Montgomery MPO Regional Freight Plan

Final Report

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Table of Contents

List of Figures

List of Tables

Executive Summary

This Regional Freight Plan for the Montgomery Metropolitan Planning Organization (MPO) identifies policies, transportation projects, and other implementation strategies to improve freight mobility in the Montgomery region. The focus of the plan is on highway freight traffic, but the plan also evaluates issues with rail traffic and intermodal freight facilities, including operations at the Port of Montgomery and the Montgomery Regional Airport.

The plan has been developed in consultation and cooperation with MPO staff and the MPO Technical Advisory Committee (TAC). The consulting team developed a comprehensive freight profile for the region, which identifies origins and destinations for freight movement within the region, assesses the truck flows on the highway network, and identifies existing and predicted future traffic bottlenecks for highway freight.

The primary data source for the plan is the Federal Highway Administration (FHWA) Freight Analysis Framework (FAF), which compiles national commodity flow data by state and region, broken down by industry sector. The FAF data was supplemented by consulting with local economic developers and land use planners to compile data on the major freight-generating industries and their locations, and through direct consultation with logistics managers and plant managers in key industries. ALDOT traffic count data, combined with classification counts to determine the percentage of trucks in the traffic stream on primary highway facilities, was used to determine the current truck flow pattern in the region; the MPO travel demand model was used in conjunction with the ALDOT truck flow data to forecast future truck traffic volumes. The key product of the outcome of the data collection and analysis is a Regional Freight Network, shown in Figure ES-1 below.

Identification of specific issues and problems in the regional freight network were identified through surveys and telephone interviews with TAC members, private sector freight stakeholders, and public sector planners, engineers and elected officials. These interviews informed the identification and prioritizations of projects for the plan. This regional input was expanded through the consultant teams examination of long term trends in freight movement and compilation of best practices for enhancing freight operations.

These efforts culminated in a matrix of recommended policies and projects in Chapter 6 of the regional freight plan. The detailed list of projects is not replicated in this executive summary; however, three key projects do rise to the top of the recommendations.

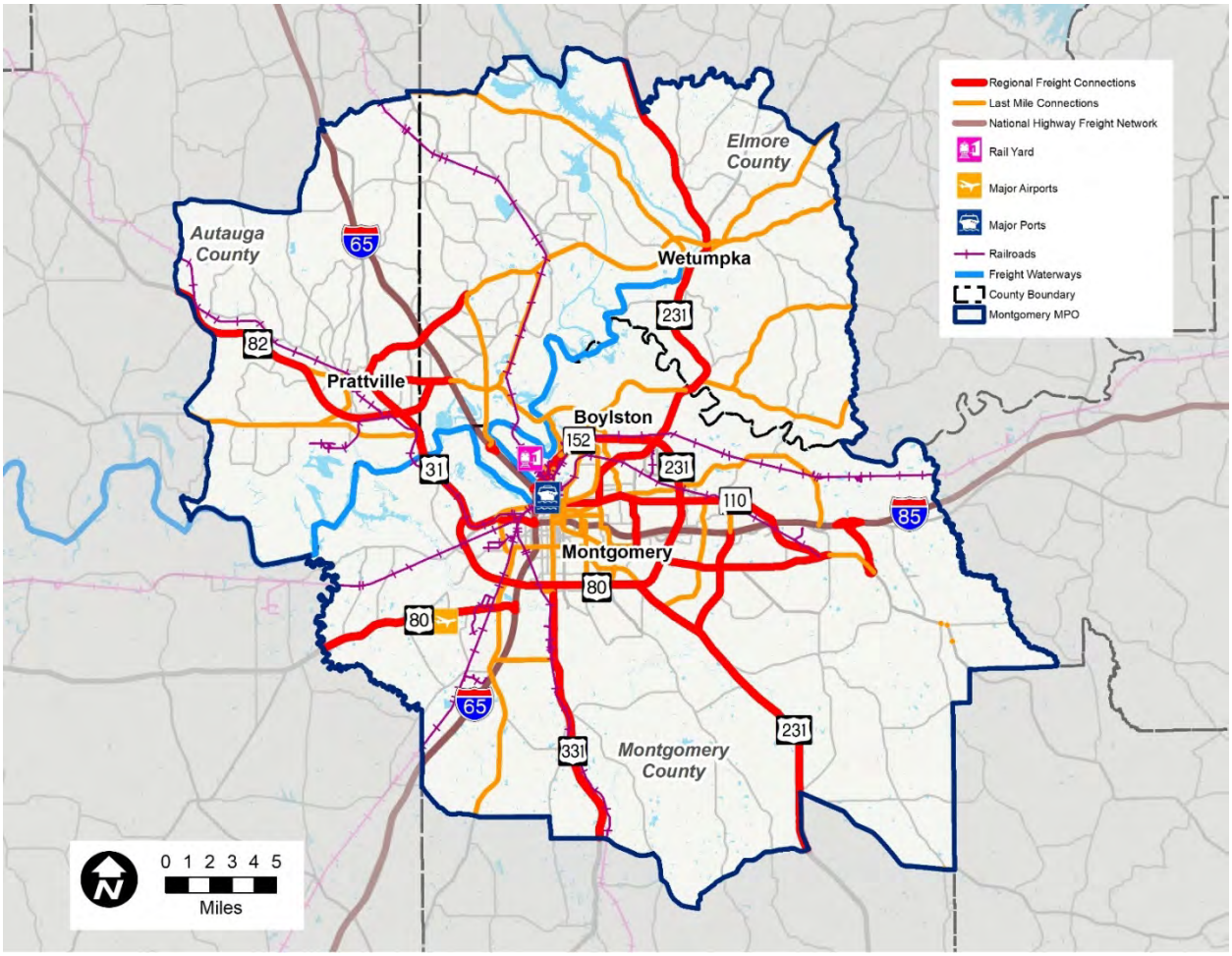
First, completion of the Montgomery Outer Loop will address both long-term and short-term freight network problems in the region. The short term problems are the diversion of trucks from the Interstate system onto two-lane state highways and county roads along the future path of the Outer Loop; these diversions are driven by the traffic congestion on I-85 and I-65 at peak periods, and are encouraged by the incomplete Outer Loop facility terminating at Vaughn Road (AL 110). The long-term benefits of the Outer Loop are the traffic congestion relief that it will provide on I-85 and I-65 when complete, and the separation of Port of Mobile truck traffic from downtown Montgomery segments of the Interstates.

A second key facility needed to enhance freight operations in the region is the I-85/I-65 interchange. This interchange is a key bottleneck in the regional and statewide freight network, and capacity expansion and operation improvements at this location will have dramatic benefits for freight and general traffic in the region.

The third key regional facility needs are the capacity expansion of I-85 and I-65; both of these projects will come at extremely high costs due to existing development and environmental constraints in the Interstate corridors.

The specific projects and policy actions in Chapter 6 provide a road map for the MPO to follow in future years in selecting and programming projects that will improve freight mobility in the Montgomery region.

Figure 1: Baseline Regional Freight Network



1. Introduction

1.1. Freight Plan Purpose

The purpose of the Montgomery Metropolitan Planning Organization (MPO) Regional Freight Plan is to develop a comprehensive policy strategy and related work program focused on enhancing freight mobility throughout the Montgomery region. Plan development is based on technical analysis, together with input from the Montgomery MPO's Technical Advisory Committee (TAC). The Regional Freight Plan will result in the identification of project recommendations, phased into short-term (1-5 years), mid-term (5-10 years) and long-term (beyond 10 years) periods. The projects will subsequently be integrated into the MPO's overall transportation work plan, which includes the short-range Transportation Improvement Program (TIP) and the Long Range Transportation Plan (LRTP). These federally mandated planning documents detail the allocation of federal, state and local funds for transportation improvements within the Montgomery region. Many projects listed in the MPO's current TIP and LRTP documents serve to enhance freight mobility within the Montgomery region and will be recognized as part of this effort.

1.2. Report Purpose

The purpose of this report, the Regional Freight Profile, is to present the baseline conditions from which the overall strategy to enhance freight mobility in the region will be developed. As such, this report provides an inventory of freight activities across all modes operating within the Montgomery MPO region, including roadway trucking, railroads, waterways, airports, and pipelines. Existing and future land use patterns, commodity flow in and out of the Montgomery region, growth trends, and future and planned improvements are also examined. This data and the resulting recommendations serve as the foundation for the MPO's freight planning efforts, to be conducted in accordance with federal and state mandates.

1.3. Relevant Policy

In order to develop an effective strategy for enhancing mobility throughout the region, the Regional Freight Plan must provide a mechanism to link policy objectives at the federal, statewide, regional and local levels. Principal among these is the federal surface transportation bill administered by the Federal Highway Administration (FHWA). Passed in December 2015, the overarching goal of the current bill (known as the Fixing America's Surface Transportation Act, or the FAST Act) is to improve mobility on America's highways by supporting critical transportation projects that facilitate freight movement, creating jobs and supporting economic growth, and accelerating project delivery while promoting innovation and establishing funding for new programs. The FAST Act provides the framework for how federal transportation funds are prioritized and distributed towards achieving these national transportation goals. Prior federal transportation bills began to promote freight mobility as a national need and encouraged its recognition by state Departments of Transportation (DOTs) and MPOs; however, the FAST Act was the first to require states to develop Statewide Freight Plans, establish freight performance measures, and encourage DOTs to identify and fund freight related improvements through the National Highway Freight Program (NHFP). Although the FAST Act is set to expire at the end of 2020, federal emphasis on promoting economic competitiveness will continue and is expected to provide funding allocations focused on improving freight mobility.

An important and often overlooked aspect of the NHFP is that its funding is apportioned from the state's overall Highway Trust Fund allocation. In other words, it is not additional money but rather an allocation of Alabama's share of Highway Trust Fund funding which FHWA encourages the Alabama Department of Transportation (ALDOT) to place into a Freight Investment Strategy. Most of the funding for the NHFP is channeled to pre-existing widening and maintenance projects along interstates and other NHFP-funding eligible facilities that were already allocated funding under the framework of the previous federal transportation bill (2012's Moving Ahead for Progress in the 21st Century Act, or MAP-21).

Alabama's first Statewide Freight Plan, developed in 2016, aimed to provide an overall policy framework to improve freight mobility throughout the state. The Statewide Freight Plan was subsequently updated in 2017 to include additional components required by the FAST Act. Two key elements of the update were the establishment of a Statewide Freight Investment Strategy and the evaluation of corridors for potential designation as Critical Urban Freight Corridors and Critical Rural Freight Corridors. However, given the limited amount of freight funding available to ALDOT, most of the freight funds were allocated to critical capacity and maintenance projects along the interstate system as well as debt service.

The Montgomery MPO Regional Freight Plan should fully explore strategies for the MPO and ALDOT to jointly push forward with major transportation enhancements that benefit overall mobility, such as widening I-85 and the Montgomery Outer Loop. In addition, a major focus of the Regional Freight Plan should be to improve connections within the region, particularly between industrial sectors and the primary major roadway network, to promote local economic development. This priority is especially pertinent given the limited availability of federal highway funds.

1.4. Report Organization

The remainder of the Regional Freight Profile report is organized as follows:

- Chapter 2 provides a summary of relevant data sources. The discussion covers local and regional data, including land use, industrial site locations and available economic development plans, as well as relevant state and federal data sources, such as FHWA's Freight Analysis Framework (FAF), North American Industry Classification System (NAICS), Federal Performance Monitoring, and other available networks and information. Finally, it addresses other third-party data sources, such as the American Transportation Research Institute (ATRI) and Streetlight, as well as stakeholder input.
- Chapter 3 involves stakeholder engagement and input. The role of public and private stakeholders is presented, along with a summary of input received from stakeholder interviews conducted during plan development. Strategies for future stakeholder engagement are also recommended.
- Chapter 4 analyzes regional freight characteristics by reviewing commodity flows for all modes in the Montgomery region and existing and future traffic volumes, including auto and truck shares. A discussion of freight generators, intermodal facilities, land use and growth patterns, and planned and future projects is presented, as well as a recommended vision for a multimodal regional freight network.
- Chapter 5 addresses the role of Montgomery's regional freight network in the National Freight System. Trends in commodity flows to and from Montgomery region via the National Freight System and the implications for potential business opportunities in the region are discussed.

- Chapter 6 lays a foundation for future assessment of the Montgomery MPO Regional Freight Plan, including discussion of key issues identified in the region. A performance measurement baseline and future project ranking methodology are also provided.

2. Summary of Relevant Data Sources

This chapter summarizes relevant data sources used throughout this report. Local and regional land use, industrial site location, and available economic development plan data and sources are discussed, as well as relevant state and federal sources, such as FHWA's Freight Analysis Framework (FAF), North American Industry Classification System (NAICS), Federal Performance Monitoring, and other available networks and information. Finally, it addresses other third-party data sources, such as the American Transportation Research Institute (ATRI) and Streetlight, as well as stakeholder input.

2.1. Local and Regional

Several local and regional datasets provided by the City of Montgomery/Montgomery MPO were used throughout this report. This data included existing and future/planned land use data, base year and future year travel demand model results, transit bus stop locations, various overlay zones, and future transportation needs identified in relevant plans/studies. The Chamber of Commerce provided location data regarding several major industrial sites within the Montgomery MPO boundaries.

2.2. State and Federal

Several state and federal sources were also used for reference and analysis throughout this report. These sources include FHWA's Freight Analysis Framework (FAF) and Highway Performance Monitoring System (HPMS), the North American Industry Classification System (NAICS), the Alabama Department of Transportation (ALDOT), the US Department of Transportation (USDOT), and Homeland Infrastructure Foundation-Level Data (HIFLD) geospatial data.

Developed through an FHWA partnership with the Bureau of Transportation Statistics (BTS), the Freight Analysis Framework (FAF) identifies freight movements between states and major metropolitan areas by all modes. The FAF data provides information such as tonnages and values by regions of origin and destination, commodity type, and mode. Data from the current FAF (version 4, called FAF4) was used to analyze the Montgomery region's freight movements (as presented in Chapter 4) and identify the top commodities and attractions by mode.

Compiled by FHWA from data developed by the individual states, the Highway Performance Monitoring System (HMPS) is a national-level highway information system which includes the conditions, performance, and operating characteristics of the nation's highways. For the Montgomery MPO Regional Freight Plan, data collected from the HPMS was used to identify characteristics of existing roadway networks and potential deficiencies throughout the region.

The North American Industry Classification System (NAICS) was developed by the US Census Bureau as a way to standardize the classification of business establishments for the purpose of collecting, analyzing and publishing statistical data related to the US business economy. For the purposes of this report, the NAICS was used to better identify freight generators and attractors in the Montgomery region and assess their regional impact. A full discussion can be found in Section 4.4.

The most current traffic data available was collected from the Traffic Monitoring section of ALDOT's Maintenance Bureau. This year 2018 traffic data was used to analyze existing and future roadway volumes and estimate the truck share of those volumes.

Multiple datasets were gathered from USDOT's data portal at http://catalog.data.gov. These datasets included major ports, North American rail lines, and rail crossings. In addition, data was collected from the Homeland Infrastructure Foundation-Level Data (HIFLD) catalog identifying navigable waterways. A thorough discussion of the region's rail network and waterways is provided in Chapter 4.

2.3. Other Potential Sources

Several other third-party data sources are available for the region but were not used for this study. Some of these sources include the American Transportation Research Institute (ATRI) database and Streetlight Data. While these sources provide additional insight into regional freight interactions, they were not utilized due to the costs associated with obtaining the data.

Another key data source for this study was the inclusion of stakeholder input. A questionnaire was created to collect information about freight related topics from various regional stakeholders, who were interviewed in-person or by phone. A detailed summary of the results is included in Chapter 3.

3. Stakeholder Engagement and Input

This chapter presents the role of public and private stakeholders in the Montgomery MPO's regional freight planning efforts. Additionally, the input received from stakeholder interviews conducted during plan development is summarized, and strategies for future stakeholder engagement are recommended.

3.1. Role of Regional Freight Stakeholders

The notion of regional freight stakeholders is a relatively new concept for many mid-size MPOs like Montgomery. With the development of this plan, various private sector contacts have been engaged in the MPO freight planning process for the first time. Some of these contacts can provide very useful input into the regional planning process beyond the development of this particular plan. Several potential strategies to enhance input on issues related to freight in the Montgomery region include:

- Gauging the level of interest of the stakeholder interview participants to continue participating in the MPO process.
- Expanding the MPO TAC to include business community stakeholders who express interest, such as chamber of commerce representatives, economic development directors, and industry leaders.
- Developing a list of key freight stakeholders to invite to MPO TAC meetings when agenda items include discussion of freight related issues.

3.2. Summary of TAC Surveys

Early in the planning process, a survey was distributed to MPO TAC members that focused on expected r regional industry sector growth, key stakeholder companies in the regional freight network, specific challenges that could be addressed by freight network improvements, specific bottlenecks within the existing freight network, and other stakeholders to be contacted. Information from the five respondents is summarized below, with the number of responses for each indicated in parentheses.

3.2.1. Industry Growth Sectors

Aerospace (1)
Automotive (3)
Building Materials, Sand/Gravel (3)
Home Delivery (1)
Medical Supplies (1)
Military (1)
Plastics (1)
Regional Prison Facility (1)
Timber/Paper (2)

3.2.2. Companies Identified

Area Sand & Gravel (1)
Autauga Northern RR (1)
Baseline Timber (1)
Central Alabama Electric Co-op (1)
CSX RR (3)
Elmore Sand & Gravel (1)
GKN Aerospace (1)
Hard Rock Hill (1)
Hercules (1)
Hyundai & Suppliers (3)
Industree Timber (1)
International Paper (4)
James Hardie (3)
Kasai North America (1)
Kinedyne (1)
Madix (1)
Maxwell AFB (1)
Medline Industries (1)
Norfolk Southern RR (1)
Rheem Water Heaters (1)
Sysco (1)
UPS/FedEx/Amazon Prime (1)
US Foods (1)

3.2.3. Specific Challenges

At-grade railroad crossing improvements (3)
Increasing capacity at industrial park entrances (1)
Grade separation at high volume railroad crossings (1)
Weight-restricted and functionally obsolete bridges on local and state networks (1)
New outer loop to relieve the bottleneck at the I-65/I-85 interchange (1)
Improvements in just-in-time manufacturing (1)

3.2.4. Network Issues

US 82 from US 31 to AL-14 (two-lane portion)
I-65 at US 31 interchange (Exit 186)
AL-14 from I-65 east to US 231 in Wetumpka
US 231 south from Redland Road to Tallapoosa River crossing (including bridge)
I-65/I-85 interchange
Freight traffic from the first segment of the Outer Loop diverts through Town of Pike Road
Air freight facilities
Commuter congestion on I-65 and I-85

3.2.5. Other Stakeholders

Prattville Area Chamber of Commerce
Montgomery Chamber of Commerce

The freight network bottlenecks listed above are further discussed in Section 4.6, Network Performance and Freight Travel. Many of the stakeholder identified issues noted above are further validated by high levels of existing and predicted traffic volumes and current or future Level of Service (LOS) deficiencies. For these reasons, the identified locations should be evaluated for improvements and included in the defined regional freight network.

3.3. Private Sector Stakeholders

Private sector stakeholders were identified through TAC survey responses, and through information provided by area chambers of commerce. Identification was based on the type of industry generally (manufacturing and distribution), and the number of employees. Contact was initiated through email contacts where available, with follow-up telephone calls or email correspondence. Private sector interviews focused on the materials and frequency of shipping materials in and out, mode of shipment, facility location and expansion, issues with infrastructure and congestion relating to shipping, and trends affecting transportation choices. The response rate was low, with seven responses out of 28 targeted companies.

3.3.1. COMPANY RESPONSES

Hyundai Motor Manufacturing Alabama (HMMA) provided the most detailed response, identifying specific areas that have caused issues with freight operations:

> Suppliers travelling US-31 and US-331 from Greenville and Luverne have experienced mishaps such as parts coming out of racks because of rough roads
>
> Railroad crossing on east side of Hyundai Blvd is rough
>
> Suggestion that traffic signals on Hyundai Blvd be set for real-time traffic during shift changes
>
> Coordination of railroad activity to reduce interference with shift changes
>
> Insofar as trends, HMMA has adopted both just-in-time and just-in-sequence deliveries. It was noted that transportation technology may change as autonomous and electric vehicles are produced.

Hyundai Power Transformers also provided detailed information about freight issues, although its freight operations are more rail than truck based due to the weight of the transformer equipment. The response notes ALDOT highway weight restrictions and the lack of a barge spur as issues affecting freight operations.

US Foods identified access roads to its facility as a source of difficulties in freight operations. The access roads are narrow and have steep drop-offs into the adjacent drainage ditches, which has caused issues with trucks.

Big Lots, Inc. stated that it did not have any infrastructure related difficulties in its freight operations.

FedEx Freight stated that it did not have any infrastructure related difficulties in its freight operations. Insofar as trends, residential delivery by LTL is increasing due to more online shopping for items too large to ship in the smaller delivery trucks.

Warehouse Services stated that it did not have any infrastructure related difficulties in its freight operations.

GLOVIS Alabama, LLC also stated that it did not have any infrastructure related difficulties in its freight operations.

3.4. Public Sector Stakeholders

Public sector stakeholders were identified through MPO membership and county/municipal officers (mayors, city and county engineers). Contact was initiated through phone calls and email correspondence. Public sector interviews focused on identifying freight generators in the community, expected growth in freight-related activity, specific freight problems or issues in the community, and prioritizing the identified issues.

3.4.1. PUBLIC SECTOR RESPONSES

Mayor William Gillespie (Prattville) identified International Paper, Medline and Kinedyne as local manufacturers who access the freight network, and noted that James Hardie is establishing a facility in the area. Freight-related issues identified were (1) the need for a signal at the intersection between US-82 and the Doster Road cut-through (this may be addressed in the planned widening of US-82), and (2) inadequate overnight parking for trucks, which on occasion will park in strip malls or neighborhoods. The priority issue for Mayor Gillespie was the lack of truck parking.

Mayor Al Kelley (Millbrook) identified rail facilities generally to the north, east, and south boundaries of the city limits, and I-65 to the west. Industrial parks are close to I-65 and AL-14 corridor in the Wetumpka airport area. Existing warehousing and light industrial facilities are located in the I-65 / Exit 179 area, and along the AL-14 corridor. I-65 is the busiest freight corridor, with AL-14 and Coosada Parkway seeing increased freight transportation. Freight volume at I-65 at Exit 186 has increased due to access to Pine Level area industrial park. Mayor Kelley noted the close cooperation between the City, Elmore County, and ALDOT to address safety and capacity of the existing arterials. Priority issues are (1) safety between freight transportation and other vehicular traffic, (2) congestion management along arterials, and (3) access/signalization along ALDOT arterials.

Mark Bartlett (FHWA) noted that the Montgomery region is centrally located with a lot of developable land, notably the industrial park on I-85, Hyundai, and the airport. Mr. Bartlett did not identify any specific growth trends, and stated that current freight activity is probably under capacity. He also stated that FHWA had produced reports on truck parking and that Alabama has an adequate number of private truck stops to deal with overnight parking issues.

Richie Beyer (Elmore County Engineer) identified the AL-14 corridor from I-65 east to Wetumpka as an important route for commerce and economic development. Secondarily, he identified AL-229 from Tallassee south to I-85 as a corridor with existing industrial activity, with room for more development. Mr. Beyer also noted that improved access to the CSX rail corridor in the west of Elmore County as a potential expansion of multi-modal opportunities to move freight. As to anticipated growth, Mr. Beyer noted that tech and medical areas was more likely than large industrial prospects. He also pointed out

that the limited number of crossings for the multiple waterways in the County can create challenges if traffic accidents or natural disasters close the crossings.

Town of Pike Road officials are concerned about the high volume of tractor trailer traffic that is travelling through the town. Trucks using the first segment of the Outer Loop exit at Vaughn Road, a two-lane state highway, and follow Vaughn Road either to Wallahatchie Road and then to Meriwether Road -- or to Pike Road and then to Meriwether Road -- as an informal truck bypass around Montgomery. Old Carter Hill Road also is used as an informal truck bypass for traffic to south US 231. Town officials are concerned about safety, general traffic volume and noise, as well as the continual wear and tear on all of these routes, but especially the county roads that are not designed for the volume of trucks that are using these routes.

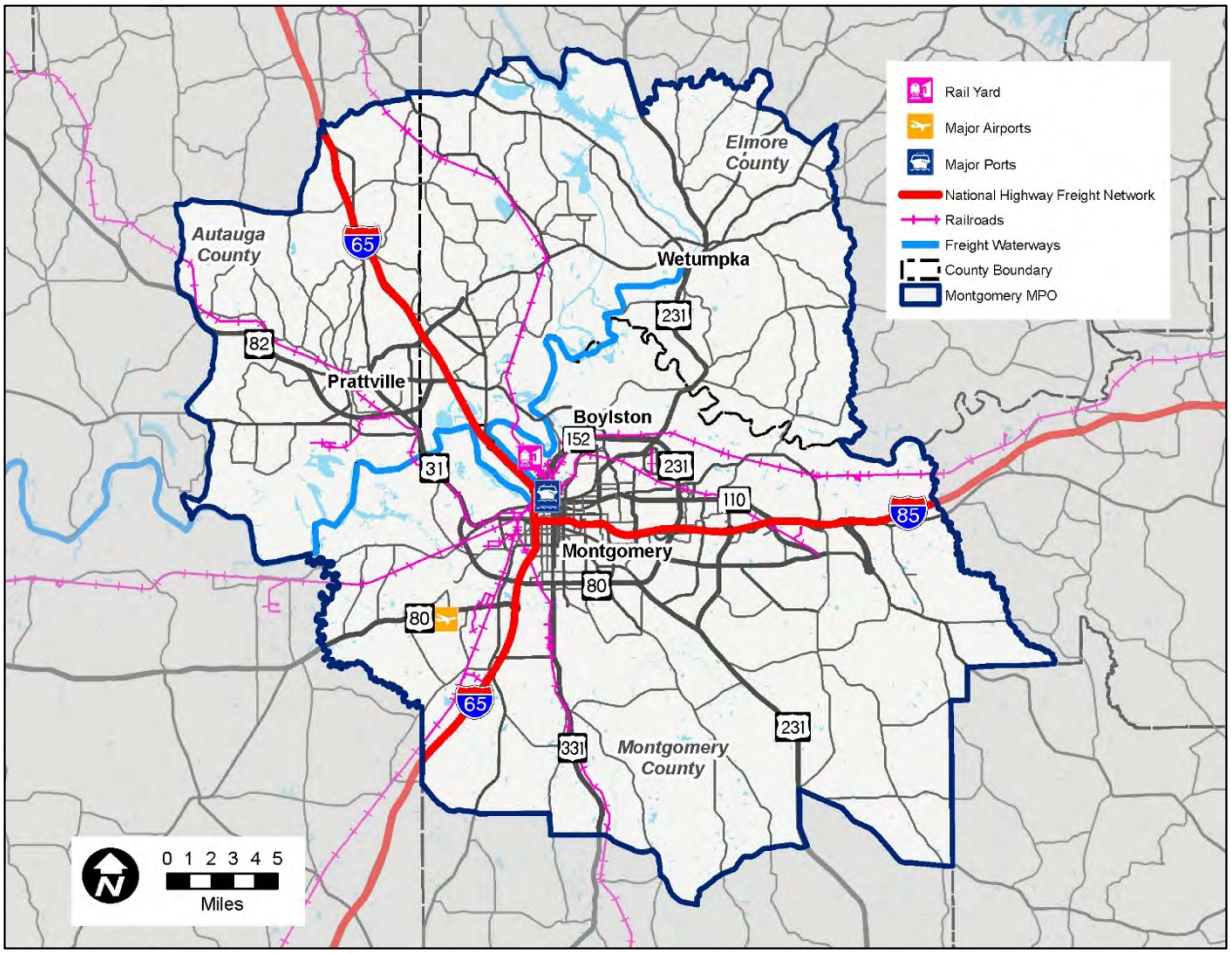
4. Regional Freight Characteristics and Recommended Intermodal Network

Chapter 4 presents the inventory of regional freight characteristics, which details the commodity flows, highway network, railroad network, intermodal facilities and other modes of transport within the Montgomery region. Key freight generators and attractors, as well as planned and programmed projects already under consideration for the region, are also identified. The analysis of inventory data, stakeholder input, and other system and operational factors provides the rationale for recommending a baseline multimodal Regional Freight Network, from which additional programming recommendations can follow in the future.

4.1.Study Area

Figure 1 provides an overview illustration of the primary freight transportation routes and facilities within the Montgomery region.

Figure 2: Study Area Regional Map with Roadways, Ports, and Airport



SOURCE: FHWA, US DOT, ALDOT, GOOGLE MAPS

4.2.Commodity Flow

The primary source for assessing commodity flows in and out of the Montgomery region is the FAF4 database, developed by USDOT to forecast commodity flow growth in 5-year increments through the year 2045. Unlike the specific datasets focused on the Birmingham and Mobile regions, information regarding commodity flow characteristics specific to the Montgomery region is not readily available within FAF4. In Alabama, FAF4 data is broken into three datasets: Birmingham, Mobile, and Rest of Alabama.

In order to conduct a high-level assessment of commodity flows through the Montgomery region, a process was developed to disaggregate the 'Rest of Alabama' dataset based on the type of business and industries in the region according to their NAICS codes. NAICS is the standard used by federal statistical agencies in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the US business economy. Through this methodology, a general estimate of the overall types of commodities attracted to and produced from the Montgomery region can be developed.

Based on this methodology, the top five estimated commodities imported into the Montgomery region are:

- Coal
- Logs
- Gravel
- Nonmetal mineral products
- Natural sands

Likewise, the top five estimated commodities exported from the Montgomery region are:

- Logs
- Base metals
- Nonmetal mineral products
- Newsprint/paper
- Gravel

Commodity flows throughout the state of Alabama are supported by several modes including highways (trucks), railroads, air cargo, ports and pipelines. Beyond developing a general profile for the region's commodity types, FAF4 data is not as useful for estimating commodity flows by mode. However, for a regional plan focused on more localized issues, the types of commodities traveling through the region are not nearly as important as identifying freight bottlenecks and impedances to freight mobility throughout the region. In consideration of this, information regarding freight by mode should be driven by stakeholder input from representatives of local government and intermodal providers such as CSX, Montgomery Regional Airport, and the Alabama Ports Authority in order to better identify freight issues associated with each mode.

4.3.Roadway Characteristics

The cornerstone of the Montgomery Regional Freight System is its highway system. Every commodity is transported by truck at some point in its journey. Roadway types and conditions have a significant

impact on the ability of trucks to carry cargo from origin to destination, as do available funding for projects and the priority of improvements. This section details the highways designated as part of the FHWA National Highway Freight Network, as well as other state and local roadways within the Montgomery Regional Freight System.

4.3.1. National Highway Freight Network

The National Highway Freight Network is a product of the FAST Act, developed by FHWA to strategically direct federal resources and policies toward improved performance of highway portions of the US freight transportation system, including federal funding for freight improvement projects. It includes the following four subsystems of roadways: Primary Highway Freight System (PHFS), Other Interstate portions not on the PHFS, Critical Rural Freight Corridors (CRFCs), and Critical Urban Freight Corridors (CUFCs). The roadways that make up these subsections in the Montgomery Regional Freight System are detailed below.

The PHFS is defined as a network of highways identified as the most critical highway portions of the US freight transportation system. Nationally, the system contains 41,518 centerline miles, including 37,436 centerline miles of Interstate and 4,082 centerline miles of non-Interstate roads, according to the FHWA website. The state of Alabama has approximately 813 miles of PHFS, which equals 1.96% of the national system according to the Table of National Highway Freight Network Mileages by State on the FHWA website.

Two highways included in the PHFS traverse the Montgomery region. The first is I-65, a north-south corridor running through the west side of downtown Montgomery. I-65 connects Montgomery south to Mobile and north to Birmingham. The second is I-85, an east-west highway that terminates at I-65 in downtown Montgomery. Traveling east from Montgomery, the I-85 corridor connects to the Auburn-Opelika area en route to Georgia and the Atlanta region. The I-85 and I-65 corridors pose a significant challenge due to the current high total traffic volumes, high percentage of trucks in the vehicle mix, and severe constraints and high cost associated with capacity expansion of these corridors.

4.3.2. Alabama Statewide Primary Freight Network

The Alabama Statewide Freight Plan provides a framework for developing a baseline regional freight network for the Montgomery region. Key Alabama Statewide Primary Freight Network roadways within the Montgomery region, shown on Figure 2, include:

- US 80 in Montgomery and west of I-65
- US 31 from near the Montgomery Regional Airport north to Prattville
- US 82 through Prattville and to the northwest
- US 231 from I-85 to the south
- SR 152 around the north side of Montgomery and south to I-85
- Taylor Road east of Montgomery south from I-85

The Alabama Statewide Primary Freight Network also includes provisions for a future northern and southern loop (SR 108 east of Montgomery).

Figure 3: Alabama Statewide Primary Freight Network

SOURCE: ALABAMA STATEWIDE FREIGHT PLAN

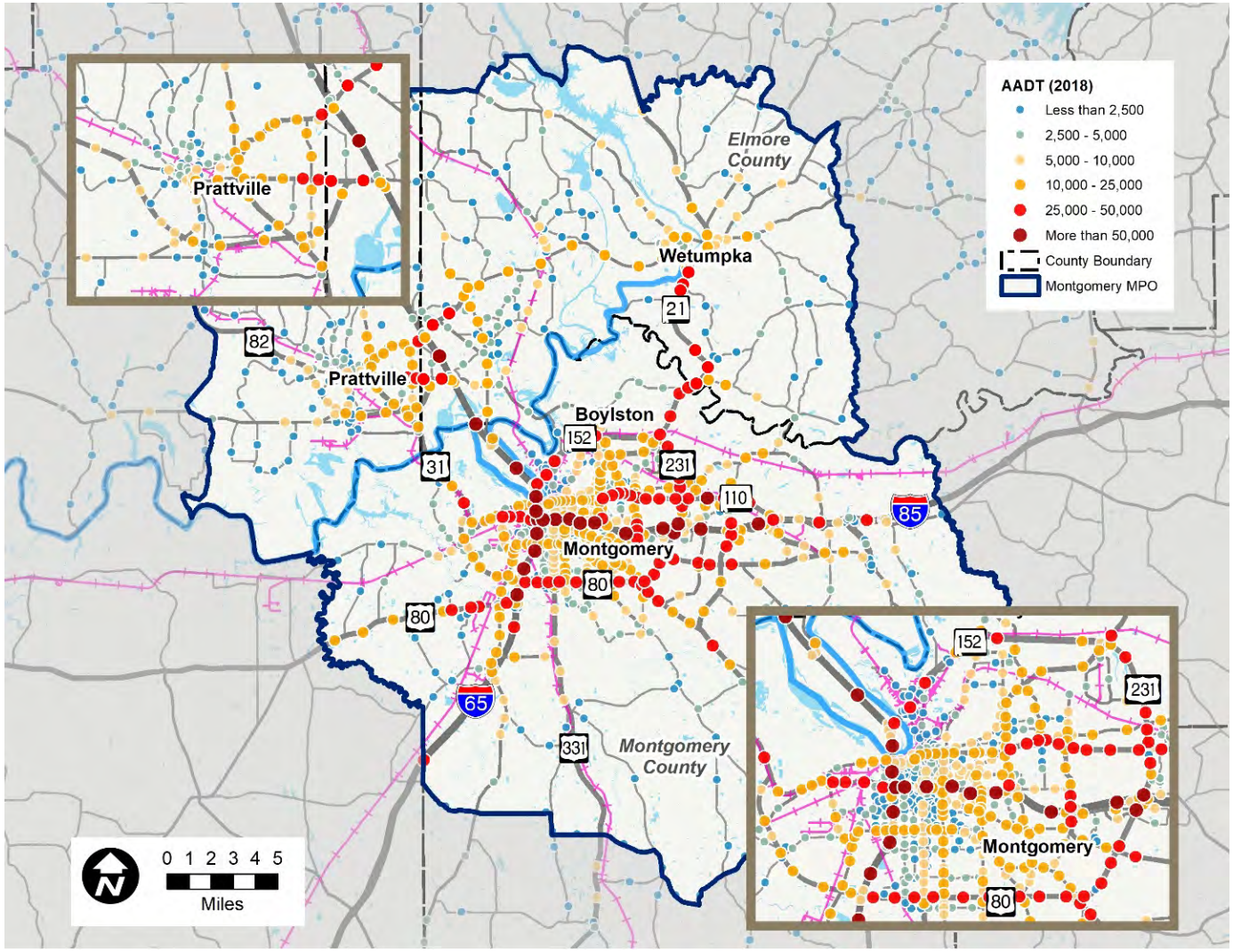
4.3.3. Existing Conditions

Roadway Volumes

The most current traffic data available (2018) was collected from the website of ALDOT's Traffic Monitoring section of the Maintenance Bureau for use in this report. As seen in

Figure 4, several roadways had Average Annual Daily Traffic (AADT) volumes that exceeded 25,000 vehicles. These include the primary highways of I-65 and I-85, US 80 running east-west along the south edge of the City of Montgomery, US 21 extending northeast from Montgomery, SR 152 crossing east-west along the north edge of the City of Montgomery, and US 231 through Montgomery and to the southeast. Traffic is generally heavier in and around the Montgomery metropolitan area, with additional hotspots in the vicinities of Prattville and Wetumpka.

Figure 4: 2018 Total Traffic Volumes



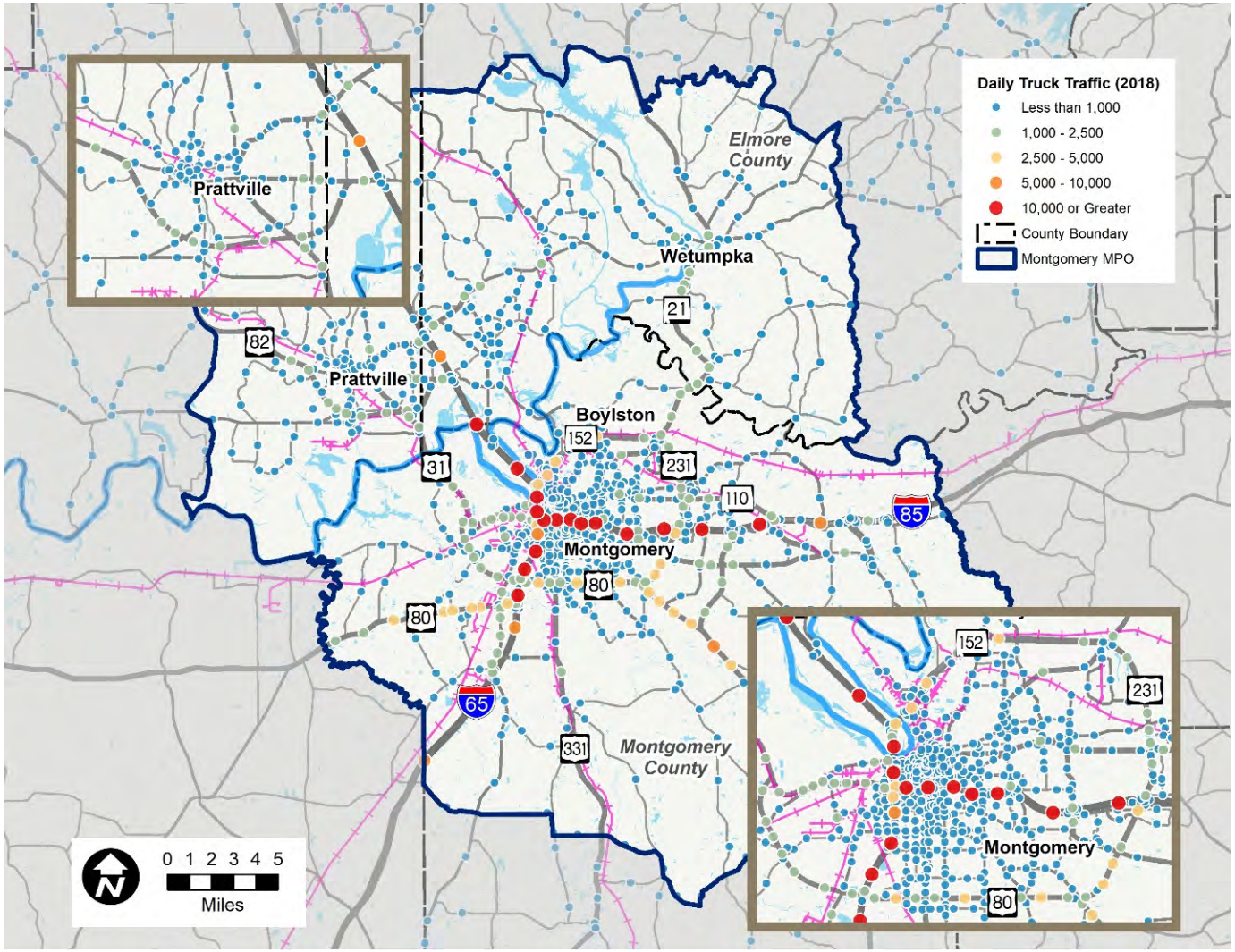
SOURCE: ALDOT

Truck Volumes

The data from ALDOT also included the percentage of total traffic volumes attributed to truck traffic. Truck volumes were calculated by multiplying the overall AADT by the truck percentage to get a calculated existing truck volume. Calculated truck volumes for the year 2018 are shown in

Figure 5. As the figure clearly illustrates, I-65 and I-85 are the two routes within the Montgomery region most heavily utilized by trucks, with daily truck volumes averaging over 10,000. Secondary routes with truck volumes between 2,500 and 10,000 average trucks per day include the US 80 and US 231 corridors on the south edge of the city. Several other roadways within the Montgomery region have volumes ranging from 1,000 to 2,500 trucks per day, including US 31 west of I-65, US 82, SR 21, SR 231 north of I-85, and US 331 south of US 80.

Figure 5: 2018 Truck Traffic Volumes



SOURCE: ALDOT

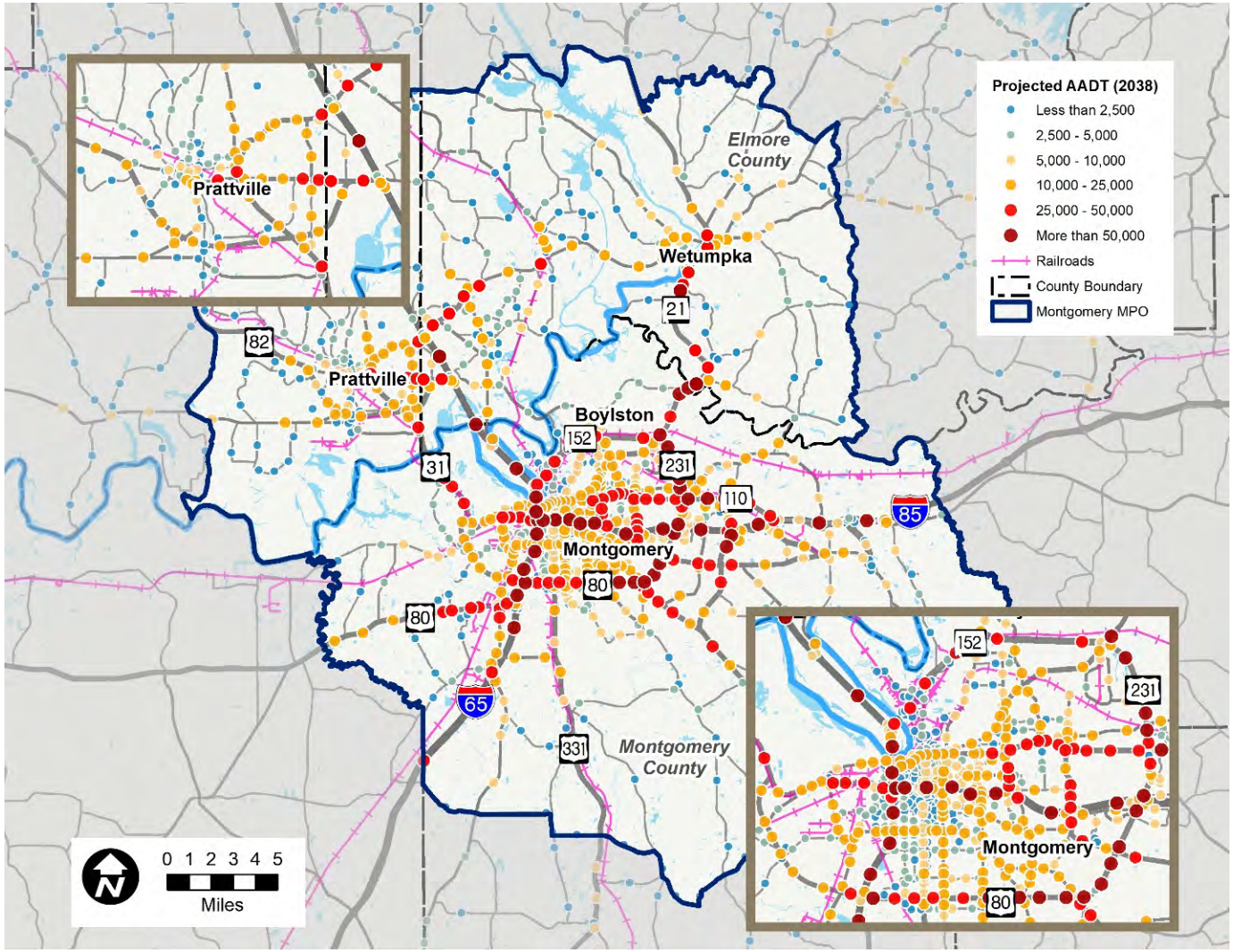
4.3.4. Projected Conditions

Projected year 2038 AADT volumes are shown in **Figure 6**. As expected, the heaviest traffic volumes are indicated on I-65 and I-85. Volumes of more than 50,000 vehicles are also projected on several other expressways and arterials, including US 80 south of Montgomery and US 231 along Montgomery's eastern edge. Roadways with a projected AADT between 25,000 and 50,000 vehicles include Atlanta Highway running parallel to I-85 to the north, SR 14 east of I-65 in the vicinity of Prattville, and US 80 west of I-65 on the south side. Several other arterials also had projected roadway volumes between 10,000 and 25,000 vehicles in the Montgomery region.

Projected truck volumes were calculated by multiplying the projected 2038 AADT by the truck percentage from the ALDOT data. A future truck percentage was not available in the data collected. As **Figure 7** shows, although future truck volumes are projected to increase, the pattern does not vary much from that in existing conditions. The future truck volumes indicate the primary freight routes will remain along the I-65 and I-85 corridors. Secondary freight routes include US 80 around the south edge of Montgomery, US 231 southwest of Montgomery, and SR 152 (Northern Boulevard) around the north side of Montgomery. It is also worth noting that a few roadways around Prattville to the northwest and Wetumpka to the northeast have truck volumes between 2,500 and 5,000.

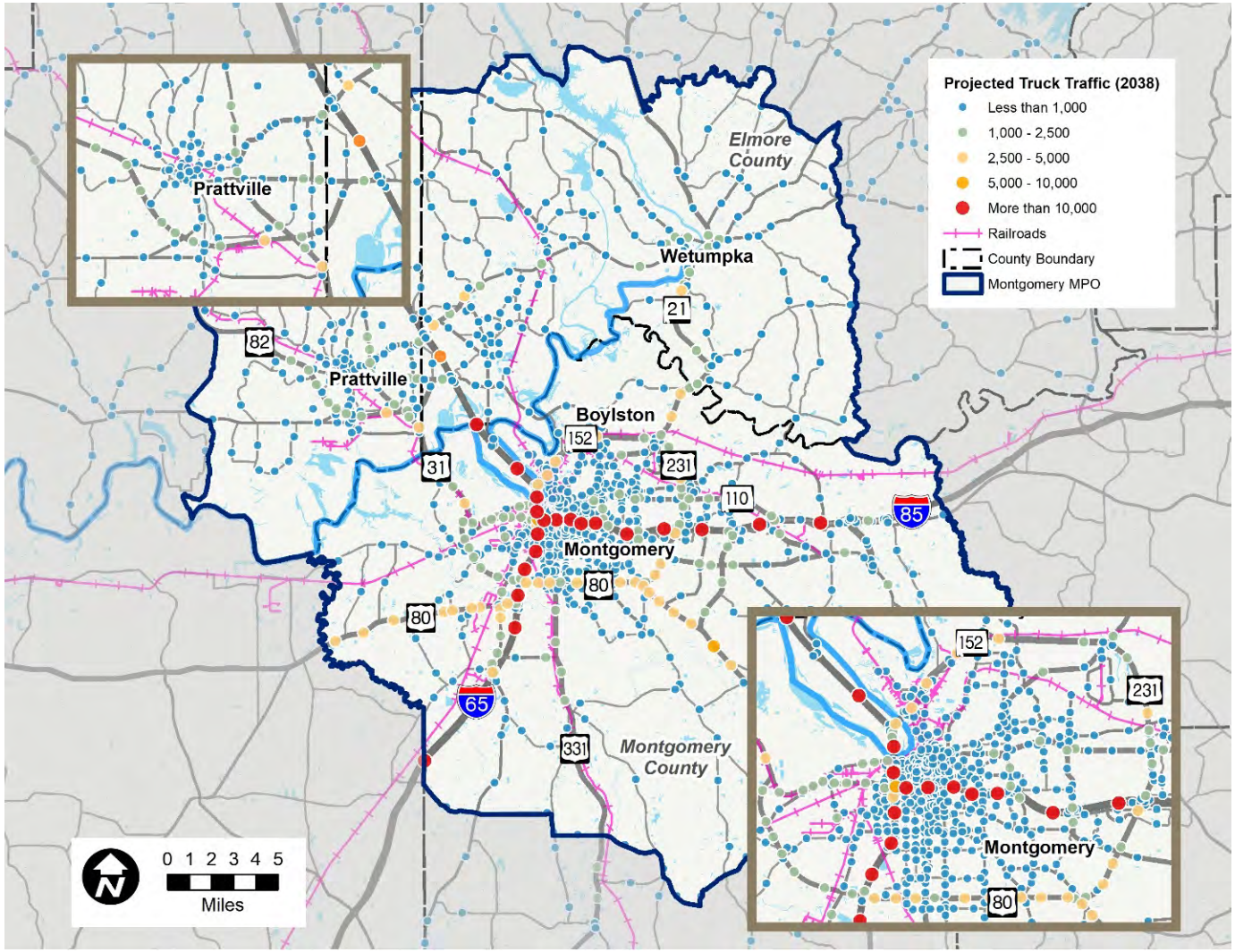
Projected Level of Service (LOS) information for year 2040 was derived from the MPO's travel demand model and can be seen in **Figure 11**. The data indicates deficiencies classified as LOS E and F in several areas of the Montgomery region. Areas with the greatest deficiencies include US 80 south of Montgomery, I-85 within Montgomery, US 231 between I-85 and Wetumpka, US 31 between Montgomery and Prattville, and SR 14 between Prattville and Wetumpka.

Figure 6: Projected Future Total Traffic Volumes



SOURCE: ALDOT

Figure 7: Projected Future Truck Traffic Volumes



SOURCE: ALDOT

4.4.Intermodal Freight (Rail, Ports and Air)

In addition to an extensive roadway network, the Montgomery region's freight network includes a significant railroad system, a potentially navigable waterway with a port, and the Montgomery Regional Airport for air traffic. Three key intermodal facilities, shown in **Figure 8**, support intermodal freight movements in the region. The CSX Montgomery Yard is a hub for rail traffic. Lying in the heart of downtown, the yard is located north of SR 152 (Northern Boulevard) and just east of I-65. Montgomery Regional Airport, the main airport in the Montgomery region, is located west of I-65 and south of US 80. Air cargo activity in the region is currently low, and expansion of air cargo is constrained by infrastructure limitations to support air freight at the Montgomery Regional Airport. Finally, the Port of Montgomery is located just south of the CSX rail yard along the Alabama River. As with air cargo, moving freight by river faces constraints. Although the Alabama River is designated as a navigable waterway, very little freight traffic currently occurs because the river needs to be dredged to provide adequate depth.

Of the three, the railroad system is the largest contributor to everyday goods movement in the region. Railroad traffic generally flows into the Montgomery region from 6 main spurs. Two spurs flow from the south into Montgomery; one generally follows the I-65 corridor while the other follows US 331. A third spur, north of US 80, extends to the west, while a fourth generally follows the Northern Loop around Montgomery and then eastward running parallel to I-85 on the northern side. A fifth spur extends northwest to Prattville, continuing northwest generally along the US 82 corridor. Finally, the sixth spur extends northward to the east of the I-65 corridor.

The rail system within the Montgomery region consists of approximately 190 miles of track and 220 railroad crossings. Of those 190 miles of track, approximately 171 miles are owned and operated by CSX Transportation, which also operates the CSX Montgomery Yard. The remaining track miles, which are owned and operated by Norfolk Southern and Autauga Northern Railroad, are located along the spur that extends to the northwest in the vicinity of Prattville and continuing northwest out of the Montgomery MPO boundary.

Table 1: Railroad Characteristics

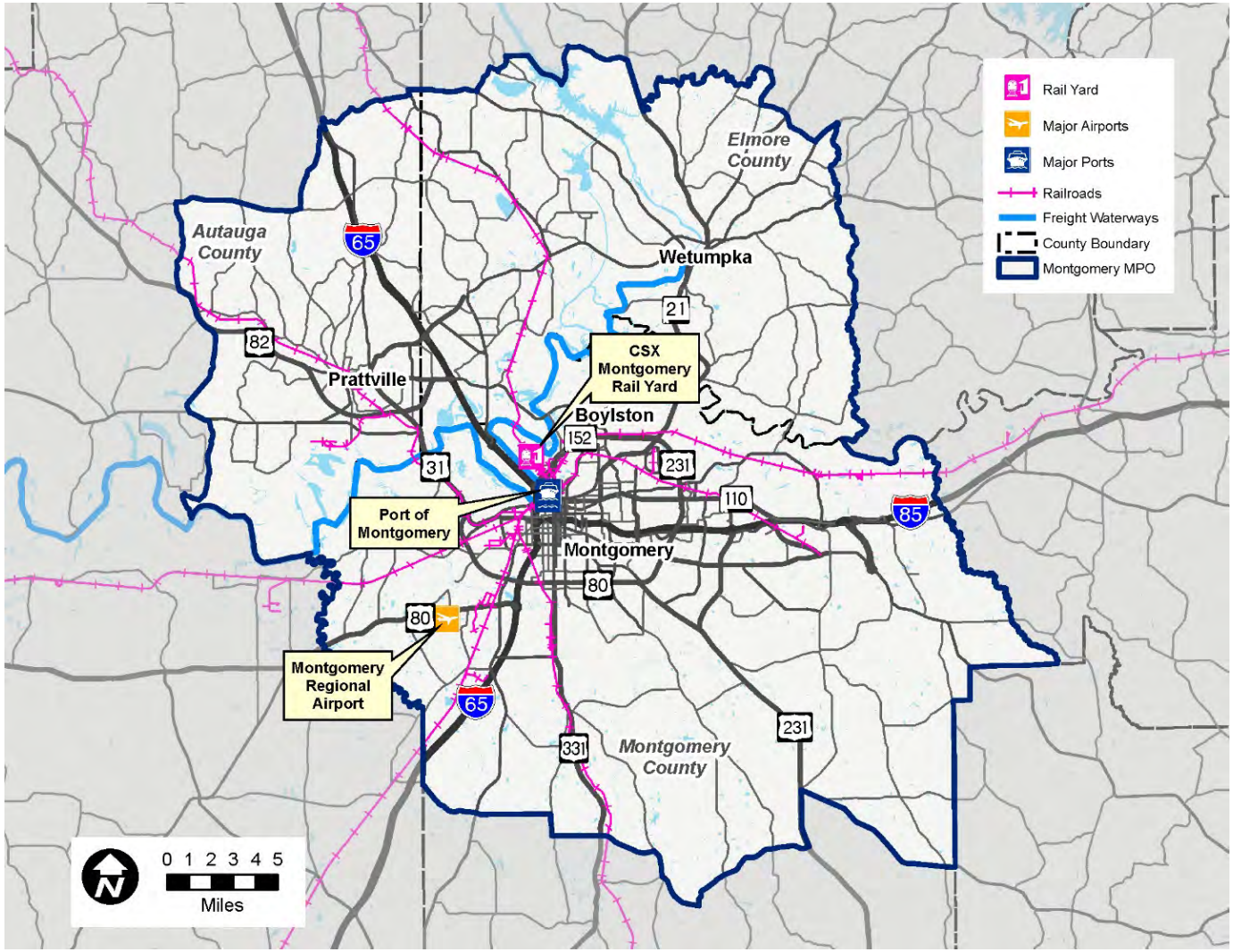
Railroad Characteristics	
Miles of Track	190 miles
- CSX	171 miles
- Autauga Northern	13 miles
- Norfolk Southern	3 miles
Railroad Crossings	220

SOURCE: NAICS

The only navigable waterway in the Montgomery region, the Alabama River begins south of Wetumpka at the convergence of the Coosa and Tallapoosa rivers, then flows southwesterly until it joins with the Tombigbee River north of Mobile, ultimately flowing into Mobile Bay on the Gulf of Mexico. There are several small ports along the Alabama River southwest of the Montgomery region; however, only one dock suitable for moving goods exists in the Montgomery region. Located at the foot of Commerce Street near Riverside Park in the City of Montgomery, data provided by USDOT indicates it is currently unowned. Through stakeholder interviews, it was learned that the Alabama River south of Montgomery is currently not navigable because of its shallow depth. Nevertheless, if it were dredged, the Alabama River could potentially be a viable mode for freight good movements to/from the Gulf of Mexico in the future.

Montgomery Regional Airport, originally opened in 1943 and formerly named Dannelly Field, covers approximately 2,000 acres and serves 16 counties in central Alabama. According to the airport's website (http://flymgm.com), "it serves as the origin or destination airport for 350,000 travelers each year" and "brings in more than $1.32 billion in annual economic activity." The airport is located immediately south of US 80 approximately six miles to the southwest of the City of Montgomery and appears to have one primary runway oriented east and west. Commercial services out of the Montgomery Regional Airport include flights by American Airlines and Delta. In addition to commercial services, the Alabama Air National Guard has a facility near the airport and utilizes the same runways. Based on interviews with airport staff, there is very little freight traffic in and out of the airport. Staff also stated that significant upgrades to the runway and fueling facilities would be needed to accommodate higher volumes of air cargo.

Figure 8: Key Intermodal Facilities



SOURCE: USDOT, GOOGLE MAPS, ALDOT

4.5. Freight Generators and Attractors

Several data sources were used to identify potential freight generators and attractors within the Montgomery region, including information from the Montgomery MPO, Autauga County, and the NAICS database. **Figure 9** illustrates the collected information, which includes the locations of regional industrial uses. Geographically, the sites are primarily clustered near the I-65/I-85 interchange in the center of the study area. Other sites are situated in the vicinity of Montgomery Regional Airport and around Prattville. Clusters of industrial sites are also located along US 231 both north and south of I-85 and continuing around the Northern Loop (SR 152) near Boylston.

Top industrial employers in the Montgomery region are listed in **Table 2**. The top three companies are:

- Hyundai Motor Manufacturing, with over 3,500 employees
- MOBIS Alabama, with approximately 1,400 employees
- Rheem Water Heaters, with just over 1,100 employees

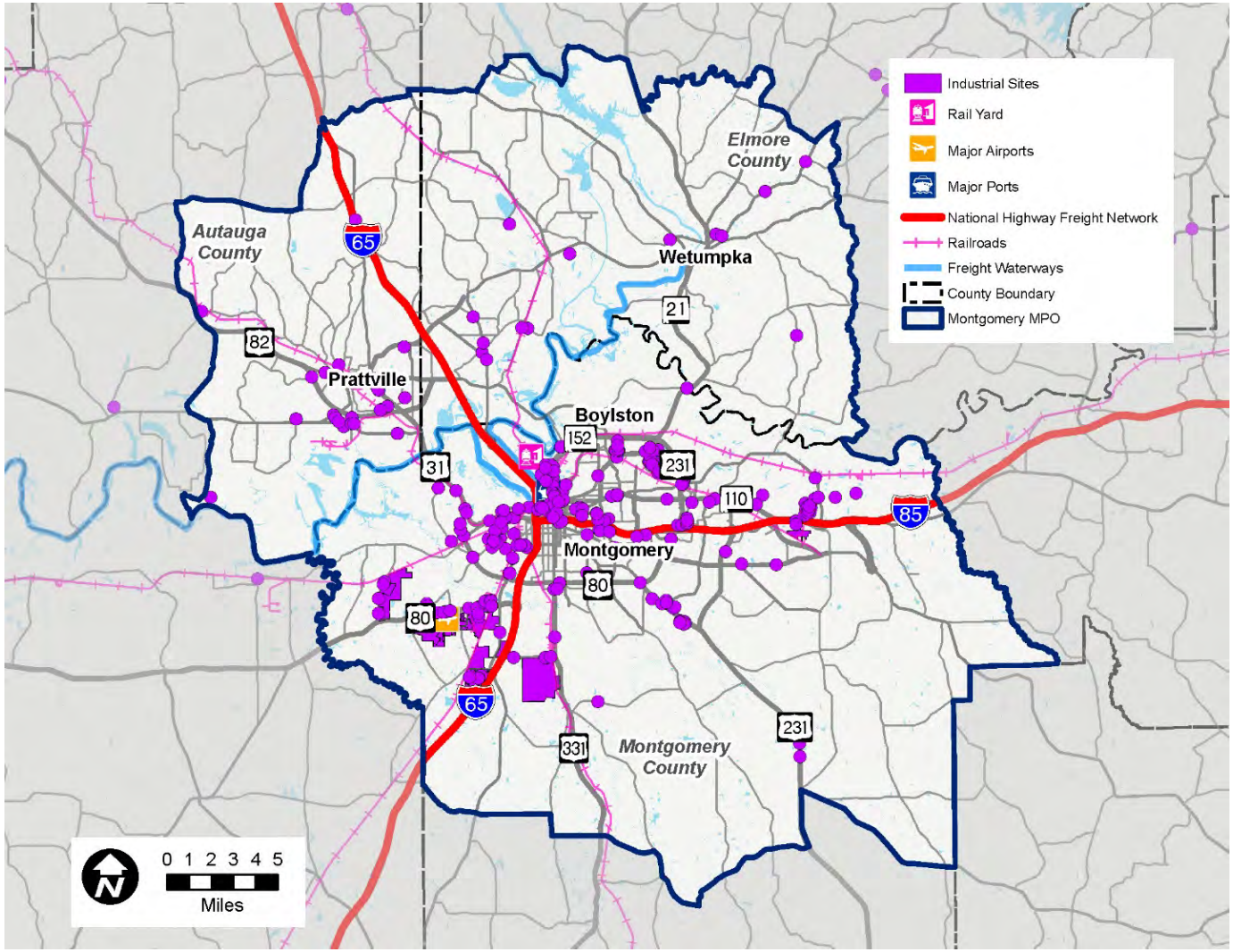
These major employers were contacted as part of the stakeholder engagement efforts for this study. Details are provided in Chapter 3.

Table 2: Major Industrial Employers in the Montgomery Region

Company	City	Total Employees
Hyundai Motor Manufacturing Alabama, LLC	Montgomery	3,530
MOBIS Alabama, LLC	Montgomery	1,400
Rheem Water Heaters	Montgomery	1,147
GLOVIS Alabama, LLC	Montgomery	832
International Paper Prattville Mill	Prattville	636
Glovis America	Montgomery	545
Big Lots Stores, Inc.	Montgomery	500
DAS North America, Inc.	Montgomery	495
US Foods	Montgomery	469
Seoyon E Hwa	Montgomery	441
Hyundai Power Transformers USA	Montgomery	396
STERIS Corporation	Montgomery	340
Lear Corporation-Montgomery	Montgomery	308
Coca-Cola UNITED Sales and Distribution Facility	Montgomery	305
Hager Companies	Montgomery	254
Petrey Wholesale	Montgomery	250

SOURCE: NAICS

Figure 9: Location of Regional Industrial Uses



SOURCE: MONTGOMERY MPO, AUTAUGA COUNTY, NAICS

4.6. Network Performance and Freight Travel

This section analyzes the existing and future freight network performance, identifies potential deficiencies and bottlenecks, and provides a general assessment of freight travel in the Montgomery region. Level of Service (LOS) information was developed using data from the Montgomery regional travel demand model, provided by the MPO. The analysis utilized the volume-to-capacity (V/C) ratio of roadway links to determine the applicable LOS classification. The travel demand model data utilized for this study included a base year of 2010 and forecast year of 2040.

The LOS data for base year (2010) conditions, mapped in

Projected roadway LOS in year 2040, mapped in **Figure 11,** indicates an increase in congestion along many of the same roadway links experiencing deficiencies today. Roadways seeing an increase in LOS deficiencies at specific locations or along extended segments include:

- US 80 from I-65 east to I-85
- US 231 between US 80 and Wetumpka
- I-85 from east of US 80 to its termination at I-65
- I-65 through Montgomery and north past Prattville
- US 82 in Prattville
- US 31 from US 80 to Prattville
- Alabama River Parkway between Boylston and I-65

Several other arterials within the regional network are also projected to experience congestion related performance deficiencies.

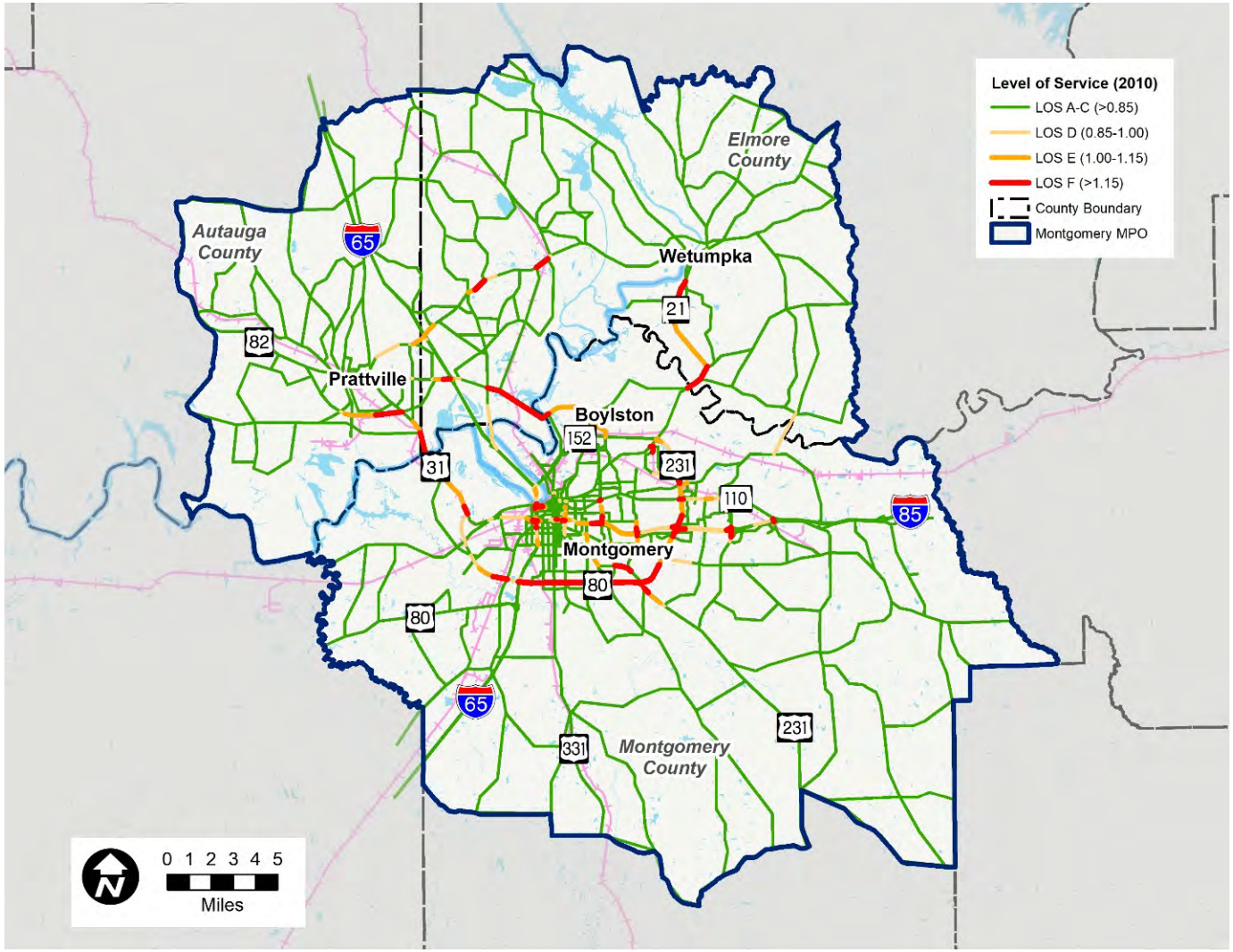
Figure 10, indicate several congestion hot spots exist around the Montgomery region. The most noticeable of these is US 80 around the south side of Montgomery. Other deficient locations include I-85 and its interchange areas through the core of Montgomery, US 31 south of Prattville, US 82 in Prattville, areas along the Alabama River Parkway between Boylston and Prattville, and US 231 south of Wetumpka.

Projected roadway LOS in year 2040, mapped in **Figure 11**, indicates an increase in congestion along many of the same roadway links experiencing deficiencies today. Roadways seeing an increase in LOS deficiencies at specific locations or along extended segments include:

- US 80 from I-65 east to I-85
- US 231 between US 80 and Wetumpka
- I-85 from east of US 80 to its termination at I-65
- I-65 through Montgomery and north past Prattville
- US 82 in Prattville
- US 31 from US 80 to Prattville
- Alabama River Parkway between Boylston and I-65

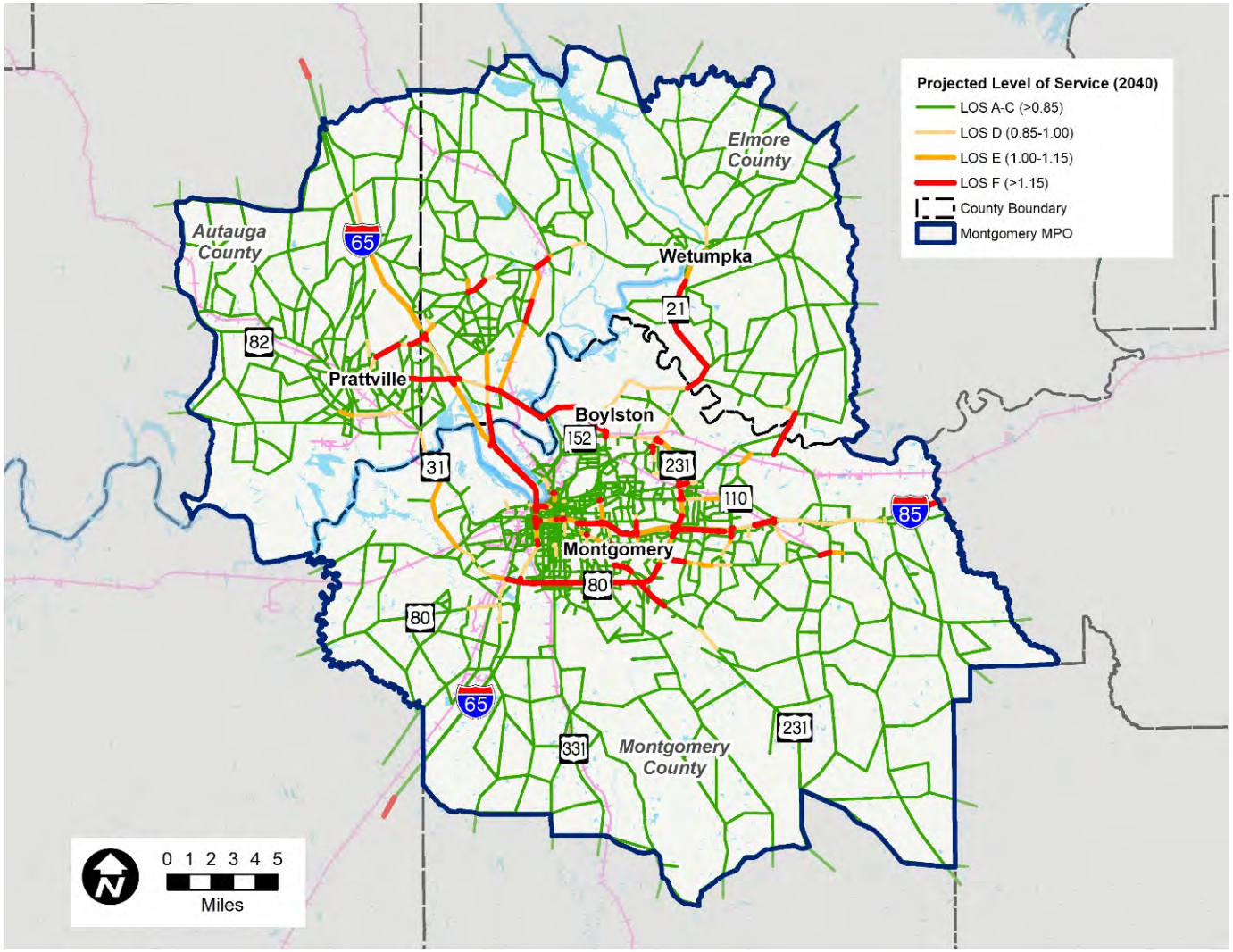
Several other arterials within the regional network are also projected to experience congestion related performance deficiencies.

Figure 10: Roadway Level of Service



SOURCE: MONTGOMERY MPO MODEL

Figure 11: Projected Future Roadway Level of Service

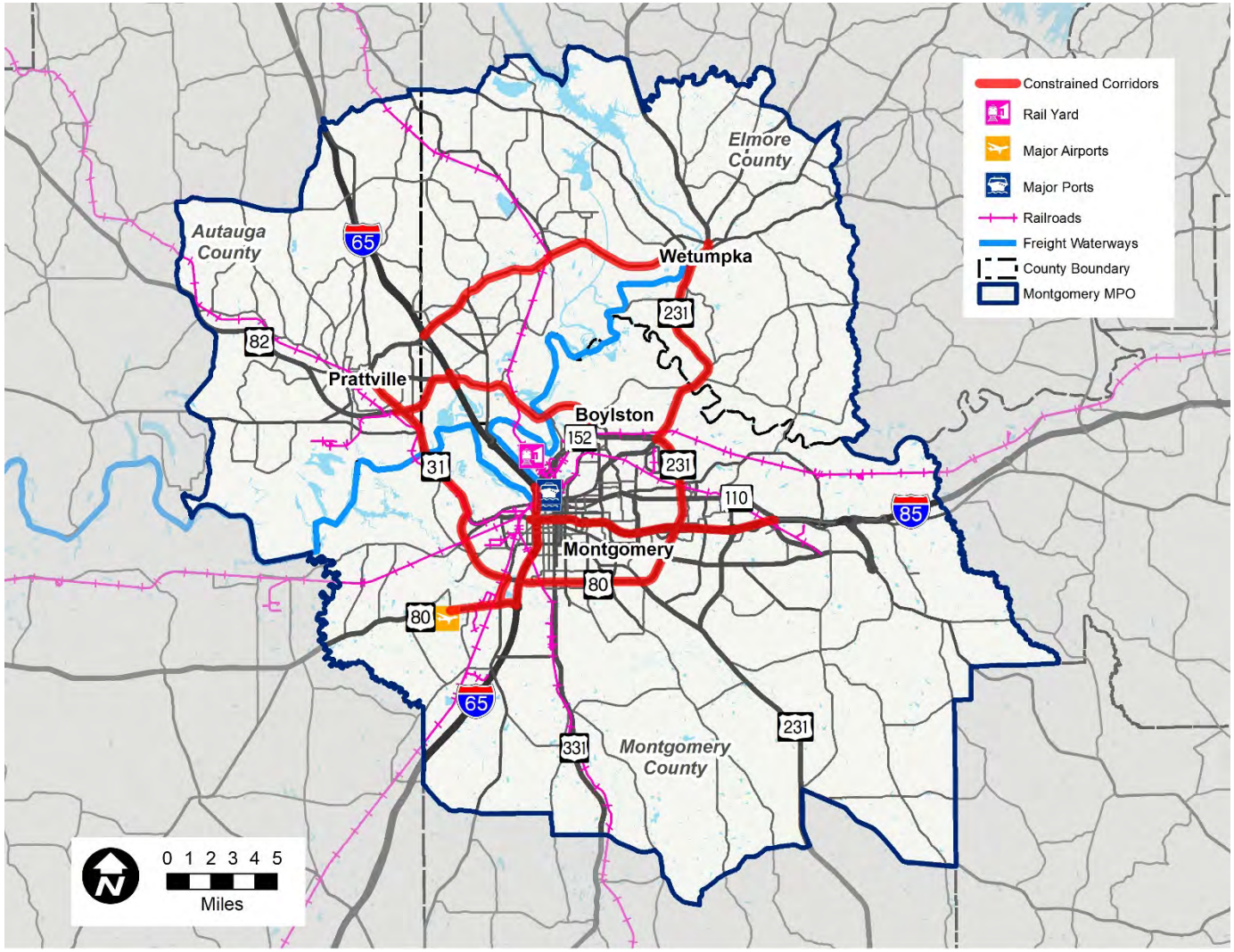


SOURCE: MONTGOMERY MPO MODEL

Analysis of the LOS and truck roadway volume data, together with stakeholder input, has identified several areas that currently experience congestion issues or could be potential constrained corridors in the future. In no particular order (and shown on Figure 11), some of those existing or potential constrained corridors are:

- **US 80 from Montgomery Regional Airport east to I-85** – This primary southern bypass route has high levels of existing and projected traffic, existing and projected LOS deficiencies, and a high density of identified commercial and industrial land uses. Projections estimate traffic along the corridor will continue to grow and develop, thus posing a challenge to mobility.
- **US 231 from US 80 north to SR 152** – This primary north-south connector route has high levels of existing and future traffic, existing and projected LOS deficiencies, and a high density of commercial and industrial land uses. Continued growth and development are also expected.
- **I-85 from SR 110 to I-65** – I-85 is the primary east-west interstate through Montgomery and a key route out of the region. High traffic volumes and LOS deficiencies indicate that this corridor will continue to grow and cause mobility challenges into the future. Stakeholders also cited this corridor for commuter congestion issues.
- **I-65 from US 80 to SR 152** – I-65 is the primary north-south interstate through Montgomery and a key route through the region. High traffic volumes and LOS deficiencies indicate that this corridor will likely see capacity issues and bottlenecks in future. Stakeholders also cited this corridor for commuter congestion issues.
- **US 31 from I-65 north to Prattville** – With projected volumes of over 25,000 cars per day and LOS deficiencies, US 31 could become a mobility challenge in the future. Stakeholders specifically noted the two-lane portion from US 31 to SR 14 and the interchange of US 31 at I-65 as current mobility challenges.
- **US 82 in Prattville** – High traffic volumes and LOS deficiencies have been identified along US 82 from the I-65 interchange into Prattville. Future land use plans also show an increase in commercial and industrial land use development in the area, which could cause further impacts to freight flow through this area in the future. This area was also identified as a potential mobility challenge by stakeholders during interviews.
- **Alabama River Parkway** – Current and projected LOS conditions show a large increase in deficiencies along this corridor north of SR 152. Some freight traffic originates at Couch Aggregates, and the corridor may be an alternate to SR 152 to reach I-65 north of Montgomery.
- **US 231 from SR 152 to Wetumpka** – US 231 is the main corridor from Montgomery to Wetumpka. High traffic volumes and LOS deficiencies, as well as several industrial and commercial sites, were identified along the corridor. Primarily a 2-3 lane facility, LOS estimates indicate possible capacity issues. The bridge over the Tallapoosa River was also identified by stakeholders as an issue.
- **SR 14 from I-65 to Wetumpka** – SR 14 is the most direct east-west route to I-65. Portions of the corridor are projected to have fairly high traffic volumes and LOS deficiencies. This corridor was also identified by stakeholders as a potential problem area.
- **I-65/1-85 Interchange** – In addition to high traffic volumes and increased projected volumes, stakeholders identified freight flow through this interchange as a problem area.
- **Air Freight Facilities** – Stakeholders reported the lack of air freight facilities at Montgomery Regional Airport as problematic.

Figure 12: Constrained Corridors



SOURCE: METRO ANALYTICS, STAKEHOLDER INPUT

4.7. Inventory of Planned and Programmed Freight Projects

Several planned and programmed projects identified in previous studies are relevant to this plan effort. Previous studies included in this analysis include the Montgomery Study Area 2040 Long Range Transportation Plan (LRTP), the 2017 Alabama Statewide Freight Plan, and the Northern Outer Loop Corridor Definition Study (2006). A summary of planned projects is provided below.

4.7.1. Montgomery 2040 LRTP

The LRTP work program includes 41 roadway capacity improvements. Significant projects include:

- Widening US 82 in Prattville from SR 41 to US 31 ($18.9 million)
- Widening and resurfacing Perry Hill Road from Harrison to Atlanta Highway ($11.5 million)
- Widening and resurfacing McQueen Smith Road from SR 3/US 31 to Cobbs Ford Road ($12.1 million)
- Widening South Boulevard from US 231 to Rosa Parks Avenue in Montgomery to a 6-lane urban arterial, adding one-way service roads in each direction, and adding grade separated diamond interchanges at 5 intersections ($82.8 million)
- Widening US 31/SR 3 in Prattville from CR 40 to SR 14 to a four-lane facility ($65.2 million)
- Widening US 31/SR 3 from US 82 to West Boulevard to a 6-lane facility, including a bridge over the Alabama River ($48.3 million)
- Widening East Boulevard in Montgomery to an 8-lane urban arterial from US 231 N to I-85 N with intersection improvements at Vaughn Road, Carmichael Road, and Woodmere Boulevard ($37.6 million)

The LRTP also included 78 maintenance and operations projects and 50 STPOA or STPAA funded projects in the Montgomery region. Some examples of significant projects are:

- Addition of center turn lane along Marler Road from US 80 to Okfuski Road in Pike Road ($19.3 million)
- Replacement of Day Street bridge in Montgomery ($10.3 million)
- Intersection improvements at Perry Hill Road at Atlanta Highway ($8.0 million)
- Resurfacing and adding two feet of pavement on SR 14 from eastern limits of Autaugaville to SR 6 (US 82) ($3.8 million)
- Widening and resurfacing of Ann Street from Brewton Street to the realignment to CR 235 (Federal Drive) ($2.3 million)
- Resurfacing and widening of Ann Street from Highland Avenue to 4-lanes and realignment to Federal Drive ($1.8 million)

The LRTP also discusses development of the Montgomery Outer Loop. Working with ALDOT, the Montgomery MPO identified several projects related to the Montgomery Outer Loop:

- New Roadway from SR 6 (US 231) to CR 85 (Carters Hill Road)
- New Roadway from CR 85 (Carters Hill Road) to SR 110
- New Roadway from I-65 to west of SR 9 (US 331) including interchange at SR 3 (US 31)
- New Roadway SR 108 from SR 8 (US 80) to west of CR 103 (Felder Road) including interchange at SR 8 (US 80)
- New Roadway SR 108 from west of CR 103 (Felder Rd) to I-65 including interchange at Felder Rd

- New Roadway SR 108 from west of CR 39 (Woodley Road) to SR 6 (US 231) including interchange at Woodley Road
- New Roadway from west of SR 9 (US 331) to west of CR 39 (Woodley Road) including interchange at SR 9 (US 331)
- SR 108 interchange, ramps and bridges at I-65

Freight related improvements identified in the LRTP include:

- Capacity improvements along US 82 from SR 14 to US 31 in Prattville
- Capacity improvements to South Industrial Boulevard from US 82 to Autauga CR 4
- Capacity improvements to Atlanta Highway from Perry Hill Road to East Boulevard (US 231)
- Resurfacing and bridge replacement projects along I-65
- Intersection improvements on SR 8 (US 231, Eastern Boulevard) at the I-85 interchange

4.7.2. Alabama Statewide Freight Plan

The Alabama Statewide Freight Plan identifies a statewide freight network in order to develop a work program utilizing NHFP funding. While no projects identified in the plan for receipt of NHFP funding are directly in Montgomery, the following projects near the Montgomery region were included in this plan due to potential benefits for freight traffic into and out of the Montgomery region:

- Resurface I-65 from 0.4 miles south of CR 141 to 0.8 miles south of Beaver Creek in Butler County (south of Montgomery)
- Resurface I-65 from SR 145 to just north of CR 48 overpass and resurface northbound and southbound rest areas in Chilton County (north of Montgomery)
- Widen I-85 bridges in Lee County (east of Montgomery)

Other projects identified along the National Highway Freight Network include:

- Widening I-85 in Montgomery County from four to six lanes
- Bridge improvements along I-65 in Montgomery County
- Resurfacing project for the entire length of I-65 in Autauga County
- Various safety and operations projects

The Statewide Freight Plan also recognizes the need for railway-highway crossing improvements (in coordination with railroad entities), sufficient truck parking, and the deployment and/or improvement of ITS infrastructure (Intelligent Transportation Systems) across the state.

4.7.3. Northern Outer Loop Corridor Definition Study

This study sought to identify potential sub-corridors for a loop road beginning west of Montgomery at US 80 and continuing through the northern edge of Lowndes County, north and east through Autauga County, then east and south through Elmore County to terminate at I-85, aligning with the Southern Outer Loop at both ends. Based on analyses and public input, identifying and evaluating a viable corridor within sub-corridors A/B is recommended. Benefits of such a corridor include:

- Improved transportation mobility and facilitation of economic development
- Providing an access-controlled route to serve travel demand for regional accessibility
- Improved east-west connectivity between Elmore and Autauga counties
- Allowing for economic growth in Autauga and Elmore counties
- Reducing traffic density on existing arterials and interstates while improving safety and mobility

4.8. Recommended Multimodal Regional Freight Network

Based on the findings of this inventory, the baseline regional freight network, shown in Figure 13: Baseline Regional Freight Network**Figure 13**, will consist of a highway framework, railroads and railyards, Montgomery Regional Airport, and waterways and ports. This freight network will serve as a framework to guide policy and project planning for existing and future freight movement and to help guide land use planning for existing and planned industrial development within the Montgomery region.

The baseline regional freight network should include the following roadways:

- National Highway Freight Network Roadways, namely I-65 and I-85.
- Alabama State Primary Freight Network roadways, including:
    - US 80 south and west of Montgomery
    - US 231 south of I-85
    - US 31 from Montgomery to Prattville
    - US 82 from I-65 north of Prattville
    - SR 152 around the north side of Montgomery
    - Taylor Road east of Montgomery
    - Provisions for the Northern Loop and Southern Loop
- Roadways identified due to existing and projected capacity issues and projected bottlenecks:
    - US 231 from SR 152 north to Wetumpka
    - SR 14 from Wetumpka to Prattville and west
    - Atlanta River Parkway from I-65 south to Montgomery
- Arterial and collector roadways connecting to last-mile destinations identified in the analysis of land use conditions and freight generators and attractor.

Combined, the above roadways provide significant connections for the movement of freight flows throughout the Montgomery region and to destinations beyond.

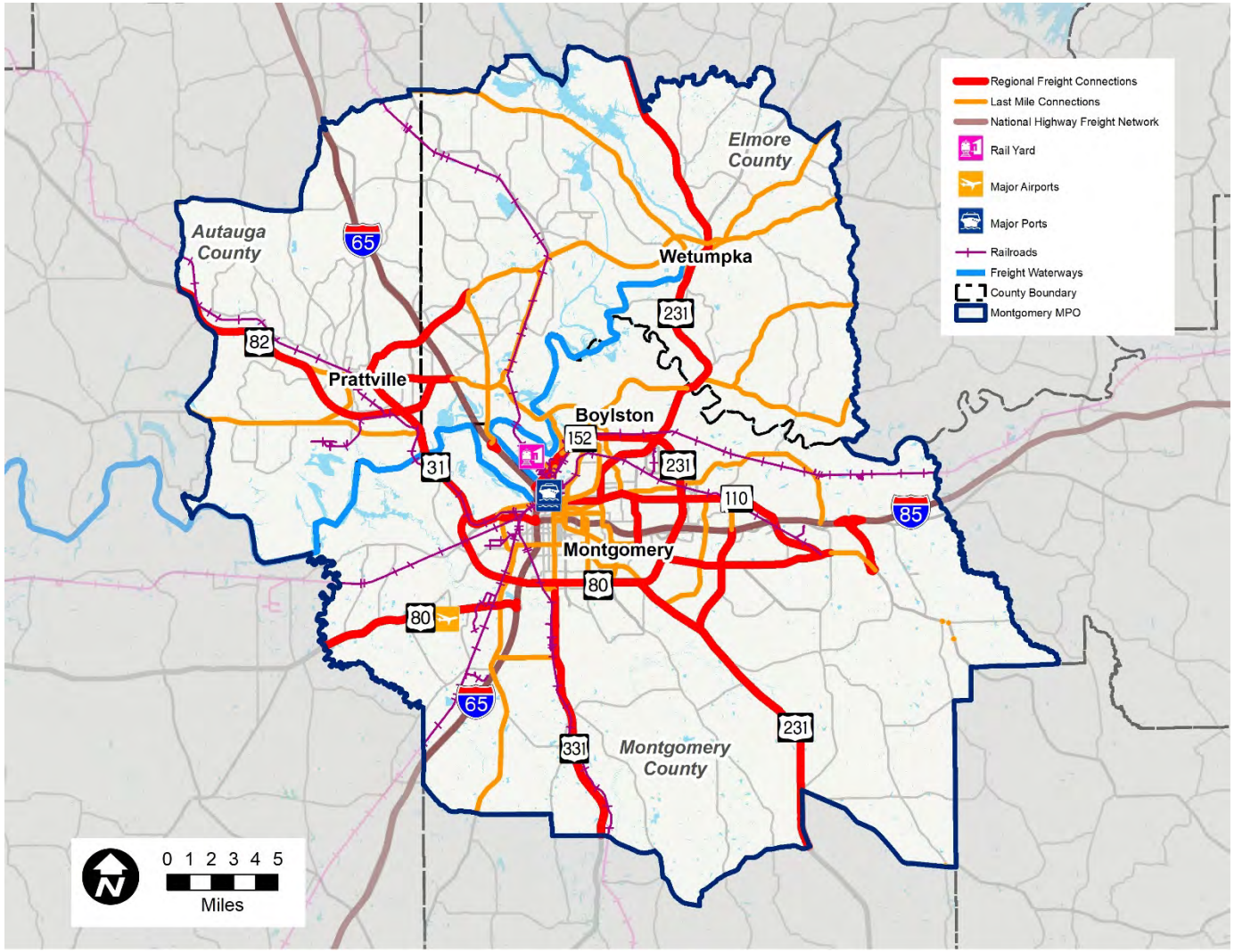
All identified railroads within the Montgomery region, including CSX Montgomery Yard, should be considered part of the baseline regional freight network. The spur lines travelling north, northwest, east, west, south, and southwest also provide a significant flow of goods and commodities into and out of the Montgomery region and are vital to the regional economy. In addition, railroad crossings, while primarily maintained by railroad entities themselves, are such that cooperative efforts can be made to provide for safety at highway-railroad intersections.

While not currently a major contributor to the flow of freight through Montgomery, Montgomery Regional Airport should be included as an integral part of the baseline regional freight network. There exists a desire among local stakeholders for this facility to be better utilized and a belief that, with appropriate upgrades and improvements, this facility could play a major role in goods movement into and out of the Montgomery region in the future.

Similarly, although the Port of Montgomery does not currently contribute to the movement of freight into or out of the Montgomery region, a future dredging project to enable the Alabama River to accommodate large capacity cargo boats could provide another way to move freight between Montgomery and the Port of Mobile.

In conclusion, the roadways, railroads, airport, navigable waterways, and associated intermodal connectors provide a baseline framework from which freight flows can be better analyzed and work programs identified for the Montgomery region. This baseline freight network will also serve as a key planning guide, not only to existing industrial and commercial land uses but also planned and future industrial and commercial development in the Montgomery region.

Figure 13: Baseline Regional Freight Network



SOURCE: FHWA, ALDOT, METRO ANALYTICS

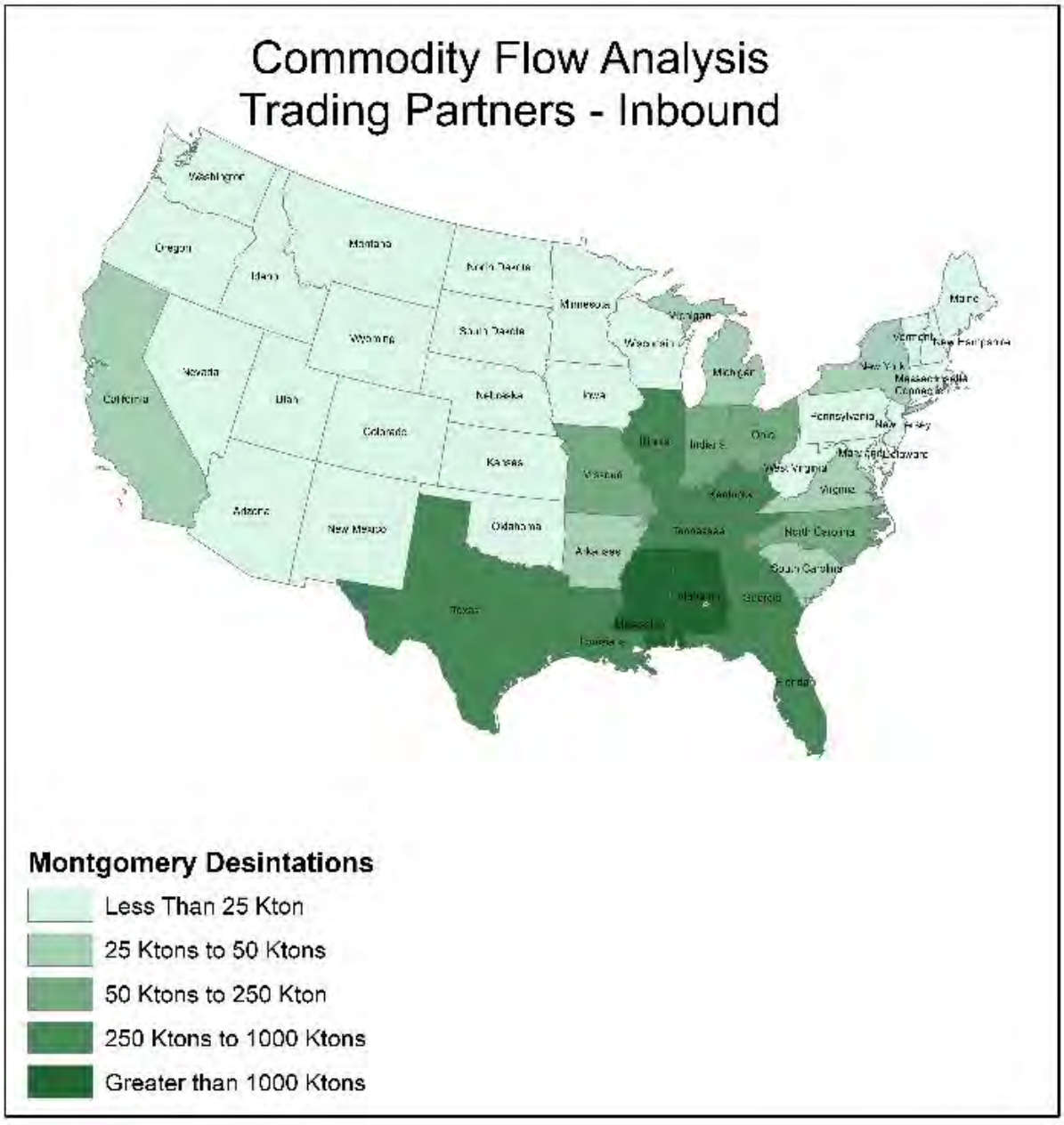
5. Montgomery Region's Context within the National Freight System

Freight movement in Alabama is dominated by regional traffic to and from other counties and municipalities. However, Alabama also connects to trading partners in nearby states and across the nation by way of all freight modes.

According to the FAF4 data collected for the year 2015, Alabama imports commodities heavily with several surrounding states. As shown in **Figure 14**, the greatest amount of imported goods and commodities – totaling over 1,000 kilotons – originates in Mississippi. Other nearby states contributing substantial imports of between 250 to 1,000 kilotons are Texas, Louisiana, Georgia, Florida, Tennessee, Kentucky and Illinois. States contributing between 25 and 250 kilotons include South Carolina, North Carolina, New York, Ohio, Michigan, Indiana, Missouri, Arkansas, and California.

As shown in **Figure 15**, Alabama also exports many goods and commodities to surrounding states and beyond. Many those exports go to the immediately surrounding states, including Mississippi, Florida, Georgia and Tennessee. Estimates from the FAF4 showed substantial exports, amounting to 250 to 1,000 kilotons, for those states. Other notable states contributing less than 250 kilotons but more than 25 kilotons include Louisiana, Arkansas, North Carolina, South Carolina, Texas, Kentucky, Pennsylvania, Ohio, Indiana, Illinois, Michigan, Wisconsin, and California.

Figure 14: National Freight Flows to Montgomery



SOURCE: FHWA, FAF4

Figure 15: National Freight Flow from Montgomery

SOURCE: FHWA, FAF4

6. Project Identification, Evaluation and Implementation

6.1. Overview of Key Issues

Among the most important measures of a region's freight system is its' ability to support economic growth for the region. Reliable access to parts and raw materials and efficient delivery of finished products are high priorities for businesses and industries evaluating sites for new operations.

Montgomery's most significant challenge for managing freight flows arises from the decades-old decision to route I-85 and I-65 through the heart of the city. Capacity expansion of both Interstates now is significantly constrained -- and construction costs magnified -- by adjacent urban development, the Alabama River and associated flood plains and wetlands.

The truck flow analysis in Map 4 (2018 flows) and Map 5 (projected future truck flows) illustrates the heavy volumes on I-85 and I-65 in the center of Montgomery. These maps also illustrate the importance of US 80, US 231, and SR 152 to regional highway freight movements. However, freight is increasingly moved by smaller "box trucks" by UPS, FedEx and Amazon Prime, which creates a more widespread pattern of direct delivery to small businesses and residences.

Much of the freight traffic on I-85 and I-65 has no destination in Montgomery, so and a large segment of the region's freight traffic would be well-served by the Southern Bypass, a big-ticket project that is being constructed in short segments as funding becomes available. Completion of the Southern Bypass between I-65 south and I-85 east would improve reliability of the freight network by shifting regional through trucks from the most congested Interstate segments in the region.

Rail service in the region introduces challenges as well, from the 220 mostly at-grade rail crossings in the study area and from reported constraints on oversize shipments. Conflicts between industrial-serving rail operations and highway traffic access to those same industries have been noted in interviews with Hyundai Motor Manufacturing, while delays for shipping oversize loads by both rail and truck has been an issue for Hyundai Power Transformers. Several unsuccessful attempts were made to engage CSX and Norfolk Southern managers in discussion of these and other operational issues. On-going efforts to engage the railroads in the MPO planning process should continue.

Based on the data, input from local planners and engineers on the TAC, and interviews with freight stakeholders, potential freight projects have been identified in five groups, with examples of potential projects listed in each group.

Major improvements are projects that add new facilities to the Montgomery Freight network, while minor improvements address current and future capacity issues on key links in the freight network. Operational improvements address identified safety issues, traffic delays, and intermodal conflicts on the freight system. Last mile improvements are focused on loading and unloading operations, while policy issues are focused on continued stakeholder engagement and funding.

1) Major improvements
   a) Southern Bypass from Wallahatchie Rd (CR-83) to I-65

b) Southern Bypass from I-65 to US 80 west

2) Minor Improvements
   a) US 82 widening from Selma Highway (SR 14) to US 31
   b) West Blvd (US 31) widening from Estate Street (west of Mobile Highway) to Birmingham Highway

3) Operational and Safety Improvements:
   a) I-85/I65 interchange study – evaluate Day Street ramp access to I-65
   b) County Road 4E (Prattville/Int'l Paper area)
   c) Railroad operations at Hyundai Blvd and coordination with shift changes
   d) Work with ALDOT to expand the Alabama Service and Assistance Patrol (ASAP) program to cover I-85 and I-65 in Montgomery to reduce incident-related congestion
   e) Work with Montgomery Regional Airport to develop strategies and seek funding to begin improving air freight capacity and efficiencies

4) Last Mile Improvements:
   a) Evaluate loading zones in downtown area to support small businesses and reduce delivery-related traffic impedance
   b) Evaluate suburban business clusters for freight-targeted operational improvements, including loading area and intersection configurations

5) Policy issues
   a) Engage logistics managers for large shipping firms (e.g. UPS and logistics providers to major manufacturers) in discussions with ALDOT and MPO technical committee to hone in on safety and operational hot spots for freight project prioritization
   b) Establish a Freight Intersection set aside in O&M budget and work with ALDOT to identify priorities based on maintenance

6.2.Innovative Last Mile Technologies and Best Practices for Montgomery

There are several last mile technologies and best practices that are currently at the forefront of the transportation industry that could benefit the Montgomery MPO if utilized or planned for future projects. The purpose of this discussion is not necessarily a recommendation for adoption of these programs but rather to bring awareness to these technologies and practices that could help mobility in the Montgomery MPO, particularly for the last mile of trips. Some of these programs can be easily implemented at the local level, however, some will require development at the state level.

- ***Innovative Zoning Codes for Freight*** – In today's market there are often pressures to convert former industrial space into residential, office, or other land uses. This can exacerbate congestion and road safety issues, including demand on the road network, and increasing conflict between truck traffic and pedestrian and cyclists. Local government can use zoning tools and incentive programs to preserve and catalyze industrial infill development. Incentivizing complementary uses, applying restrictions on non-compatible uses, placement of green infrastructure between neighborhoods and industrial activity are a few of the tools available to

local agencies to prevent incompatible land use issues. These tools are immediately available and can be used at the discretion of the local government.

- ***Integrating Heavy Truck Design into Streets in Mixed Use Areas*** – In cases where industrial development is integrated with mixed use areas, it is necessary to safely integrate truck traffic into streets with pedestrians, cyclists, transit vehicles, and private vehicles. Several street design features are available with the intention to improve pedestrian and bicycle safety. Some of these features include, narrow travel lanes, small corner radii, raised medians islands, corner bulb-outs, and neckdowns can help provide a barrier between trucks and pedestrians. Other design interventions with heavier freight traffic that can provide protection to vulnerable road users include, leading signal phases, bicycle boxes and in some cases protected or channelized turn phases can mitigate some turn radius dangers. Finally, redirecting pedestrian and bicycle traffic to separated facilities parallel to freight routes can also provide safety improvements. Integrating these concepts can also be implemented into projects at the discretion of local and state agencies where applicable.
- ***Development of Truck Parking and Staging Facilities*** – Adequate available short-term and long-term truck parking can provide and additional level of safety to the Montgomery Region. A shortage of truck parking leads to drivers parking on expressway ramps, closed inspection stations or rest areas, retail parking lots or even local streets. The National Coalition on Truck Parking was formed to address truck parking issues across the nation. They have suggested the incorporation of overflow truck parking into shipping and distribution centers, creating "bullpen" areas to relieve illegal truck parking. In addition, vacant, or underutilized sites within industrial districts may be great targets for additional truck paring facilities. In addition to increasing mobility, these actions will reduce complaints and safety issues created by a lack of truck parking. Local and state agencies should work with both developers and collaborate with other agencies to increase the availability of short-term and long-term truck parking solutions.
- ***Truck Parking Technologies*** – ITS based truck parking systems are currently being utilized in Minnesota, Florida, Michigan, and California. These systems provide operational information directly to truck drivers about to incidents or congestion ahead of the driver's route. This allows them to interact with the truck parking applications to reserve a parking space in advance of arriving at the parking lot. These systems can contribute to improved efficiency and mobility allowing drivers to move directly to the reserved parking space while staying on their routes. The Montgomery MPO should coordinate with its partners and business community to ensure information regarding available truck parking is to their logistics carriers. ITS related projects would fall under the jurisdiction of ALDOT for implementation, however local agencies should be aware of these programs to better facilitate coordination with the public.
- ***Freight Signal Priority*** – This technology provides precedence to freight and commercial vehicles traveling in a signalized network along a defined corridor. The goal is to reduce stops and delays thus increasing travel time reliability and improve on-time deliveries. It also enhances intersection safety and increases overall network performance. It can be applied with ITS or Integrated Corridor Management (ICM) strategies to maximize operational benefits for trucks. The USDOT is also exploring smarter traffic signal timing using vehicle-to-infrastructure (V2I) communications. The Multi-Modal Intelligent Traffic Signal System (MMITSS) is a bundle of applications that allows traffic signals to be monitored and adjusted in real time to maximize

traffic flows. Another similar application being explored by the USDOT is the Eco-Freight Priority application, which gives signal priority to freight vehicles approaching signalized intersections, taking its weight, location, speed, and type into consideration. Decisions are based on real-time traffic and emissions data to provide the least amount of emissions at an intersection. This results in fuel reduction benefits for freight vehicles. While some of this technology will not be immediately implementable, future infrastructure to implement systems such as these should be considered when developing future projects. As stated above, most ITS related projects would fall under the jurisdiction of ALDOT for implementation, however local agencies should be aware of these programs to better facilitate coordination with last mile connections.

- ***Camera-Linked Dilemma Zone Signal Technology*** – Another ITS application that could be utilized is camera-linked signal pre-emption based on real time surveillance of vehicles. This technology is used to improve safety and operations using a traffic responsive signal timing (extended green) to respond to high truck volumes to reduce 'dilemma zones' (when trucks cannot either safely brake or continue through) for trucks approaching signalized intersections that require a larger braking zone such as high pedestrian activities, steep grades, etc. A distinct advantage of this technology is that cameras read every type of truck regardless of on-board equipment. As stated above, ITS related projects would fall under the jurisdiction of ALDOT for implementation, however local agencies should be aware of these programs to better facilitate coordination with the public.
- ***Connected/Autonomous Vehicle Implications*** – Vehicle-to-infrastructure (V2I) and vehicle-to-vehicle (V2V) communications technologies continue to innovate roadway safety and operations throughout the United States. Smart Traffic, smart network cities have seen impressive results after implementing intersection preemption software. V2I technology notifies drivers if they are in speed reduced zones and gives warnings if exceeding the speed limit through in-vehicle communications so that drivers can safely operate their vehicles. Implementations for trucks include the potential for signal priority for freight traffic applications during off-peak hours. V2V communications enables trucks to receive information from other vehicles. These Wi-Fi based technologies provide adaptive cruise control, lane departure assist, blind spot detection, forward collision warning, and active brake assist. These technologies have introduced a whole new level of safety and operations to the industry. A switch the Fright Priority Signaling discussed above, this technology may not be immediately implementable, but future projects should consider planning for this future technology. Also, as stated regarding other programs, ITS related projects would fall under the jurisdiction of ALDOT for implementation, however local agencies should be aware of these programs to better facilitate coordination with the public.
- ***Evolutions in Supply Chain and Logistics Models*** – The trucking industry now more than ever, demands drivers not only to deliver goods safely and efficiently, but also to check store inventory, place orders, process invoices, check financial statistics, and find product availability. They access databases on hand-held devices, in-dash consoles. Because of this fleet managers have moved towards more advanced all-inclusive software platforms to enable the sharing of information throughout their network. Evolution from the conventional on-demand economy to the just-in-time economy, to the new e-commerce business model has also driven the need for effective last-mile delivery through anticipatory logistics. These considerations and an

understanding that these business models are constantly changing should be understood by local and state agencies as they plan for future projects.

6.3. Performance Measures

Key performance measures for freight projects are truck travel time reliability and excess peak hour delay. Improved methods for accurately gauging the impact of these performance measures should be addressed in travel model improvements in the update of the LRTP.

6.4. Project Prioritization Approach

Ultimately, the freight projects identified here will be ranked through the Long Range Plan process. The ranking methodology should include the following six factors:

Daily truck volumes on routes/facilities to be improved (objective measure)

Level of Service on the routes/facilities to be improved (objective measure)

Proximity of the project to existing industrial development (subjective measure)

Importance of the project to future industrial development (subjective measure)

Improvement in freight network reliability (subjective measure)

Improves Regional Freight network continuity (subjective measure)

6.5. Recommendations and Implementation Strategy

The following matrix of recommended projects was developed by utilizing information obtained for the for the Montgomery MPO Regional Freight Plan Regional Freight Profile. It provides recommended projects, policies and actions that should be considered to help alleviate future constraints and provide sustainable growth to the Regional Freight Network.

The information obtained and analyzed from the Regional Freight Profile indicated six key categories that should be addressed to help with the improvement of the Regional Freight Network. The first category includes high priority projects with regional significance including the completion of the Outer Loop, improvements along I-85 and improvements at the I-65/I-85 Interchange. The second category includes bottle necks and constrained corridors. Future traffic levels and Level of Service (LOS) indicated several areas that would be constrained by future traffic, causing congestion on the Regional Freight Network. The projects below would address short-term operational concerns in these first two categories.

The third category identified in the Regional Freight Profile was the importance of last-mile connectivity. Projects listed below will help owners and operators reach those last mile connections by providing operational improvements at key locations near major industrial facilities and intermodal centers. Similar to last mile connections, the fourth category of recommended projects includes prioritization and creation of a "Port Access Improvement Zone" along N. Court Street. In addition to the projects and policies described above, the fifth and sixth categories address land use, zoning and technology strategies identified in the Regional Freight Profile that could help improve the development of robust industrial areas and improve mobility in the region through technological advances.

Matrix of Recommended Projects

	Projects	**Policies/Actions**
High Priority/Regional Significance	Outer Loop I-65/I-85 Interchange I-85 Widening	Continue to coordinate with ALDOT and explore innovative funding for high priority, regional projects
Bottlenecks	Various projects along constrained corridors (See complete list below)	Prioritize freight improvements
Last Mile Connections	Various projects near important major industrial areas and intermodal facilities (See complete list below)	Supplement Regional Freight Network with key last mile connections
Port Access	Prioritize resurfacing along N Court Street, 6th Street, and Parallel Street as Regional Freight Corridors	Create a Port Access Improvement Zone
Land Use/Zoning	N/A	Ensure new development has proper ingress and egress on site and sufficient spacing with adjacent properties
Technology	N/A	Monitor ALDOT use of freight-related technologies along major corridors to ensure compatibility on non-state system

High Priority/Regional Significance

Projects

- Outer Loop
- I-65 Interchange
- I-85 Widening

Policy Actions

- Continue to coordinate with ALDOT to ensure funding for I-85 widening
- Explore innovative solutions for addressing I-85/I-65 interchange
- Explore grant and innovative funding opportunities to complete the Outer Loop
- Work with ALDOT, Montgomery County, and Town of Pike Road to manage and mitigate impacts of trucks routing on two lane state and county roads in the Pike Road area until the Outer Loop is completed to US 231.

Bottlenecks (In lieu of capacity improvements) – By Priority

Projects

- Operational Improvements along US 231 (Eastern Blvd.) from I-85 to SR 21 (Congressman W.L. Dickinson Dr)
- Operational Improvements along US 80 (South Blvd) from I-65 to I-85
- Interchange Upgrades at I-65 and Herron St./Clay St.
- Operational Improvements along Alabama River Parkway from I-65 to SR 152
- Operational Improvements along SR 231 from US 80 to SR 271 (Taylor Rd)
- Operational Improvements along US 231 from SR 152 to SR 14
- Operational Improvements along Cobbs Ford Rd from I-65 to US 31 (S Memorial Dr)
- Operational improvements along SR 14 from I-65 to US 231
- Intersection Upgrades at N Court St. and Railroad St.
- Operational Improvements along SR 110 (Atlanta Hwy) from SR 231 to I-85
- Operational Improvements along US 31 from I-65 to E Main St
- Operational Improvements along US 80 (Selma Hwy) from Alatex Rd to I-65
- Operational Improvements and increased maintenance effort along Vaughn Road, Wallahatchie Road, and Meriwether Road in the Pike Road area to mitigate Outer Loop traffic diversions

Policy Actions

- Prioritize improvements along Regional Freight Network within the TIP
- Dedicate a certain share of revenues specifically to address freight bottlenecks

Last Mile Connectivity

Projects

- Intersection Improvements at US 331 (Norman Bridge Rd) and Hyundai Blvd
- Operational Improvements along N. Court Street from 6th Street to Railroad St

- Operational Improvements along US 82 from Doster Rd Cutoff to Cobbs Ford Rd
- Operational Improvements along SR 126 (Atlanta Hwy from Technacenter Dr to Industrial Park Blvd.
- Intersection Improvements at US 82 and Perimeter Pkwy

Policy Actions

- Include key last mile connections on the Regional Freight Network
- Focus on improved access to:
  - Major industrial areas
  - Intermodal Facilities – include intermodal yards

Port Access

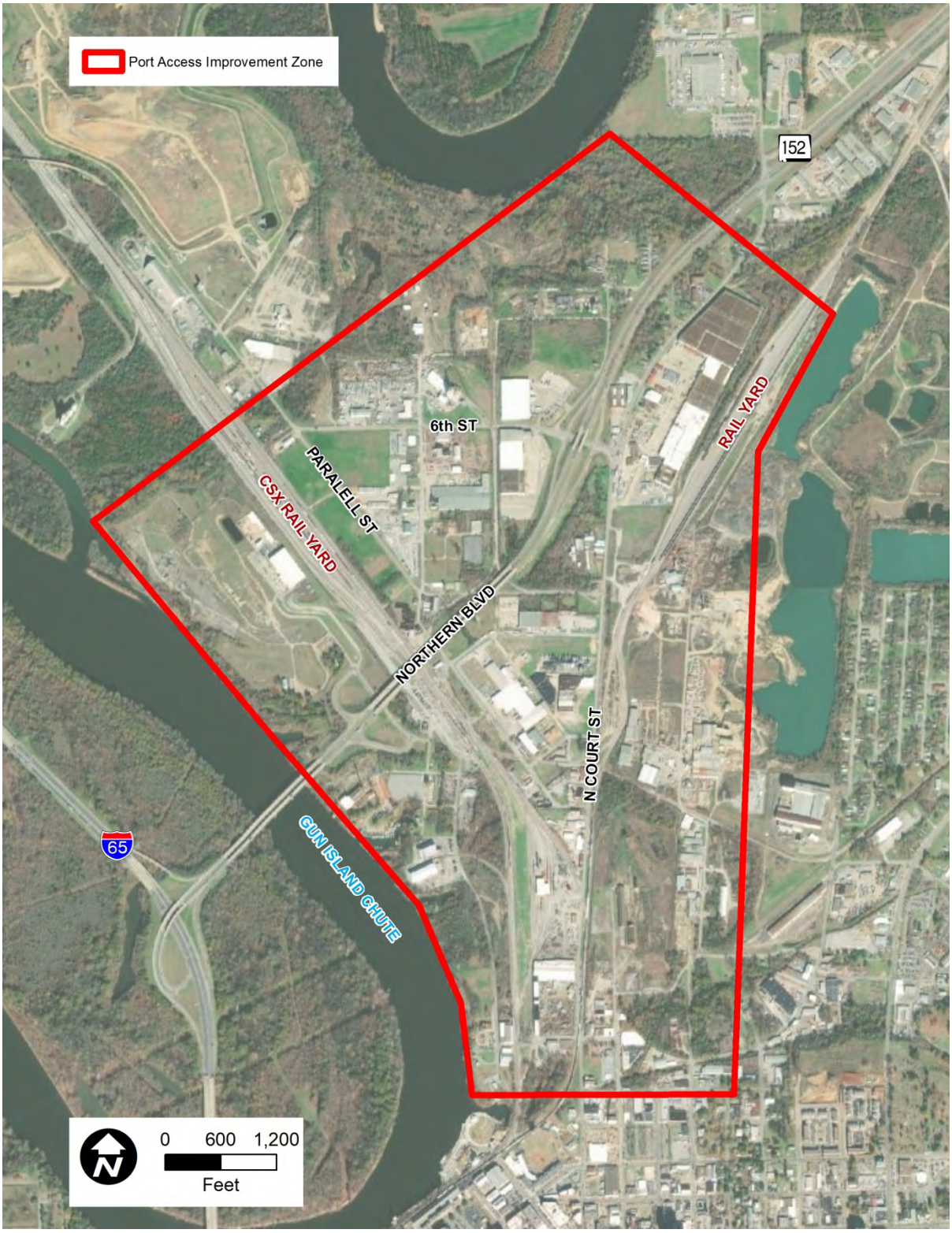
Projects

- Prioritize resurfacing along N Court Street, 6th Street, and Parallel Street as Regional Freight Corridors

Policy Actions

- Create a "Port Access Improvement Zone" that focuses operations and maintenance activities on area roadways – specifically N. Court Street, 6th Street, and Parallel Street as Regional Freight Corridors (to provide improved port access) – see Figure 16 on next page
- Designate N Court Street, 6th Street, and Parallel Street as Regional Freight Corridors (due to Port Access)

- **Figure 16: Proposed Port Access Improvement Zone**



Land Use/Zoning

Projects

- None

Policy Actions

- Ensure new development has proper ingress and egress on site and sufficient spacing with adjacent properties
- Prioritize development of high-ranking freight-oriented developments.
- Use zoning incentives to explore regulatory approaches such as restricting eligible development types to only include industrial or related uses. Or adjust zoning regulations to make industrial development easier.
- Utilize innovative site design to provide district level amenities such as shared truck parking, employee parking and transportation services, green storm water infrastructure, and district energy.
- Explore the use of mixed-use development and compatible land uses such as commercial in areas with high freight activity. Establish industrial site guidelines to prevent noise and pollution from freight developments.
- Preserve agricultural land by concentrating the development of freight districts in proximity to existing industrial businesses and areas identified as future employment centers.

Technology

Projects

- None

Policy Actions

- Monitor ALDOT use of freight-related technologies along major corridors to ensure compatibility on non-state system

6.6. Potential Funding Sources

Potential Funding for Montgomery Freight Initiatives

There are several federal, state, and local funding sources that could be available for use in the development of a freight work program in the Montgomery MPO. Some of those funding programs include National Highway Freight Program (NHFP), National Highway Performance Program (NHPP), Surface Transportation Program (STP), Highway Safety Improvement Program (HISP), INFRA Grants, ALDOT Industrial Access Funds, and the Alabama Transportation Rehabilitation and Improvement Program (ATRIP).

The **National Highway Freight Program (NHFP)** provides funds through the federal Highway Trust Fund through the Fixing America's Surface Transportation Act (FAST Act) to improve the efficient movement of freight on the National Highway Freight Network (NHFN). Regulations require projects to be on an approved Statewide Freight Plan to obligate NHFP funds and can be used for various freight related projects including development phase activities, construction, ITS and IFTS, reducing environmental impacts, geometric deficiencies at interchanges and ramps, truck-only lanes, adding or widening shoulders, truck parking facilities, and electronic screening systems for vehicles among others. According to the 2017 Alabama Statewide Freight Plan, no projects in the Montgomery MPO are currently listed as a NHFP Freight Investment Plan project. However, as future ALDOT statewide freight investment plans and work programs are developed, projects in the Montgomery MPO could be considered – especciall6 the widening of I-85 and modifications to the I-65/I-85 interchange.

The **National Highway Performance Program (NHPP)** allocates funds for improvements to the National Highway System (NHS) as well as roads important to the nation's economy, defense, and mobility. This program was established under MAP-21 and is also directed by the FAST-Act and directs FHWA to apportion an amount to each state which is divided among apportioned projects. It is eligible for the installation of vehicle-to-infrastructure (V2I) communication equipment, reconstruction, resurfacing, bridge preservation, and critical infrastructure projects.

INFRA Grants are a federal program of discretionary funding available to projects the help rebuild America's crumbling infrastructure. Eligible projects include highway freight projects on the NHFN, highway or bridge projects on the NHS, freight projects that are intermodal or rail, or railroad-highway grade crossing or separation projects. INFRA grants may not exceed 60 percent of total eligible project costs; an additional 20 percent of project costs may be funded by federal assistance for a maximum of 80 percent.

Several other programs are potentially available funding sources for freight improvements in the Montgomery MPO. They include:

- ***Surface Transportation Program (STP)*** – This program allocates funds for improvements to Federal-aid highway and bridge projects on public roads, and facilities for non-motorized transportation, transit capital projects and public bus terminals and facilities. ALDOT allocates these funds within the Other Area (STOA) funds and State managed (STPAA) funds. STPOA

projects are used at the discretion of MPO's for project funding, while STPPA funds are used at the discretion of ALDOT.

- ***Highway Safety Improvement Program (HSIP)*** – Utilizes funds for highway safety and operations projects on all public roads. The goal of this program is to improve overall performance on the roadway network.
- ***Alabama Transportation Rehabilitation and Improvement Program (ATRIP)*** – This program is administered by ALDOT and funds up to 80 percent of the construction of key roadway projects. The program requires local jurisdictions to cover the cost of environmental assessment, design, and right-of -way acquisition costs.

ALDOT Industrial Access Funds These funds are intended to provide adequate public access to new or expanding distribution, manufacturing, or industrial firms. Projects must be committed to new jobs, new investment, and create new access on public right-of-way. Project sponsors must maintain the completed facility. The project sponsor is also responsible for preliminary engineering, right-of way acquisition and utility relocation costs