffic.
- It was suggested to overlay chokepoints with freight flow to identify more freight-related issues along the roadway network.
• The Freight Plan needs to consider ITS technologies.

Huntsville

• A map of chokepoints within Huntsville was provided by Huntsville staff. The major chokepoints are I-565 southwest to Decatur and Greenbrier Boulevard.
• Major freight generators in the Huntsville area that contribute to congestion include:
  o The Airport
  o Polaris
  o Toyota
  o Target Distribution Center
  o FedEx
  o UPS
  o NASA/RSA (Redstone Arsenal)
• High priority needs or improvements for Huntsville are:
  o The widening of US 72 west between Providence Main and Mooresville Road
  o The widening of US 72 east from Moores Mill Road to Jackson County
  o The widening of I-565 from I-65 to SR 255
  o A northern bypass around Huntsville
  o Memorial Boulevard south of Lilly Flagg Road
  o SR 53 from Jeff Road north to the Tennessee state line
  o The southbound US 231 bridge over the Tennessee River
  o Memorial Parkway north of Sparkman Drive
• The City of Huntsville is actively investigating the potential for commuter rail.

Decatur

• A major freight need is a new bridge parallel to SR 20 to relieve current freight traffic to the river port. Others include:
  o Improvements to SR 20 throughout Decatur
  o The rerouting of SR 36 north of downtown Hartselle
• The major area chokepoint is anything near the port, including SR 20 and US Alternate 72.
• SR 20 and SR 36 are the main freight chokepoints with respect to rail crossings in the Decatur area.
• The GE plant is a major freight generator in the Decatur area.

Shoals

• Within the Shoals area the major chokepoints for freight traffic are:
- The Port
- US 72
- SR 133
- Shoals Industrial Park
- The largest need for freight mobility in the Shoals area are improvements to US 72 east of Florence.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes – Second Round
Mobile and Eastern Shore MPOs
December 3, 2015 – 10:00 AM
Mobile MPO Offices

Meeting Purpose: The purpose of the meeting was to review the results of the initial 2040 statewide freight model results and gather input on regional chokepoints, the statewide Primary Freight Network, and the framework for MPO freight planning.

Attendees:

- Tom Piper, Mobile MPO
- Anthony Johnson, Mobile MPO
- Frank Fogarty, Alabama State Port Authority
- Parrish Lawlor, Alabama State Port Authority
- Leslie Beard, C.H. Robinson
- Bryan Fair, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General Comments

- While the development of inland ports has gained momentum throughout the US to alleviate shipping bottlenecks at major ports (such as Savannah), the Port of Mobile has enough existing and planned capacity to accommodate projected cargo demands. *The project team will note this in the Freight Plan.*
- The bottlenecks reflected are on a link basis. *The project team will investigate ways to identify specific interchanges that are of particular significance.*
• The projected truck travel along Water Street looks to be understated. This is likely a function of the scale of the statewide freight model as opposed to the regional travel demand model. *The project team will investigate these results and make any necessary corrections as appropriate.*

• The projected freight volumes along the SR 158 corridor may be understated since it will be designated as US 98 upon its widening.

**Eastern Shore**

• The model needs to reflect the completion of the Baldwin Beach Express Phase II from I-10 to I-65, which will relieve a great deal of traffic along SR 59.
• There is a great deal of industrial development planned in the Theodore area of Baldwin County.
• There are bottlenecks projected along roadways in the southern portion of Baldwin County in conjunction with a reduction of percent trucks. This reflects a great deal of growth in general auto travel in the area.

**Draft Statewide Primary Freight Network**

• The draft statewide Primary Freight Network was presented and no additions were suggested; however, the SR 158 corridor may need consideration once it is designated as US 98.

**Framework for MPO Planning**

• Overall there was general support for the draft performance measures presented to the group.
• The MPOs should have some measures that serve to support economic development.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes – Second Round
Birmingham, Tuscaloosa, Gadsden-Etowah and Calhoun MPOs
December 8, 2015 – 10:00 AM
Birmingham MPO Offices

Meeting Purpose: The purpose of the meeting was to review the results of the initial 2040 statewide freight model results and gather input on regional chokepoints, the statewide Primary Freight Network, and the framework for MPO freight planning.

Attendees:

- Scott Tillman, Regional Planning Council of Greater Birmingham
- Mike Kaczorowski, Regional Planning Council of Greater Birmingham
- Harry He, Regional Planning Council of Greater Birmingham
- Marshall Farmer, Regional Planning Council of Greater Birmingham
- Fenn Church, Church Transportation
- Toni Bast, Birmingham Airport Authority
- Brad Weston, Birmingham Airport Authority
- Meinrad Tabengwa, Gadsden-Etowah MPO
- Jack Plunk, East Alabama Regional Planning and Development Commission
- Jill Hannah, West Alabama Regional Commission
- Shandrekia Stewart, BNSF Railway
- Jason Levandoski, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General Comments

- Rail needs were primarily addressed in the Statewide Rail Plan. The rail plan is available for download on the ALDOT website.
- It was suggested that ALDOT take an inventory of technology on an annual basis to assist the MPOs in understanding data collection options.
- It was suggested that truck classification counts should be taken at least once a year along key corridors.
- There are private sources that have very detailed data regarding truck movement in the Birmingham region. McLeod Software is such a firm that may need to be contacted. The project team will investigate this possibility.

**Birmingham**

- A select link directional analysis needs to be performed at the I-65/I-22 interchange to examine the true impacts of that improvement. The project team will perform this analysis.
- The high truck volumes along I-20 west of the Birmingham area make sense due to the presence of industrial uses and the Norfolk Southern intermodal facility.
- The fact that much of the Birmingham area showing up as a potential or future bottleneck is a result of the methodology used to identify bottlenecks on a statewide level. For more urbanized areas a different methodology may need to be employed that captures true congestion hot-spots.
- For Birmingham congestion, it may make more sense to only show the Statewide Primary Freight Network so the needs are more clearly identified. While local roadways are important from a regional perspective, they may not have statewide significance.
- Manufacturers for Mercedes are located in Jasper but the truck flow does not reflect much truck movement from Jasper to I-20. This needs to be checked. It was suggested that the project team call the Mercedes plant to gather that type of information.
- A major influence on congestion and truck traffic will be the completion of the Northern Beltline. It needs to be reflected in the future conditions map for the region. It was not included in the model because its construction is not included in the CPMS; however, the project team will conduct a model run to determine its potential benefits.
- Truck restrictions are hard to enact in the Birmingham region due to the lack of a complete bypass.

**Gadsden/Anniston**

- The projected conditions and bottlenecks reflected in the maps presented appeared to be consistent with projected conditions in the LRTP in both Gadsden and Anniston.
- With regard to freight generators, the map shown does not reflect three significant areas that generate truck traffic. This is probably a result of the methodology of dividing truck trips by the area of a particular TAZ. TAZs in the more rural areas are much larger...
in area. As a result, truck traffic generation from significant industrial uses within then TAZs may not accurately be reflected. The project team will investigate a methodology to accurately reflect these uses and their influence on the overall network.

**Tuscaloosa**

- With regard to bottlenecks, there are none shown through the core of the City but only the outskirts. This is particularly true for 15th Street, which accommodates a great deal of retail, and McFarland Boulevard. The project team will investigate these results and report back.
- A large decrease of the truck volumes along I-20/59 from Birmingham to Tuscaloosa is reflected in the projected volumes map. While the Mercedes plant is located between these areas, this disparity seems too high. The project team will investigate the reason for this decrease.
- There is absolutely no growth projected in the Tuscaloosa region. The project team will investigate these results and report back.

**Draft Statewide Primary Freight Network (PFN)**

- The bypass under construction east of Anniston will be designated at US 431 (and moved from Quintard Avenue) and should be considered for inclusion on the Statewide PFN.
- US 78 should be removed from the Statewide PFN with the completion of I-22.

**Framework for MPO Planning**

- The amount of committee engagement, performance measures and monitoring procedures will depend on the influence of freight on the regional network and the availability of data and staff to conduct analysis and monitoring activity.
- The amount of performance measures undertaken by an MPO for prioritization and monitoring should be kept to a minimum and only include those measures most pertinent to your particular region.

**Map Comments**

- All - Street names would help for points of reference.
- All – Areas reflected in the map needs to be included within the titles.
- Volumes and Percent Change -Legends need to reflect the top portion of the ranges presented in the maps.
- Percent Change - Maximum percentages need to be changed from 100% to the highest value.
• Volumes and Percent Change – Need to clarify what it means where two colors are shown on the same link on maps. *(It means that one direction of the roadway falls within a different range than the others. The legend reflects ranges per each direction. If necessary, a note will be added to future maps to reflect this item.)*
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes – Second Round
Decatur, Huntsville and Shoals Area MPOs
December 9, 2015 – 10:00 AM (CDT)
Decatur MPO Offices

Meeting Purpose: The purpose of the meeting was to review the results of the initial 2040 statewide freight model results and gather input on regional chokepoints, the statewide Primary Freight Network, and the framework for MPO freight planning.

Attendees:

- Dewayne Hellums, Decatur Area MPO
- Lee Terry, Decatur Area MPO
- Ken Newberry, City of Huntsville/Huntsville Area MPO
- James Moore, City of Huntsville/Huntsville Area MPO
- Tanjie Kling, City of Huntsville/Huntsville Area MPO
- Jesse Turner, Shoals Area MPO
- Joseph Holt, Shoals Area MPO
- Jason Levandoski, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General Comments

- The greatest need for all of the MPOs in the area is a second river crossing over the Tennessee River.
- An E-mail from the project team will be sent out to all of the MPOs throughout the state requesting the following:
  - Major truck generators that may not have been reflected on the freight generators maps
  - Any locally funded projects that would influence freight movement
o Any unfunded, aspirational projects noted in their respective LRTPs that would influence freight movement
o Any projects that you would like the project team to model to test their overall need for future mobility

- The terminology of “potential” bottlenecks needs to be changed to be more clear.
- The plan should take into account that many truck operators work in off-peak hours. *The team will work to account for this factor.*
- TAZs in the more rural areas are much larger in area. As a result, truck traffic generation from significant industrial uses within then TAZs may not accurately be reflected. *The project team will investigate a methodology to accurately reflect these uses and their influence on the overall network.*

**Decatur**

- Truck restrictions are already in place in Decatur and are heavily enforced. Trucks are limited to state roadways and prohibited from local roads.
- Sand and rock trucks are a major contributor to roadway maintenance needs in Decatur.
- The freight generation in 2040 west of Decatur looks to be understated.

**Huntsville**

- Huntsville also has truck restrictions on local roadways.
- There are several regionally significant projects that are being funded locally in Huntsville that may not show up in the model results.

**Shoals**

- Shoals does not have a great deal of truck traffic. Most of the freight in the Shoals area moves through Decatur.

**Draft Statewide Primary Freight Network (PFN)**

- The following facilities were recommended for inclusion on the statewide network:
  o SR 157 from Cullman to US 72
  o SR 225 from I-565 to SR 53
  o SR 53 from SR 225 to Tennessee State Line
Framework for MPO Planning

- The amount of committee engagement, performance measures and monitoring procedures will depend on the influence of freight on the regional network and the availability of data and staff to conduct analysis and monitoring activity.
- The amount of performance measures undertaken by an MPO for prioritization and monitoring should be kept to a minimum and only include those measures most pertinent to your particular region.

Map Comments

- All - Street names would help for points of reference.
- All – Areas reflected in the map needs to be included within the titles.
- The 2012 versus 2040 truck traffic for all of Northwest Alabama reflects no growth in freight traffic. The project team will investigate these results and report back.
Alabama Statewide Freight Plan

MPO Coordination Meeting Notes – Second Round
Auburn-Opelika, Montgomery, Dothan and Columbus-Phenix City MPOs
December 10, 2015 – 10:00 AM (CDT)
Auburn-Opelika MPO Offices

Meeting Purpose: The purpose of the meeting was to review the results of the initial 2040 statewide freight model results and gather input on regional chokepoints, the statewide Primary Freight Network, and the framework for MPO freight planning.

Attendees:

- Joshua Cameron, Auburn-Opelika MPO
- Kindell Anderson, Montgomery MPO
- Logan Kipp, Columbus-Phenix City MPO
- Steve Williams, Alabama Department of Transportation
- David Bollie, Alabama Department of Transportation
- Rod Wilburn, J.R. Wilburn and Associates
- Wade Carroll, J.R. Wilburn and Associates

Discussion Highlights:

General Comments

- The truck generation shown near the Tuskegee area needs to be checked. The project team will re-examine this data.
- There has been a great deal of industrial activity along the SR 229 corridor near Tallassee.
- The Industrial Access Board documentation in CPMS could be useful to gauge where industrial development is occurring throughout the state.
- MPOs throughout the state need to coordinate with ALDOT when considering potential studies. There have been several instances where ALDOT and the MPOs will be studying the same corridors.
• The freight generation maps will likely not appear in the report; they are primarily for illustrative purposes for this meeting.
• Freight movements along SR 14 and SR 140 to and from International Paper need to be examined. The project team will re-examine these links.
• Specific thresholds need to be determined that defines significant truck traffic and connectivity to generators.

Montgomery

• The projected truck volumes, percent trucks and bottlenecks reflected in the maps for the Montgomery MPO area appeared to be accurate.

Auburn-Opelika

• The projected truck volumes and percent trucks reflected in the maps for the Auburn-Opelika area appeared to be accurate.
• Most of the projected bottlenecks appeared to be accurate. The one exception is the link of SR 51 south of Opelika. The roadway is a very rural roadway and there is no industrial development along the corridor. The project team will investigate the reason for this projected bottleneck.

Columbus-Phenix City

• The projected conditions and bottlenecks reflected in the maps for the Columbus-Phenix City MPO areas presented appeared to be accurate. External nodes from the Georgia model were taken into account during model development.

Draft Statewide Primary Freight Network (PFN)

• No specific routes were recommended for inclusion on the draft PFN.
• In Southwest Alabama some state routes that serve as primary logging truck routes may need to be added to the network. The project team will look into this area more closely to identify potential routes.

Framework for MPO Planning

• The amount of committee engagement, performance measures and monitoring procedures will depend on the influence of freight on the regional network and the availability of data and staff to conduct analysis and monitoring activity.
• The amount of performance measures undertaken by an MPO for prioritization and monitoring should be kept to a minimum and only include those measures most pertinent to your particular region.
Overview of Freight Plan

- **Purpose**
  - Assess existing and projected freight conditions to identify needs and significant projects to meet those needs
  - Align Alabama’s freight policy with federal and related guidance
  - Provide guidance to MPOs for freight planning

- **Previous Efforts**
  - 2010 Alabama Statewide Freight Study and Action Plan
  - 2013 Alabama Rail Plan and Rail Directory
**Key Components**

- Description of compliance with federal policy
- Existing and projected commodity flows (all modes)
- Freight needs assessment
- Statewide Primary Freight Network (PFN)
- Overall freight improvement strategy
- Performance monitoring framework

**Consistency with Federal Policy**

- Initial scope developed to meet MAP-21
- FAST Act passed in December 2015
  - Very few changes to freight policy from MAP-21
  - Made Statewide Freight Plans a requirement
  - Specific Statewide Freight Plan requirements
  - Statewide Freight Plan goals consistent with National Freight Goals
  - No requirement for MPOs to adopt freight plans or elements, but still must monitor performance
- Compliance matrix developed for Freight Plan
FAC and Stakeholder Outreach

- Freight Advisory Committee
  - Staff from selected MPOs (Mobile, Birmingham, Montgomery and Huntsville)
  - Port Authority representatives
  - Railroad representatives
  - Airport officials
  - Freight logistics professionals

- Regional Meetings with MPO Staff
  - Two rounds of meetings held across the state (six meetings in first, four in second)
  - Key input: Freight generators, bottlenecks, needed improvements

Commodity Flow Highlights—All Modes

- Overall commodity flow projected to increase by 40%
- Trucks (roadways) currently carry 80% of all freight; same ratio projected for 2040
- Impact of uncertain future coal demand negligible on highways, but potentially greater for Port and rail
Projected Freight Flows by Truck

- Steady growth in commodity flow projected throughout entire interstate network
- Highest freight flows (120,000 annual kilotons and more) along:
  - I-20/59 west of Birmingham
  - I-65 south of Birmingham through Shelby County
  - I-65 south of Montgomery to Greenville

Projected 2040 Volumes and Bottlenecks

- Freight volumes of more than 15,000 trucks per day on most interstates (green)
- Several non-interstate facilities to exceed 25% truck traffic (blue)
- Conditions along all current (2012) bottlenecks to worsen statewide (yellow=VC >1.5, red=VC >3.0)
- Birmingham area to continue experiencing highest levels of congestion
- Smaller areas of bottlenecks and higher freight volumes to occur on non-interstate facilities such as US 280, US 72 Alt., and US 231
**Statewide Primary Freight Network**

- Developed through four-step process
  1. Integrate the National Primary Freight Network
  2. Develop draft network based on freight volumes and connectivity
  3. Revise per input from FAC and MPO input
  4. Finalize per technical analysis

- **Network Selection Criteria**
  - Presence on the National PFN
  - Existing and/or projected high truck traffic volumes
  - Connectivity to major freight generators and intermodal facilities
  - Connectivity to interstates and/or major highways

**Primary Freight Network**

- Total of 3,050 centerline miles (28% of state total)
- All interstates included (1/3 of network miles)
- Principal arterials the majority at 60% and 1,830 centerline miles
- 35% of PFN projected to be congested in 2040; 3% congested in 2012
Freight Improvement Strategy

Highway improvements by 2030 on Statewide PFN include:
- Capacity
- Bridge improvements
- Operations
- Resurfacing
- Safety

170 improvements include
- 27 capacity
- 143 maintenance/operations

35 of 170 at 2012 bottleneck locations

Freight Improvement Strategy

Significant improvements by 2030 in CPMS include:
- Widen I-10 Bayway and Mobile River bridge (2020) from Broad Street to Spanish Fort from four to eight lanes
- Widen I-10 from CR-39 to CR-59 in Mobile County (2023) from four to six lanes
- Widen I-59/I-20 in Tuscaloosa (2018) and Jefferson (2023-2025) counties from four to six lanes
- Widen I-65 in Shelby (2021) and Cullman (2025) counties from four to six lanes
- Widen I-85 in Montgomery (2030) and Lee (2030) counties from four to six lanes
- Widen I-565 from I-65 to the Madison County Line (2020-2021) from four to six lanes
- Resurfacing projects along I-65 and I-20/59
- Series of improvements along I-65 within Montgomery, Shelby, and Elmore counties
- I-10 tunnel rehabilitation
- I-85 bridge widenings within Montgomery and Macon counties
**Freight Improvement Strategy**

- Visionary improvements in 2040 LRTPs not included in STIP:
  - Widen/relocate SR 53 from north of Harvest Road to I-65 from two to four lanes (Huntsville MPO)
  - Widen SR 53 from Jeff Road north to the Tennessee state line (Huntsville MPO)
  - Widen I-565 from I-65 to Wall Triana Highway (Huntsville MPO)
  - Construct Northern Beltline (SR-959) from I-59 to I-65 (Birmingham MPO)
  - Add truck auxiliary lane on northbound I-65 at I-459 (Birmingham MPO)
  - Widen I-459 from I-59 to Morgan Road (Birmingham MPO)
  - Widen I-85 from SR 271 to SR 126 (Montgomery MPO)
  - Improve southbound US 231 bridge over the Tennessee River (Huntsville and Decatur MPOs)
  - Widen I-20/59 from Jefferson County to Greene County (Tuscaloosa MPO)
  - Improve I-20/59 at US 82 interchange (Tuscaloosa MPO)
  - Extend US 11 from I-20/59 to SR 216 to provide alternate route when I-20/59 is closed (Tuscaloosa MPO)

**Performance Monitoring Process**

- Universe of potential performance measures developed to address emphasis areas:
  - Congestion reduction/mobility preservation
  - Infrastructure condition
  - Economic competitiveness
  - Safety
  - Innovative operational improvements
  - Environmental sustainability/Environmental Justice

- FHWA to release guidance for performance measures, targets and monitoring procedures soon
**Major Findings**

- Plan developed consistent with federal guidelines
- Projected increases in truck commodity flow in conjunction with limited funding highlight need for strategic planning on Alabama’s highways
- Statewide PFN establishes a prioritized freight network eligible for increased federal share projects (should ALDOT change current policy)
- CPMS contains 170 improvements (27 capacity, 143 MO) that would address several bottlenecks
- Performance measures and monitoring procedures to be finalized upon release of FHWA guidance
Mr. Jim Doolin (ALDOT) welcomed attendees to the third and final FAC meeting for the Statewide Freight Plan development effort. The final plan is expected to be loaded to ALDOT’s website by early March. He stated that ALDOT and the consultant team appreciate the time offered by the FAC members to help in preparing this plan. Because ALDOT hopes the FAC members will continue to participate in other efforts, the FAC members will receive emails in future on how things are progressing and other opportunities for involvement.

Mr. Rod Wilburn (J. R. Wilburn and Associates, Inc.) noted that the project has been going for almost a year. The completion deadline was extended into the new year to allow for extra review time by staff and stakeholders. The handout materials provided to attendees when they signed in include copies of the presentation and the draft Plan Summary document. These documents will be posted on ALDOT’s Freight Planning website along with the others from the study within a few days. Mr. Wilburn requested that attendees provide any follow up questions or guidance within the next few weeks so that the team can respond prior to finalization of the documents and study completion.

As indicated on the Overview slide, Mr. Wilburn reiterated that this effort updates the freight plan that ALDOT has had in place for several years. By continuing the planning effort every few years, ALDOT will get a better sense of the freight movements in order to try to program improvements and be aware of bottlenecks that constrain movements, particularly for roadway related movements (trucks, at the Port, and at rail-to-truck connections). In addition, federal funding requires a plan be in place and analysis have been undertaken.

In referring to the Key Components slide, Mr. Wilburn noted the importance of remembering that this effort will not result in the development of a Freight Plan specific list of project needs through 2040. The plan will identify changes projected to occur and whether projects that could help are already planned. It serves to make DOT aware of the needs and to consider projects as funding becomes available.

A key point related to the Consistency with Federal Policy slide noted that a statewide freight plan is required for federal funding assistance, the same as regional plans are required for MPOs. The consultant team paid attention to the federal requirements throughout plan development, and the plan is compliant with the regulations. The Freight Plan document includes a table that cross-references the plan’s content with the federal requirements to demonstrate the connection. In addition, DOT will continue using the process to remain compliant.

The FAC committee and key regional stakeholders were helpful in developing the plan, particularly given each person’s unique perspective by geography and/or mode. FAC and stakeholder comments and observations were important consideration as the study progressed, and the FAC provided good feedback and guidance. Planning out to a 2040 horizon year is difficult, but at the statewide level is even more so. Two rounds of regional meetings were held across the state at the MPOs. As a statewide plan, it was not developed at the same degree of specificity as an MPO plan would be; it covered a more macro level and different kinds of data were used at different levels.
Dr. Michael Anderson explained the Commodity Flow Highlights slide. The assessment process is explained briefly in the plan document, with more detail available in the appendices. The assessment starts with generic data—tons moved. The assessment relied on USDOT data sources and projections; the consultant team used those projections for the analyses but did not make them. As noted on the slide, overall commodity flow is projected to increase by 40% by 2040, with trucks carrying 80% of all freight in Alabama. That percentage continues in the future for truck movements, just with larger total total freight volumes. Rail is projected at 11%.

With regard to the coal issue raised at previous meetings, the consultant team ran scenarios without including any coal movements. The results showed those potential changes in coal will not impact these projects. Importantly, future changes in coal do not distract from or change the overall findings.

Looking at the Projected Freight Flows by Truck, there is no shift in WHERE trucks are expected to be by 2040. No “new” locations with high volumes are projected. Several maps from the presentation and report were displayed on boards in the back of the meeting room for attendees to look over and ask any questions.

One question that was raised during the regional meetings was why the volumes seen along I-10 are so small. In looking deeper into that issue, the DOT data indicated that most freight originating out of Florida is northbound, not westbound towards Louisiana and Texas. The likely reason is that freight destined to those areas is likely to be shipped via boat past Florida to those western ports because it is cheaper (albeit somewhat slower) than arriving in Florida and having to transfer to rail or truck for longer distance journeys.

The Projected 2040 Volumes and Bottlenecks slide map really “tells the story.” The green indicates roadways with high truck volumes (15,000 per day and up). Blue shows locations where trucks account for more than 25% of total traffic, either because there are lots of trucks or that the traffic is mostly trucks. The yellow and red show congestion—high volume to capacity (V/C) locations, with yellow indicating volumes exceed capacity and red where it is much more in excess. Birmingham in particular shows lots of yellow and red. It experiences a lot of congestion AND a lot of trucks. The trucks do not cause the congestion, but they are stuck in it. Freight mobility is impacted because the trucks cannot move, but the trucks are not the cause of the congestion. There are a number of other yellow spots around the state, which are mostly cars causing congestion.

In response to a question, Dr. Anderson indicated that the 2040 projections used FAF data from version 3.5. The data provides commodity flow in kilotons, indicating what is moving; it does not provide specific vehicles. That next step was done by the consultant team. Commodity flows by kilotons were assigned (calculated) to a certain number of truck/rail loads onto the system to then result in the number of trucks on the network. It is important to remember that the FAF data does not capture short trips or empty trucks. Dr. Anderson also explained that the FAF data can be “verified” (“validation” is too strong a word for this) by looking at the ALDOT truck counts/percent truck data. This “verification” exercise indicated that the flow data is below the truck counts, although it generally held true, along
with the growth in flows. Also, the V/C assigned for “congested” was 1.5. Given the origin of the truck calculations, that is more toward a level of service (LOS) of D or E (regardless of source).

It was noted that the consultant team will be preparing an MPO White Paper to provide the MPOs with guidance on what this study’s data can and can’t be used for. As a reminder, this is a statewide analysis; local (regional) planning and modeling analysis utilizes shorter links and more detailed geography. On balance, the analysis indicated no surprises as to where the flows will increase and where they are going.

In response to several questions, the discussion reiterated that the FAF data does not account for alternate routing to avoid congestion (as is a key part of regional MPO travel demand models). This is an important part of the reason this study does not result in a detailed project list, because it lacks the “rigor” necessary for that at the local level. The analysis does identify locations for more detailed analysis, which can then be looked at in a finer grain by the regional MPO models. The FAF data is at a national level and includes only three zones for Alabama (Birmingham, Mobile, and the rest of the state). That data is then disaggregated across the state and for the adjacent states as well. Additional information about the disaggregation process and the resulting geographies is available in the interim summary reports as well as the final report appendices.

Wade Carroll began the discussion on the Statewide Primary Freight Network. The starting point was the national network, with some additional criteria established for the selection of additional links. The resulting Statewide Primary Freight Network (PFN), shown on the map, indicates that 3% of the PFN is currently congested and projected to increase to 35% in future.

As previously indicated, the Freight Improvement Strategy is not a prioritized list of projects. Through a review of ALDOT’s CPMS, a number of projects already planned/programmed through 2030 across the state were identified as offering potential freight mobility benefit by addressing the bottlenecks and maintaining the network. Even more projects were identified in “visionary” lists for implementation after 2030. Of the 170 improvements identified, 27 are capacity projects and 143 maintenance and operations (responding to federal guidance on the state of good repair). A very limited number of representative projects were selected for the slides on improvements through 2030 in the CPMS and visionary improvements in 2040 MPO LRTPs. They include many important projects that will also address freight mobility.

At this point, performance measures and the performance monitoring process are still in flux because final rulemaking from FHWA was recently delayed until March 29, 2016. In the meantime, a list of potential performance measures for consideration by ALDOT and the MPOs was developed. Key to this is to provide a starting point and basis from which to work in future. Questions to ask include: What are the key variables in your area? What tools are available? What is the staffing commitment?

With regard to Major Findings, the Freight Plan was developed consistent with federal guidelines, and a comparison matrix providing more detail was included within the report document. Importantly, truck flows are projected to increase and will need innovative strategies to manage mobility. Federal legislation now allows for an increased federal share for freight improvement projects; however,
because it does not provide any additional total funding, ALDOT is currently not planning to pursue this approach. The performance measures and monitoring process will be finalized when guidance is released by FHWA.

Some general discussion followed the presentation, as summarized below:

- There are few truck-only facilities nationwide, mostly near Ports, which are also highly dependent on rail.
- Freight planning occurs within the overall context of mixed traffic, which in turn feeds into the state's annual updated program (the STIP, State Transportation Improvement Program). It requires ongoing analysis and coordination, and that is the point for looking at particular issues.
- A key consideration is designing roadway improvement with an eye towards truck needs. Likely routes for particular attention to freight needs should be identified.
- This is a statewide, macro level assessment. The local level is where analysis should get specific and where the money is actually spent.
- The FAST Act does include a new freight funding category for “freight projects of national significance.” Alabama’s allocation will total $22 million, but FHWA has not yet told the states how they can spend it. That amount will only cover a handful of improvements, and the CMPS already has 170 programmed projects that seem to offer freight related benefits. In addition, more projects (e.g., something at the State Docks) are not even in the CPMS but could possibly be eligible for money. As in everything, there are more needs than revenue across all funding categories.
- No overlay map of the identified freight improvements in the CPMS has been developed.
- The plan addresses all modes. However, the focus is on roadway because of the significance of truck freight movement (80%) and the importance of intermodal connections.

In closing, the study team asked attendees to provide any comments to the draft plan within the next week or two so that the plan can be finalized. The link to access the draft plan was distributed via email as part of the meeting notice reminder. The plan will be updated every 5 years or so, and ALDOT will try to keep the committees involved in the interim. For example, the consultant team will suggest that committee members be added to the notification list for the annual STIP update as a way to continue outreach during plan cycles.
Appendix E
Listing of Projects Under Consideration for Freight Program Funding
(in progress)