

NORTH CENTRAL ALABAMA INLAND PORT FEASIBILITY STUDY

prepared by:



In association with

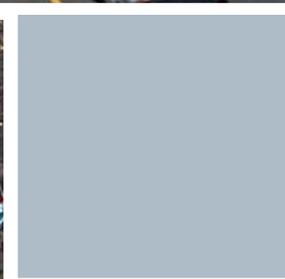
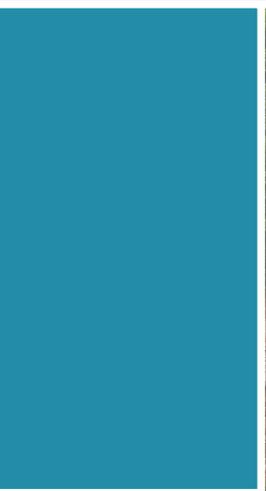
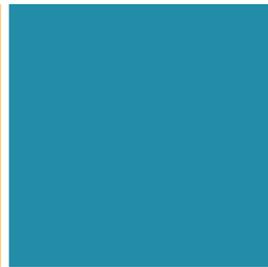
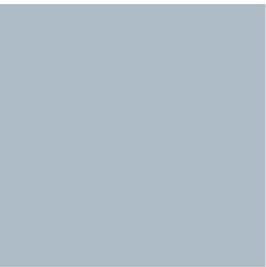


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Executive Summary

The following provides a high-level overview of the report that follows. It serves to present the

- Overall feasibility of an Inland port facility
- Key elements of developing an inland port facility
- Actions needed to implement a facility

Is an Inland Port in the Study Area Feasible?

Based on interviews with stakeholders and an assessment of potential sites for an inland port in the study area, the answer is yes, provided two key issues are resolved.

The inland port needs to be directly linked with the Port of Mobile and serve as the primary Customs and Border Protection (CBP) port of entry along the CSX line. Linking a deep draft seaport to an inland port that can facilitate and enable the efficient movement of imports and exports by enabling customs clearance at the inland port is consistent with how the Georgia Ports Authority (GPA) and the South Carolina Ports Authority (SCPA) have developed inland ports. Inland ports with customs capabilities on-site enable containers to be off-loaded from a ship directly to rail for secured transport to the inland port for customs inspection and clearance. While the CPB already has a facility along the Norfolk Southern rail line in Huntsville, a major emphasis is being placed on system resiliency at all levels of the federal government. At this juncture, it is unknown whether the planned intermodal yard at Montgomery will have a CPB port of entry. If this is being considered, then local officials need to reach out to the Port, CPB, CSX, and other state officials to discuss this matter as soon as possible. Given 1) the ability to reduce truck travel along the I-65 corridor through Birmingham, Montgomery, and Mobile and crossing the Tennessee River and 2) better access served to markets to the north such as Nashville, Louisville, etc., North Alabama would be a much more advantageous location than Montgomery for a CBP facility for the Port.

The feasibility of the inland port is also predicated on the development of manufacturing and high-technology industries in close proximity to generate and capture domestic freight. Our analysis discovered that the intermodal yard in Huntsville only moves international freight. The Huntsville facility does not have sufficient anchor demand to capture a domestic market share. As a pair to the Port of Mobile, an inland port can serve the local market without competing directly with the Huntsville yard.

Key Issues

Several thresholds need to be met for the inland port to secure its full potential:

1. The inland port must have a carefully integrated partnership with the Port of Mobile. The peer facilities that have demonstrated success show a synergy between the deep-water port and inland port from the highest political levels to the lowest daily operational levels. A formal partnership between the inland port and the Port of Mobile must be negotiated.
2. There must be sufficient cargo container demand near the inland port to support a MINIMUM of 600 containers per week (300 containers inbound and 300 containers outbound). Linkage to the Port of Mobile for customs clearance and the development of supporting manufacturing and high-technology supporting industries could generate this volume. Additionally, to economically move containers by rail, a rail line will normally look to traverse a minimum of 500 miles between cargo points so domestic cargo would need a considerable geographic range.

3. The inland port must host a full-time CPB facility with customs inspection and clearance capacities. This would allow cargo to be directly from ships at the Port of Mobile onto rail cars and sent to the inland port for customs inspection and clearance. This would be a critical operational capacity increase for the Port of Mobile that does not require the Port to develop additional on-site storage or expansion. Of course, customs clearance could also apply for containers for export from destinations further north such as Nashville, Louisville, etc. This would streamline operations at the Port tremendously.
4. Linkages to the freight network through multiple modes of transport are critical. The establishment and maintenance of key modes, particularly rail access, are necessary for the success of the inland port. The transportation facilities for improvement would be subject to the desired site for the facility, but would almost certainly require connections to I-65 and potential upgrades to the CSX line.
5. It is important that the inland port not be framed as competition for the intermodal yard at Huntsville or the facility currently under development at Montgomery. The gaps in the market are the capture of the domestic market and the presence of the primary CPB facility along CSX- the inland port should be pursued to fill those market gaps.
6. Based on the economic profile in the region in Section 3, a shortage of skilled workers persists in the study area, and it seems clear that additional focus on producing skilled technical and manufacturing workers is needed in the region. With numerous technical colleges in the study area, there is an opportunity to refine their curriculum to better suit the automobile and related industries and other industrial uses that may be attracted to the area based on feedback from local economic development officials.

Recommended Actions

Based on the issues cited above, developing an inland port could take some time. Significant progress can be made in the interim, given the necessary coordination, industry development, and workforce development.

0 – 12 Months: Conversations with top leadership within the study area, Port of Mobile, CSX, and the legislative contingent for the State of Alabama should occur. The goal of these conversations should be to 1) develop a consensus of a preferred location for a Port facility, and 2) execution of a Memorandum of Understanding describing the Port of Mobile and the Inland Port as a linked, joint venture designed to:

- Establish the location of a CBP facility within North Central Alabama to Improve the operational resilience of the Port of Mobile by moving containers to the inland port directly for customs inspection and clearance and expanding its capture for exports from markets north of Alabama. *(This is an especially urgent matter if the Montgomery facility is being considered for a CBP port of entry).*
- Improve the operational resilience and safety of the I-65 corridor by removing container traffic to and from the Port of Mobile by alleviating truck traffic along the I-65 corridor in Birmingham, Montgomery, and Mobile.
- Capture more of the freight flows in Alabama for domestic industrial use.
- NOT directly compete with the CPB facility at Huntsville (which largely serves international markets) or the intermodal yard at Montgomery (anchored to the automobile assembly and related industries).

0 – 48 Months:

- Carefully observe the development of the Montgomery Intermodal Yard and converse with the key stakeholders to identify practices to adopt and lessons learned.
- Actively recruit industries to the preferred area to generate the minimum 600 containers per week demand required to begin active discussions with CSX.
- Begin to work with local officials to investigate earmarks and innovative funding (such as Community Project Funding, discretionary funding, etc.) to begin acquisition of the preferred site.

48 – 60 Months:

- Once the container demand, or at least the letters of intent, are in place or are trending near the threshold, conduct regular conversations with CSX to move the Memorandum of Understanding process forward. This would include committing to more service frequency and potential physical upgrades to tracks, switches, etc.
- Subsequent discussions with the Port of Mobile, CSX, and the ALDOT to identify and generate joint applications for federal discretionary funding for the new facility. A description of the federal programs cited in this report is provided in the following subsection,
- Upon securing an inland port of entry, coordinate with the CBP to establish a foreign trade zone to promote new businesses near or at the facility and, therefore, increase the number of containers along the CSX line. More information on Foreign Trade Zones is provided later in this section.

Section 1: Overview of the Study

The development of inland ports is a growing trend, with new inland port facilities now operating in Georgia and South Carolina directly linked to their respective Ports (Savannah and Charleston). These inland ports are an essential piece of regional solutions to provide safe, reliable, and efficient movement of goods. The Port of Mobile continues to see an ever-increasing volume of shipping traffic since the expansion of the Panama Canal.

The purpose of the *North Central Alabama Inland Port Feasibility Study* is to identify and analyze industrial areas within four counties in northern Alabama - Cullman, Lawrence, Limestone, and Morgan Counties – and assess their potential for an inland port facility in North Central Alabama. The study was to:

- 1) Identify the feasibility of an inland port facility linked to the Port of Mobile that would provide for better goods movement throughout the State of Alabama and, in turn, provide economic development opportunities in the region.
- 2) Determine the best and highest uses of potential industrial areas identified through stakeholder outreach based on various physical, economic, and environmental factors. These factors include each area's physical attributes, transportation infrastructure, utility infrastructure, surrounding land uses, and potential development costs.

Why Alabama?

Alabama is centrally located in a region experiencing significant U.S. population growth, business and economic growth in domestic production, goods movement, and expanding international trade lanes through the Gulf of Mexico with Mexico, South America, and Pacific Rim Countries. The study area is among the fastest-growing population centers in the Southeast region, as illustrated in the U.S. Environmental Protection Agency (EPA) map of U.S. Population Growth Trends.¹ The State's infrastructure includes six interstate highways, seven commercial airports, five Class I railroads, multimodal services and facilities, one of the nation's largest inland waterway systems, and a deep-water seaport. The State is an international aerospace and automotive production leader and has solid agricultural, chemical, timber, and paper production industries.²

Many U.S. Gulf of Mexico ports are seeing massive increases in containerized movements in recent years. According to the Florida Seaport Mission Plan, Florida's ports of Manatee, Tampa, and Panama City have doubled container throughput in the past four years.³ The Port of Mobile's TEU throughput went from 182K TEUs in 2015 to 354K TEUs in 2020.⁴ Nearshoring of manufacturing in Mexico coupled with the completion of the Panama Canal expansion with four additional post Panamax locks provides market opportunities for northern Gulf ports to expand Pacific trade lanes. Significant investments in inland port infrastructure are necessary to capture, transfer, fulfill, and distribute goods and services into and from the major metropolitan markets of the southeastern U.S., where Northern Alabama is centrally located.

A recent article published by the *Mobile Real Time News* published on January 4, 2022, highlights the importance of the rail infrastructure in moving goods from the Port of Mobile. The article reported on the

¹ *Analyses and Effects of Global Change on Human Health and Welfare and Human Systems, Chapter 1. U.S. Environmental Protection Agency (EPA)*

² *Economic Development Partnership of Alabama, <https://edpa.org/>*

³ *Florida Seaport Mission Plan, July 27, 2021, Page 47 Exhibit 19, 4-Year Comparison of Containerized Cargo Handled by Florida Seaports, Accessed from: <https://flaports.org/success-story/fsted-seaportmission-plan/>*

⁴ *Port Performance Freight Statistics Program, Bureau of Transportation Statistics*

development of the Alabama-USA program that "involves 12 specific track, signal and yard improvements on Norfolk Southern rail lines between Mobile, Selma and Birmingham." Per the article, "the overall concept calls for \$231.6 million in investment in rail projects to upgrade economic development infrastructure in central and southern Alabama. The first phase, costing \$71.6 million, will focus on the rail connection to the McCalla Intramodal Facility near Birmingham." Norfolk Southern is funding more than half of the project. The remainder is from the U.S. Department of Transportation (USDOT) Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program and other statewide funds. No award information had been granted at the time of this report, but similar applications could be potential items for area officials. More information regarding the CRISI program and its potential application for North Central Alabama is provided in Section 7 of this report.⁵

Report Overview

The remainder of the report is organized as follows:

- Section 2 – Definition of an Inland Port and Facility Types – A definition of an inland port and overview of the five types of facilities defined for this analysis.
- Section 3 – Highlights of Initial Assessment – An overview of key findings from the *Initial Area Assessment* Report, attached in **Appendix A**.
- Section 4 – Key Issues Identified through Interviews – A description of issues related to developing an inland port based on stakeholder interviews from intermodal port operators, railroad representatives, and the Port of Mobile.
- Section 5 – Area Assessments – An assessment of the industrial areas for their most appropriate port facility type based on area characteristics.
- Section 6 – Peer Reviews of Port-Related Facilities – A summary of characteristics from peer facilities that advise potential actions for a similar facility in North Central Alabama
- Section 7 – Action Plan – Recommendations for next steps for an inland port facility in the study area.

⁵ <https://www.al.com/news/mobile/2022/01/alabama-usa-corridor-rail-work-to-improve-supply-chain-infrastructure.html>

Section 2: Definition of an Inland Port and Facility Types

America's coastal ports are integral nodes in the supply chain that moves an extraordinary amount of inbound and outbound cargo. In addition, they are challenged to onload and off-load current volumes as container ships continue to increase their carrying capacity and can now off-load thousands of containers to a port upon arrival. These ports do not have the space to store the cargo or the resources to provide value-added services. The shipment needs to move out of the coastal port to locations that can perform these services (e.g., sort, consolidate, assemble, or finish) and where functions such as customs clearance, warehousing, or intermodal exchanges occur before the cargo arrives at its final destination.

Inland ports are also critical nodes in America's supply chain providing shippers (the cargo owners) and carriers (the modes on which the cargo moves) the needed bandwidth to manage consumer demands efficiently and effectively and to diversify their distribution networks by placing processing, warehousing, and assembly capacity closer to the point of consumption. The advent of eCommerce will add new pressures and new locations to these distribution networks; as more firms offer faster delivery times (e.g., same day or a few hours) directly to consumers, they will need logistics centers closer to urban centers. Real estate near an urban center is more expensive than where inland ports are historically located. Therefore, the eCommerce fulfillment centers will need to maximize their capacity on a smaller footprint by going vertical.

These critical nodes on the nation's supply chain distribution network weave into the nation's economic competitiveness. There are economic and localized financial and workforce development opportunities at these facilities. Still, the economic benefit from these facilities is spread over the supply chain and enjoyed by shippers, carriers, and consumers of the goods distant from these nodes. The social equity and environmental impacts, on the other hand, directly impact the communities near them.

The five types of inland port facilities identified for this analysis are described below

Intermodal/Bulk Transfer

Intermodal refers to the movement of products involving multiple modes of transportation. The transfer between modes occurs at an intermodal facility using cargo handling equipment capable of moving the cargo from one mode to another. Examples include ship-to-shore cranes, rail-mounted gantry, rubber-tired gantry, reach stackers, straddle carriers, and yard mules. Intermodal rail refers to containerized cargo movements as opposed to bulk cargo. Containerized freight is typically described as a TEU, which stands for a twenty-foot equivalent unit. This terminology provides uniformity across the industry. *This type of facility could relieve goods congestion on the highways and provide customs clearance for international goods to and from seaports, such as the Port of Mobile.*

Warehousing/Transit (i.e., Fulfillment Center)

This type of facility provides covered freight storage within industrial buildings, securing cargo from weather and elements and theft and damage. They often have equipment like forklifts and bins or containers, with pallet racks stacked high and stocked with large quantities of products. These facilities can provide climate control, cargo refrigeration for food and kindred products like produce, or even sub-freezing storage for fresh meats and perishable shipments. These warehouses can also be called cross docks or distribution centers where transfer of goods from full-load bulk or break-bulk truck, container, or railcar loaded with one commodity or product like bananas. These facilities differ from intermodal transfer facilities in that they do not just transfer a full load from one mode to another. Still, the goods arriving at these facilities are taken out of their containers for repackaging and further distribution. They are picked and mixed for delivery by a regional van or truck shipment typically supplying a retail center or

store. These shipments are typically a mixture of many batches or pallets like a produce department order of fruits and vegetable or perishable goods. A fulfillment center is a warehouse that provides product finishing services to finalize a specification or product upgrade feature, like an online computer order where the customer got the larger storage capacity hard drive or better resolution screen, a fulfillment center would make those final order adjustments or upgrade features before customer delivery.

Light Manufacturing Facility (i.e., Parts Manufacturing)

These facilities accommodate light industrial businesses where all processing, fabricating, assembly, or disassembly occurs wholly within an enclosed building. Light industry refers to manufacturing activity that uses moderate amounts of partially processed materials to produce relatively high value per unit weight items. Light industries require only a small number of raw materials, area, and power. Light industries cause relatively little pollution from the production of their output compared to heavy industries. As light industry facilities have less environmental impact than those associated with heavy industry, zoning laws permit light industry near residential areas. It is a criterion for zoning classification. The manufacturing of clothes, shoes, furniture, consumer electronics, and household items are a few examples of light industries.

Heavy Manufacturing Facility (i.e., Conversion of Raw Materials)

Heavy industry relates to a type of business that typically carries a high capital cost (capital-intensive), high barriers to entry, and low transportability. The term "heavy" refers to the fact that the items produced by "heavy industry" use commodities such as iron, coal, oil, phosphate, aggregate, etc. Heavy industry typically involves large and heavy products and equally large and heavy equipment and facilities in producing its output. Because of those factors, heavy industry involves higher capital intensity than light industry.

Industrial Flex (High Tech/Business Park, Laboratory, Robotics)

Traditionally, industrial-office flex space is a single-story, industrial type building with at least 25 percent office space with a parking space to office ratio of four-to-one if the property becomes 100 percent office space. Flex buildings are, by design, "flexible" and allow for a wide range of office and warehouse uses. They can be used for many purposes and are easier to retrofit to meet a company's needs than typical warehouse buildings. This flexibility is ideal for a wide range of companies that need office space with a warehouse component. Flex buildings usually have a slightly lower ceiling clear height (14 – 24 ft clear) and have a larger percentage of office space than a typical distribution warehouse building. They also have more parking and landscaping than other industrial buildings. Most flex buildings have overhead loading doors and loading areas in flex buildings can be high or grade-level (ground-level). Some older buildings may even have semi docks (2 ft) that can accommodate smaller box trucks and vans. Flex space can work well for value office tenants like start-ups. The rental/leasing rates are typically lower than traditional office space and accommodate more parking than bulk warehouse buildings.

Section 3: Highlights of the Initial Area Assessment

This section details some of the key characteristics highlighted in the *Initial Area Assessment*, provided in **Appendix A**. More detail on the overall freight network, commodity flows, economic development profile, and other study area characteristics can be found in the technical memorandum.

Overview of Freight Network

This study area provides an exciting nexus of multimodal activities, one of the features necessary for future facility development. It includes all major transportation modes, including interstates and major highways, railroads, airports, waterports, waterways, and bridges. The confluence of modes within this particular region is critical to the combined strength of the overall freight network, providing opportunities that each mode offers. The following discussion will introduce each of these transportation components and characterize the specific assets located in the study area.

Interstates and Major Highways

Interstates and roadways constitute a fundamental part of the system for goods movement. Frequently, roads are most important for shipments at the beginning or end of the supply chain, last mile, or moving goods short distances to their final destination. Local shipping and distribution from higher-capacity cargo vehicles depend heavily on adequate interstate and major highways. In addition, interstates and other major roadway networks provide a primary means for connectivity to broader metropolitan and out-of-state markets. This is particularly true in areas with limited or absent connectivity to different modes.

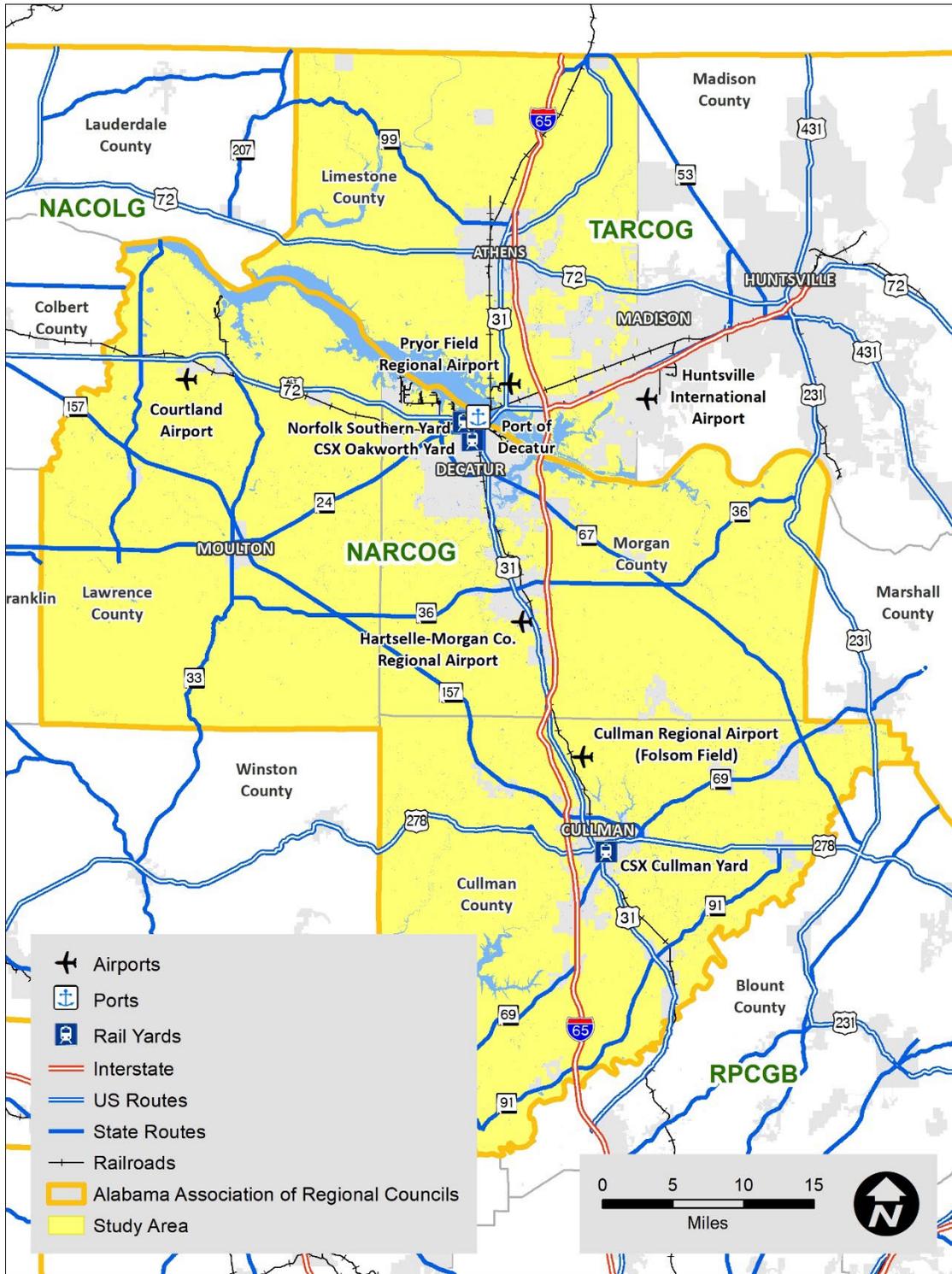
Interstate roadways within the study area include I-65 and I-565 (See Figure 1). I-65 is the primary north-south route through the study area. It runs from the Alabama-Tennessee state line on the north through Athens, Decatur, and Cullman, crossing into Blount County on the south edge of the study area. I-65 connects the study area to Nashville, Tennessee, to the north and Birmingham, Montgomery, and Mobile to the south. Interstate 565 is the critical east-west connection in the study area connecting to I-65 on the west of the study area to Huntsville, Alabama, on the east.

The four counties are also well connected by various non-Interstate National Highway System (NHS) routes, including US-72, Alt US-72, US-31, and US-278. Running north and south throughout the study area is US-31, and it runs almost parallel to I-65. It provides an essential alternative to I-65 during congestion, providing a measure of redundancy and resiliency to the freight network serving the study area. The other U.S. Routes provide east-west connections and, in most cases, cross I-65 and U.S. 31. In addition, several state routes traverse the study area and provide additional links. For example, Lawrence County has four separate state highways to handle high-capacity traffic – SR 67, SR 20, SR 157, and SR.24. US 72 also serves as Corridor V of the Appalachian Development Highway System (ADHS). As such, improvements along the roadway can be funded through the Appalachian Regional Commission in addition to traditional FHWA and State funding sources.

With respect to congestion, the largest freight bottleneck along the roadway network in the study area is the intersection of US Alt 72/SR 24 and US 31 to the south of the Tennessee River bridge, which needs replacement (as discussed later in this section). An example of congestion is provided in the image to the right.



Figure 1. Interstates, Roadways, Railroads, Airports, and Ports



Railways

Railways excel as a cost-effective way to transport heavy commodities or quantities in bulk. They can also economically move intermodal freight (containerized freight) at distances usually at or above 500 miles. Railyards and stations provide regions with an excellent opportunity to facilitate intermodal distribution.

Inland ports are significantly advantaged if there are high-quality railways that they can leverage as part of the transportation system that serves them.

Alabama's freight rail network encompasses nearly 4,000 freight rail miles operated by 28 railroads. Four of the nation's seven Class I railroads serve Alabama—Burlington Northern Santa Fe, Canadian National Illinois Central, CSX Transportation (CSX), and Norfolk Southern — those four railroads constitute about 72 percent of track mileage in Alabama. The most recent Alabama Rail Plan, finished 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>.

The four-county study area's railway system reaches north-south and east-west, with Decatur as the central point. The north-south track, operated by CSX, runs parallel to US 31 and connects the cities of Athens, Decatur, and Cullman as it passes through the study area. Ultimately, it connects the study area to Nashville to the north and Birmingham, Montgomery, and Mobile to the south. A picture of freight activity along the CSX line near Hanceville is pictured to the right. The east-west track, operated by Norfolk Southern, connects Decatur to the Huntsville metro area just east of the study area. Ultimately, it connects the study area to Memphis in the west and Chattanooga in the east.



There are multiple railyards located in or near the study area, including the CSX Oakworth Yard (Decatur), CSX Cullman Yard (Cullman), Norfolk Southern (Decatur), and Norfolk Southern (Tuscumbia).

Airports

Airports provide a base of operations for air cargo shipments. Air cargo facilitates the movement of mostly lightweight, high-value, or time-dependent goods, such as mail, auto parts, electronics, and medical supplies. Air Cargo provides a fast, reliable, and secure way to move goods to practically anywhere in the world with low risk. Some benefits of air cargo include prompt delivery, minimizing the need for warehousing, and providing a high-security level.

There are several airports within the study area (see Figure 1). Please note that outreach with the airports mentioned below will gauge air cargo utilization and expansion potential as recommendations are considered.

- **Huntsville International Airport** – Located approximately ten miles southwest of Huntsville, it is part of the Port of Huntsville, the International Intermodal Center, and Jetplex Industrial Park in Madison County. While this resource is not directly in the study area, it is just east of the study area along I-565. It provides the most significant potential air cargo opportunities in the region. It has the second-longest commercial runway in the southeastern United States.
- **Pryor Field Regional Airport** – Located three miles from the central business district of Decatur, Alabama, in Limestone County. It serves the Decatur Metropolitan Area. It is one of the busiest general aviation airports in Alabama. While it is primarily a general aviation airport, it provides air cargo services, including freight loading and off-loading.
- **Courtland Airport** – Located just north of Courtland, Alabama, in Lawrence County, it is a public-use airport covering approximately 350 acres and has two runways. Based on available

information provided by Lawrence County, it does not appear the facility currently accommodates air cargo.

- **Cullman Regional Airport (Folsom Field)** – Located just north of Cullman, Alabama in Cullman County, this airport is also a public-use airport categorized as a general aviation airport. According to the airport website, it is capable of "handling aircraft up to and including the Boeing 737."⁶ Therefore, the facility should be able to accommodate limited air cargo needs.
- **Hartselle-Morgan Co. Regional Airport** – Located just south of Hartselle, Alabama, in Morgan County, it serves the Hartselle and Falkville area. It is also a public-use general aviation airport. It is one of the smaller airports discussed in this section.

Ports and Waterways

Ports and waterways provide a critical domestic and global connection between sea and land transport. As urban development has surrounded many of these port facilities, their ability to expand operations has become increasingly constrained. Ports generate significant economic activity in and around coastal and inland waterway facilities. Ports provide customers with multimodal freight transfer and access at the lowest unit cost. They tend, however, to have high land and labor costs. For these reasons, port facilities are becoming more congested and less efficient. They are looking to inland port facilities to provide low-cost storage, production, and distribution of goods and services.

The primary waterway through the study area is the Tennessee River. According to the Tennessee Valley Authority, the Tennessee River provides passage for approximately 25,000-30,000 barges annually, carrying 40-50 million tons of goods along its 652-mile length.⁷ It is kept at a minimum channel depth of 11-feet and connects to both the Tennessee-Tombigbee Waterway and the Ohio and Mississippi River Systems. It ultimately flows south into the Mobile Bay (Port of Mobile) and the Gulf of Mexico.

The primary port within the four-county study area is the Port of Decatur, located in the City of Decatur in Morgan County. According to the port website, the Port of Decatur is "one of the busiest ports on the Tennessee River with access to the Tennessee-Tombigbee Waterway."⁸ The website also indicates it handles approximately five million tons of river freight. It offers a wide range of freight services and has access to Norfolk Southern and CSX rail lines.

Inland Port Facilities

As noted earlier in this section, the International Intermodal Center at the Huntsville airport is the only inland port facility near the study area. According to the 2017 Alabama Statewide Freight Plan, the airport also operates an "industrial switching track" off the Norfolk Southern spur into the International Intermodal Center, with the capability to extend rail southward to a potential riverport facility." In addition, it has a CBP port of entry for managing international freight. Based on interviews with Airport staff, the only cargo entering the facility is either via air or rail from the Port of Savannah.

⁶ <http://www.co.cullman.al.us/airport.htm>

⁷ <https://www.tva.com/environment/managing-the-river>

⁸ <http://www.portofdecatur.net/>



Another element offered by the Huntsville facility is the Port's Foreign-Trade Zone (FTZ). Per the Airport website, an FTZ is a specially designated area, in or adjacent to a U.S. Port of Entry, which is considered to be outside the Customs Territory of the U.S. The following is a partial list of the many benefits you can attain when using a Foreign-Trade Zone or Subzone:

- No duty is ever paid on re-exported merchandise from a zone.
- If the merchandise is sold domestically, no duty is paid until it leaves the zone or zones.
- No duty is paid on waste or scrap within a zone.
- Generally, if foreign components are manufactured into a product with a lower duty rate, then the lower duty applies. No duty applies to domestic content.
- Both foreign and domestic merchandise in a zone may be stored, repacked, manipulated, manufactured, processed, destroyed, or otherwise altered or changed.
- Generally, when foreign merchandise is sold to the U.S. Government, no duty is charged⁹

More information regarding Foreign Trade Zones is provided in Section 7.

Planned and Programmed Roadway Improvements

Planned roadway improvements that improve access to a particular facility can influence their potential to function as an inland port.

The Decatur Area Metropolitan Planning Organization (MPO) facilitates the development of a Long-Range Transportation Plan (LRTP) that dictates how federal, state, and local funds will be spent for improvements over the next 25 years. The Metropolitan Planning area includes portions of Morgan, Lawrence, and Limestone Counties, including Decatur, Hartselle, Priceville, and Trinity. Planned

⁹ Port of Huntsville, <https://www.portofhuntsville.com/foreign-trade-zone-83/>

improvements on significant facilities within the 2045 Draft LRTP that can influence goods movement in the region include the following:

- Intersection Improvements on Vaughn Bridge Road at SR-3 (US-31)
- Intersection Improvements at SR-36 and Lando Cain Road
- Intersection Improvements at SR-67 and Upper River Road
- Access Management on SR-3 (US Hwy 31) from Gordon Terry Drive to SR-67
- Access Management on SR-67 from SR-3 (US Hwy 31) to Country Club Road
- Intersection Improvements on SR-24 and South Greenway Drive
- Intersection Improvements on SR-3 (US Hwy 31) at Airport Road
- Intersection Improvements on SR-36 and Ironman Road
- Intersection Improvements on SR-24 at Hudson Road

Projects in the study area identified by ALDOT staff include a variety of capacity improvements, bridge replacements, and safety improvements. With interest to goods movement, please note that only one of these projects appears to be for capacity improvement, with the remainder being maintenance projects. These projects are included in Table 1.

In addition to the improvements identified above, NARCOG has developed conceptual routes for a proposed secondary Tennessee River bridge near Decatur. Conceptual routes include a concept that runs north from SR-24 along the Morgan/Lawrence County line turning east after crossing the Tennessee River and connecting to I-65. The second alternative runs slightly northeast from US ALT-72 across the Tennessee River, turning east near railroad tracks and US-31 to I-65. Additionally, the City of Decatur received a \$14.2 million BUILD grant from the USDOT along with funds for a Highway 20 Overpass project that officially began in March. Once complete, the 300-foot overpass will stretch over Highway 20, near the I-65 and I-565 interchanges in Limestone County. City officials hope that the project will encourage economic interest in the area, with new mixed-use developments in the works.¹⁰

Other transportation issues identified by staff include:

- The southbound bridge on U.S. 31 into Downtown Decatur over the Tennessee River needs replacement, which will create temporary disruption during construction. With the replacement of this bridge, a challenge will be accommodating the freight traffic from Lawrence County along US ALT 72.
- ALDOT is also replacing bridges over the Norfolk Southern railroad along U.S. 31 in Limestone County, which will create temporary freight issues.

¹⁰ <https://thebamabuzz.com/several-exciting-projects-in-decatur-including-the-highway-20-overpass/?fbclid=IwAR3698eltzdmhu835tGqP2kKJePiKmGS9Kly9S0utl685rA6Dxv1Y2oBA0M>

Table 1: ALDOT Planned and Programmed Improvements

Project	County	Type	Construction Date
Access management improvements, SR-3 from Curry Street to Sparkman Street	Morgan	PE	12/2/2022
Bridge replacement, SR-3 over Cedar Creek	Morgan	CN	10/4/2021
Intersection Improvements, SR-67 (Beltline Rd) at Sandlin Road and Central Parkway	Morgan	PE	9/24/2021
Replace bridge, SR-101 over Big Nance Creek	Lawrence	UT	7/27/2022
Replace bridge, SR-101 over Big Nance Creek	Lawrence	RW	1/26/2022
Safety improvements, SR-3 at Red Bank Road in the city of Decatur	Morgan	PE	6/15/2021
Safety improvements, widening and traffic stripe on Hulaco Road from SR-67 to the Marshall County Line	Morgan	CN	9/2/2020
Slide correction, on SR-53 from 301.300 to MP 301.900	Morgan	CN	5/5/2021
Slide correction, on SR-53 from 301.300 to MP 301.900, ALDOT Event 042, site is 042-05-52-1	Morgan	CN	5/5/2021
Slide correction, on SR-53 from 301.300 to MP 302.890	Morgan	CN	4/15/2021
Slide correction, on SR-53 from 301.300 to MP 302.890	Morgan	CN	4/15/2021
Slide correction, SR-53 from 301.300 to MP 302.890	Morgan	CN	4/15/2021
Slide correction, on SR-53 from 301.300 to MP 302.891	Morgan	CN	4/15/2021
Slide correction, SR-53 from 301.300 to MP 301.900	Morgan	RW	11/1/2020
Slide correction, SR-53 from 301.300 to MP 301.900	Morgan	CN	5/5/2021
Slide correction, SR-53 from 301.300 to MP 301.900	Morgan	PE	5/5/2020
SR-157 add lanes from SR-69 to East of SR-3. (GRP) Grade, Drain, Base and Pave	Cullman	C.N.	10/23/2024
SR-157, add lanes and bridges from SR-69 to East of SR-3	Cullman	UT	1/27/2021
SR-157, add lanes and bridges from SR-69 to East of SR-3. Bridges over Lake Catoma ad CSX railroad.	Cullman	UT	1/27/2021
SR-157, add lanes and bridges from SR-69 to East of SR-3. Bridges over Lake Catoma ad CSX railroad.	Cullman	UT	1/27/2021
SR-157, add lanes from SR-69 to East of SR-3 North of Cullman	Cullman	C.N.	10/23/2024

Source: Alabama Department of Transportation Staff, 2021

Commodity Flow Analysis

Commodity freight flow can assist in identifying needed facility types as an indicator of potential new businesses to capitalize on existing freight flows.

The data used in this analysis is derived from the FHWA Freight Analysis Framework, Version 5 (FAF5) data. FAF5 modes include truck, rail, water, air, multimodal (such as mail), and pipeline. Given the exclusive use of pipeline and that multimodal freight is primarily mail, materials transmitted via these modes do not represent goods movement that would impact the location of a potential inland port facility. Therefore, the analysis focused primarily on freight via the following modes:

- Truck – suited for commodities with intermediate destinations and regional transport for direct delivery to customers or distribution centers.
- Rail – suited for commodities carried in bulk that are less time-sensitive for intermediate destinations and regional transport that is delivered directly to clients (with rail access) or for intermodal containerized cargo transferred to a truck at an intermodal facility.
- Water – suited for commodities or containerized freight carried in significant quantities for national or international transport transferred onto rail or truck at port facilities.
- Air – suited for highly time-sensitive, high-value, or fragile commodities and transferred to a truck for last-mile delivery.

Analysis for the study was conducted for three specific freight flows.

- Freight passing through the Port of Mobile or generated in Mobile moving through North Alabama to other places in the country.
- Freight moving from outside Alabama into North Alabama.
- Freight moving from North Alabama to locations within and outside Alabama.

The following highlights the commodity flows through these areas. More detail on commodity flow can be found in the Initial Area Assessment provided in Appendix A.

From the Port of Mobile to or through North Alabama

- Trucks carry 39% of the goods moved from the Port to North Alabama of the four primary modes. Of the goods shipped by truck, approximately 36% are base metals, and 13% are agricultural products.
- Rail accommodates approximately 26% of the goods moved from the Port, with base metals accounting for 60% of rail cargo.
- Approximately 35% of the goods destined to North Alabama from the Port continues through waterways. Base metals and scrap make up approximately 72% of the waterborne cargo shipped through North Alabama.
- The Port FAF zone includes goods moved by air. These are likely from the Mobile airport. The most common goods shipped via air from the Port FAF zone are electronics, machinery, and precision instruments.

To North Alabama from Outside Alabama

- Trucks carry 82% of the goods from outside Alabama to North Alabama. The goods received via truck are numerous, with agricultural products, wood products, and base metals collectively comprising roughly 27% of truck cargo.
- Rail accommodates approximately 12% of goods to North Alabama from outside Alabama, with base metals, coal, and petroleum collectively comprising roughly 60% of rail cargo.

- Approximately 6% of the goods destined to North Alabama from outside Alabama are transported through waterways. Base metals and scrap make up approximately 72% of the waterborne cargo shipped through North Alabama from outside North Alabama.
- Air cargo comprises less than one percent of goods to North Alabama from outside Alabama. Almost half of this cargo comprises electronics, machinery, and precision instruments.

Freight from North Alabama

- Approximately 76% of the goods from North Alabama are carried via truck. The goods moved via truck are numerous. Over 200,000 tons of 25 different commodities are generated from North Alabama. Base metals and wood products collectively comprise roughly 22% of truck cargo from North Alabama.
- Rail accommodates approximately 21% of goods from North Alabama, with natural sands accounting for 46% of rail cargo.
- Of the 553,000 tons of waterborne cargo generated from North Alabama, nearly 60% consists of base metals.
- Of the 36.7 tons of air cargo generated from North Alabama, over 86% consists of machinery and electronics most likely tied to the emerging automotive sector.

Key Takeaways from Freight Flows

Based on the freight flows, the following takeaways are:

- Only 26 percent of the freight to the study area from the Port of Mobile is carried via rail. This would imply there is the capacity to serve local industries from the Port of Mobile (and reduce trucks throughout the I-65 corridor).
- Base metals are the prevalent commodity transported throughout the region for manufacturing, particularly along rail and waterways, indicating opportunities for manufacturing uses that utilize base metals along the ports and railways.
- Air cargo plays a minor role in the local economy and is typically reserved for specialized commodities such as machinery, pharmaceuticals, and electronics. However, the presence of an airport can present opportunities for industries that utilize these commodities.

Study Area Economic Profile

Understanding demographics and employment characteristics within the study area will be critical for identifying potential industries most appropriate for the study area. This section aims to present the overall economic profile for the study area and identify trends based on data from the U.S. Census. More specifically, this section will inventory the following characteristics within Cullman, Lawrence, Morgan, and Limestone Counties:

- Economically related demographics such as civilian labor force, unemployment rates, median household income, poverty rates, and educational attainment.
- Employment by industry sector

The section concludes with a summary of economic opportunities for the study area.

Economic Demographics

Table 2 presents the economic-related demographics for the study area.

Table 2. 2020 Demographic Data for Study Area

Industry Sector	Cullman	Lawrence	Morgan	Limestone
Population 2020	87,866	33,073	123,421	103,570
Population 2010	80,406	34,339	119,490	82,782
Percent Change in Population	9.3%	-3.7%	3.3%	25.1%
Employment (December 2020)	40,390	13,515	55,304	41,815
Employment to Population Ratio	0.46	0.41	0.45	0.40
Civilian Labor Force	41,258	13,950	56,914	42,894
Unemployment Rate	2.1%	3.1%	2.8%	2.5%
Median Household Income	44,918	44,886	52,156	59,686
Persons in Poverty (percent)	12.2%	17.7%	13.7%	12.0%
Education Attainment (percent)				
High School Diploma	81.6%	79.3%	84.1%	84.7%
Bachelors Degree or higher	13.9%	12.8%	22.4%	25.7%

Sources: 2020 Census, Alabama Dept. Of Labor (Dec. 2020 Data), County Business Patterns (2019)

Key takeaways:

- Limestone County has the highest population growth in the area, with over 25% growth.
- Lawrence County has demographic characteristics that would indicate the greatest need for economic and educational opportunities, with the highest unemployment and poverty levels and the lowest educational attainment of the four counties.
- Lawrence and Cullman Counties also have significantly lower household median incomes than Morgan and Limestone Counties.
- Limestone and Morgan Counties have the highest income and educational attainment compared to Lawrence and Cullman Counties.

Employment Characteristics

The employment data for the study area is provided in Table 3.

Table 3. 2019 Employment for Study Area by Sector

Industry Sector	Cullman	Lawrence	Morgan	NARCOG Total	Limestone	Study Area Total
Total for all sectors	25,889	3,568	45,554	75,011	18,202	93,213
Agriculture, forestry, fishing, and hunting	92	-	11	103	41	144
Mining, quarrying, and oil and gas extraction	-	-	47	47	-	47
Utilities	134	126	80	340	-	340
Construction	1,131	296	3,702	5,129	1,336	6,465
Wholesale trade	1,343	100	1,864	3,307	728	4,035
Information	225	28	561	814	162	976
Finance and insurance	780	109	1,343	2,232	406	2,638
Real estate and rental and leasing	162	31	391	584	169	753
Professional, scientific, and technical services	431	131	2,450	3,012	897	3,909
Management of companies and enterprises	463	-	820	1,283	59	1,342
Administrative and support and waste management and remediation services	954	61	1,948	2,963	482	3,445
Educational services	91	-	161	252	183	435
Health care and social assistance	4,084	791	5,846	10,721	2,328	13,049
Arts, entertainment, and recreation	153	-	236	389	114	503
Accommodation and food services	3,304	536	4,588	8,428	2,094	10,522
Other services (except public administration)	1,333	231	1,901	3,465	1,048	4,513
Industries not classified	-	-	6	6	-	6
Manufacturing	5,285	225	12,371	17,881	4,182	22,063
Retail trade	4,113	784	5,268	10,165	2,670	12,835
Transportation and warehousing	1,779	79	1,960	3,818	1,278	5,096

NOTE: Empty cells [-] did not have precise employment numbers reported or have no companies in the sector.

Source: County Business Patterns, 2019

Key takeaways:

- Manufacturing, retail trade, health care, and food services were the most prevalent industries throughout the study area.
- Manufacturing makes up approximately 20% of the employment in all the counties except for Lawrence, which has only 225 manufacturing jobs (6.3%). Morgan County has the highest concentration of manufacturing jobs (27%)
- Lawrence County has a much higher concentration of lower-paying employment (retail, food services, home health care) than the other three counties.

Study Area Economic Development Opportunities

The Northern Alabama Industrial Development Authority (NAIDA) covers the 13 counties in North Alabama, including all NARCOG and TARCOG. NAIDA's economic development efforts focus on four industry sectors: Automotive, Advanced Manufacturing, Distribution and Logistics, and Technology. This strategy is well supported by existing industries and fits well with the current effort to evaluate opportunities for inland port development.

The region's two COGs have articulated effective strategies that support industrial development and recruitment by:

- Improving the skilled technical workforce
- Enhancing the quality-of-life factors that contribute to industry location decisions, and
- Focusing on infrastructure needs, including water, sewer, and multimodal transportation infrastructure.

Opportunities in the study area include:

- The Mazda-Toyota Manufacturing (MTM) joint venture is likely the most significant industrial development in decades for the region and will have a transformative impact on the regional economy. NAIDA has identified several industrial sites suitable for major suppliers of the MTM plant.
- NASA, Redstone Arsenal, Hudson Alpha Institute for Biotechnology, and the Robotics Technology Park initiative are vital drivers of high-tech industry opportunities cited in the NARCOG and TARCOG Comprehensive Economic Development Strategy (CEDS) documents.
- Aerospace, Aviation, and Automotive industries rely heavily on manufacturing innovation and research and development to remain competitive and profitable in a global economy. The study areas focus on these industry needs.
- A shortage of skilled workers persists, and it seems clear that additional focus on producing skilled technical and manufacturing workers is needed in the region.
- Abundant undeveloped land is an asset for the region, but water and sewer infrastructure limits land development. Both CEDS reports for the region identify aging infrastructure and limited capacity as water and sewer systems issues.
- The region has a well-developed multimodal transportation system, with good interstate highway access, good access to two Class 1 railroads, the Port of Decatur on the Tennessee River and the Huntsville International Airport. The region's CEDS reports focus on improving the multimodal transportation system, addressing highway congestion, and expanding the Huntsville airport.
- Cultural and natural assets are a factor in major industrial site selection decisions. The emphasis on developing and improving these resources is an appropriate element of regional economic development.

The study area has some economic challenges; however, the economic opportunities that existing industries continue to generate are substantial. The pending expansion of the automotive sector in the region as Mazda-Toyota Manufacturing comes online offers solid opportunities for all parts of the region to benefit substantially. The current low unemployment rate in the region is a positive factor. Still, it makes it even more critical to continue developing an expanded pool of highly skilled workers to support the industries moving to the region.

Section 4: Key Issues Identified through Interviews

The study team undertook a series of interviews with key stakeholders and potential partners for an inland port facility. The interviews were held with:

- Alabama State Docks
- CSX Railroad
- Huntsville International Airport
- Pryor Field Regional Airport (Decatur/Athens Airport Authority)
- Alliance Sand and Aggregates, LLC
- Theodore Industrial Port
- Limestone County Economic Development Authority
- Lawrence County Industrial Development Board
- Morgan County Economic Development Authority

The following highlights key issues reflected in these interviews organized by subject matter.

Key Needs for an Inland Port

Several thresholds were identified as essential for developing an inland port, which are interrelated.

These include:

Ownership/Partnership with the Port of Mobile

Based on peer review, implementing an inland port facility will be quite costly and need funding from the State and/or Alabama State Ports Authority to become a reality. For example,

- The Chatsworth, GA facility was constructed at \$19.7 million, with \$10 million being provided by the State of Georgia and the remainder being funded by the Georgia Ports Authority (GPA).
- The 40-acre Greer, SC facility operated by the South Carolina Ports Association (SCPA) cost nearly \$60 million in 2015 to construct. The State paid roughly \$51 million, and Norfolk Southern paid approximately \$7 million.¹¹
- The \$50.5 million Dillon, SC facility was funded largely by SCPA and state funds.

Given that CSX typically requires 500 miles between intermodal facilities, the Montgomery intermodal yard could be a major barrier to an intermodal/bulk facility in North Central Alabama should a full-service CBP port of entry be implemented in Montgomery. Therefore, an inland port facility in the study area would need to serve as the primary CBP facility along the CSX line from the Port of Mobile. A North Central Alabama site with rail connections and customs clearance would be able to alleviate truck travel demand through the Birmingham and Montgomery metropolitan areas and provide operational resilience opportunities to the Port of Mobile by loading containers from ships to rail cars and transporting them directly to the inland port facility for customs inspection and clearance.

Another key issue is the Port of Mobile currently does not have a viable connection to the Alabama domestic rail market. According to Port officials, nearly all of their domestic cargo is destined to Chicago and Memphis via the Canadian National Railway.

¹¹ Journal of Commerce Online, June 2016 - https://www.joc.com/port-news/us-ports/south-carolina-ports-authority/charleston-pursues-second-inland-port-after-greer-success_20160420.html

Partnership with CSX

As the direct rail provider from the Port of Mobile to the study area, a relationship with CSX should be developed and maintained. With the growing demand for inland port facilities around the U.S., officials should begin a dialogue with CSX to prepare the region for potential grant applications. This coordination will also help better define the specific parameters CSX can provide and prepare both sides for a Memorandum of Understanding (MOU) for implementation.

Another consideration is the potential for CSX to establish a facility to compete with Norfolk Southern in this geographic area. The new inland port in Dillon, SC, was constructed with cooperation with CSX to compete with the Norfolk Southern-served facility in Greer. Likewise, another facility is being developed in Gainesville, GA, in cooperation with Norfolk Southern to compete with Chatsworth, GA CSX facility. Currently, no inland port facilities are serving the Port of Mobile. Through the Alabama-USA program, Norfolk Southern hopes to enhance its network in the region that "involves 12 specific track, signal and yard improvements on Norfolk Southern rail lines between Mobile, Selma and Birmingham. It could be possible that CSX would be willing to cooperate with local officials for competitive reasons.

Discretionary Federal Funding is Critical

Based on input from the Port of Mobile and Huntsville Airport, an inland port facility cannot be built without significant federal assistance. Recent examples include 1) a \$46.9 million Infrastructure for Rebuilding America (INFRA) Grant being used by the Georgia Ports Authority to fund an inland port facility in Gainesville, GA¹², and 2) a \$25 million Better Utilizing Investments to Leverage Development (BUILD) grant being sought to fund expansion of the Greer, SC facility, and 3) the CRISI grant applied for by ALDOT and Norfolk Southern for the A-USA initiative. In particular, the intermodal yard at the Huntsville Airport reports that they operate only in the black because of federal funds. They believe this is because virtually all of their containers originate or are destined internationally (no domestic freight capture) and the lack of surrounding anchor tenants surrounding the intermodal yard.

A summary of the federal funding noted in this report is provided in Section 7. With the recent passage of the Infrastructure Investment and Jobs Act (IIJA), several changes to federal discretionary programs are currently underway. Officials in the region should continue monitoring these changes to identify which USDOT programs would be most appropriate for further implementation.

Anchor Tenants to Generate Sufficient Rail Traffic

To generate interest from CSX, a potential location would need to generate a minimum of 600 containers – 300 in each direction – per week. The MTM plant could offer opportunities to attract ancillary business opportunities to generate this level of freight rail traffic. Based on discussions with local economic development representatives, both auto-related and non-auto-related businesses have expressed interest in locating in the study area. Furthermore, Pryor Field, especially with the planned expansions, is a key asset to attract new businesses for its competitiveness for business travelers and unscheduled air service. The facility will also have the capacity to accommodate C-130s and larger freight aircraft suitable for air cargo opportunities.

¹² Gainesville Times, <https://www.gainesvilletimes.com/news/transportation/when-construction-could-begin-inland-port/>

Other Issues

Relationship to Huntsville Facility

A critical issue for developing a Port-related facility is that it could potentially negatively impact the nearby intermodal facility at the Huntsville International Airport. Through interviews, Airport staff expressed interest in a facility in the area that could potentially connect to their facility and capture the local domestic rail market. Rail traffic through the Huntsville facility is currently limited to international goods from the Port of Savannah. Depending on the results of the CRISI application for the A-USA initiative, this may become a viable option. However, this alternative would provide a circuitous route from the Port of Mobile that would not be competitive to truck travel along I-65 and, as such, would do very little to alleviate truck traffic through Birmingham and Montgomery. Furthermore, other input expressed from those interviewed is the need for network resiliency and that multiple options are attractive to shippers. As a CSX-served inland port is developed that can capture both domestic and international markets, the overall market share should be carefully assessed to ensure the success of a new facility.

Montgomery Intermodal Yard Progress

To avoid direct competition with the Montgomery Yard, it is critical to develop the customs capacities and recruit sufficient anchor tenants into the immediate area to capture an increased share of the domestic freight market.

As noted previously, the potential for an intermodal facility without Port of Mobile affiliation and customs CBP capabilities will be severely diminished by the opening of the intermodal transfer facility in Montgomery. According to an article from Freightwaves, a \$2 million earmark was requested to purchase land for the project, located just south of Montgomery adjacent to a CSX rail line and close to I-65 and I-85. The overall estimated cost of the facility is \$54 million. The article also reinforces the need for an anchor tenant. The article quotes Alabama State Ports Authority CEO, "You need to have critical mass for this kind of development to be successful, and that's the opportunity that Hyundai brings to the project."¹³

While the Montgomery Yard could compete with a potential facility in North Alabama, there are advantages to the timing of the Montgomery facility development. A road map for implementation has been developed. Through reviewing the actions of the Montgomery officials, North Alabama officials can model their activities with respect to securing funding, developing partnerships, and understanding facility needs.

¹³ Freightwaves, June 2021, <https://www.freightwaves.com/news/congressional-earmark-aims-to-expand-port-of-mobile-container-markets>

Section 5: Area Assessments for Inland Port Potential

As shown in Figure 3, nine potential areas were assessed for their highest and best use. These sites are as follows:

1. Hood Harris/International Paper (Lawrence County)
2. Courtland Industrial Air Park (Lawrence County)
3. Mallard Fox West (Lawrence County)
4. Delphi Area (Limestone County)
5. Murphy Area (Limestone County)
6. Falkville/Hartselle (Morgan County)
7. Lacon (Morgan County)
8. Vinemont Cullman Airport (Cullman County)
9. Hanceville (Cullman County)

As noted throughout the report, the type of inland port facility most appropriate for the study area would be one where customs capacities are in place with a direct linkage to the Port of Mobile. As part of the second phase of the study, these facilities were further assessed for their overall strengths, limitations, and threats regarding development/redevelopment and their appropriateness for such an inland port directly tied to the Port of Mobile via the CSX rail line.

The Initial Area Assessment Report in Appendix A provides more detail on these sites, including aerial maps with the boundaries.

Lawrence County – Hood Harris/International Paper (Area #1)

As shown in Figure 2, the Hood Harris/International Paper area is comprised of a 1000-acre vacant greenfield on the north and west and the former International Paper Site along the Tennessee River on the east. The Mill closed over five years ago and has been going through demolition. It is a potential brownfield site, and it is believed that the permits are still valid. The site features direct access to the Tennessee River and Norfolk Southern railroad. Highway access is via CR 150 to U.S. Alt 72, three miles to the south in Courtland. It should be noted that the 317-acre Rebman site is directly west of this area and could be available for facility-related development.

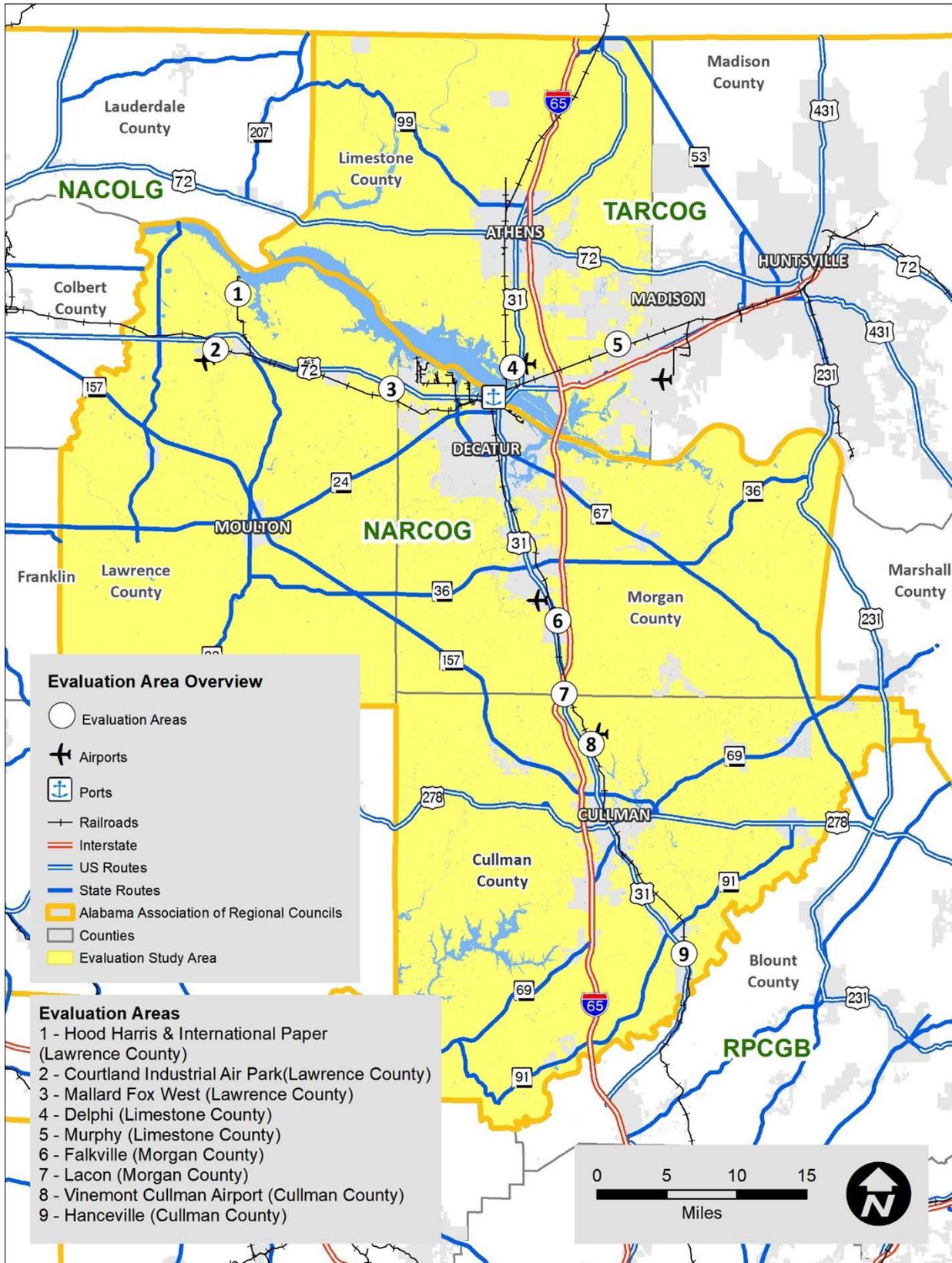
Strengths

- It is sufficiently large to support a variety of mutually beneficial industrial uses that could create adequate weekly container traffic demand to meet railroad needs.
- The existing port facility on the river could accommodate significant volumes of high-bulk commodities for use by surrounding industrial users.
- The prior operation of the I.P. site means that rail and utility services are present, though they will likely require upgrades if significant additional demand is generated.

Limitations

- The existing ownership of the I.P. site may or may not be receptive to such efforts.
- The existing rail line serving this area is not well-positioned to remove containers that originate or are destined to the Port of Mobile from I-65.
- Significant redevelopment will need to occur to generate the 600 containers per week required by the railroads. This redevelopment will likely require many years.

Figure 2. Industrial Areas Assessed for Highest and Best Use



Opportunities

- This area is the only area of those analyzed with direct riverport access and thus the only area able to leverage barge traffic directly.
- Because of the commodities moved by barge in Alabama, there is significant opportunity to leverage multiple related industries with minimal transport between sites.
- For example, the presence of Nucor in the Mallard Fox area means that bringing in base metals by barge for metallurgical processing is unlikely to find sufficient market demand. However, bringing in gravel and clay by barge could be made to serve the heavy manufacturing use of Portland Cement manufacturing and related uses like Portland Concrete production and Asphalt Concrete production.

Threats

- The low connectivity to I-65 and the limited opportunities for access north and south across the Tennessee River threaten this area's economic feasibility. The costs to overcome the connectivity issues may require a value to the land not supported in the market.
- The ownership issues with the I.P. area may complicate the redevelopment of this area.
- The utility infrastructure that can be made available may also impact the economic feasibility of the area.

Highest and Best Use - This area's highest and best use is a mixed-use of an intermodal yard at the former I.P. site supporting heavy manufacturing uses such as Portland Cement production, Portland Concrete production, and Asphalt Concrete production.

Potential for Port of Mobile Connected Facility - This area is not a strong candidate. The limited connectivity to I-65 and the CSX rail line make it unlikely it could function in synergy with the Port of Mobile.

Lawrence County – Courtland Industrial Air Park (Area #2)

As shown in Figure 2, the Industrial Air Park is located adjacent to the Lockheed Martin site. The primary NHS facility providing access is U.S. Alt 72. It presents a relatively easy connection to the Norfolk Southern rail line to the north. It is approximately 6 miles from the Hood Harris/I.P. area along the Tennessee River. It also has Courtland Airport access. According to the Lawrence County Industrial Development Board, roughly 700 acres of this site are currently available.

Strengths

- It is sufficiently large to support a variety of high-technology and research/development uses.
- Its proximity to the Courtland Municipal Airport makes executive air service readily available.
- The Lockheed Martin facility and the Courland Municipal Airport operation have provided all required utilities are in place and of sufficient quality to support a variety of uses.

Limitations

- The highway connectivity to this area is limited, and the number of heavy trucks that could be accommodated on county roads may not support manufacturing uses.
- The existing rail line serving this area is not well-positioned to remove containers that originate or are destined to the Port of Mobile.
- It is unlikely that even full site development would generate the 600 containers per week demand required for upgraded rail service.

Opportunities

- This area is adjacent to the Lockheed Martin facility, and there is a significant opportunity to build synergy around high-tech research and development.
- Rail service is possible, but air and truck access is more readily available. The air service provides an opportunity to develop uses that do not depend upon large quantities of commodities or components.
- Facilities that research technological developments in guidance systems, metallurgy, or explosive ordnance would benefit from the presence of Lockheed Martin but would not be limited by the relatively isolated area.

Threats

- The limited connectivity to NHS roadways and the limited capacity of the Courtland Municipal Airport limits the economic feasibility of this area. The costs to overcome the connectivity issues may require a value to the land not supported in the market.
- The security issues that often accompany missile technology development uses could be a significant added cost.
- It may be difficult to secure container demand sufficient to cost-justify the cost of rail connectivity.

Highest and Best Use - This area's highest and best use is industrial flex, focusing on research and development of missiles and related technologies.

Potential for Port of Mobile Connected Facility - This area is not a strong candidate. The limited connectivity to NHS and the CSX rail line make it unlikely it could function in synergy with the Port of Mobile.

Lawrence County - Mallard Fox West (Area #3)

As shown in Figure 2, the Mallard Fox West area is located in Trinity along U.S. Alt 72, just west of the Lawrence-Morgan County line. The site also features direct access to the Norfolk Southern rail line, which runs through the center of the area. Per the Lawrence County IDB site, there are approximately 751 acres available for development.

Strengths

- It is sufficiently large to support a variety of manufacturing uses.
- Its proximity to the Norfolk Southern rail line and its connectivity to US-72/SR20.
- The operation of the Jack Daniels Cupperage facility means that all required utilities are in place and of sufficient quality to support a variety of uses.

Limitations

- This area's highway and rail connectivity are adequate, but air and water access are limited.
- The existing rail line serving this area is not well-positioned to remove containers that originate or are destined to the Port of Mobile.
- The manufacturing uses for this area will need to be coordinated with the current uses of the Mallard Fox industrial park to avoid direct competition between neighboring developments.

Opportunities

- This area is near the Mallard Fox Industrial Park, which is completely built out. Thus, there are significant opportunities for recruitment of new industries that do not "cut the throat" of the Mallard Fox tenants.
- Rail service is possible, and truck access is good. This access provides an opportunity to develop manufacturing uses that require large quantities of commodities or components.
- For example, facilities that assemble components into larger component parts in support of larger industrial entities, much as the Cupperage site supports the overall Jack Daniels industry.

Threats

- The limited connectivity to air service limits the "executive air service" type industrial flex uses.
- The Mallard Fox Industrial Park tenants may absorb a significant proportion of the market demand for those industrial sectors.
- For instance, the presence of Nucor at Mallard Fox means that the recruitment of another metallurgical manufacturer into this area may result in negative net demand in the market. Special care should be taken to recruit users that do not "cut the throats" of other industrial developments.

Highest and Best Use - The highest and best use of this area is light manufacturing, focusing on supporting industries for larger industrial presences (like the Jack Daniels Cooperage).

Potential for Port of Mobile Connected Facility - This area is not a strong candidate. The limited connectivity to the CSX rail line makes it unlikely to function in synergy with the Port of Mobile. Also, an intermodal bulk facility would be an under-improvement to this area given its potential for more active industrial uses. The Mallard Fox development directly to the east is currently at full capacity.

Limestone County - Delphi Area (Area #4)

As shown in Figure 2, the Delphi Area is on the site of the former Delphi Auto Parts plant. The area has direct access to the CSX rail line and is roughly 1.5 miles from the Tennessee River. The area has excellent highway access, located approximately a half-mile from U.S. 31. U.S. 31 also provides close access to the interchange of I-65 and I-565, approximately 4.5 miles from the area. The Huntsville Madison County Railroad is currently storing railcars in this area.

Strengths

- It is sufficiently large to support an intermodal yard in an inland port fashion plus adjacent manufacturing to help generate the required container volumes.
- Its proximity to the CSX rail line and its connectivity to I-65 / I-565, plus its linkage to Pryor Field, make it the most advantageous area in terms of transportation mode capacities.
- The fact that the area is located on the north side of the Tennessee River and along the CSX line overcomes the challenge of getting large numbers of containers across the river on a limited number of crossings. The CSX line is ideally suited to relieve customs clearance of containers at the Port of Mobile.

Limitations

- The connectivity to I-65 / I-565 will require significant upgrading.
- Significant development will be required to generate a minimum of 600 containers per week to begin serious discussions with CSX.

- The condition of the brownfield means that the investment required for suitable and up-to-date utility services may be substantial.

Opportunities

- This area is ideally situated along the CSX line and north of the Tennessee River to relieve truck-born container traffic coming out of the Port of Mobile. This location would represent a significant increase in operational resilience for the Port.
- Given the area's proximity to the MTM complex and related industrial developments, the Delphi area is in a "sweet spot" of available transportation mode capacities and potential for new industrial development.
- Full development of this area as an inland port provides an opportunity to capture the domestic market in northern Alabama that does not infringe the international container market currently served by the intermodal yard at Huntsville.

Threats

- The intermodal yard at Montgomery now getting under development means that attention needed for this effort (particularly CSX) may be difficult to hold, and commitments of support may prove difficult until the intermodal yard is much further along in its development.
- The need to coordinate capital improvements to Pryor Field, utility infrastructure, and connectivity to I-65 / I-565 will require significant investment by multiple regulatory partners.
- There is a significant chicken-and-egg dilemma requiring the development of significantly more industrial demand for containerized freight than currently exists or is planned in this area.

Highest and Best Use - This area's highest and best use is an intermodal bulk transfer use with related /supporting manufacturing and warehousing uses.

Potential for Port of Mobile Connected Facility - This area is a strong candidate. The area could exist in a strong synergy with the Port of Mobile if regulatory champions can be identified and recruited. This area is the best candidate for a Port-related facility of those analyzed.

Limestone County - Murphy Area (Area #5)

As shown in Figure 2, the Murphy Area is a collection of undeveloped lots in the vicinity of Greenbrier. Mooresville Road would provide access to major highways. The I-565 interchange with Mooresville Road is four miles from the area, and the I-65 at Huntsville Browns Ferry Road interchange is roughly 8.5 miles away. It is also approximately a half-mile away from the Norfolk Southern line to the south.

Strengths

- It is sufficiently large to support multiple industrial flex uses.
- Its proximity to the I-65 / I-565 corridors puts it within the 90-minute drive to Birmingham and Nashville and within the 30-minute drive to Huntsville. This access makes it very attractive from an employee recruitment perspective.
- The operation of the MTM facility means that all required utilities are in place and of sufficient quality to support multiple uses.

Limitations

- The connectivity to I-65 / I-565 will require improvements to accommodate additional demand (truck or employee access).

- The existing rail line serving this area is not well-positioned to remove containers that originate or are destined to the Port of Mobile.
- The manufacturing uses for this area will need to be coordinated to support MTM, the dominant development in the area.

Opportunities

- Given this area's proximity to MTM, there is a tremendous opportunity to develop a high-tech research and development campus that could include developing and testing artificial intelligence, vehicle sensors, battery technology, and composite materials technology in partnership with MTM.
- The demographics and linkages to technical/trade and higher education institutions create significant opportunities for developing and testing new vehicle technologies from a human capital perspective.
- NAIDA currently actively markets dozens of sites as "automobile manufacturing support" sites; however, there does not appear to be an active marketing of a high-tech business park. There is greater opportunity in this area for high-tech business park development than any of the other areas analyzed.

Threats

- The continuing global supply-chain issues may confound the full potential of this area and the MTM site for some time. This is particularly true for semiconductor chips, which are critical for the automotive industry.
- If MTM, as a multinational corporation as opposed to an individual assembly plant, cannot be convinced to actively partner and support this effort, a complete re-think of the use and absorption of this area will be required.
- There is a considerable amount of ground available and potentially marketable in this area. This oversupply of available ground risks dilution of effort. Despite its favorable location, the Murphy area will likely require focused and significant marketing efforts by various champions. A lack of such investment may extend the absorption period by years.

Highest and Best Use -. The highest and best use of this area is industrial flex, focusing on research and development of automotive technologies.

Potential for Port of Mobile Connected Facility - This area is not a strong candidate. The limited connectivity to the CSX rail line makes it unlikely to function in synergy with the Port of Mobile. Also, an intermodal yard-type development that is part of a typical inland port development would be an under-improvement to this area.

Morgan County – Falkville (Area #6)

As shown in Figure 2, Falkville has potential industrial and manufacturing use areas on both sides of I-65 with direct access to the U.S. 31 corridor and CSX rail line. The area consists of undeveloped lots north of Robinson Creek, which could present mitigation issues if developed. Two of the lots are currently featured on the Morgan County EDA website as for sale and zoned for industrial use. The area is collectively approximately 438 acres in size.

Strengths

- It is sufficiently large to support significant warehousing-transit use development.

- Its proximity to the I-65 corridor and its connectivity to US-31 and State Route 55 makes this area one of the best-connected from a highway perspective. This access puts it within a 60-minute drive to Birmingham and Huntsville.
- The warehouse fulfillment center type has one of the lowest utility requirements, requiring minimal utility improvements.

Limitations

- Developing sufficient demand for containerized freight by rail will likely require significant time.
- Linkage to air services is limited.
- The location of the area south of the Tennessee River may work against the goal of removing truck-borne containers from I-65, thus relieving pressures on the limited number of river crossings

Opportunities

- Given this area's proximity to I-65, there is a tremendous opportunity to develop a series of warehouse-transit and fulfillment centers that operate from Birmingham to Huntsville along the I-65 corridor.
- The warehouse-transit uses have relatively low utility demands and could be developed at lower costs.
- The development of this area for warehouse-transit uses will also provide opportunities to alleviate higher unemployment rates for younger workers and absorb higher house vacancy rates.

Threats

- A typical desirable distance of travel for a rail container is at least 500 miles, and this area may be too close to the Port of Mobile to serve as an inland port.
- The area is largely dependent upon highway modes of travel, though rail is present. It will likely take several years to achieve the container demand threshold required for intermodal connection.
- There is a considerable amount of ground available and potentially marketable in this area. This oversupply of available ground risks dilution of effort. Despite its location immediately proximate to the I-65 corridor, this area will likely require focused and significant marketing efforts by a variety of champions, and lack of such investment may extend the absorption period by years.

Highest and Best Use -. This area's highest and best use is warehouse-transit, focusing on fulfillment centers for development clusters within a 60-minute drive of the I-65, US-31, and SR-55 corridors.

Potential for Port of Mobile Connected Facility - This area is a potential candidate. However, the low development density and its proximity to the Montgomery intermodal yard limit the competitiveness of this area.

Morgan County – Lacon (Area #7)

As shown in Figure 2, the Lacon area is located at the I-65 interchange (Exit 318) with U.S. 31, located roughly 11 miles north of Cullman and 20 miles south of Decatur. Flint Creek and Indian Creek traverse the property, so site work would be necessary to mitigate development impacts. The area also has direct access to the CSX rail line. The area is approximately 146 acres in size.

Strengths

- It is sufficiently large to support significant warehousing-transit use development.
- Its proximity to the I-65 corridor and its connectivity to US-31 and the CSX line makes this area well connected from highway and rail perspectives. This location puts it within a 60-minute drive to Birmingham and Huntsville.
- The warehouse fulfillment center type has one of the lowest utility requirements, requiring minimal utility improvements.

Limitations

- Developing sufficient demand for containerized freight by rail will likely require significant time.
- The connection capacity to US-31 and I-65 is low and will require significant investment, including an Interchange Modification Request (IMR) that will require approval by the FHWA.
- The area is low-lying topographically speaking and will require significant environmental remediation.

Opportunities

- Given this area's proximity to I-65 and CSX, there is a tremendous opportunity to develop a series of warehouse-transit and fulfillment centers that operate from Birmingham to Huntsville along the I-65 corridor.
- The warehouse-transit uses have relatively low utility demands and could be developed at lower costs.
- The development of this area for warehouse-transit uses will also be least sensitive to the area's relative isolation.

Threats

- A desirable distance of travel for a rail container is at least 500 miles, and this area may be too close to the Port of Mobile to serve as an inland port.
- The area is very isolated with very low development densities. The time required to build the necessary rail container demand will likely be years.
- There is a considerable amount of ground available in Morgan County that can be developed at a lower cost.

Highest and Best Use -. This area's highest and best use is warehouse-transit, focusing on fulfillment centers for development clusters within a 60-minute drive of the I-65, US-31, and SR-55 corridors.

Potential for Port of Mobile Connected Facility - This area is a potential candidate. However, the low development density and its proximity to the Montgomery intermodal yard limit the competitiveness of this area.

Cullman County – Vinemont/Cullman Airport (Area #8)

As shown in Figure 2, the Vinemont/Cullman Airport area includes the area in and around the airport property. Compared to other areas evaluated for this effort, it is a relatively small area at 274 acres but has direct air access. The highway access is via U.S. 31 roughly 1.5 miles to the west via CR 1398 and CR 1365, with the nearest I-65 interchange being near Lacon (Exit 318), approximately six miles to the north. Rail is also present approximately one-half mile from the site.

Strengths

- It is sufficiently large to support significant warehousing-transit use development.
- The connectivity of this area to highway, rail, and air modes makes it especially accessible.
- The warehouse fulfillment center type has one of the lowest utility requirements, requiring minimal utility improvements.

Limitations

- Developing sufficient demand for containerized freight by rail will likely require significant time.
- The connections to I-65 and US-31 will require significant investment.
- The location of the area south of the Tennessee River may work against the goal of removing truck-borne containers from I-65, thus relieving pressures on the limited number of river crossings.

Opportunities

- Given this area's linkage to three modes, there is tremendous opportunity to develop a series of warehouse-transit and fulfillment centers that operate from Birmingham to Huntsville along the I-65 corridor.
- The warehouse-transit uses have relatively low utility demands and could be developed at lower costs.
- The development of this area for warehouse-transit uses will also provide opportunities to alleviate higher unemployment rates for younger workers and leverage a significant number of employees who commute into the Vinemont area.

Threats

- A typical desirable distance of travel for a rail container is at least 500 miles, and this area may be too close to the Port of Mobile to serve as an inland port.
- It will likely take several years to achieve the container demand threshold required for intermodal rail connection.
- There is already some development in the Cullman County Regional Airport area. Still, if further development is seen as unwanted competition, or if the political will for highway and airport improvements are not present, then the development of this area could be impeded.

Highest and Best Use - This area's highest and best use is warehouse-transit, focusing on fulfillment centers for development clusters within a 60-minute drive of the I-65 and US-31 corridors.

Potential for Port of Mobile Connected Facility - This area is a potential candidate. However, the low development density and its proximity to the Montgomery intermodal yard limit the competitiveness of this area.

Cullman County – Hanceville (Area #9)

As shown in Figure 2, the Hanceville area is located near US 31, located south of SR 91, a short distance from Hanceville and the Hanceville Community College campus. The area is bisected by the CSX rail line, though enhancement to CR-552 is required to support truck connectivity to US-31.

Strengths

- It is sufficiently large to support significant manufacturing use development.
- Its proximity to US 31 and the CSX line makes this area well connected from highway and rail perspectives once the connection to US 31 is improved. This location puts it within a 60-minute drive to Birmingham.
- The manufacturing type of use for this area is supported by its proximity to Hanceville Community College for skill and trade training opportunities.

Limitations

- Developing sufficient demand for containerized freight by rail will likely require significant time.
- The connection capacity to US-31 will require investment.
- The old mill brownfield area has been sold for use as an asphalt cement concrete facility and is not currently available on the market.

Opportunities

- Given this area's proximity to US-31 and CSX, there is a tremendous opportunity to develop a series of manufacturing uses that operate from Birmingham to Huntsville along US-31.
- The manufacturing uses provide an opportunity to partner with Hanceville Community College for skill and tradecraft training programs.
- The development of this area for additional manufacturing uses could be synergized with the planned asphalt plant use.

Threats

- A typical desirable distance of travel for a rail container is at least 500 miles, and this area may be too close to the Port of Mobile to serve as an inland port.
- The time required to build the necessary rail container demand will likely be years.
- There is a considerable amount of ground available in Cullman County that can be developed at a lower cost.

Highest and Best Use -. This area's highest and best use is manufacturing, focusing on heavy-horizontal construction support in synergy with the planned asphalt plant.

Potential for Port of Mobile Connected Facility - This area is a potential candidate. However, the low development density and its proximity to the Montgomery intermodal yard limit the competitiveness of this area

Section 6: Peer Review of Port Related Facilities

Given that a facility directly affiliated with the Alabama State Docks Authority is recommended for the area, this section compares intermodal bulk facilities operated by state ports authorities that were initially reviewed in the *Initial Area Assessment*. These facilities include:

- Inland Port Dillon (Dillon, South Carolina)
- Port Greer (Greer, South Carolina)
- Appalachian Regional Port (Chatsworth, GA)

This section describes the following elements associated with these facilities, including overall access and markets served, industrial anchors, and other related information that serves as a benchmark for implementing a facility in North Alabama. Table 4 provides a high-level comparison of these characteristics.

More specific information regarding these facilities, including their size, equipment, etc., is provided in the Initial Area Assessment, in Appendix A.

Table 4. Comparison of Port Owned Facilities

	SCPA Dillon	SCPA Greer	GPA ARP
Year Opened	2018	2013	7/10/1905
Year Expansion to be completed	No plan	2023	10 year plan
Expansion Cost	No plan	28 Million	NA
Acres Developed	35	50	42
Available Undeveloped Acres	123	50	NA
Total Acres	158	100	NA
Initial Capital Cost	\$48M	\$48M	24 million
Nominal Capacity -- Lifts/Yr	116,000	100,000	50,000
Volume -- Lifts/Yr	35,000	160,200	29,400
Capacity with Expansion -- Lifts/Yr	NA	170,000	100,000
Yard Storage Capacity	7,584 TEU	7,584 TEU	9,500 TEU
Expanded Yard Storage Capacity	NA	15,384 TEU	11,500 TEU
Days Operated per week	6	6	6
Trains per week	11	12	6
Existing Working Rail Tracks	2	2	3
Working Rail Tracks with Expansion	NA	3	3
Working Plus Storage Track Length	10,000	13,000	6,000
Railroad Service	CSX	NS	CSX

NA – Not available

TEU = A TEU or Twenty-foot Equivalent Unit is an exact unit of measurement used to determine cargo capacity for container ships and terminals. This measurement is derived from the dimensions of a 20ft standardized shipping container.

Inland Port Dillon

SCPA’s Inland Port Dillon (IPD) facility is the second-highest volume facility in this peer group and is currently operating at about 30 percent of nominal design capacity. The facility opened in 2013, with an initial construction cost of \$48 million. Thirty-five acres of the 158-acre site are currently developed. The facility is surrounded by a 3,400-acre industrial park with sites selling for about \$20,000 per acre.

The Dillon facility is located on a CSX mainline between Fayetteville, NC, and Charleston, SC. IPD is served by five outbound and six inbound trains per week, with next-day container availability. The yard has two working tracks of 5,000 feet each and no separate storage tracks.

IPD was developed with Harbor Freight as the primary customer at launch. Harbor Freight’s three million square foot distribution warehouse is less than four miles from IPD. Northwest Grains International, LLC, has developed a facility to handle containerized agricultural and forest products adjacent to IPD. Soybeans, corn, and other agricultural products are transferred to containers for international shipment. Forest products also are containerized for international shipment through IPD.

The existing facility operates at about one-third capacity, and no expansion plans are pending. The facility is owned and operated by the SCPA and served by CSX. Construction costs totaled \$50.5 million, funded mostly by SCPA funds. Unlike most inland port facilities, the Dillon site did not have an “anchor tenant” before construction. However, the facility is within a 3,400-acre industrial park that includes available speculative buildings – and in a region boasting over 100 industrial sites with an average price of \$17,000 per acre and more than 30 available buildings¹⁴

Figure 3. Dillon Inland Port



Source: Inland Port Dillon, South Carolina Ports Authority (Transystems). Available at <https://www.transystems.com/our-projects/inland-port-dillon/>.

¹⁴ NESAC, <https://www.nesasc.org/competitive-advantages/inland-port-dillon>

Inland Port Greer

SCPA's Inland Port Greer (IPG) facility is the highest volume facility in this peer group and currently operates at 150 percent of nominal design capacity. The facility opened in 2013, with an initial construction cost of \$48 million. Fifty acres of the 100-acre site are currently developed.

The facility is located on the Norfolk Southern mainline between Charlotte and Atlanta. Norfolk Southern contributed \$7 million in track improvements to the project in addition to the \$48 million of public funding. IPG is served by a daily train inbound and outbound six days per week, and travel time from Greer to the Port of Charleston is 12 hours. The yard has two working tracks of 2,600 feet each and three storage tracks that are each 2,600 feet.

IPG was developed with BMW Manufacturing, which is just four miles from the port facility. BMW shifted the delivery of vehicle components (engine and drivetrain components) to rail and ships 250,000 finished vehicles by rail annually. BMW now is the largest exporter of automobiles manufactured in the United States, with 70 percent of production at its Greer plant destined overseas. The inland port also supports many automotive suppliers that have located in the area around BMW Manufacturing. Other tenants include Michelin, Adidas, Dollar General, and Eastman Chemical.¹⁵

An economic impact study estimates the annual economic impact of IPG to be \$63.4 billion, with 225,000 jobs facilitated or supported statewide.

The existing facility operates above capacity due to insufficient container storage space on the yard. Since the port opened, the volume has steadily increased, with over 160,000 container lifts in FY 2021.

SCPA has announced a \$28 million expansion plan, with a target to increase IPG capacity by 60 to 70 percent by 2023. The expansion will develop an additional 13 acres, expand container storage by 60 percent, extend the existing working tracks, add a third working track, and extend the lead tracks from the mainline into the port facility. A siding 60 miles south of IPG will be extended to handle longer trains. Rail improvements total \$11 million of the project budget.

Figure 4. Greer Inland Port (with new expansion space)



Source: "South Carolina Inland Port Case Study," CenterPoint. Available at <https://centerpoint.com/highlights/case-studies/south-carolina-inland-port-case-study/>.

¹⁵ Journal of Commerce, https://www.joc.com/port-news/us-ports/port-charleston/inland-ports-gaining-popularity-despite-volume-slowdown_20200728.html

Appalachian Regional Port

Georgia Ports Authority's Appalachian Regional Port (ARP) handles 29,400 container lifts per year and is approaching capacity.

The facility opened in 2018 on a 42-acre site on a CSX mainline between Chattanooga and Atlanta. Rail service is provided every other day in each direction, with the port operating six days a week. The facility has three working tracks totaling 6,000 feet.

ARP was developed to serve the Volkswagen manufacturing facility in Chattanooga, about 35 miles from the port facility. The port has attracted a GE Appliance distribution facility and serves Mohawk Flooring and Huali Floors.

Figure 5. Appalachian Regional Port



Source: Georgia Ports, June 3, 2020. Available at <https://gaports.com/blog/appalachian-regional-port-sees-business-increase/>.

ARP is approaching capacity and plans call for doubling of capacity over the next several years, with an extension of the existing working tracks and expansion of the container storage yard. The GPA estimates that each roundtrip container will offset 710 truck miles on Georgia highways. ¹⁶

¹⁶ Georgia Ports Authority, <https://gaports.com/facilities/inland-ports/appalachian-regional-port/>

Section 7: Action Plan

Recommended Actions

Based on the issues cited above, developing an inland port could take some time. Significant progress can be made in the interim, given the necessary coordination, industry development, and workforce development.

0 – 12 Months: Conversations with top leadership within the study area, Port of Mobile, CSX, and the legislative contingent for the State of Alabama should occur. The goal of these conversations should be to 1) develop a consensus of a preferred location for a Port facility, and 2) execution of a Memorandum of Understanding describing the Port of Mobile and the Inland Port as a linked, joint venture designed to:

- Establish the location of a CBP facility within North Central Alabama to Improve the operational resilience of the Port of Mobile by moving containers to the inland port directly for customs inspection and clearance and expanding its capture for exports from markets north of Alabama. *(This is an especially urgent matter if the Montgomery facility is being considered for a CBP port of entry).*
- Improve the operational resilience and safety of the I-65 corridor by removing container traffic to and from the Port of Mobile by alleviating truck traffic along the I-65 corridor in Birmingham, Montgomery, and Mobile.
- Capture more of the freight flows in Alabama for domestic industrial use.
- NOT directly compete with the CPB facility at Huntsville (which largely serves international markets) or the intermodal yard at Montgomery (anchored to the automobile assembly and related industries).

0 – 48 Months:

- Carefully observe the development of the Montgomery Intermodal Yard and converse with the key stakeholders to identify practices to adopt and lessons learned.
- Actively recruit industries to the preferred area to generate the minimum 600 containers per week demand required to begin active discussions with CSX.
- Begin to work with local officials to investigate earmarks and innovative funding (such as Community Project Funding, discretionary funding, etc.) to begin acquisition of the preferred site.

48 – 60 Months:

- Once the container demand, or at least the letters of intent, are in place or are trending near the threshold, conduct regular conversations with CSX to move the Memorandum of Understanding process forward. This would include committing to more service frequency and potential physical upgrades to tracks, switches, etc.
- Subsequent discussions with the Port of Mobile, CSX, and the ALDOT to identify and generate joint applications for federal discretionary funding for the new facility. A description of the federal programs cited in this report is provided in the following subsection,
- Upon securing an inland port of entry, coordinate with the CBP to establish a foreign trade zone to promote new businesses near or at the facility and, therefore, increase the number of containers along the CSX line. More information on Foreign Trade Zones is provided later in this section.

Summary of Potential Discretionary Funds

The following describes the potential discretionary funding programs offered by the USDOT that could be potentially used to help fund an inland port facility or supporting infrastructure. The following describes the funding sources cited in this report.

- Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants
- Infrastructure for Building America (INFRA)
- Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grants

It should be noted that the documentation contained in this section was derived from the USDOT sources in January 2022 and, as such, are still subject to administrative changes with the passage of the Infrastructure Investment and Jobs Act.

Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants

The Rebuilding American Infrastructure with Sustainability and Equity, or RAISE Discretionary Grant program, provides a unique opportunity for the DOT to invest in road, rail, transit, and port projects that promise to achieve national objectives. Previously known as the Better Utilizing Investments to Leverage Development (BUILD) and Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants, Congress has dedicated nearly \$9.9 billion for thirteen rounds of National Infrastructure Investments to fund projects that have a significant local or regional impact.

In each competition, USDOT receives hundreds of applications to build and repair critical pieces of our freight and passenger transportation networks. The RAISE program enables USDOT to examine these projects on their merits to help ensure that taxpayers are getting the highest value for every dollar invested.

The eligibility requirements of RAISE allow project sponsors at the State and local levels to obtain funding for multi-modal, multi-jurisdictional projects that are more difficult to support through traditional DOT programs. RAISE can fund port and freight rail projects, for example, which play a critical role in our ability to move freight but have limited sources of Federal funds. RAISE can provide capital funding directly to any public entity, including municipalities, counties, port authorities, tribal governments, MPOs, or others in contrast to traditional Federal programs, which provide funding to very specific groups of applicants (mostly State DOTs and transit agencies). This flexibility allows RAISE and our traditional partners at the State and local levels to work directly with a host of entities that own, operate, and maintain much of our transportation infrastructure, but otherwise cannot turn to the Federal government for support.

Since 2009, the Program has awarded more than \$3.8 billion in Federal funding to 345 projects to support rural [i] and tribal communities across the nation, leveraging an estimated \$6.8 billion in non-RAISE/BUILD/TIGER funding. Overall, the Department of Transportation has received more than 10,400 applications requesting more than \$185 billion for transportation projects across the country. The RAISE program enables DOT to use a rigorous merit-based process to select projects with exceptional benefits, explore ways to deliver projects faster, save on construction costs, and make needed investments in our Nation's infrastructure.

Infrastructure for Building America (INFRA) Grants

These grants advance the Administration's priorities of rebuilding America's infrastructure and creating jobs by funding highway and rail projects of regional and national economic significance.

INFRA grants are selected based on several criteria. In addition to prioritizing projects that would improve local economies, create jobs, and meet all statutory requirements, for the first time in USDOT's history, 2021 grants were considered by how they would address climate change, environmental justice, and racial equity.

Further, in 2021, USDOT prioritized funding to rural areas to address historic underinvestment. Approximately 44 percent of proposed funding will be awarded to rural projects, which exceeded the statutory requirements for rural projects set by Congress by 19%. INFRA projects were also rated on how they applied innovative technology and whether they could deliver projects cost-effectively.

Demand for INFRA grants far exceeded available funds. USDOT evaluated 157 eligible applications from 42 states, as well as Guam. Applicants collectively requested approximately \$6.8 billion in grant funds—more than seven times the funding available.

Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grants

This program is administered through the Federal Railroad Administration (FRA) and typically funds projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. Projects related to an inland port facility eligible for funding under this grant program include, but are not limited to:

- Deployment of railroad safety technology;
- Capital projects that:
 - address congestion challenges affecting rail service,
 - improve short-line or regional railroad infrastructure;
- Highway-rail grade crossing improvement projects;
- Rail line relocation and improvement projects;
- Regional rail and corridor service development plans and environmental analyses;
- Any project necessary to enhance multimodal connections or facilitate service integration between rail service and other modes;
- The development and implementation of a safety program or institute;
- Any research that the Secretary considers necessary to advance any particular aspect of rail-related capital, operations, or safety improvements; and
- Workforce development and training activities, coordinated to the extent practicable with the existing local training programs supported by the Department of Transportation, the Department of Labor, and the Department of Education.

Eligible recipients could include NARCOG, ALDOT, Port of Mobile, or CSX (in cooperation with public agencies).

Foreign Trade Zone Overview

The US CBP provides the following information regarding Foreign Trade Zones (FTZs), their establishment, and their advantages. More information regarding free trade zones can be found on the US CBP website at <https://www.cbp.gov/border-security/ports-entry/cargo-security/cargo-control/foreign-trade-zones/about>

An Introduction to Foreign-Trade Zones

Foreign-Trade Zones (FTZ) are secure areas under U.S. Customs and Border Protection (CBP) supervision that are generally considered outside CBP territory upon activation. Located in or near CBP ports of entry, they are the United States' version of what are known internationally as free-trade zones.

Foreign and domestic merchandise may be moved into zones for operations, not otherwise prohibited by law, including storage, exhibition, assembly, manufacturing, and processing. All zone activity is subject to public interest review. Foreign-trade zone sites are subject to the laws and regulations of the United States and those of the states and communities in which they are located.

Under zone procedures, the usual formal CBP entry procedures and payments of duties are not required on the foreign merchandise unless and until it enters CBP territory for domestic consumption, at which point the importer generally has the choice of paying duties at the rate of either the original foreign materials or the finished product. Domestic goods moved into the zone for export may be considered exported upon admission to the zone for purposes of excise tax rebates and drawbacks.

Qualified public or private corporations that may operate the facilities themselves or contract for the operation sponsors foreign-trade zones. The operations are conducted on a public utility basis, with published rates. A typical general-purpose zone provides leasable storage/distribution space to users in general warehouse-type buildings with access to various modes of transportation. Many zone projects include an industrial park site with lots on which zone users can construct their own facilities.

The Advantages of Using a Foreign-Trade Zone

Advantages of an FTZ include:

- If applicable, CBP duty and federal excise tax are paid when the merchandise is transferred from the zone for consumption.
- While in the zone, merchandise is not subject to U.S. duty or excise tax. Certain tangible personal property is generally exempt from state and local ad valorem taxes.
- Goods may be exported from the zone free of duty and excise tax.
- CBP security requirements protect against theft.
- Merchandise may remain in a zone indefinitely, whether or not subject to duty.

Establishing a Foreign-Trade Zone

The Foreign-Trade Zones Act of 1934 created a Foreign-Trade Zones Board to review and approve applications to establish, operate, and maintain foreign-trade zones. The Board may approve any zone or subzone which it deems necessary to serve adequately "the public interest."

The Board also regulates the administration of foreign-trade zones and the rates charged by zone "grantees."

CBP must approve activation of the zone before any merchandise is admitted under the Foreign-Trade Zones Act.

It is the intent of the U.S. foreign-trade zone program to stimulate economic growth and development in the United States. In an expanding global marketplace, there is increased competition among nations for jobs, industry, and capital. The FTZ program was designed to promote American competitiveness by encouraging companies to maintain and expand their operations in the United States.

The FTZ program encourages U.S.-based operations by removing certain disincentives associated with manufacturing in the United States. The duty on a product manufactured abroad and imported into the U.S. is assessed on the finished product rather than on its individual parts, materials, or components. The U.S.-based manufacturer finds itself at a disadvantage compared with its foreign competition when it must pay a higher rate on parts, materials, or components imported for use in a manufacturing process. The FTZ program corrects this imbalance by treating products made in the zone, for the purpose of tariff assessment, as if it were manufactured abroad. At the same time, this country benefits because the zone manufacturer uses U.S. labor, services, and inputs.

Role of CBP

CBP is responsible for the transfer of merchandise into and out of the FTZ and matters involving revenue collection. The Office of Regulations and Rulings at CBP Headquarters provides legal interpretations of the applicable statute, CBP Regulations and procedures.

The Port Director of CBP, in whose port a zone is located, is charged with overseeing zone activity as the local representative of the Foreign-Trade Zones Board. He or she controls the admission of merchandise into the zone, the handling and disposition of merchandise in the zone, and the removal of merchandise from the zone. In addition to the Foreign-Trade Zones Act, he or she enforces all laws normally enforced by CBP that are relevant to foreign-trade zones.

Zones are supervised by FTZ Coordinators (i.e., CBP Officers, Import Specialists, Entry Specialists or Agricultural Specialists, etc.) through compliance reviews and visits; the security of the zone must meet certain requirements.

Permitted Merchandise/Goods

Any foreign or domestic merchandise not prohibited by law or other exception listed below, whether dutiable or not, may be taken into a foreign-trade zone.

Merchandise, which lawfully cannot be imported into the United States, is prohibited without exception. Furthermore, placing merchandise subject to a quota into a zone cannot circumvent the quota on the imported merchandise.

On the other hand, merchandise for which a quota is filled or for which a quota on entry is established, may be placed into a zone until the quota opens or is removed since foreign-trade zones are considered outside CBP territory for entry purposes. Such products, with the exception of certain textiles (19 CFR 146.63(d)), may be manipulated or manufactured while in the zone into a product not subject to a quota.

Some Federal agencies regulate storage and handling in the United States of certain types of merchandise, such as explosives. Depending on the nature of the requirements and the particular characteristics of the zone facility, such merchandise may be excluded. Moreover, agencies that license importers or issue importation permits may block admissions to a zone that is not properly licensed or permitted.

The Foreign-Trade Zones Board may exclude from a zone any merchandise that is in its judgment detrimental to the public interest, health, or safety. The Board may place restrictions on certain types of

merchandise, which would limit the zone status allowed, the kind of operation on the merchandise in a zone, the entry of the merchandise into the commerce, or similar transactions or activities.

Permitted FTZ Activities

The Foreign-Trade Zones Board may exclude from a zone any merchandise that is in its judgment detrimental to the public interest, health, or safety. The Board may place restrictions on certain types of merchandise, which would limit the zone status allowed, the kind of operation on the merchandise in a zone, the entry of the merchandise into the commerce, or similar transactions or activities.

Many products subject to an internal revenue tax may not be manufactured in a zone. These products include alcoholic beverages, products containing alcoholic beverages except domestic denatures distilled spirits, perfumes containing alcohol, tobacco products, firearms, and sugar. In addition, the manufacture of clock and watch movements is not permitted in a zone.

No retail trade of foreign merchandise may be conducted in an FTZ. However, foreign and domestic merchandise may be stored, examined, sampled, and exhibited in a zone.

Appendix A

Initial Area Assessment

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Section 1: Introduction

The development of inland ports is a growing trend, with new inland port facilities now operating in Georgia and South Carolina directly linked to their respective Ports (Savannah and Charleston). These inland ports are an essential piece of regional solutions to provide safe, reliable, and efficient movement of goods. The Port of Mobile continues to see an ever-increasing volume of shipping traffic since the expansion of the Panama Canal.

The purpose of the *North Central Alabama Inland Port Feasibility Study* is to identify and analyze industrial areas within four counties in northern Alabama - Cullman, Lawrence, Limestone, and Morgan Counties – and assess their potential for an inland port facility in North Central Alabama. The study was to:

- 1) Identify the feasibility of an inland port facility linked to the Port of Mobile that would provide for better goods movement throughout the State of Alabama and, in turn, provide economic development opportunities in the region.
- 2) Determine the best and highest uses of potential industrial areas identified through stakeholder outreach based on various physical, economic, and environmental factors. These factors include each area's physical attributes, transportation infrastructure, utility infrastructure, surrounding land uses, and potential development costs.

What is an Inland Port?

America's coastal ports are integral nodes in the supply chain that moves an extraordinary amount of inbound and outbound cargo. In addition, they are challenged to onload and off-load current volumes as container ships continue to increase their carrying capacity and can now off-load thousands of containers to a port upon arrival. These ports do not have the space to store the cargo or the resources to provide value-added services. The shipment needs to move out of the coastal port to locations that can perform these services (e.g., sort, consolidate, assemble, or finish) and where functions such as customs clearance, warehousing, or intermodal exchanges occur before the cargo arrives at its final destination.

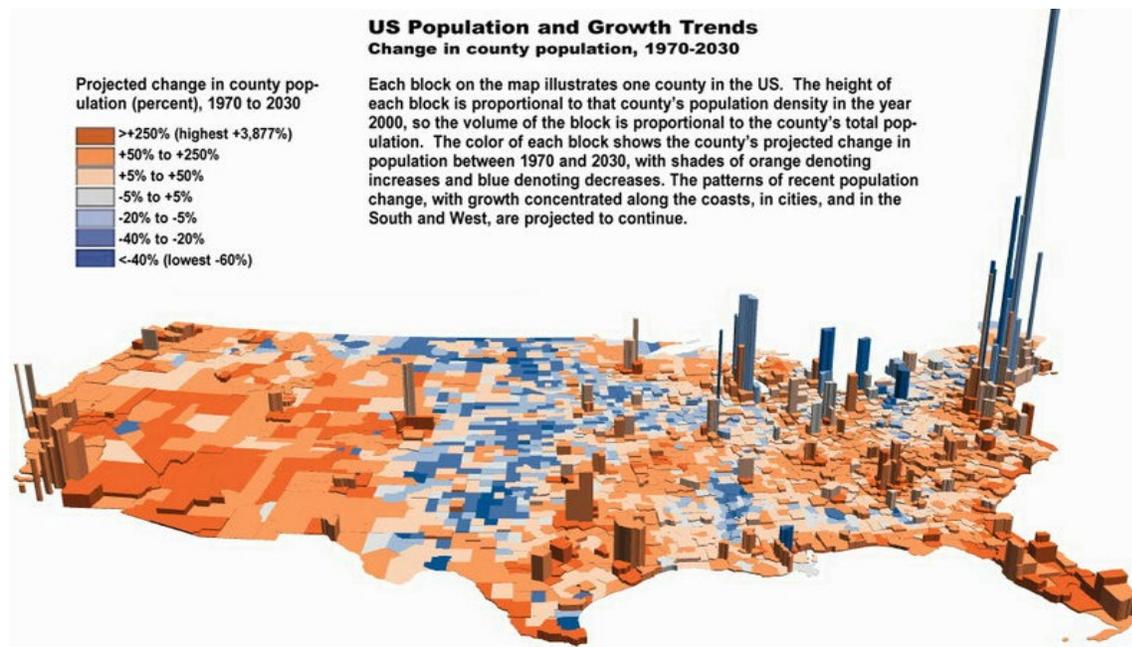
Inland ports are also critical nodes in America's supply chain providing shippers (the cargo owners) and carriers (the modes on which the cargo moves) the needed bandwidth to manage consumer demands efficiently and effectively and to diversify their distribution networks by placing processing, warehousing, and assembly capacity closer to the point of consumption. The advent of eCommerce will add new pressures and new locations to these distribution networks; as more firms offer faster delivery times (e.g., same day or a few hours) directly to consumers, they will need logistics centers closer to urban centers. Real estate near an urban center is more expensive than where inland ports are historically located. Therefore, the eCommerce fulfillment centers will need to maximize their capacity on a smaller footprint by going vertical.

These critical nodes on the nation's supply chain distribution network weave into the nation's economic competitiveness. There are economic and localized financial and workforce development opportunities at these facilities. Still, the economic benefit from these facilities is spread over the supply chain and enjoyed by shippers, carriers, and consumers of the goods distant from these nodes. The social equity and environmental impacts, on the other hand, directly impact the communities near them.

Why Alabama?

Alabama is centrally located in a region experiencing significant U.S. population growth, business and economic growth in domestic production, goods movement, and expanding international trade lanes through the Gulf of Mexico with Mexico, South America, and Pacific Rim Countries. The study area is among the fastest-growing population centers in the Southeast region, as illustrated in the U.S. Environmental Protection Agency (EPA) map of U.S. Population Growth Trends.¹ The State's infrastructure includes six interstate highways, seven commercial airports, five Class I railroads, multimodal services and facilities, one of the nation's largest inland waterway systems, and a deep-water seaport. The State is an international aerospace and automotive production leader and has solid agricultural, chemical, timber, and paper production industries.²

Many U.S. Gulf of Mexico ports are seeing massive increases in containerized movements in recent years. According to the Florida Seaport Mission Plan, Florida's ports of Manatee, Tampa, and Panama City have doubled container throughput in the past four years.³ The Port of Mobile's TEU throughput went from 182K TEUs in 2015 to 354K TEUs in 2020.⁴ Nearshoring of manufacturing in Mexico coupled with the completion of the Panama Canal expansion with four additional post Panamax locks provides market opportunities for northern Gulf ports to expand Pacific trade lanes. Significant investments in inland port infrastructure are necessary to capture, transfer, fulfill, and distribute goods and services into and from the major metropolitan markets of the southeastern U.S., where Northern Alabama is centrally located.



Source: *Analyses and Effects of Global Change on Human Health and Welfare and Human Systems, Chapter 1. U.S. Environmental Protection Agency (EPA)*

¹ *Analyses and Effects of Global Change on Human Health and Welfare and Human Systems, Chapter 1. U.S. Environmental Protection Agency (EPA)*

² *Economic Development Partnership of Alabama, <https://edpa.org/>*

³ *Florida Seaport Mission Plan, July 27, 2021, Page 47 Exhibit 19, 4-Year Comparison of Containerized Cargo Handled by Florida Seaports, Accessed from: <https://flaports.org/success-story/fsted-seaportmission-plan/>*

⁴ *Port Performance Freight Statistics Program, Bureau of Transportation Statistics*

The Port of Mobile (Port) is essential as a significant state freight generator and hub for international trade. The Port expanded its logistical capabilities with a 37% growth between 2020 to 2021 in total container movements.⁵ It currently serves Panamax vessels that carry between 4,000 and 8,000 TEUs (twenty-foot equivalent units) and Post Panamax vessels with 8,000 and 12,500 TEUs. The Port's new intermodal container transfer facility (ICTF) saw increased volume as shippers opted to utilize Mobile for rail service into Midwest and Canadian markets. The ICTF had its highest throughput ever in August 2021, bringing year-to-date volume to 13,662 container moves reaching a 200 percent gain over the same period in 2020.²

Factors Specific to Alabama

Over time, growth in intermodal movements of containers and commodities will challenge available highway capacities, and reducing truck traffic along I-65 to ease congestion through metropolitan areas like Birmingham and Montgomery is a regional priority. Reducing truck dependence will help to manage highway maintenance costs and the risk of transport. Containerized rail is recognized as six (6) times more efficient and generating four (4) times fewer greenhouse emissions. Benefits also include lowered transportation costs. There are also the benefits of more reliable deliveries to and from Mobile, expanding the port authority's market area into neighboring states, and boosting local economies.

Finally, Alabama is focused on investing in multimodal development. In 2019, the first gas tax increase since 1992 was passed and will supply \$150 million for the ship channel dredging at the Port of Mobile. The dedication of these funds for this purpose was part of the Rebuild Alabama Act. The future 3.7 million-square-foot Mazda-Toyota Manufacturing (MTM) joint venture in Huntsville/Madison represents an investment of \$1.6B in the facility and the creation of up to 4,000 jobs with an average salary of \$50,000. The new plant will have the capacity to produce a total of 300,000 vehicles per year. The nearest inland ports or transfer facilities, strictly dedicated to rail and truck freight, are located at Cordele, GA, with a second facility, opened in 2018 near Chatsworth, GA. Linking the Port of Savannah to markets throughout the Southeast is a high priority for the state. In summary, North Alabama and particularly the four counties identified in this study are at the nexus of trade and development. They are ripe for inland port development if they do not compete with existing ones.

Bettering Communities

The proposed Inland Ports provide unique opportunities to better the communities in the NARCOG region and the rest of north Alabama. Anticipated benefits include creating new businesses and jobs, increased private investment, and a competitive edge in recruiting industries. Local governments in the NARCOG region should be directly involved in the investment process to benefit from increased tax revenues.

Report Overview

The remainder of the report is organized as follows:

- Input from the client and key stakeholders to refine the study scope and purpose and identify the sites to be analyzed.
- A profile of the study area that influences inland port location such as traffic, land use, and multimodal facilities.

⁵ Port of Mobile Posting Record Growth As Midwest Supply Chains Shift, September 16, 2021. Accessed from: http://www.asdd.com/pdf/PortofMobile_ContainerVolume_09162021.pdf

- The analysis of freight flows to understand the current state of goods movement by mode to identify the “net residual demands” or the opportunities available to the sites.
- The economic profile of the study area to understand the demographic, employment, and primary economic activities that underpin the demand for these sites.
- Analysis of the sites to understand which of five inland port types each is suited, or unsuited, to fill.
- Next steps to introduce how the highest and best use of each industrial area.

Section 2: Kickoff Meeting Input

At the beginning of the project, kickoff meetings were held in the four counties of the study area:

- Lawrence County – June 30, 2021 - 10:00 am.
- Morgan County – June 30, 2021 – 1:00 pm.
- Limestone County – June 30, 2021 – 3:30 pm.
- Cullman County – July 1, 2021 – 10:00 am.

The purpose of the kickoff meetings was to gather input on the type of facility the stakeholders thought would be appropriate for the region based on how they identified the facility’s desired function. This input would inform the study, including the industrial area selection and evaluation processes. At each meeting, the project team provided examples of inland ports and intermodal distribution centers to inform stakeholders on the possible functions and facility types with an inland port.

Stakeholders were asked questions to set manageable expectations for the outcome of the study. The input was obtained via index cards provided to the attendees. Each card contained a question and enabled the stakeholders to offer their individual opinions. After each question, the results of the input exercise were shared with the group to generate discussion. The questions were:

1. What should be the primary goal of this study?
2. In your mind, what should be the overall function of the inland port facility?

Attendees were also asked which of the examples of inland facility types shown in the presentation were more favorable. Their responses were in line with the preferred facility types.

Input on Study's Primary Goal

There was a wide range of responses to the question on the primary goal of the study. The two most common were to promote economic development and identify the location for the inland port facility. It should be noted that stakeholders also wanted the study to assess the facility's overall need and function.

Table 1. Overall Purpose of Study Input

	Totals	Cullman	Lawrence	Limestone	Morgan
Economic Development	15	13	1	0	1
Feasibility/ Overall Need	6	4	0	0	2
Identify Location	11	6	1	1	3
Identify Type/Function	7	4	1	1	1
Reduce/ Manage Truck Traffic	7	5	0	0	2
Serve Existing Industries	2	2	0	0	0
Redevelop Existing Areas	4	4	0	0	0
Identify Costs/ Implementation Plan	4	2	1	1	0
Regional Vision	2	2	0	0	0

Other takeaways from these meetings include:

- Most responses were generated from the Cullman County meeting given the attendance; Respondents in Cullman County were very focused on economic development.

- There were limited responses from the other counties for this question; however, more insight is provided in the ‘Other Relevant Input by County’ subsection.

Input on Function of a Potential Facility

Examples of different facility types were presented along with factors such as their average size, function, and other needs (as described in Section 5: Peer Review). As shown in Table 2, the three most preferred functions are Intermodal Transfer Center, Warehouse/Distribution, and a combination of distribution and manufacturing.

Table 2. Overall Functions of Potential Facility

	Totals	Cullman	Lawrence	Limestone	Morgan
Intermodal Transfer Center	16	6	2	6	2
Warehouse / Distribution	13	8	1	3	1
Manufacturing	7	2	1	2	2
Both Distribution and Manufacturing	13	3	6	1	3
Free Trade/ Opportunity Zone	1	1	0	0	0
Serving Industries	3	0	0	2	1

When assessing the results by County, key takeaways are:

- Intermodal transfer facilities are seen as desirable by all four counties.
- Warehousing (fulfillment) centers and seen as desirable by all four counties.
- Additional light and heavy manufacturing facilities were also considered acceptable but were much less popular choices.
- More exotic uses such as opportunity zones were much less popular choices.

This input and technical analysis results for each facility type were incorporated into the recommendations for each evaluation area described in Section 10.

Other Relevant Input by County

Cullman County

- The area surrounding the old mill site in Hanceville was the overwhelming favorite among the attendees.
- Auto batteries for applications like electric vehicles, tool manufacturers, and other applications are a potential source to replace coal along the railroads.
- Developing a solid relationship with the railroad to develop a transload or intermodal site seems critical – railroads have not been easy to work with on past encounters.
- Adjacent land development planning and zoning will be essential for supporting industries.

Lawrence County

- Lawrence County is perfectly positioned between Muscle Shoals and Decatur.
- Large International Paper site is available, has more than 500 acres, and direct access to the Tennessee River, four miles from rail mainline with extensive rail storage and waterside on dock bulk transfer capability.
- The Courtland Airport facility provides the perfect opportunities for air cargo.

Limestone County

- The study needs to consider neighboring port facilities when considering the location.
- The entire I-65 Corridor from Birmingham to Nashville is critical and needs relievers like rail or ports.
- There is a potential need for transfer facilities and auto transport for cars and parts.

Morgan County

- Any location must consider potential traffic impacts and utility needs.
- Evaluate the current and potential levels of congestion area highway connections.

Section 3: Study Area Profile

Overview of Freight Network

This study area provides an exciting nexus of multimodal activities, one of the features necessary for future facility development. It includes all major transportation modes, including interstates and major highways, railroads, airports, waterports, waterways, and bridges. The confluence of modes within this particular region is critical to the combined strength of the overall freight network, providing opportunities that each mode offers. The following discussion will introduce each of these transportation components, why they are essential to the freight network, and characterize the specific assets located in the study area.

Interstates and Major Highways

Interstates and roadways constitute a fundamental part of the system for goods movement. Frequently, roads are most important for shipments at the beginning or end of the supply chain, last mile, or moving goods short distances to their final destination. Local shipping and distribution from higher-capacity cargo vehicles depend heavily on adequate interstate and major highways. In addition, interstates and other major roadway networks provide a primary means for connectivity to broader metropolitan and out-of-state markets. This is particularly true in areas with limited or absent connectivity to different modes.

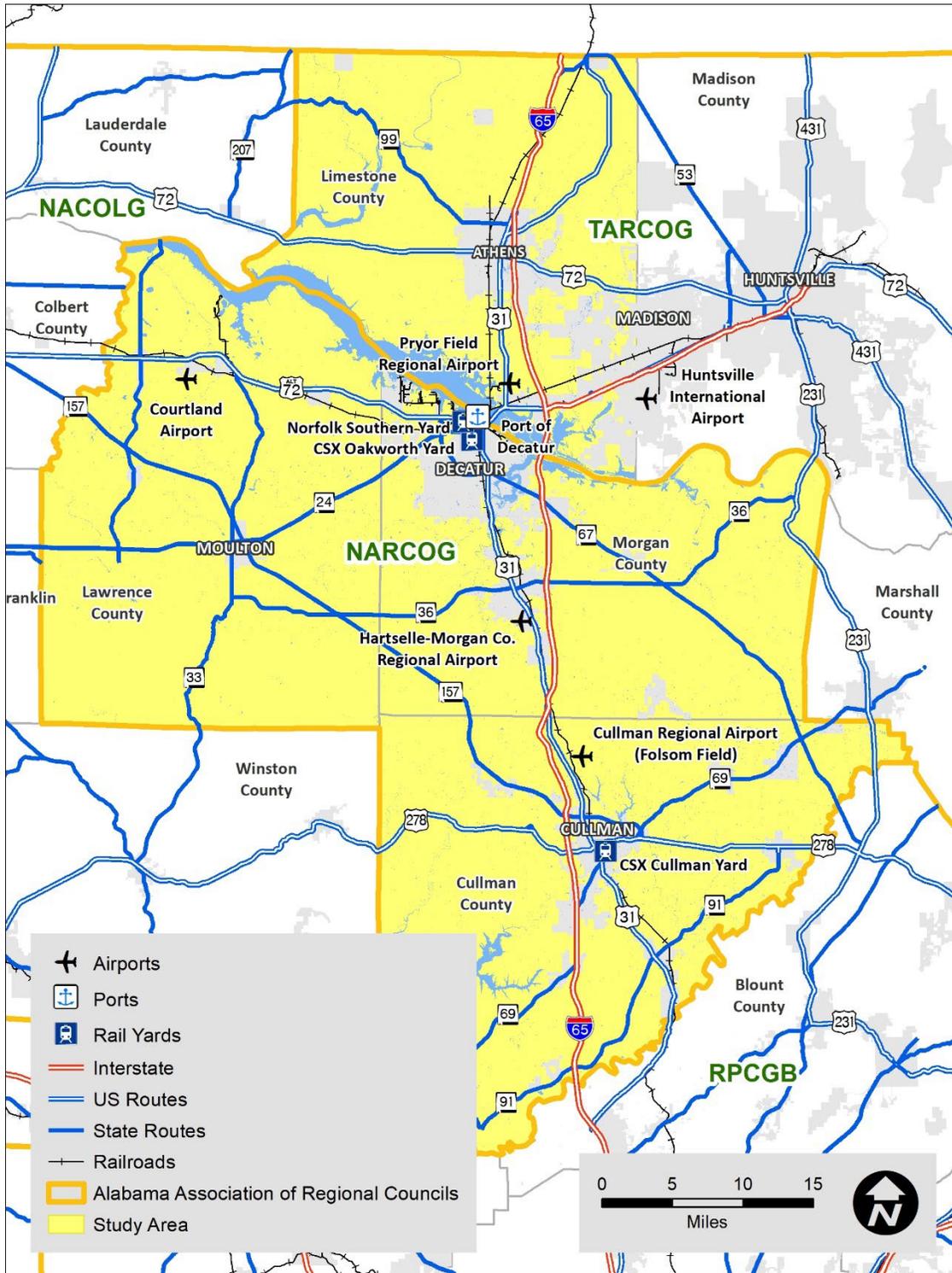
Interstate roadways within the study area include I-65 and I-565 (See Figure 1). I-65 is the primary north-south route through the study area. It runs from the Alabama-Tennessee state line on the north through Athens, Decatur, and Cullman, crossing into Blount County on the south edge of the study area. I-65 connects the study area to Nashville, Tennessee, to the north and Birmingham, Montgomery, and Mobile to the south. Interstate 565 is the critical east-west connection in the study area connecting to I-65 on the west of the study area to Huntsville, Alabama, on the east.

The four counties are also well connected by various non-Interstate National Highway System (NHS) routes, including US-72, Alt US-72, US-31, and US-278. Running north and south throughout the study area is US-31, and it runs almost parallel to I-65. It provides an essential alternative to I-65 during congestion, providing a measure of redundancy and resiliency to the freight network serving the study area. The other U.S. Routes provide east-west connections and, in most cases, cross I-65 and U.S. 31. In addition, several state routes traverse the study area and provide additional links. For example, Lawrence County has four separate state highways to handle high-capacity traffic – SR 67, SR 20, SR 157, and SR.24. US 72 also serves as Corridor V of the Appalachian Development Highway System (ADHS). As such, improvements along the roadway can be funded through the Appalachian Regional Commission in addition to traditional FHWA and State funding sources.

With respect to congestion, the largest freight bottleneck along the roadway network in the study area is the intersection of US Alt 72/SR 24 and US 31 to the south of the Tennessee River bridge, which needs replacement (as discussed later in this section). An example of congestion is provided in the image to the right.



Figure 1. Interstates, Roadways, Railroads, Ports and Airports



Railways

Railways excel as a cost-effective way to transport heavy commodities or quantities in bulk. They can also economically move intermodal freight (containerized freight) at distances usually at or above 500 miles. Railyards and stations provide regions with an excellent opportunity to facilitate intermodal distribution. Inland ports are significantly advantaged if there are high-quality railways that they can leverage as part of the transportation system that serves them.

Alabama's freight rail network encompasses nearly 4,000 freight rail miles operated by 28 railroads. Four of the nation's seven Class I railroads serve Alabama—Burlington Northern Santa Fe, Canadian National Illinois Central, CSX Transportation (CSX), and Norfolk Southern — those four railroads constitute about 72 percent of track mileage in Alabama. The most recent Alabama Rail Plan, finished 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>.

The four-county study area's railway system reaches north-south and east-west, with Decatur as the central point. The north-south track, operated by CSX, runs parallel to US 31 and connects the cities of Athens, Decatur, and Cullman as it passes through the study area. Ultimately, it connects the study area to Nashville to the north and Birmingham, Montgomery, and Mobile to the south. A picture of freight activity along the CSX line near Hanceville is pictured to the right. The east-west track, operated by Norfolk Southern, connects Decatur to the Huntsville metro area just east of the study area. Ultimately, it connects the study area to Memphis in the west and Chattanooga in the east.



There are multiple railyards located in or near the study area, including the CSX Oakworth Yard (Decatur), CSX Cullman Yard (Cullman), Norfolk Southern (Decatur), and Norfolk Southern (Tuscumbia)

Airports

Airports provide a base of operations for air cargo shipments. Air cargo facilitates the movement of mostly lightweight, high-value, or time-dependent goods, such as mail, auto parts, electronics, and medical supplies. Air Cargo provides a fast, reliable, and secure way to move goods to practically anywhere in the world with low risk. Some benefits of air cargo include prompt delivery, minimizing the need for warehousing, and providing a high-security level.

There are several airports within the study area (see Figure 1). Please note that outreach with the airports mentioned below will gauge air cargo utilization and expansion potential as recommendations are considered.

- **Huntsville International Airport** – Located approximately ten miles southwest of Huntsville, it is part of the Port of Huntsville, the International Intermodal Center, and Jetplex Industrial Park in Madison County. While this resource is not directly in the study area, it is just east of the study area along I-565. It provides the most significant potential air cargo opportunities in the region. It has the second-longest commercial runway in the southeastern United States.
- **Pryor Field Regional Airport** – Located three miles from the central business district of Decatur, Alabama, in Limestone County. It serves the Decatur Metropolitan Area. It is one of the busiest

general aviation airports in Alabama. While it is primarily a general aviation airport, it provides air cargo services, including freight loading and off-loading.

- **Courtland Airport** – Located just north of Courtland, Alabama, in Lawrence County, it is a public-use airport covering approximately 350 acres and has two runways. Based on available information provided by Lawrence County, it does not appear the facility currently accommodates air cargo.
- **Cullman Regional Airport (Folsom Field)** – Located just north of Cullman, Alabama in Cullman County, this airport is also a public-use airport categorized as a general aviation airport. According to the airport website, it is capable of "handling aircraft up to and including the Boeing 737."⁶ Therefore, the facility should be able to accommodate limited air cargo needs.
- **Hartselle-Morgan Co. Regional Airport** – Located just south of Hartselle, Alabama, in Morgan County, it serves the Hartselle and Falkville area. It is also a public-use general aviation airport. It is one of the smaller airports discussed in this section.

Ports and Waterways

Ports and waterways provide a critical domestic and global connection between sea and land transport. As urban development has surrounded many of these port facilities, their ability to expand operations has become increasingly constrained. Ports generate significant economic activity in and around coastal and inland waterway facilities. Ports provide customers with multimodal freight transfer and access at the lowest unit cost. They tend, however, to have high land and labor costs. For these reasons, port facilities are becoming more congested, less efficient. They are looking to inland port facilities to provide low-cost storage, production, and distribution of goods and services.

The primary waterway through the study area is the Tennessee River. According to the Tennessee Valley Authority, the Tennessee River provides passage for approximately 25,000-30,000 barges annually, carrying 40-50 million tons of goods along its 652-mile length.⁷ It is kept at a minimum channel depth of 11-feet and connects to both the Tennessee-Tombigbee Waterway and the Ohio and Mississippi River Systems. It ultimately flows south into the Mobile Bay (Port of Mobile) and the Gulf of Mexico.

The primary port within the four-county study area is the Port of Decatur, located in the City of Decatur in Morgan County. According to the port website, the Port of Decatur is "one of the busiest ports on the Tennessee River with access to the Tennessee-Tombigbee Waterway."⁸ The website also indicates it handles approximately five million tons of river freight. It offers a wide range of freight services and has access to Norfolk Southern and CSX rail lines.

⁶ <http://www.co.cullman.al.us/airport.htm>

⁷ <https://www.tva.com/environment/managing-the-river>

⁸ <http://www.portofdecatur.net/>



Source: Aerial Photo of Decatur Morgan County Port Authority Alabama

Inland Port Facilities

As noted earlier in this section, the International Intermodal Center at the Huntsville airport is the only inland port facility near the study area. According to the 2017 Alabama Statewide Freight Plan, the airport also operates an "industrial switching track" off the Norfolk Southern spur into the International Intermodal Center, with the capability to extend rail southward to a potential riverport facility." In addition, it has a CBP port of entry for managing international freight. Based on interviews with Airport staff, the only cargo entering the facility is either via air or rail from the Port of Savannah.

Another element offered by the Huntsville facility is the Port's Foreign-Trade Zone (FTZ). Per the Airport website, an FTZ is a specially designated area, in or adjacent to a U.S. Port of Entry, which is considered to be outside the Customs Territory of the U.S. The following is a partial list of the many benefits you can attain when using a Foreign-Trade Zone or Subzone:

- No duty is ever paid on re-exported merchandise from a zone.
- If the merchandise is sold domestically, no duty is paid until it leaves the zone or zones.
- No duty is paid on waste or scrap within a zone.
- Generally, if foreign components are manufactured into a product with a lower duty rate, then the lower duty applies. No duty applies to domestic content.
- Both foreign and domestic merchandise in a zone may be stored, repacked, manipulated, manufactured, processed, destroyed, or otherwise altered or changed.
- Generally, when foreign merchandise is sold to the U.S. Government, no duty is charged⁹

⁹ Port of Huntsville, <https://www.portofhuntsville.com/foreign-trade-zone-83/>

Planned and Programmed Improvements

Planned roadway improvements that improve access to a particular facility can influence their potential to function as an inland port.

The Decatur Area Metropolitan Planning Organization (MPO) facilitates the development of a Long-Range Transportation Plan (LRTP) that dictates how federal, state, and local funds will be spent for improvements over the next 25 years. The Metropolitan Planning area includes portions of Morgan, Lawrence, and Limestone Counties, including Decatur, Hartselle, Priceville, and Trinity. Planned improvements on significant facilities within the 2045 Draft LRTP that can influence goods movement in the region include the following:

- Intersection Improvements on Vaughn Bridge Road at SR-3 (US-31)
- Intersection Improvements at SR-36 and Lando Cain Road
- Intersection Improvements at SR-67 and Upper River Road
- Access Management on SR-3 (US Hwy 31) from Gordon Terry Drive to SR-67
- Access Management on SR-67 from SR-3 (US Hwy 31) to Country Club Road
- Intersection Improvements on SR-24 and South Greenway Drive
- Intersection Improvements on SR-3 (US Hwy 31) at Airport Road
- Intersection Improvements on SR-36 and Ironman Road
- Intersection Improvements on SR-24 at Hudson Road

Projects in the study area identified by ALDOT staff include a variety of capacity improvements, bridge replacements, and safety improvements. With interest to goods movement, please note that only one of these projects appears to be for capacity improvement, with the remainder being maintenance projects. These projects are included in Table 1.

In addition to the improvements identified above, NARCOG has developed conceptual routes for a proposed secondary Tennessee River bridge near Decatur. Conceptual routes include a concept that runs north from SR-24 along the Morgan/Lawrence County line turning east after crossing the Tennessee River and connecting to I-65. The second alternative runs slightly northeast from US ALT-72 across the Tennessee River, turning east near railroad tracks and US-31 to I-65. Additionally, the City of Decatur received a \$14.2 million BUILD grant from the USDOT along with funds for a Highway 20 Overpass project that officially began in March. Once complete, the 300-foot overpass will stretch over Highway 20, near the I-65 and I-565 interchanges in Limestone County. City officials hope that the project will encourage economic interest in the area, with new mixed-use developments in the works.¹⁰

Other transportation issues identified by staff include:

- The southbound bridge on U.S. 31 into Downtown Decatur over the Tennessee Reviser needs replacement, which will create temporary disruption during construction. With the replacement of this bridge, a challenge will be accommodating the freight traffic from Lawrence County along US ALT 72.
- ALDOT is also replacing bridges over the Norfolk Southern railroad along U.S. 31 in Limestone County, which will create temporary freight issues.

¹⁰ <https://thebamabuzz.com/several-exciting-projects-in-decatur-including-the-highway-20-overpass/?fbclid=IwAR3698eltzdmhu835tGqP2kKJePiKmGS9Kly9S0utl685rA6Dxv1Y2oBA0M>

Table 3: ALDOT Planned and Programmed Improvements

Project	County	Type	Date
Access management improvements, SR-3 from Curry Street to Sparkman Street	Morgan	PE	12/2/2022
Bridge replacement, SR-3 over Cedar Creek	Morgan	CN	10/4/2021
Intersection Improvements, SR-67 (Beltline Rd) at Sandlin Road and Central Parkway	Morgan	PE	9/24/2021
Replace bridge, SR-101 over Big Nance Creek	Lawrence	UT	7/27/2022
Replace bridge, SR-101 over Big Nance Creek	Lawrence	RW	1/26/2022
Safety improvements, SR-3 at Red Bank Road in the city of Decatur	Morgan	PE	6/15/2021
Safety improvements, widening and traffic stripe on Hulaco Road from SR-67 to the Marshall County Line	Morgan	CN	9/2/2020
Slide correction, on SR-53 from 301.300 to MP 301.900	Morgan	CN	5/5/2021
Slide correction, on SR-53 from 301.300 to MP 301.900, ALDOT Event 042, site is 042-05-52-1	Morgan	CN	5/5/2021
Slide correction, on SR-53 from 301.300 to MP 302.890	Morgan	CN	4/15/2021
Slide correction, on SR-53 from 301.300 to MP 302.890	Morgan	CN	4/15/2021
Slide correction, SR-53 from 301.300 to MP 302.890	Morgan	CN	4/15/2021
Slide correction, on SR-53 from 301.300 to MP 302.891	Morgan	CN	4/15/2021
Slide correction, SR-53 from 301.300 to MP 301.900	Morgan	RW	11/1/2020
Slide correction, SR-53 from 301.300 to MP 301.900	Morgan	CN	5/5/2021
Slide correction, SR-53 from 301.300 to MP 301.900	Morgan	PE	5/5/2020
SR-157 add lanes from SR-69 to East of SR-3. (GRP) Grade, Drain, Base and Pave	Cullman	CN	10/23/2024
SR-157, add lanes and bridges from SR-69 to East of SR-3	Cullman	UT	1/27/2021
SR-157, add lanes and bridges from SR-69 to East of SR-3. Bridges over Lake Catoma ad CSX railroad.	Cullman	UT	1/27/2021
SR-157, add lanes and bridges from SR-69 to East of SR-3. Bridges over Lake Catoma ad CSX railroad.	Cullman	UT	1/27/2021
SR-157, add lanes from SR-69 to East of SR-3 North of Cullman	Cullman	CN	10/23/2024

Source: Alabama Department of Transportation ALDOT 2016 Freight Plan

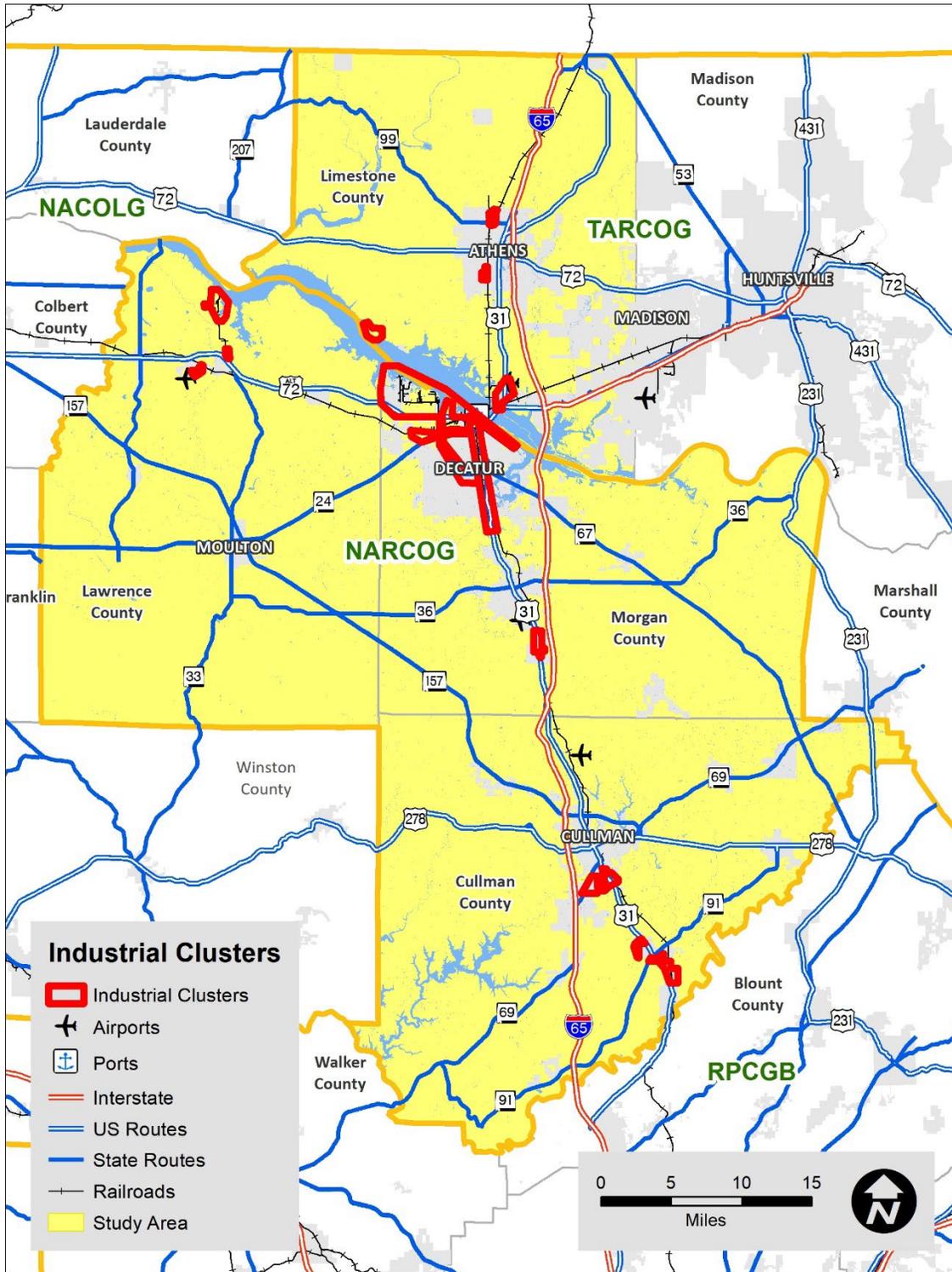
Industrial Clusters and Freight Generators

Available land use and zoning information from the counties and Cullman, Decatur, Hanceville, Trinity, and Falkville municipalities were collected; however, many counties and cities did not have data or mapping available. Industrial clusters were identified using aerial photography, internet research, and client input for areas that did not have available data.

Based on a review of zoning data and aerial photography, 15 industrial clusters were identified within the study area, as shown in Figure 3. There were three clusters in northern Lawrence County, five in Limestone County, four in Morgan County, and three in Cullman County. Many of these clusters included substantial industrial and manufacturing businesses that could potentially utilize the inland port facility. These clusters and freight generators are described in further detail in the following paragraphs.

- **Lawrence County** - The three industrial clusters in Lawrence County include the Industrial Airpark located west of Courtland near the Courtland Airport. This cluster is home to Lockheed Martin, Calaway Systems, and Branshaw Mechanical. Although currently closed, the International Paper complex along the Tennessee River north of Courtland is another cluster. A third cluster is Servico, a public warehouse and cotton gin located just northeast of Courtland.
- **Limestone County** - The five industrial clusters in Limestone County are located near Athens or along the Tennessee River. The first cluster situated just north of Athens along Wilkinson Street includes Asahi Kasei Plastics, Athens Utilities, Indorama Ventures, and Foley Products. The second cluster located just east of Athens along US 31 and Freeman Avenue consists of the Federal-Mogul Corporation and T&C Stamping. The third and largest cluster near Athens is located south of Durham Drive and Martin Luther King Drive includes Steelcase, Vulcan Plastics, Coilplus Alabama, Tbaki USA, and several other small industrial and manufacturing businesses. The fourth cluster is the Tennessee Valley Authority Browns Ferry Nuclear Plant located along the north shore of the Tennessee River west of Decatur. The fifth cluster in Limestone County is located near US 31, just west of Pryor Field Regional Airport. Some parcels in the area are zoned for manufacturing and industrial use.
- **Morgan County** - The four industrial clusters in Morgan County are primarily located in the city of Decatur. One of these clusters is situated along the Tennessee River on the south shore. The largest of all the clusters identified contains several potential freight generators, including Capital Power, Toray Carbon Fibers, Nucor Tubular Products, GE Appliances, Wolverine Industries, and Big Heart Pet Brands Bunge Packaging Plant, Ascend Performance Materials, and the Port of Decatur. Another cluster is the US 31 corridor through Decatur. It includes companies like Matthews Industries, the CSX Oakworth Yard, Mid-Ohio Tubing, and several small industrial and manufacturing operations. Along the SR 24 and SR 67 corridors surrounding Decatur on the north and west represents another cluster. Various industrial and manufacturing companies throughout these corridors, including Littrell Lumber Mill, International Paper, Kenan Advantage Group, Wayne Farms LLC, Turner Industries Group, American Pipe and Supply Company, and several others. The final cluster in Morgan County is near Falkville. Several parcels along US 31 were identified in the Falkville Zoning data as being zoned for manufacturing. Google Maps reviews show multiple industrial companies, including Falkville Wood Treating, Lawrimore Manufacturing, Mayfield Trucking, and Pilgrim's Pride Corporation.
- **Cullman County** - In Cullman County, one cluster is located just south of the City of Cullman, and two clusters were identified in Hanceville. The cluster in Cullman is located at the south edge of town and includes a Walmart Distribution Center, Tyson Foods, and several other small industrial operations. The first cluster in Hanceville is located on the north end of Hanceville along Industrial Drive. It has a few parcels that appear to be industrial from a review of an aerial photo. The second industrial cluster near Hanceville is just south of the city along US 31. It includes Louisiana-Pacific Corporation, Birmingham Fastener Distribution Center, and Morton Buildings.

Figure 2. Industrial Clusters



Source: NARCOG

Section 4: Freight Flow Analysis

Commodity freight flow can assist in identifying needed facility types as an indicator of potential new businesses to capitalize on existing freight flows. Analysis for the study was conducted for three specific freight flows.

- Freight passing through the Port of Mobile and generated in Mobile moving through North Alabama to other places in the country.
- Freight moving from outside Alabama into North Alabama.
- Freight moving from North Alabama to locations within and outside Alabama.

The data within is derived from the FHWA Freight Analysis Framework, Version 5 (FAF5) data. FAF5 modes include truck, rail, water, air, multimodal (such as mail), and pipeline. Given the exclusive use of pipeline and that multimodal freight is primarily mail, materials transmitted via these modes do not represent goods movement that would impact the location of a potential inland port facility. Therefore, the analysis focused primarily on freight via the following modes:

- Truck – suited for commodities with intermediate destinations and regional transport for direct delivery to customers or distribution centers.
- Rail – suited for commodities carried in bulk that are less time-sensitive for intermediate destinations and regional transport that is either delivered directly to clients (with rail access) or transferred to a truck by a distribution center.
- Water – suited for commodities carried in significant quantities for national transport that are transferred onto rail and truck at port facilities.
- Air – suited for highly time-sensitive or fragile commodities and transferred to a truck for last-mile delivery.

From the Port of Mobile to or through North Alabama

The following data represents the freight volumes that pass through the Port of Mobile from the Freight Analysis Framework, Version 5 (FAF5), either destined to North Alabama or would flow through North Alabama to its destination. Freight moving through the Port of Mobile that did not flow on any transportation network serving North Alabama was omitted.

Table 4. Total Freight Tonnage by Mode – From Port to or through North Alabama

Mode	Sum of thousand tons in 2017
1-Truck	4,961
2-Rail	3,252
3-Water	4,389
4-Air	1

Source: FAF5 Data

The tables on the following page show the freight tonnage data by mode and commodity. The top 10 commodities are displayed for each mode. The data are sorted from the commodity with the largest tonnage to the smallest.

Table 5. Top 10 Commodities by Truck– From Port to or through North Alabama

Truck by commodity	Sum of thousand tons in 2017
32-Base metals	1,780
03-Other ag prods.	628
34-Machinery	374
24-Plastics/rubber	232
20-Basic chemicals	225
41-Waste/scrap	186
15-Coal	162
30-Textiles/leather	153
39-Furniture	138
31-Nonmetal min. prods.	128
Total	4,961

Table 6. Top 10 Commodities by Rail– From Port to or through North Alabama

Rail by commodity	Sum of thousand tons in 2017
32-Base metals	1,941
12-Gravel	347
20-Basic chemicals	233
13-Nonmetallic minerals	233
34-Machinery	137
41-Waste/scrap	64
23-Chemical prods.	33
33-Articles-base metal	26
27-Newsprint/paper	26
40-Misc. mfg. prods.	24
Total	3,252

Table 7. Top 10 Commodities by Water– From Port to or through North Alabama

Water by commodity	Sum of thousand tons in 2017
32-Base metals	1,808
34-Machinery	1,474
20-Basic chemicals	447
41-Waste/scrap	229
33-Articles-base metal	144
12-Gravel	81
31-Nonmetal min. prods.	55
14-Metallic ores	26
43-Mixed freight	21
40-Misc. mfg. prods.	18
Total	4,389

Table 8. Top 10 Commodities by Air– From Port to or through North Alabama

Air by commodity	Sum of thousand tons in 2017
43-Mixed freight	0.82
24-Plastics/rubber	0.16
35-Electronics	0.13
34-Machinery	0.11
23-Chemical prods.	0.05
32-Base metals	0.05
36-Motorized vehicles	0.05
20-Basic chemicals	0.04
33-Articles-base metal	0.04
40-Misc. mfg. prods.	0.04
Total	1.71

Summary:

- Of the four primary modes, trucks carry 39% of the commodities from the Port to North Alabama. Of the commodities shipped by truck, approximately 36% of commodities are base metals, and 13% are agricultural products.
- Rail accommodates approximately 26% of commodities from the Port, with base models accounting for 60% of rail cargo.
- Approximately 35% of the cargo destined to North Alabama from the Port continues through waterways. Base metals and scrap make up approximately 72% of the waterborne cargo shipped through North Alabama.

- Given its time sensitivity, there are few to no goods typically transferred from barge to air. Therefore, the commodities from the Port FAF zone are likely from the Mobile airport. The most common commodities shipped via air from Mobile are electronics, machinery, and precision instruments.

To North Alabama from Outside Alabama

The flow of freight moving into North Alabama from the other locations in the country is represented in the following tables. The FAF5 data was aggregated to represent the potential freight destined for North Alabama (from the “rest of Alabama” FAF zone). This freight is coming into North Alabama from potentially great distances, then processed at an inland Port facility and moved locally for the remainder of the trip.

Table 9. Total Freight Tonnage by Mode – To North Alabama from Outside Alabama

Mode	Sum of thousand tons in 2017
1-Truck	15,600
2-Rail	2,323
3-Water	1,088
4-Air	9
5-Multiple Modes	2,592
6-Pipeline	27,107

The following tables show the freight tonnage data by mode and commodity. The top 10 commodities are shown in the table for each mode, with the entire table included in spreadsheets (note that only two commodities were reported). The data are sorted from the commodity with the largest tonnage to the smallest.

Table 10. Top 10 Commodities by Truck – To North Alabama from Outside Alabama

Truck by Commodity	Sum of thousand tons in 2017
03-Other ag prods.	1,435
26-Wood prods.	1,412
32-Base metals	1,408
07-Other foodstuffs	840
31-Nonmetal min. prods.	829
43-Mixed freight	811
24-Plastics/rubber	751
36-Motorized vehicles	747
41-Waste/scrap	696
20-Basic chemicals	693
Total	15,600

Table 11. Top 10 Commodities by Rail – To North Alabama from Outside Alabama

Rail by Commodity	Sum of thousand tons in 2017
32-Base metals	515
15-Coal	507
16-Crude petroleum	358
02-Cereal grains	167
26-Wood prods.	151
20-Basic chemicals	129
31-Nonmetal min. prods.	122
22-Fertilizers	61
41-Waste/scrap	48
24-Plastics/rubber	43
Total	2,323

Table 12. Top 10 Commodities by Water
 – To North Alabama from Outside Alabama

Water by Commodity	Sum of thousand tons in 2017
32-Base metals	395
41-Waste/scrap	387
12-Gravel	82
22-Fertilizers	59
16-Crude petroleum	56
20-Basic chemicals	47
04-Animal feed	22
30-Textiles/leather	11
33-Articles-base metal	9
35-Electronics	7
Total	1,088

Table 13. Top 10 Commodities by Air
 – To North Alabama from Outside Alabama

Air by Commodity	Sum of thousand tons in 2017
35-Electronics	1.67
34-Machinery	1.54
38-Precision instruments	1.05
20-Basic chemicals	0.90
24-Plastics/rubber	0.81
23-Chemical prods.	0.80
21-Pharmaceuticals	0.42
30-Textiles/leather	0.39
36-Motorized vehicles	0.31
33-Articles-base metal	0.28
Total	9.60

Summary:

- Trucks carry 82% of the commodities from outside of Alabama to North Alabama. The commodities received via truck are numerous, with agricultural products, wood products, and base metals collectively comprising roughly 27% of truck cargo.
- Rail accommodates approximately 12% of commodities to North Alabama from outside of Alabama, with base metals, coal, and petroleum collectively comprising roughly 60% of rail cargo.
- Approximately 6% of the cargo destined to North Alabama from outside Alabama is transported through waterways. Base metals and scrap make up approximately 72% of the waterborne cargo shipped through North Alabama from outside North Alabama.
- Air cargo comprises less than one percent of cargo to North Alabama from outside Alabama, with almost half comprised of all air cargo comprised collectively of electronics, machinery, and precision instruments.

Freight from North Alabama

The flow of freight moving from North Alabama to the other locations in the country is represented in the following tables. Half reduced the FAF5 data to represent the potential amount of freight generated in North Alabama and have the potential to be moved to an inland port in North Alabama, processed, and moved on to the remainder of the US.

Table 14. Total Freight Tonnage by Mode – Freight from North Alabama

Mode	Sum of thousand tons in 2017
1-Truck	19,077
2-Rail	5,327
3-Water	553
4-Air (include truck-air)	36

The following tables show the freight tonnage data by mode and commodity. For each mode, the top 10 commodities are shown in the table. The data are sorted from the commodity with the largest tonnage to the smallest.

Table 15. Top 10 Commodities by Truck
 – Freight from North Alabama

Truck by Commodity	Sum of thousand tons in 2017
32-Base metals	2,301
26-Wood prods.	1,900
27-Newsprint/paper	1,330
43-Mixed freight	1,292
36-Motorized vehicles	1,050
05-Meat/seafood	1,035
12-Gravel	990
31-Nonmetal min. prods.	919
40-Misc. mfg. prods.	904
07-Other foodstuffs	742
Total	19,077

Table 16. Top 10 Commodities by Rail
 – Freight from North Alabama

Rail by Commodity	Sum of thousand tons in 2017
11-Natural sands	2,478
20-Basic chemicals	943
27-Newsprint/paper	657
32-Base metals	237
12-Gravel	232
24-Plastics/rubber	196
41-Waste/scrap	177
26-Wood prods.	93
36-Motorized vehicles	92
37-Transport equip.	63
Total	5,327

Table 17. Top 10 Commodities by Water
 – Freight from North Alabama

Water by Commodity	Sum of thousand tons in 2017
32-Base metals	324
43-Mixed freight	105
20-Basic chemicals	97
30-Textiles/leather	9
27-Newsprint/paper	3
24-Plastics/rubber	3
05-Meat/seafood	3
18-Fuel oils	2
26-Wood prods.	1
23-Chemical prods.	1
Total	553

Table 18. Top 10 Commodities by Air
 – Freight from North Alabama

Air by Commodity	Sum of thousand tons in 2017
34-Machinery	18
35-Electronics	13
21-Pharmaceuticals	1
43-Mixed freight	0.84
36-Motorized vehicles	0.57
40-Misc. mfg. prods.	0.33
23-Chemical prods.	0.26
33-Articles-base metal	0.25
24-Plastics/rubber	0.24
38-Precision instruments	0.14
Total	36

Summary:

- Approximately 76% of the commodities from North Alabama are carried via truck. The commodities moved via truck are numerous. Over 200,000 tons of 25 different commodities are generated from North Alabama. Base metals and wood products collectively comprise roughly 22% of truck cargo into North Alabama.
- Rail accommodates approximately 21% of commodities from North Alabama, with natural sands accounting for 46% of rail cargo.

- Of the 553,000 tons of waterborne cargo generated from North Alabama, nearly 60% consists of base metals.
- Of the 36.7 tons of air cargo generated from North Alabama, over 86% consists of machinery and electronics most likely tied to the emerging automotive sector.

Key Takeaways from Freight Flows

Based on the freight flows, the following takeaways are as follows:

- Base metals are the prevalent commodity transported throughout the region for manufacturing, particularly along rail and waterways, indicating opportunities for manufacturing uses that utilize base metals along the ports and railways.
- Air cargo plays a minor role in the local economy and is typically reserved for specialized commodities such as machinery, pharmaceuticals, and electronics. However, the presence of an airport can present opportunities for industries that utilize these commodities.

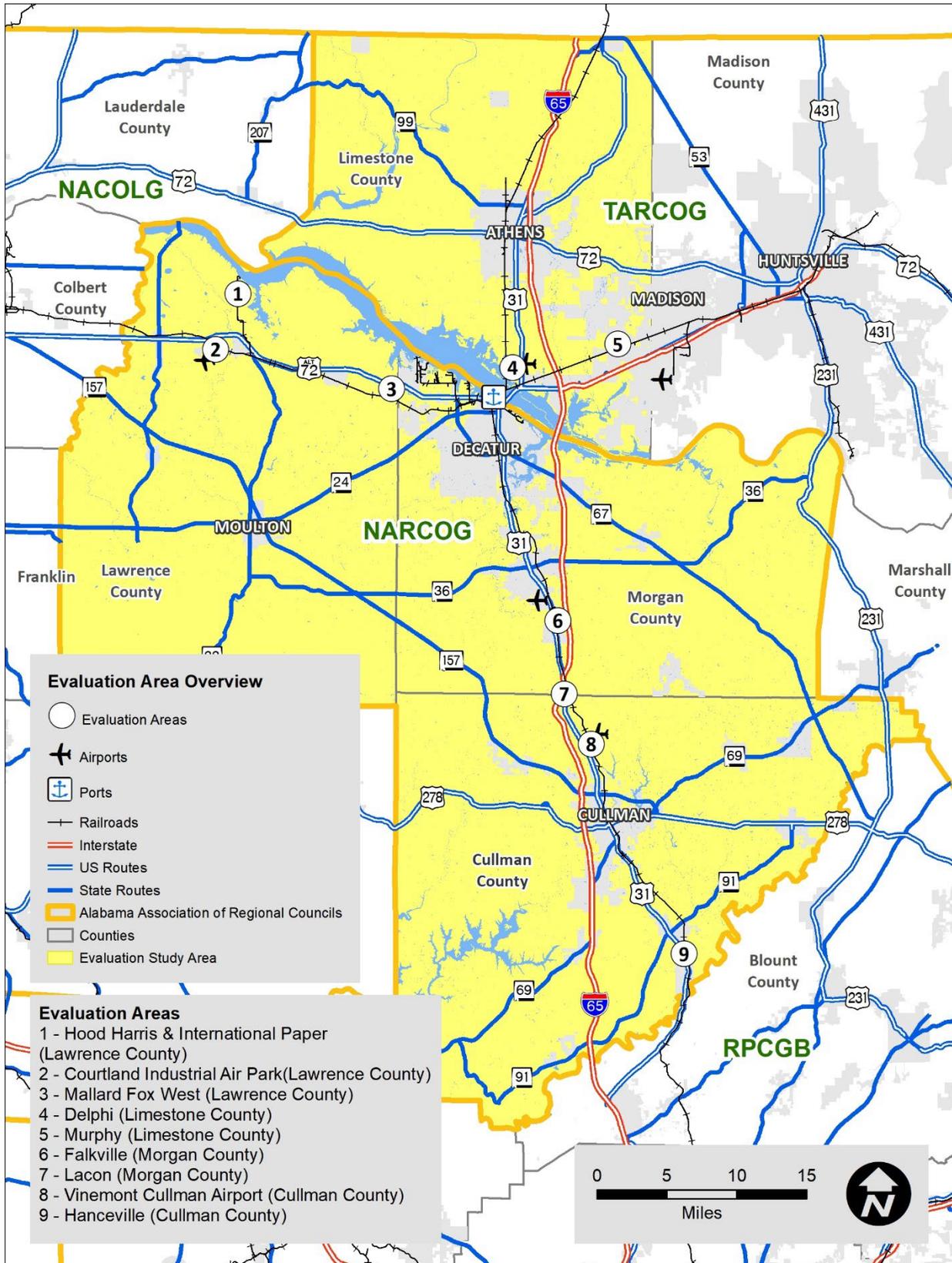
Section 5: Identification of Potential Industrial Areas

The nine areas identified throughout the four counties are the result of the kick-off meetings with key stakeholders. These meetings resulted in a shift in primary focus away from selecting a single, highest potential, inland port area in favor of analyzing each area's highest and best use (based upon the five facility types identified and identifying the comparative advantages and disadvantages for each location.

As shown in Figure 3, nine potential areas were selected for evaluation through input from the client and stakeholders. This section identifies the areas and provides a brief description of each location.

- Hood Harris/International Paper (Lawrence County)
- Courtland Industrial Air Park (Lawrence County)
- Mallard Fox West (Lawrence County)
- Delphi Area (Limestone County)
- Murphy Area (Limestone County)
- Falkville/Hartselle (Morgan County)
- Lacon (Morgan County)
- Vinemont Cullman Airport (Cullman County)
- Hanceville (Cullman County)

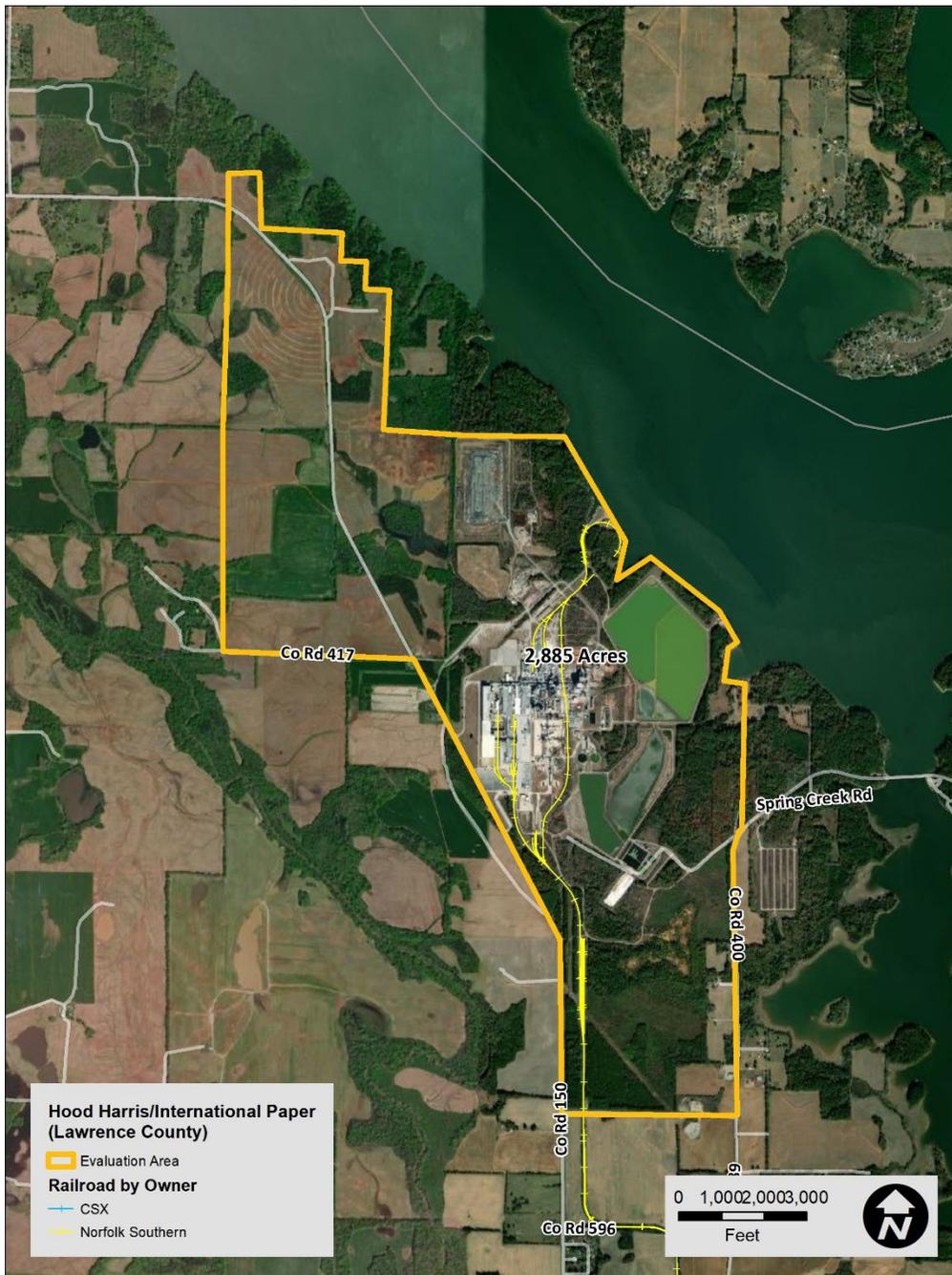
Figure 3. Overview of Potential Areas



Lawrence County – Hood Harris/International Paper

As shown in Figure 4, the Hood Harris/International Paper area is comprised of a 1000-acre vacant greenfield on the north and west and the former International Paper Site along the Tennessee River. The Mill closed over five years ago and has been going through demolition. It is a potential brownfield site, and it is believed that the permits are still valid. The site features direct access to the Tennessee River and Norfolk Southern railroad. Highway access is via CR 150 to US Alt 72 three miles to the south in Courtland. It should be noted that the 317-acre Rebman site is directly west of this area and could be available for facility-related development.

Figure 4. Hood Harris/International Paper (Lawrence County)



Lawrence County – Courtland Industrial Air Park

As shown in Figure 5, the Industrial Air Park is located adjacent to the Lockheed Martin site. The primary NHS facility providing access is US Alt 72. It presents a relatively easy connection to the Norfolk Southern rail line to the north. It is approximately 6 miles from the Hood Harris/IP area along the Tennessee River. It also has Courtland Airport access. According to the Lawrence County Industrial Development Board, roughly 700 acres of this site are currently available.

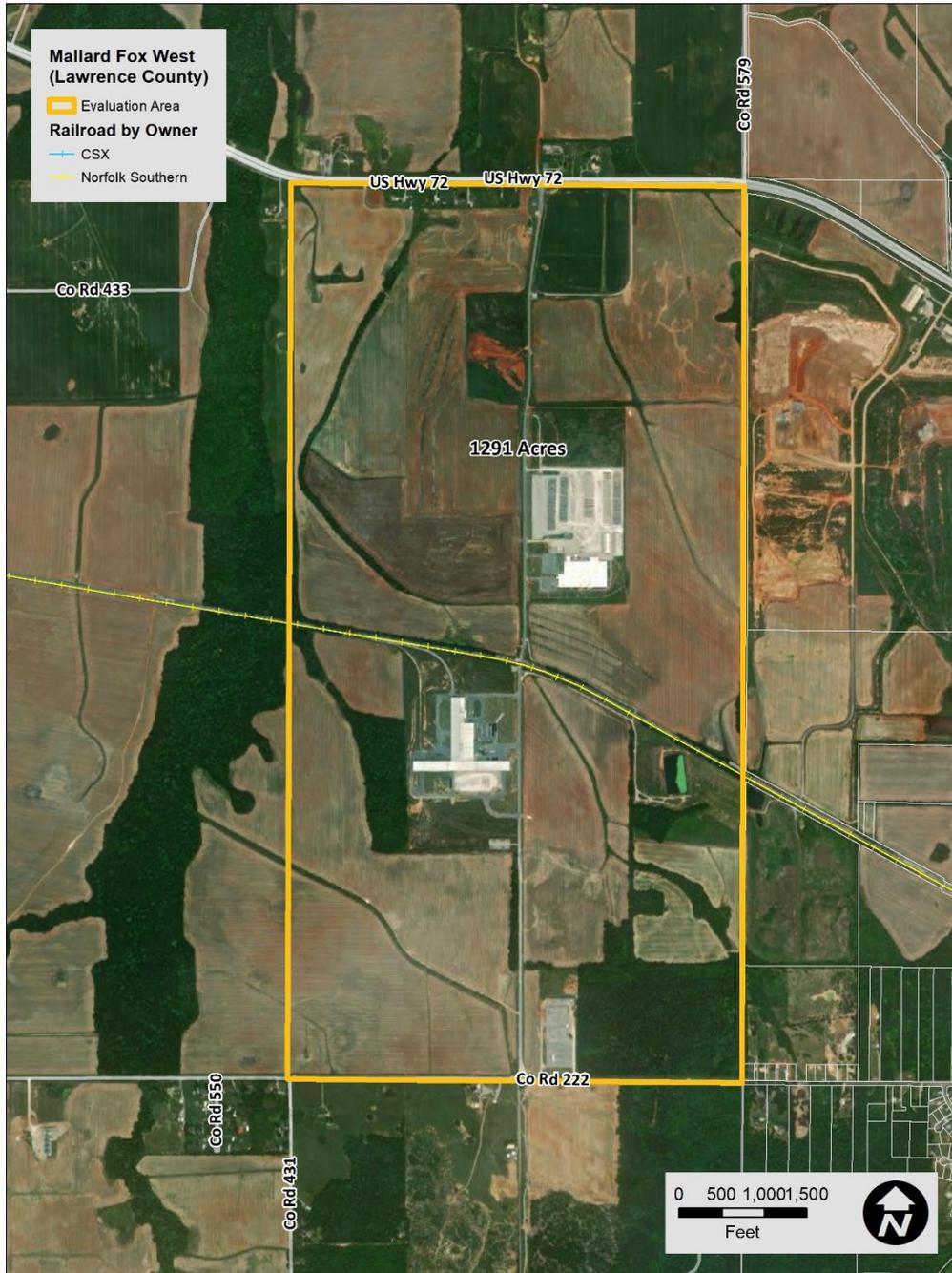
Figure 5. Courtland Industrial Air Park (Lawrence County)



Lawrence County - Mallard Fox West

As shown in Figure 6, the Mallard Fox West area is located in Trinity along US Alt 72, just west of the Lawrence-Morgan County line. The site also features direct access to the Norfolk Southern rail line, which runs through the center of the area. Per the Lawrence County IDB site, there are approximately 751 acres available for development.

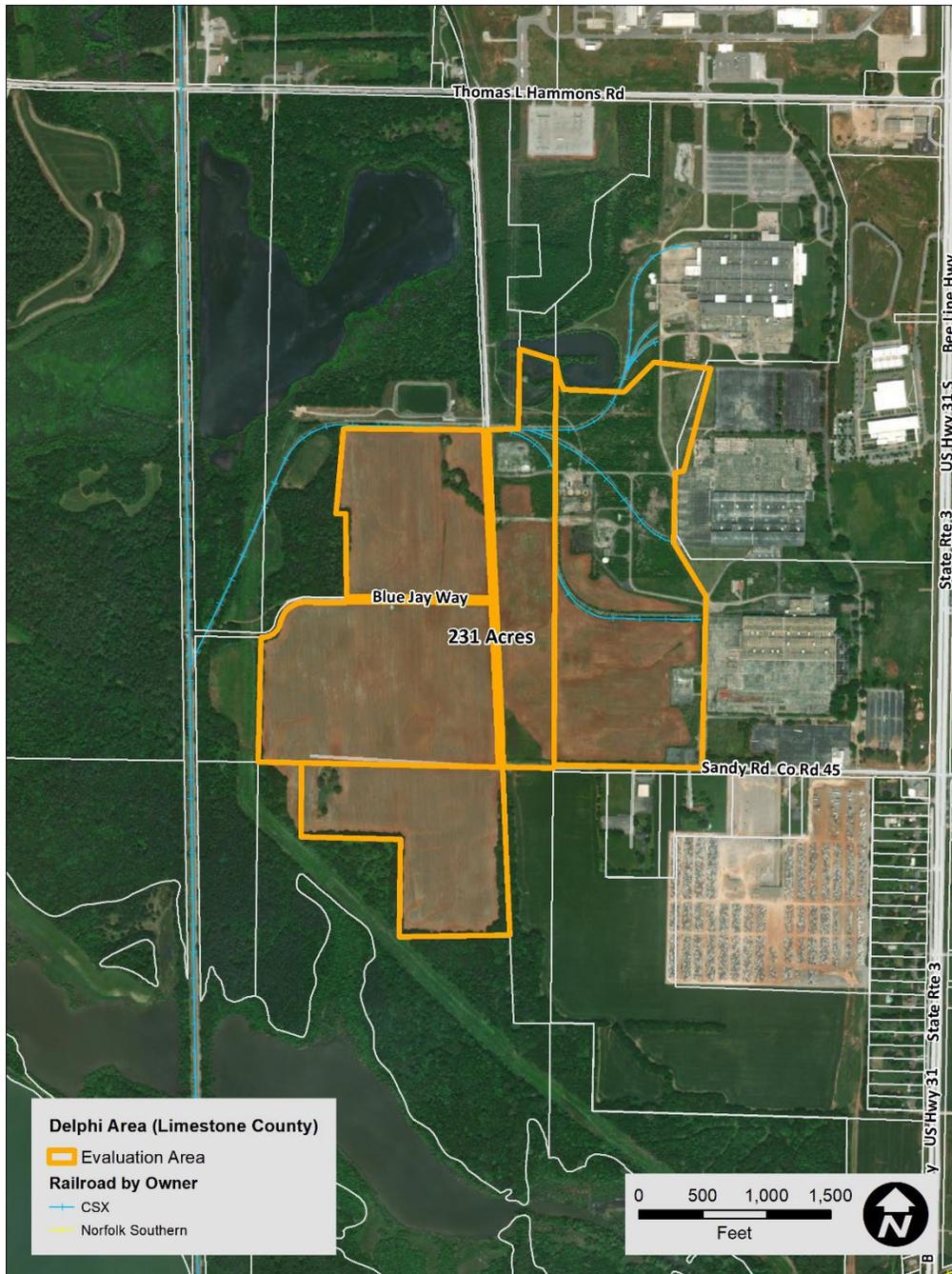
Figure 6. Mallard Fox West (Lawrence County)



Limestone County - Delphi Area

As shown in Figure 7, The Delphi Area is on the site of the former Delphi Auto Parts plant. The area has direct access to the CSX rail line and is roughly 1.5 miles from the Tennessee River. The area has excellent highway access, located approximately a half-mile from US 31. US 31 also provides close access to the interchange of I-65 and I-565, approximately 4.5 miles from the area. The Huntsville Madison County Railroad is currently storing railcars in this area.

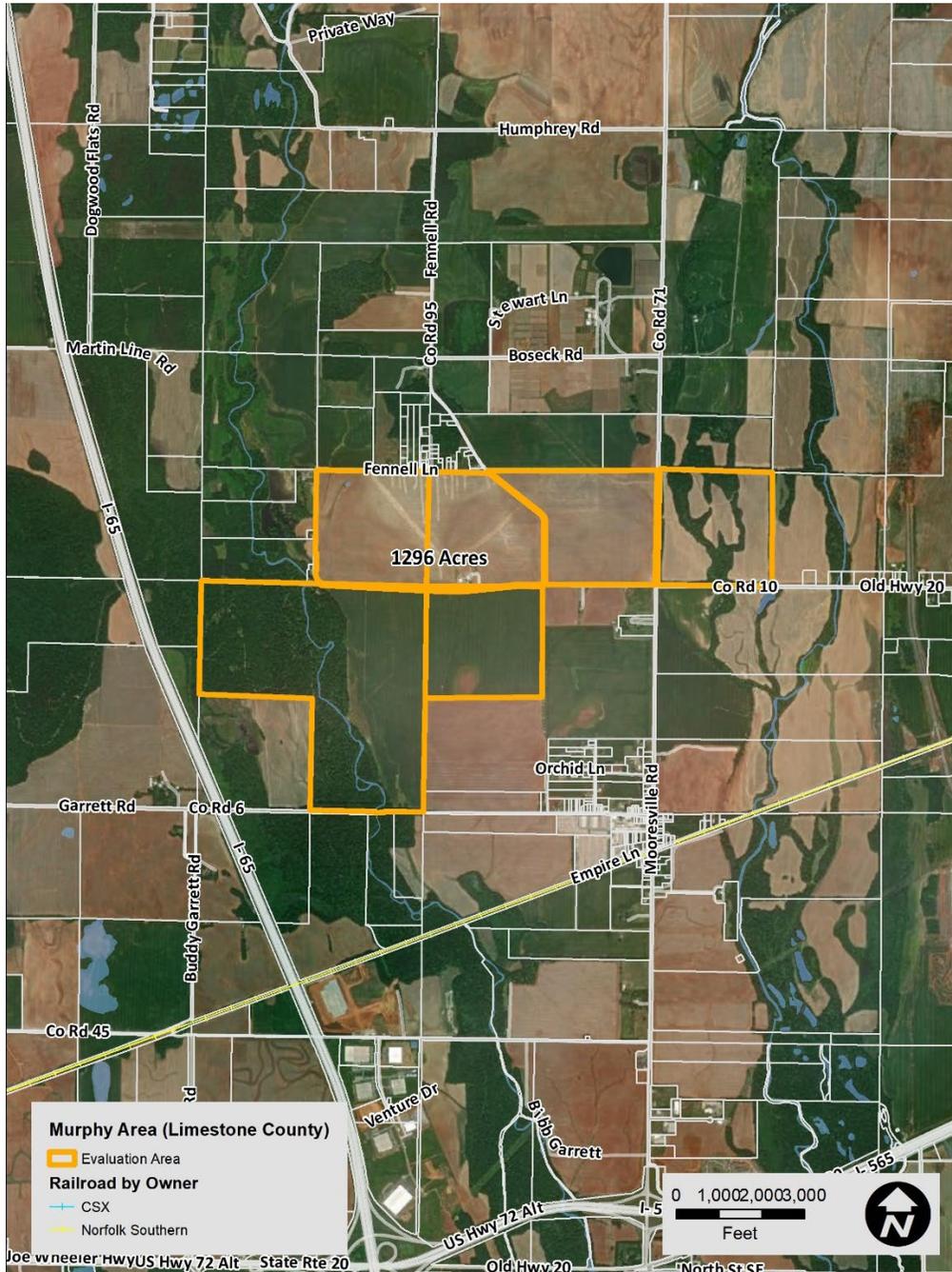
Figure 7. Delphi Site (Limestone County)



Limestone County - Murphy Area

As shown in Figure 8, the Murphy Area is a collection of undeveloped lots in the vicinity of Greenbrier. Mooresville Road would provide access to major highways. The 565 interchange with Mooresville Road is four miles from the area, and the I-65 at Huntsville Browns Ferry Road interchange is roughly 8.5 miles away. It is also approximately a half-mile away from the Norfolk Southern line to the south.

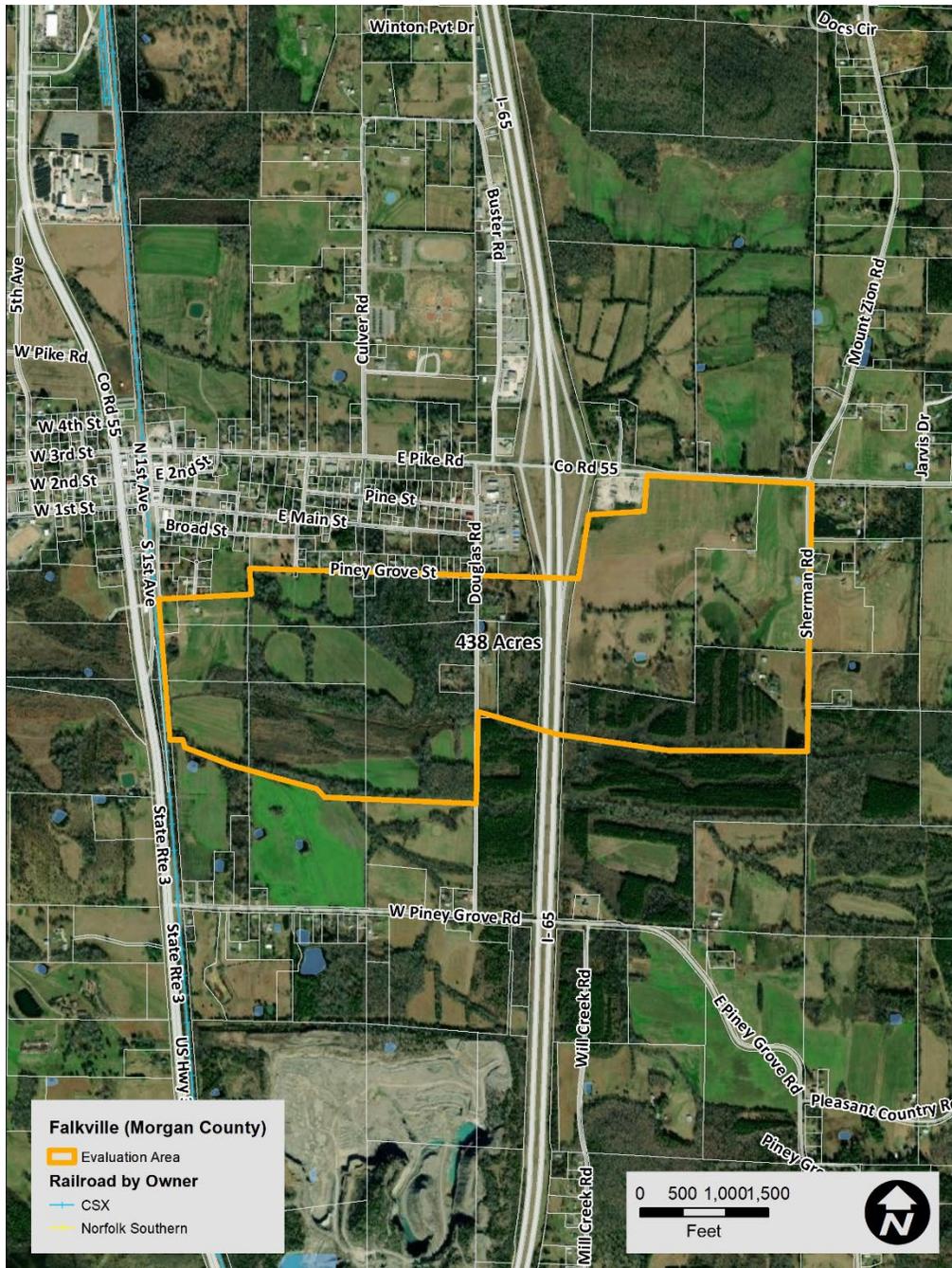
Figure 8. Murphy Site (Limestone County)



Morgan County – Falkville

As shown in Figure 9, Falkville has potential industrial and manufacturing use areas on both sides of I-65 with direct access to the US 31 corridor and CSX rail line. The area consists of undeveloped lots north of Robinson Creek, which could present mitigation issues if developed. Two of the lots are currently featured on the Morgan County EDA website as for sale and zoned for industrial use. The area is collectively approximately 438 acres in size.

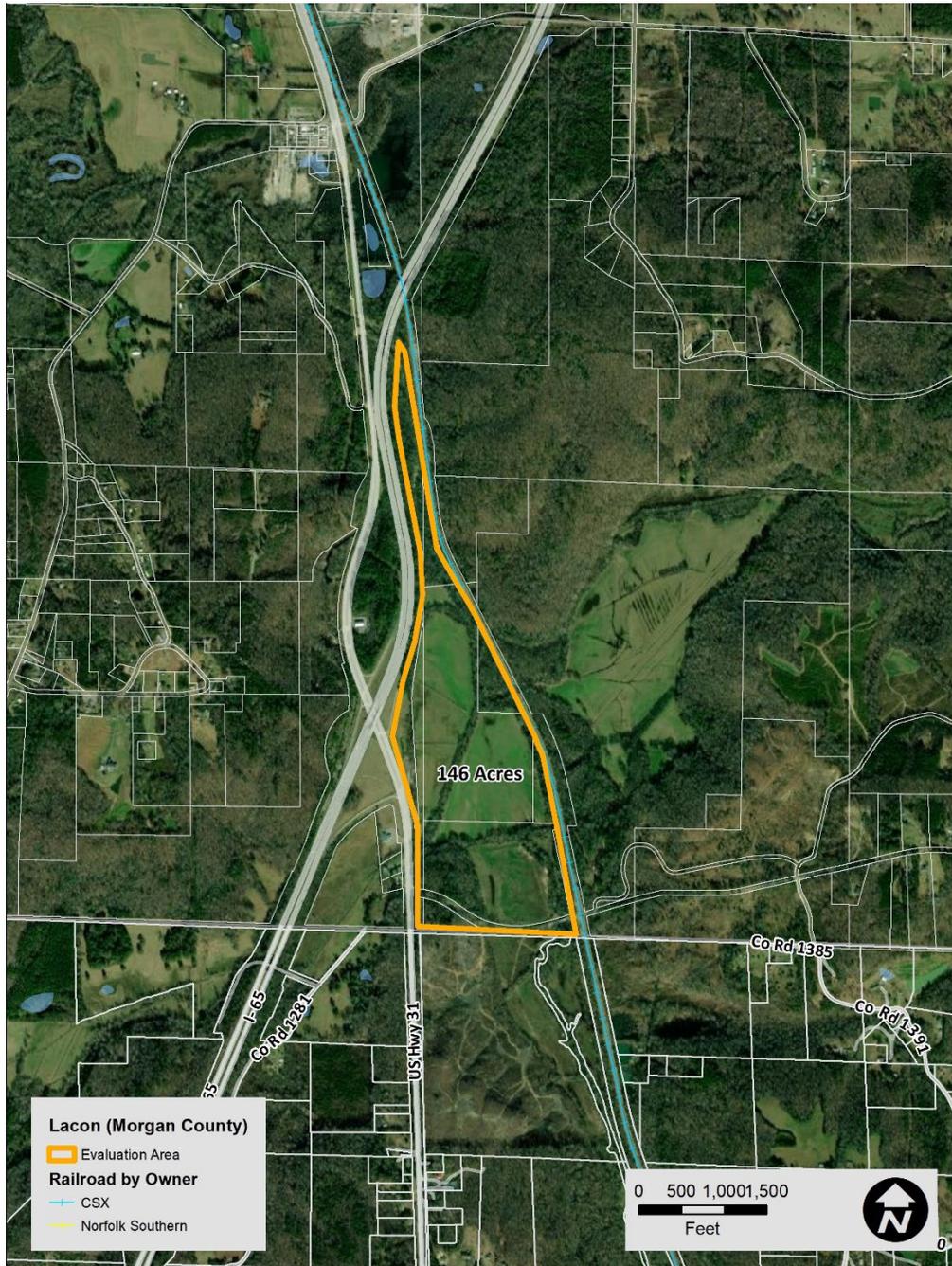
Figure 9. Falkville/Hartselle (Morgan County)



Morgan County - Lacon

As shown in Figure 10, the Lacon area is located at the I-65 interchange (Exit 318) with US 31, located roughly 11 miles north of Cullman and 20 miles south of Decatur. Flint Creek and Indian Creek traverse the property, so site work would be necessary to mitigate development impacts. The area also has direct access to the CSX rail line. The area is approximately 146 acres in size.

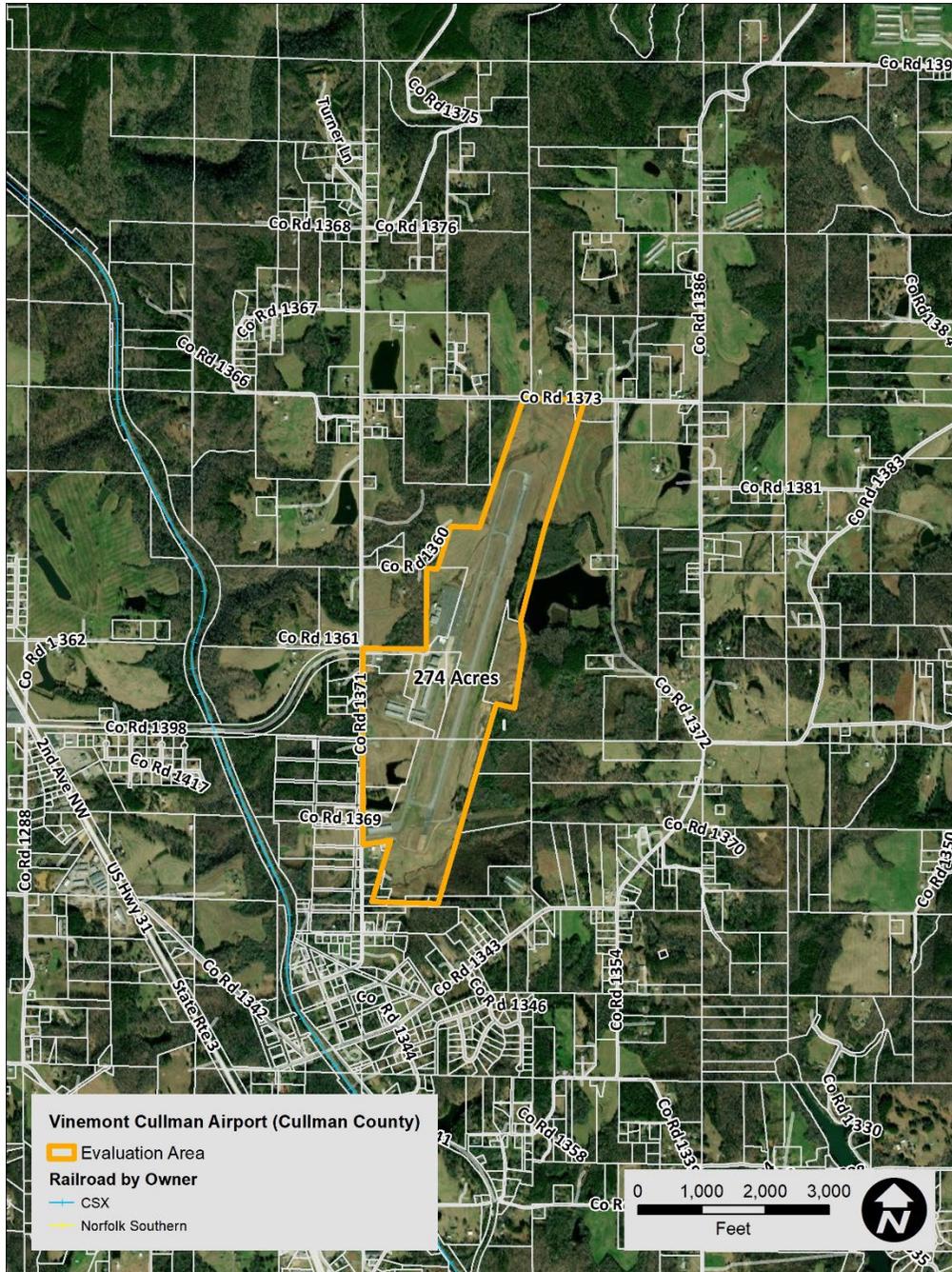
Figure 10. Lacon (Morgan County)



Cullman County – Vinemont/Cullman Airport

As shown in Figure 11, the Vinemont/Cullman Airport area includes the area in and around the airport property. Compared to other areas evaluated for this effort, it is a relatively small area at 274 acres but has direct air access. The highway access is via US 31 roughly 1.5 miles to the west via CR 1398 and CR 1365, with the nearest I-65 interchange being near Lacon (Exit 318), approximately six miles to the north. Rail is also present approximately one-half mile from the site.

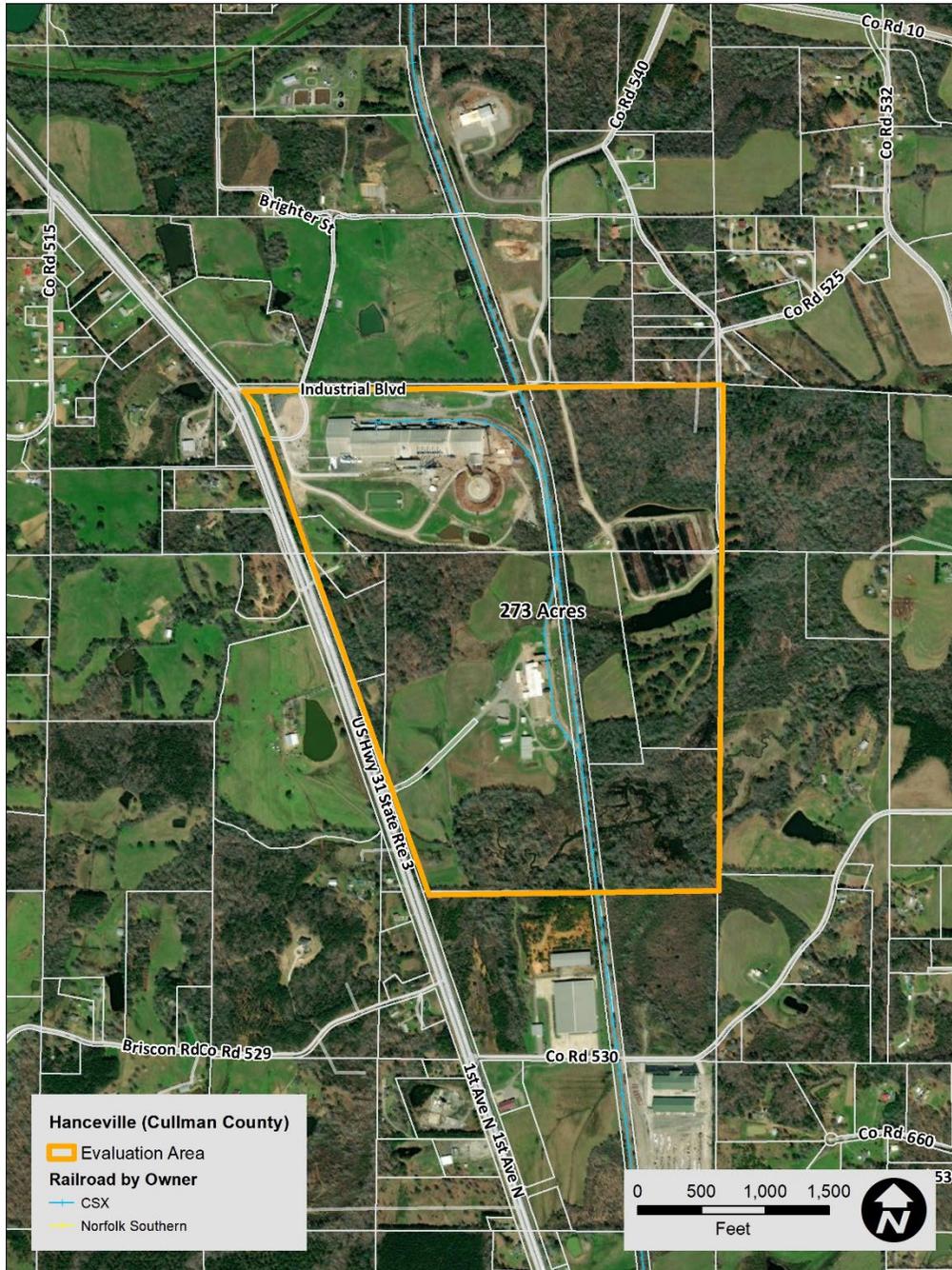
Figure 11. Vinemont/Cullman Airport (Cullman County)



Cullman County – Hanceville Site

As shown in Figure 12, the Hanceville area is located near US 31 and the CSX Railroad. It includes the area surrounding a former mill site and Louisiana Pacific. Hanceville owns the land on the east side of the tracks. The site has direct access to US 31 to the west, and the CSX rail line runs through the center of the area.

Figure 12. Hanceville Site (Cullman County)



Section 6: Peer Review of Inland Intermodal Facilities

This section provides an overview of the inland intermodal facilities and their operational parameters. It considers critical elements for the successful development of the industrial areas in the study. All the study areas could serve the Gulf Coast and Atlantic deep-water ports, including the Port of Mobile and ports in Florida, Louisiana, Mississippi, Georgia, and South Carolina. All industrial areas are evaluated for marine service via the Tennessee River, for rail service via Class I or short line railroads, and for access to an interstate or primary arterial for short-haul (local or less than 100 miles) medium-haul (100 - 350 miles) truck service. Also provided is the type of facility used in this assessment (see Section 9) each represents.

Seaport-Owned Inland Ports

Central Florida Intermodal Logistics Center

The Central Florida Intermodal Logistics Center (ILC) in Figure 13 is a 932-acre intermodal container, automobile rail terminal, and distribution park in Winter Haven to support inland connectivity from the Port of Tampa. The Central Florida ILC will handle containers and general cargo goods from various marine terminals in Tampa. Other operational parameters are shown in Table 19.

This facility is an example of a combination of Intermodal Bulk Transfer and Warehousing Transit facility types.

Table 19. Central Florida ILC
 - Other Operational Parameters

Wheeled Storage (3 Rubber Mounted Gantries)	300 acres
Warehouse Space (sq. ft.)*	8,000,000
TEU Capacity (Annual)	600,000
RR Tracks (Number)	4

Figure 13. Central Florida Intermodal Logistics Center



* Square footage references permitted space planning to be developed.

Source: "Winter Haven Terminal Facility," TransDevelopment. Available at <https://www.transdevelopment.com/?project=winter-haven>.

Dillon Inland Port

Dillon Inland Port, shown in Figure 14, is a 163-acre inland container rail terminal in Dillon, South Carolina, developed in 2018 to capture the Charlotte, North Carolina, market from the North Carolina State Ports Authority terminals in Wilmington. The Dillon Inland Port primarily handles containers from the South Carolina Ports Authority’s marine terminal in Charleston. The transit (rail trip) is less than a day for which CSX provides frequent (almost daily) service. Other operational parameters are shown in Table 20.

This facility is an example of an Intermodal Bulk Transfer facility type.

Table 20. Dillon Inland Port - Operational Parameters

Figure 14. Dillon Inland Port

Wheeled Storage (Rubber Tired Gantries)	3 acres
Grounded Storage	2 acres
TEU Capacity	200,000
RR Tracks (Number)	2



Note: Wheeled and grounded storage space is based on an aerial review; further, Dillon Inland Port has unpaved land that could serve as wheeled and grounded storage.

Source: Inland Port Dillon, South Carolina Ports Authority (via Transystems). Available at <https://www.transystems.com/our-projects/inland-port-dillon/>.

Equipment includes two rubber-tired gantry cranes and two empty container handlers. Further, the facility is near I-95 providing likely shipment access from Georgia to North Carolina; shipments to destinations beyond these two states would likely be moved through the respective ports, such as Jacksonville.

Port Greer

Port Greer in Figure 15 is a 50-acre inland container rail terminal in Greer, South Carolina, developed in 2013 to capture the Atlanta from the Georgia Ports Authority’s marine terminal in Savannah and Eastern Tennessee from the North Carolina State Ports Authority terminals in Wilmington.¹¹ Greer Inland Port primarily handles containers from the South Carolina Ports Authority’s marine terminal in Charleston. The transit (rail trip) is less than a day for which Norfolk Southern provides frequent (almost daily) service. Other operational parameters are shown in Table 21.

This facility is an example of an Intermodal Bulk Transfer facility type.

Table 21. Greer Inland Port - Operational Parameters

Wheeled Storage (Rubber Tired Gantries)	20 acres
Grounded Storage	5 acres
TEU Capacity	300,000
RR Tracks (Number)	5

Figure 15. Greer Inland Port (with new expansion space)



Note: Wheeled and grounded storage space is based on an aerial review; further, Greer Inland Port has unpaved land that could serve as wheeled and grounded storage.

Source: “South Carolina Inland Port Case Study,” CenterPoint. Available at <https://centerpoint.com/highlights/case-studies/south-carolina-inland-port-case-study/>.

Equipment includes two rubber-tired gantry cranes and rail-mounted gantry cranes, and yard hostlers.

¹¹ Greer Inland Port is currently being expanded by 13 acres

Port Panama City Intermodal Distribution Center (IDC)

Port Panama City, shown in Figure 16, is a 250-acre inland distribution center (IDC), break-bulk, and bulk terminal in Bay County, Florida, adjacent to US-231, which connects directly through Dothan, Birmingham, and Huntsville and connects East-West via I-10 from Jacksonville, FL to Mobile, AL. The Facility is served with two bulk spurs from the Class II Bay Line Railroad part of the Genesee and Wyoming short line that directly connect with both port marine terminals. The IDC has 40 acres of developed warehouse providing over 210,000 sq. ft. Across two buildings, expandable by an additional 140,000 sq. ft. An adjacent 40 acres zoned for industrial and commercial development with a similar planned distribution and storage development layout. An additional 100 acres is reserved to expand bulk transfer facilities with rail access and grounded uncovered cargo laydown capability and future commercial and industrial development opportunities.

This facility is an example of a combination of the Light Manufacturing and Warehousing Transit facility types.

Table 22. Port Panama City Intermodal Distribution Center - Operational Parameters

Figure 16. Port Panama City Intermodal Distribution Center

Warehouse Availability	40 acres	
Future Warehouse Expansion	40 acres	
Grounded Storage Industrial Development	100 acres	
TEU Capacity	NA	
RR Tracks (Number)	2	
<p><i>Note: Warehouse acres and grounded bulk storage acres are based on previous site work with the Port; Panama City Intermodal Distribution Center Information in Port Master Plan and Website.</i></p>		
<p><i>Source: "Panama City Port Authority," IDC Intermodal Distribution Center. Available at http://panamacityportauthority.com/the-port.html</i></p>		

The port authority originally developed this site with the idea of moving intermodal freight to an off-port cross-dock or intermodal transfer from truck to rail. There has been a shift to more of a market demanded finished goods distribution, order finalization fulfillment center, and third-party logistics regional sorting and delivery center for e-commerce and ground freight delivery. This market shift was driven by the expansion of maritime facilities with the additional purchase of land on the waterfront and the high demand for commercial climate-controlled contemporary storage capacity. Expansion capacity long-term is reserved for rapid customer or new customer commodity growth scenarios in both bulk and intermodal. Other operational parameters are shown in Table 22.

Appalachian Regional Port

The Appalachian Regional Port (ARP) in Figure 17 is a 42-acre intermodal rail terminal in Chatsworth, Georgia, developed in 2018 to help capture the Central Tennessee market. The Appalachian Regional Port handles containers from the Georgia Port Authority’s marine terminals in Savannah. The transit (rail trip) is about a day for which CSX provides almost daily service to and from ARP. Other operational parameters are shown in Table 23.

This facility is an example of an Intermodal/Bulk Transfer facility type.

Table 23. Appalachian Regional Port – Operational Parameters

Figure 17. Appalachian Regional Port

Wheeled Storage (Rubber Tired Gantries)	1.5 acres	
Grounded Storage	0 acres	
TEU Capacity	50,000	
RR Tracks (Number)	3	
Source: Georgia Ports, June 3, 2020. Available at https://gaports.com/blog/appalachian-regional-port-sees-business-increase/ .		

Equipment includes three electric Rubber Tired Gantry cranes for five-high.

Virginia Inland Port

Virginia Inland Port (VIP), shown in Figure 18, is a 161-acre inland container rail terminal in Front Royal, Virginia, developed in 1989 to capture the Ohio market from the Maryland Port Administration’s marine terminals in Baltimore. The Virginia Inland Port primarily handles cargo from the Norfolk International and the Portsmouth Marine Terminals in Hampton Roads. The transit (rail trip) is less than a day by which CSX provides daily service Monday through Friday. Other operational parameters are shown in Table 24.

This facility is an example of an Intermodal/Bulk Transfer facility type.

Table 24. Virginia Inland Port - Operational Parameters

Figure 18. Virginia Inland Port

Wheeled Storage (Four Straddle Carriers)	10 acres
Grounded Storage	13.5 acres
General Open Storage	8.5 acres
TEU Capacity	78,000
RR Tracks (Number)	5



Source: “Association chapter promotes ties to Virginia ports,” *Virginia Business*, June 30, 2017. Available at <https://www.virginiabusiness.com/article/association-chapter-promotes-ties-to-virginia-ports/>.

Equipment includes four straddle carriers, including loading rail cars, a forklift, a log handler (to load containers), and seven hustler trucks. Further, the facility is near I-66 providing access to the Washington, DC-Baltimore Metropolitan Statistical Area, about 1.5 to three hours away. It is also near I-81, which stretches from Tennessee to New York. Finally, VIP is a designated Foreign Trade Zone, which means import shipments can be bonded to the facility, consolidated with other products, and exported without incurring U.S. Customs fees.

Richmond Marine Terminal

Richmond Marine Terminal in Figure 19 is a 121-acre marine terminal with deep draft marine, rail, and truck access via the I-95 corridor in Richmond, Virginia. Before 2011, it operated independently of Virginia Port Authority (VPA) terminals in the Hampton Roads area. In 2011, the Port of Richmond signed a 40-year lease agreement with VPA to become an inland terminal for the marine facilities in Norfolk, Portsmouth, and Newport News. Further, the designation of the facility as Foreign Trade Zone #207 allows imported goods to be bonded through Hampton Roads facilities to Richmond.

Single containers are trucked in one to two hours to the Richmond Marine Terminal, or 80-100 containers are barged in 12 hours thanks to the weekly “64 Express” container-on-barge service on the James River. The service started in 2008 with the help of a Federal Highway Administration Congestion Mitigation and Air Quality grant. Moreover, containers and bulk cargo (grain and scrap metal) are barged back Hampton Roads, aside from single containers that need to be moved back quicker. Other operational parameters are shown in Table 25.

This facility is an example of a combination of the Intermodal/Bulk Transfer and Warehousing Transit facility types.

Table 25. Richmond Marine Terminal - Operational Parameters

Figure 19. Richmond Marine Terminal

Wheeled Storage	10 acres	
Grounded Storage	13.5 acres	
TEU Capacity	50-60,000	
Tracks (Number)	7.5	
<p>Source: Goodland County Economic Development. Available at http://www.gochlandforbusiness.com/168/Ports-Shipping.</p>		

There are also 8.5 acres of open storage, 34 acres of paved open storage, 300,105 square feet of covered storage space, and 186,225 square feet of warehouse space serviced by rail. Finally, equipment includes 36 reefer plugs, nine-yard hostlers, three reach stackers, one Manitowoc Crawler Crane, and a Liebherr 420 Mobile Harbor Crane.

Other Inland Transfer Facilities

Norfolk Southern Birmingham (McCalla) Intermodal Terminal

The Norfolk Southern (NS) Birmingham Regional Intermodal Facility (BRIF) shown in Figure 20 is a 316-acre inland container and automotive rail terminal in McCalla, Alabama, developed in 2012 to service North and Central Alabama from the Port of Mobile. The BRIF handles containers from the Port of Mobile Terminals. The transit is less than a day, by which NS provides almost daily service. Other operational parameters are shown in Table 26.

Table 26: NS Birmingham Intermodal Rail Facility – Operational Parameters

Figure 20. NS Birmingham (McCalla) Intermodal Terminal

Wheeled/Grounded Storage (Trailer & Rubber Tired Gantry)	10 acres	
Automobile Storage	10 acres	
General Open Storage	10 acres	
TEU Capacity	330,000	
Tracks (Number)	9 (7 for railcar storage)	

Source: "Alabama poised to grow in the distribution center industry," Alabama Newscenter, July 21, 2015. Available at <https://alabamaneWSCenter.com/2015/07/21/alabama-poised-to-grow-in-the-distribution-center-industry/>.

The facility is near I-20 near Birmingham, providing good access to the Publix Distribution Center (DC) adjacent to the terminal. In addition, the Publix DC has a rail line into its facility from the terminal or mainline. The DC is part of the Jefferson Metropolitan Park, which is 739 acres and includes Gestamp, Plastipak Packaging, Johnson Controls, Antolin, the Salon Centric DC, and POSCO AAPC, and the Home Depot DC.

Competitive Set (Inland Ports)

Many inland ports developed by public port authorities with coastal marine terminals are intended to capture market share from neighboring ports and better serve an inland market for the developing port authority. The Virginia Inland Port was developed in 1989 to better serve Virginia Port Authority marine facilities in Hampton Roads and capture Ohio market share from Maryland Port Administration facilities in Baltimore. The critical issue is whether there is a fixed supply of cargo depending on the coast through which it enters and considering market growth. A fixed market share means cargo is taken from another facility; a growth in total cargo handled by the existing and new inland port likely means the new facility could divert cargo from other modes. Similarly, the Dillon Inland Port in South Carolina was developed to capture the market share for Charlotte, North Carolina, the fastest-growing urban area since 2015.

Current competitors for a new inland terminal in North Central Alabama include the Appalachian Regional Port in North Central Georgia, Inland Port Greer in North Central South Carolina, Yellow Creek State Inland Port in Northeast Mississippi, and possibly McCalla Intermodal Facility in Birmingham. Table 27

provides an overview of the inland ports, more specific location, primary coastal port served, likely market served and modes accessing the facility.

Table 27. NARCOG Inland Port Competitors

Inland Port	Location	Primary Coastal Port	Inland Markets Served	Modes
Appalachian Regional Port	Crandall, GA	Port of Savannah	Knoxville, TN; and Nashville, TN	Truck & Rail
Inland Port Greer	Greer, SC	Port of Charleston	Charlotte, NC; Knoxville, TN; and Nashville, TN	Truck & Rail
Yellow Creek State Inland Port	Luka, MS	Port of Gulfport	Nashville, TN, and Jackson, TN	Water, Truck & Rail
Norfolk Southern McCalla Intermodal Transfer Facility	Birmingham, AL	Port of Savannah, Port of Charleston, Port of New York-New Jersey	Birmingham, Huntsville, Gadsden, Tuscaloosa, AL and Chattanooga, TN	Rail and Truck

Section 7: Freight Generators in One Day Drive

This study considers freight generators within the study area and the major freight generators within different truck drive times. Truck drive time regulations, as stated by the Federal Motor Carrier Safety Administration, have different set points for driver times at eight (8) hours, eleven (11) hours, fourteen (14) hours, etc.¹² To set truck drive parameters to and from the North Alabama study area, the map in Figure 21 shows four drive times that capture the typical resting point or load drop distances that drivers like to find when routing load opportunities – that’s the outer, eight (8) hour drive time. The four (4) hour drive to/from the region captures opportunities where drivers can drop and pick loads within a day and not overnight stays. Then the one- and two-hour drive time circles illustrate just-in-time service opportunities where typical third-party logistics providers can complete last-mile shipments. These tend to be distribution, fulfillment, and or light manufacturing and rely heavily on the highway, air cargo, and even rail in some instances. The longer-haul shippers like to find usual routes from freight generators like ports, rail yards, and airport facilities to provide cost-competitive logistics to their customers with as few stops or shifts as possible.

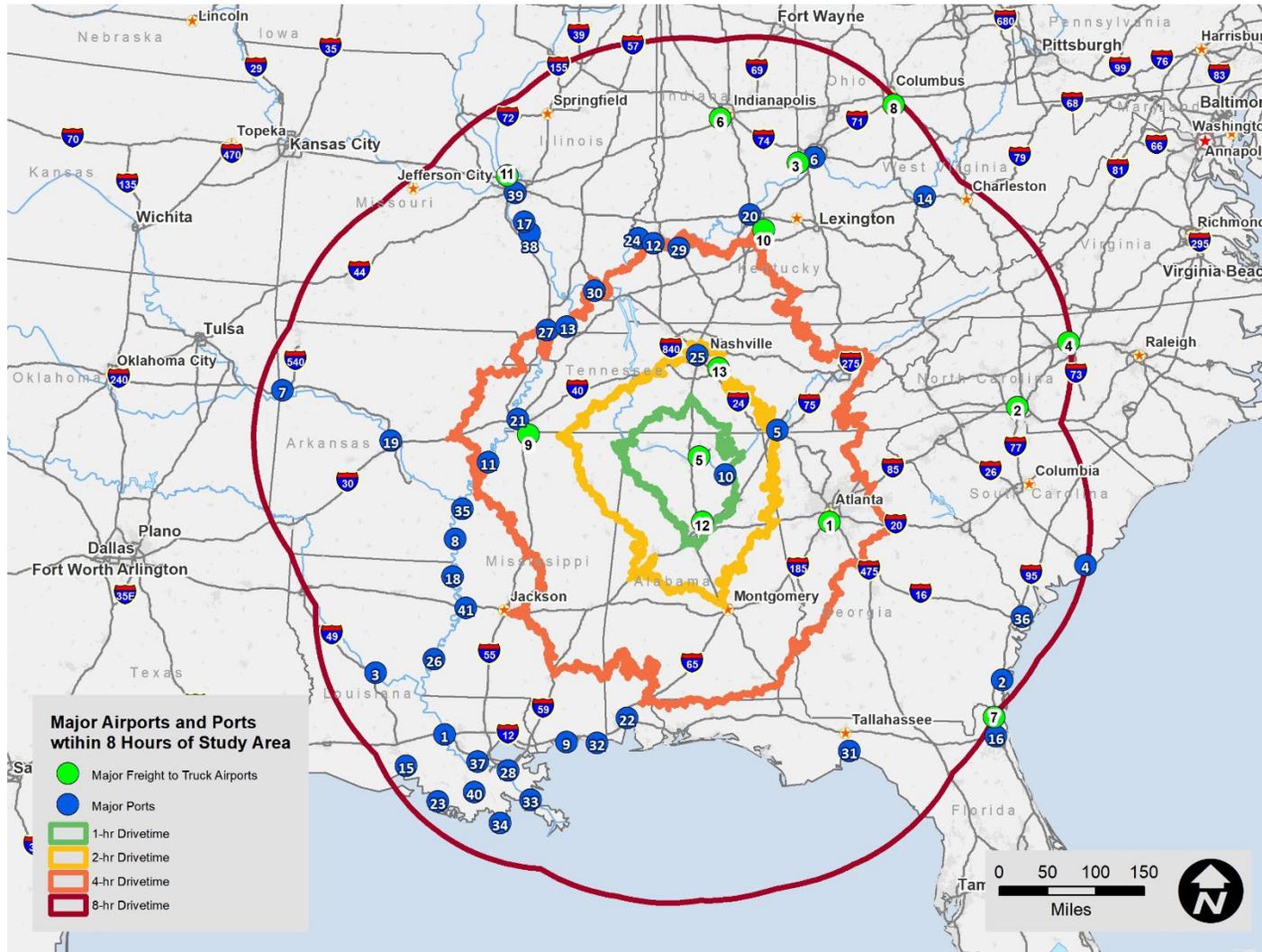
Waterborne Cargo Facilities

Water-served facilities were looked at within an 8-hour drive of the NARCOG region for blue water (seaports) and brown water (riverports) facilities. As previously mentioned, the eight- and four-hour concentric rings were determined by drive time regulations for truck drivers. Four hours provides enough distance to make a round trip in one day, which can be significant for an inland port application. It provides a sometimes-needed drayage capability to keep empties and chassis within logistical reach of a major international container port. Several seaports along the Gulf of Mexico and significant riverports were right at the edge of four to five hours of service, including Mobile, Alabama; Panama City, Florida; Owensboro, Paducah, Louisville, and Hickman, Kentucky; Pascagoula, Greenville, Gulfport, Rosedale, Vicksburg, and Natchez, Mississippi; and Memphis, Nashville, and Chattanooga, Tennessee. The complete list of seaports and riverports within eight hours of drive time is in Table 28.

The study looked at a total of forty-one (41) major tonnage water ports across 12 states, as shown in Table 28, to look at an even broader port freight generation market. These ports combine to move close to 840 million tons, with 380 million tons in international imports and exports and 460 million tons shipped domestically. These eight ports have direct access to the Gulf of Mexico and four major Atlanta Ocean ports. These represent significant opportunities to source freight generation facilities in waterborne commerce and develop relationships with port facilities that may have a strategic interest in a centrally located inland port in the NARCOG and TARCOG regions.

¹² <https://www.fmcsa.dot.gov/regulations/hours-service/summary-hours-service-regulations>

Figure 21. Airports, Seaports and Riverports within 8-hour Drive of NARCOG



Source: USDOT BTS, <https://data-usdot.opendata.arcgis.com/datasets/major-ports/explore?location=35.699031%2C62.447550%2C3.63>, <https://data-usdot.opendata.arcgis.com/datasets/intermodal-freight-facilities-air-to-truck-2/explore?location=35.209946%2C-111.955950%2C3.91>

Table 28. Seaports and Riverports within 8-hours and Freight Movements

Port Name	State	Total Tonnage	Foreign Trade Total	Imports	Exports	Domestic Total
Port of South Louisiana	LA	275,512,500	141,536,873	38,252,692	103,284,181	133,975,627
Port of New Orleans	LA	93,332,543	43,810,994	18,402,293	25,408,701	49,521,549
Port of Baton Rouge	LA	82,234,811	35,084,717	6,284,412	28,800,305	47,150,094
Port of Mobile	AL	58,635,622	36,516,319	19,104,863	17,411,456	22,119,303
Port of Plaquemines	LA	56,850,137	25,735,724	6,605,611	19,130,113	31,114,413
Port of Savannah	GA	41,273,947	40,138,093	22,512,768	17,625,325	1,135,854
Port of St. Louis	MO	37,426,710	-	-	-	37,426,710
Huntington - Tristate	TN	34,245,342	-	-	-	34,245,342
Port of Pascagoula	MS	27,358,043	17,521,892	8,833,016	8,688,876	9,836,151
Port of Charleston	SC	24,822,636	22,784,122	14,144,869	8,639,253	2,038,514
Port of Jacksonville	FL	17,999,036	9,721,385	7,744,659	1,976,726	8,277,651
Port of Memphis	TN	11,055,740	-	-	-	11,055,740
Port of Mount Vernon	IN	10,332,103	-	-	-	10,332,103
Port Fourchon	LA	7,836,594	122,354	15,380	106,974	7,714,240
Port of Louisville	KY	6,241,476	-	-	-	6,241,476
Port of Nashville	TN	6,154,679	-	-	-	6,154,679
Port of Kaskaskia	IL	5,776,030	-	-	-	5,776,030
Port of Central Louisiana Regional	LA	3,211,068	-	-	-	3,211,068
Port of Vicksburg	MS	2,962,979	-	-	-	2,962,979
Port of Greenville	MS	2,944,932	-	-	-	2,944,932
Port of Owensboro	KY	2,872,596	-	-	-	2,872,596
Port of Brunswick	GA	2,503,937	2,419,557	1,139,371	1,280,186	84,380
Port of New Madrid County	MO	2,259,548	-	-	-	2,259,548
Port of Chattanooga	TN	2,225,953	-	-	-	2,225,953
Port of Iberia	LA	2,172,388	-	-	-	2,172,388
Port of Panama City	FL	2,140,388	1,717,564	656,103	1,061,461	422,824
Port of Terrebonne	LA	2,122,316	930	930	-	2,121,386
Port of Gulfport	MS	2,052,691	2,025,585	1,374,591	650,994	27,106
Port of Guntersville	AL	1,918,572	-	-	-	1,918,572
Paducah-McCracken County Riverport	KY	1,813,468	-	-	-	1,813,468
Henderson County Riverport	KY	1,757,755	-	-	-	1,757,755
Hickman-Fulton County Riverport	KY	1,283,282	-	-	-	1,283,282
Port of Lake Providence	LA	1,147,254	-	-	-	1,147,254
Port of Helena	AR	1,118,011	-	-	-	1,118,011
Port of Rosedale	MS	1,066,185	-	-	-	1,066,185
Southeast Missouri Port	MO	1,054,128	-	-	-	1,054,128
Port of Natchez	MS	1,045,109	-	-	-	1,045,109
Port of Morgan City	LA	991,600	51	51	-	991,549
Port of Little Rock	AR	914,190	-	-	-	914,190
Port of Fort Smith	AR	788,939	-	-	-	788,939
		839,455,238	379,136,160	145,071,609	234,064,551	460,319,078

Outside of tonnage and bulk commodity movements, some of the largest east coast container and auto ports are within the 8-hour driving window, including the Port of Jacksonville that moved 1.3 million twenty-foot equivalent container units (TEUs) and 556,000 automobiles in 2020, even during slower trade because of COVID19.¹³ The Port of Savannah moved more than 4.7 million TEUs in 2020.¹⁴ Georgia's other port, Brunswick, moved nearly 587,000 autos and heavy equipment Ro/Ro shipments in 2020.¹⁵ The Port of Charleston, South Carolina, provides another central waterborne facility in one day's travel time, and it moved a record 2.3 million TEUs in 2020. Charleston also moves autos but at a lower amount than Florida and Georgia.

Air Cargo Facilities

It is important to consider air transport for passenger and freight in the industrial site selection process in the current global market. Passenger airports provide access for global and multinational companies to manage industrial and commercial business activities. There has been significant growth in e-commerce activities and high-tech order fulfillment to better meet the demands placed by online retailers competing with brick-and-mortar retail distribution and storefront facilities. Consumers are creating a demand for air cargo facilities closer to the intermodal and bulk distribution hubs. This study considered all air cargo and passenger facilities within one hour and two hours' drive time of the NARCOG region.

One of the critical air freight ports within the one-hour driving window was Huntsville International Airport, an Air Cargo Center located in the Port of Huntsville Global Logistics Park. This facility provides a single hub location specializing in receiving, transferring, storing, and distributing international and domestic cargo via air, rail, and highway; it has one million square feet of cargo ramp space. Huntsville International Airport has two parallel runways, one 10,000 feet and one 12,600 feet, with a 5,000-foot separation allowing for simultaneous operations during instrument conditions. Domestic and international all-cargo carriers serve this high-tech air cargo market. Weekly international nonstop service is available to Europe; Hong Kong; Shanghai; and Sao Paulo, Brazil.¹⁶

Within a four-hour driving window are two of the largest airports in the country with Memphis International Airport and Hartsfield-Jackson Atlanta Global Port. Memphis International Airport (MEM) is the busiest cargo airport in North America and the second busiest globally. The largest and most notable air cargo operator at MEM is FedEx. The airport regularly coordinates and plans projects with FedEx and works to ensure that the largest cargo contributor can continue growing and prosper. Atlanta's Hartsfield-Jackson (ATL) Cargo facilities are critical economic generators to areas surrounding the airport, creating more than 27,000 jobs in Georgia and triggering more than \$6.7 million in revenue for metro Atlanta.¹⁷ Hartsfield-Jackson has seen year-over-year gains in cargo traffic, and it's looking to break into the top tier of the world's leading cargo airports.

¹³ JAXPORT Container Volumes and Revenue Remain Steady In 2020, <https://www.jaxport.com/jaxport-container-volumes-and-revenue-remain-steady-in-2020/>

¹⁴ Savannah moves more than 4.6M TEUs in 2020, <https://gaports.com/press-releases/savannah-moves-more-than-4-6m-teus-in-2020/>

¹⁵ <https://www.usnews.com/news/best-states/articles/2021-09-22/spreading-hiv-is-against-the-law-in-37-states-with-penalties-ranging-up-to-life-in-prison>

¹⁶ <https://www.portofhuntsville.com/air-cargo/>

¹⁷ <https://www.atl.com/business-information/cargo-airlines/>

Table 29. Airports in within 8-hours

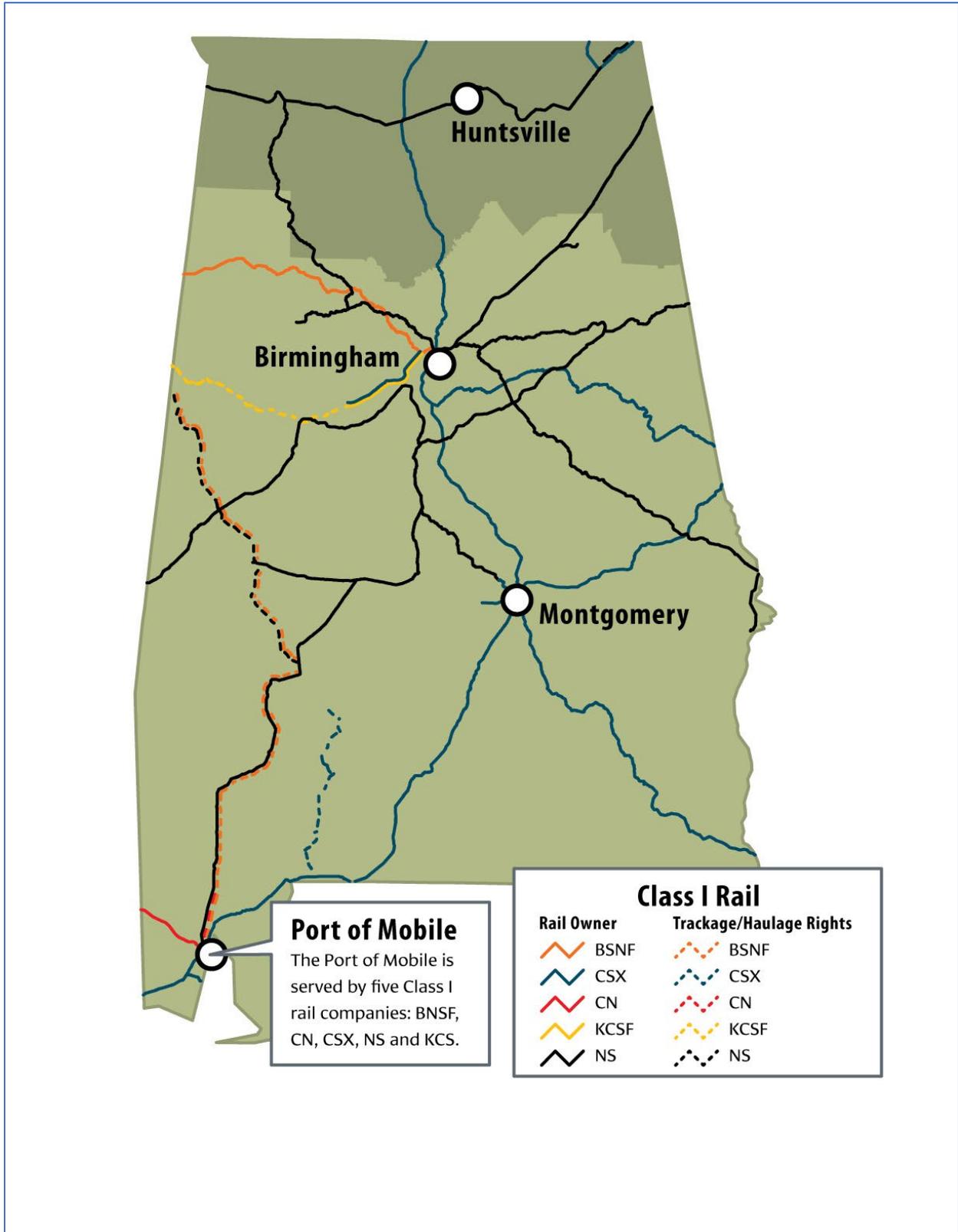
Map ID	Airport (ID Code)*	Airport
1	ATL	Hartsfield–Jackson Atlanta International Airport
2	CLT	Charlotte Douglas International Airport
3	CVG	Cincinnati/Northern Kentucky International Airport
4	GSO	Piedmont Triad International Airport
5	HSV	Huntsville International Airport
6	IND	Indianapolis International Airport
7	JAX	Jacksonville International Airport
8	LCK	Rickenbacker International Airport
9	MEM	Memphis International Airport
10	SDF	Louisville International Airport
11	STL	St. Louis Lambert International Airport
12	BHM	Birmingham-Shuttlesworth International Airport
13	BNA	Nashville International Airport

Rail Services and Rail Intermodal Facilities

The study area identified 5 Class I railroads with intermodal terminals within the eight-hour drive time of the NARCOG region. Most notable are the rail lines that have right-of-way or tracks within the four-county region, including Norfolk Southern and CSX, as identified and described in Section 2.

U.S. rail freight is a \$60 billion industry consisting of 140,000 rail miles. Aside from the five Class 1 railroads, Alabama is home to nearly two dozen short-line and industrial railroads. The state totals nearly 165 million tons of freight originating, terminating, or moving through Alabama. The Huntsville and Madison County Railroad Authority (HMCR) is among the lines in Madison County. During field visits, there was a discussion of the need to explore a future connection to the Alabama and Tennessee Railway in Marshall County to provide better connectivity to Class I lines. A map of the major railroads in Alabama is provided in Figure 22.

Figure 22. Alabama Statewide Rail Map



Source: North Alabama Industrial Development Association

Section 8: Study Area Economic Profile

Understanding demographics and employment characteristics within the study area will be critical for identifying potential industries most appropriate for the study area. This section aims to present the overall economic profile for the study area and identify trends based on data from the US Census. More specifically, this section will inventory the following characteristics within Cullman, Lawrence, Morgan, and Limestone Counties:

- Economically related demographics such as civilian labor force, unemployment rates, median household income, poverty rates, and educational attainment.
- Employment by industry sector

The section concludes with a summary of economic opportunities for the study area.

Economic Demographics

Table 30 presents the economic-related demographics for the study area.

Table 30. 2020 Demographic Data for Study Area

Industry Sector	Cullman	Lawrence	Morgan	Limestone
Population 2020	87,866	33,073	123,421	103,570
Population 2010	80,406	34,339	119,490	82,782
Percent Change in Population	9.3%	-3.7%	3.3%	25.1%
Employment (December 2020)	40,390	13,515	55,304	41,815
Employment to Population Ratio	0.46	0.41	0.45	0.40
Civilian Labor Force	41,258	13,950	56,914	42,894
Unemployment Rate	2.1%	3.1%	2.8%	2.5%
Median Household Income	44,918	44,886	52,156	59,686
Persons in Poverty (percent)	12.2%	17.7%	13.7%	12.0%
Education Attainment (percent)				
High School Diploma	81.6%	79.3%	84.1%	84.7%
Bachelors Degree or higher	13.9%	12.8%	22.4%	25.7%

Sources: 2020 Census, Alabama Dept. Of Labor (Dec. 2020 Data), County Business Patterns (2019)

Key takeaways:

- Lawrence County has demographic characteristics that would indicate the greatest need for economic and educational opportunities, with the highest unemployment and poverty levels and the lowest educational attainment of the four counties.
- Lawrence and Cullman Counties also have significantly lower household median incomes than Morgan and Limestone Counties.
- Limestone and Morgan Counties have the highest income levels and educational attainment compared to Lawrence and Cullman Counties.

Employment Characteristics

The employment data for the study area is provided in Table 31.

Table 31. 2019 Employment for Study Area by Sector

Industry Sector	Cullman	Lawrence	Morgan	NARCOG Total	Limestone	Study Area Total
Total for all sectors	25,889	3,568	45,554	75,011	18,202	93,213
Agriculture, forestry, fishing, and hunting	92	-	11	103	41	144
Mining, quarrying, and oil and gas extraction	-	-	47	47	-	47
Utilities	134	126	80	340	-	340
Construction	1,131	296	3,702	5,129	1,336	6,465
Wholesale trade	1,343	100	1,864	3,307	728	4,035
Information	225	28	561	814	162	976
Finance and insurance	780	109	1,343	2,232	406	2,638
Real estate and rental and leasing	162	31	391	584	169	753
Professional, scientific, and technical services	431	131	2,450	3,012	897	3,909
Management of companies and enterprises	463	-	820	1,283	59	1,342
Administrative and support and waste management and remediation services	954	61	1,948	2,963	482	3,445
Educational services	91	-	161	252	183	435
Health care and social assistance	4,084	791	5,846	10,721	2,328	13,049
Arts, entertainment, and recreation	153	-	236	389	114	503
Accommodation and food services	3,304	536	4,588	8,428	2,094	10,522
Other services (except public administration)	1,333	231	1,901	3,465	1,048	4,513
Industries not classified	-	-	6	6	-	6
Manufacturing	5,285	225	12,371	17,881	4,182	22,063
Retail trade	4,113	784	5,268	10,165	2,670	12,835
Transportation and warehousing	1,779	79	1,960	3,818	1,278	5,096

NOTE: Empty cells [-] did not have precise employment numbers reported or have no companies in the sector.

Source: County Business Patterns, 2019

Key takeaways:

- Manufacturing, retail trade, health care, and food services were the most prevalent industries throughout the study area.
- Manufacturing makes up approximately 20% of the employment in all the counties except for Lawrence, which has only 225 manufacturing jobs (6.3%). Morgan County has the highest concentration of manufacturing jobs (27%)
- Lawrence County has a much higher concentration of lower-paying employment (retail, food services, health care) than the other three counties.

Study Area Economic Development Opportunities

The Northern Alabama Industrial Development Authority (NAIDA) covers the 13 counties in North Alabama, including all NARCOG and TARCOG. NAIDA's economic development efforts focus on four industry sectors: Automotive, Advanced Manufacturing, Distribution and Logistics, and Technology. This strategy is well supported by existing industries and fits well with the current effort to evaluate opportunities for inland port development.

The region's two COGs have articulated effective strategies that support industrial development and recruitment by:

- Improving the skilled technical workforce
- Enhancing the quality of life factors that contribute to industry location decisions, and
- Focusing on infrastructure needs, including water, sewer, and multimodal transportation infrastructure.

Opportunities in the study area include:

- The Mazda-Toyota Manufacturing (MTM) joint venture is likely the most significant industrial development in decades for the region and will have a transformative impact on the regional economy. NAIDA has identified several industrial sites suitable for major suppliers of the MTM plant.
- NASA, Redstone Arsenal, HudsonAlpha Institute for Biotechnology, and the Robotics Technology Park initiative are vital drivers of high-tech industry opportunities cited in the NARCOG and TARCOG Comprehensive Economic Development Strategy (CEDS) documents.
- Aerospace, Aviation, and Automotive industries rely heavily on manufacturing innovation and research and development to remain competitive and profitable in a global economy. The study areas focus on these industry needs.
- A shortage of skilled workers persists, and it seems clear that additional focus on producing skilled technical and manufacturing workers is needed in the region.
- Abundant undeveloped land is an asset for the region, but water and sewer infrastructure limits land development. Both CEDS reports for the region identify aging infrastructure and limited capacity as water and sewer systems issues.
- The region has a well-developed multimodal transportation system, with good interstate highway access, good access to two Class 1 railroads, the Port of Decatur on the Tennessee River and the Huntsville International Airport. The region's CEDS reports focus on improving the multimodal transportation system, addressing highway congestion, and expanding the Huntsville airport.
- Cultural and natural assets are a factor in major industrial site selection decisions. The emphasis on the development and improvement of these resources is an appropriate element of regional economic development.

The study area has some economic challenges; however, the economic opportunities that existing industries continue to generate are substantial. The pending expansion of the automotive sector in the region as Mazda-Toyota Manufacturing comes online offers solid opportunities for all parts of the region to benefit substantially. The current low unemployment rate in the region is a positive factor. Still, it makes it even more critical to continue developing an expanded pool of highly skilled workers to support the industries moving to the region.

Section 9: Facility Types

There are five types of inland port facilities being considered for this analysis. It should be noted that certain areas may accommodate a combination of these facility types (as shown in the Peer Review, Section 6) depending on the size and function.

Intermodal/Bulk Transfer

Intermodal refers to the movement of products involving multiple modes of transportation. The transfer between modes occurs at an intermodal facility using cargo handling equipment capable of moving the cargo from one mode to another. Examples include ship-to-shore cranes, rail-mounted gantry, rubber-tired gantry, reach stackers, straddle carriers, and yard mules. Intermodal rail refers to containerized cargo movements as opposed to bulk cargo. Containerized freight is typically described as a TEU, which stands for a twenty-foot equivalent unit. This terminology provides uniformity across the industry. This type of facility could relieve goods congestion on the highways and provide customs clearance for international goods to and from seaports, such as the Port of Mobile.

Warehousing/Transit (i.e., Fulfillment Center)

This type of facility provides covered freight storage within industrial buildings, securing cargo from weather and elements and theft and damage. They often have equipment like forklifts and bins or containers, with pallet racks stacked high and stocked with large quantities of products. These facilities can provide climate control, cargo refrigeration for food and kindred products like produce, or even sub-freezing storage for fresh meats and perishable shipments. These warehouses can also be called cross docks or distribution centers where transfer of goods from full-load bulk or break-bulk truck, container, or railcar loaded with one commodity or product like bananas. These facilities differ from intermodal transfer facilities in that they do not just transfer a full load from one mode to another. Still, the goods arriving at these facilities are taken out of their containers for repackaging and further distribution. They are picked and mixed for delivery by a regional van or truck shipment typically supplying a retail center or store. These shipments are typically a mixture of many batches or pallets like a produce department order of fruits and vegetable or perishable goods. A fulfillment center is a warehouse that provides product finishing services to finalize a specification or product upgrade feature, like an online computer order where the customer got the larger storage capacity hard drive or better resolution screen, a fulfillment center would make those final order adjustments or upgrade features before customer delivery.

Light Manufacturing Facility (i.e., Parts Manufacturing)

These facilities accommodate light industrial businesses where all processing, fabricating, assembly, or disassembly occurs wholly within an enclosed building. Light industry refers to manufacturing activity that uses moderate amounts of partially processed materials to produce relatively high value per unit weight items. Light industries require only a small number of raw materials, area, and power. Light industries cause relatively little pollution from the production of their output compared to heavy industries. As light industry facilities have less environmental impact than those associated with heavy industry, zoning laws permit light industry near residential areas. It is a criterion for zoning classification. The manufacturing of clothes, shoes, furniture, consumer electronics, and household items are a few examples of light industries.

Heavy Manufacturing Facility (i.e., Conversion of Raw Materials)

Heavy industry relates to a type of business that typically carries a high capital cost (capital-intensive), high barriers to entry, and low transportability. The term "heavy" refers to the fact that the items produced by "heavy industry" use commodities such as iron, coal, oil, phosphate, aggregate, etc. Heavy industry typically involves large and heavy products and equally large and heavy equipment and facilities in producing its output. Because of those factors, heavy industry involves higher capital intensity than light industry.

Industrial Flex – (High Tech/Business Park, Laboratory, Robotics)

Traditionally, industrial-office flex space is a single-story, industrial type building with at least 25 percent office space with a parking space to office ratio of four-to-one if the property becomes 100 percent office space. Flex buildings are, by design, "flexible" and allow for a wide range of office and warehouse uses. They can be used for many purposes and are easier to retrofit to meet a company's needs than typical warehouse buildings. This flexibility is ideal for a wide range of companies that need office space with a warehouse component. Flex buildings usually have a slightly lower ceiling clear height (14 – 24 ft clear) and have a larger percentage of office space than a typical distribution warehouse building. They also have more parking and landscaping than other industrial buildings. Most flex buildings have overhead loading doors and loading areas in flex buildings can be high or grade-level (ground-level). Some older buildings may even have semi docks (2 ft) that can accommodate smaller box trucks and vans. Flex space can work well for value office tenants like start-ups. The rental/leasing rates are typically lower than traditional office space and accommodate more parking than bulk warehouse buildings.

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Section 10: Evaluation Criteria

Area evaluation included freight connection and access criteria, direct multimodal access criteria, and commercial real estate criteria.

The freight criteria for a particular area include considering adverse travel time or connectivity to major NHS routes, distance to rail access, distance to ports or waterways, and distance to air cargo facilities. The multimodal evaluation included a review of direct rail access, direct waterway access, and land needs for multimodal development and onsite storage.

The highest and best use is reasonable and probable use that will support the highest present value, as defined as the appraisal's effective date. Alternatively, it is that use, from among legally permissible, physically possible, and reasonably probable uses, is found to be economically and financially feasible and which results in the most profitable of the alternatives. Four questions must be answered in determining the highest and best use.

- Physically possible uses — What uses is it physically possible to the subject area?
- Legally permissible uses — What uses are permitted by zoning and deed restrictions on the subject area?
- Financially feasible uses — Which possible and permissible uses will produce any net return to the owner of the subject area?
- Optimal (highest and best) use — Among the feasible uses, which will produce the highest net return or result in the highest present worth? For purposes of this study, we focus on five potential facility types for the areas identified. Those five types are defined in the following subsection.

Specific information on evaluation criteria for these five facility types are discussed below, but in general, the physical demands of a given area will be driven by considerations of:

- ***The shape of potential sites and the net-usable area.*** Net usable area is defined by the radius required for a design vehicle to pull into the area, circulate through the area, and depart while minimizing requirements for backing up.
- ***The lack of environmentally, historically, or culturally sensitive areas.*** While flood fringe areas can be utilized for parking or outdoor storage, it is generally advisable not to construct improvements in wetland or flood-prone areas. The presence of “protected” areas may compromise the functional utility of an area.
- ***Zoning codes almost universally dictate legally permissible uses.*** Heavy manufacturing often requires specific allowances in code for noise, dust, and other “unsightly” impacts, while business park uses are often viewed as more desirable.

The following highlights the overall evaluation framework that will be used to evaluate the identified industrial areas.

- It should be noted that this framework may depend on specific customer site-location requirements. This framework focuses on facility-type requirements and how areas compare with one another for a given type.
- Some areas may only accommodate one facility type, while others may accommodate a combination of facility types.

Evaluation Criteria Factors

The criteria to be used for each facility are shown below. The weight given to each of the criteria by facility type is provided in Attachment A of this report.

- Adverse Travel
 - Distance to NHS Route
 - Distance to Rail
 - Distance to Port
 - Distance to Air
- Direct Rail Access
- Direct Waterway Access
- Land Needs
 - Acreage
 - Needed Acquisition of Additional Parcels
 - Land Utilization Ratio
- Utility Needs – Capacity and Resiliency
 - Electrical Power
 - Gas
 - Water
 - Sewer
 - Fiber
- Competitive Set (What are the other similar facility types in the region and areas of influence)
 - By Facility Type
 - Proximity to Market
 - Commodity Flows
- Linkages to Compatible Land Uses (i.e., population centers, manufacturing centers)
- Workforce Demographics (within 60 minutes)
 - Workforce Age Distribution
 - Educational Attributes

Section 11: Evaluation of Industrial Areas

This section summarizes the findings for each of the ten potential industrial areas.

Summary of Area Evaluations

NAIDA (noted in Section 8) maintains a helpful website with information on a 13-county area, including the four counties subject to this study. Information contained on this website includes information on infrastructure and workforce demographics. It also includes listings of available sites and buildings broken down by Automotive Related (focused upon the Mazda-Toyota manufacturing complex area), Tennessee Valley Authority (TVA) sites, and Economic Development Partnership of Alabama (EDPA) sites. The ten areas that are the subject of this project were searched, and listings brochures were downloaded when available. The ten subject areas were also analyzed utilizing Site to do Business (STDB) – a web-based service that real estate professionals use to pull together workforce and economic development information. Each area is analyzed based upon 30-minute, 60-minute, and 90-minute drive time radii considering demographic, housing, and other market data.

Lawrence County – Hood Harris/International Paper Area

Key characteristics:

- The area shows a steady increase in households and approximately 13.5% of income for mortgages in a relatively affordable market.
- Demographics show it to be a working-class area with more white-collar than blue-collar jobs and a majority of homeowners instead of renters.
- Has direct water access to the Tennessee River and NS rail.
- A higher proportion of unemployed ages 16-24 indicates a need for entry-level jobs, possibly with on-the-job training.
- The International Paper site is a brownfield redevelopment site. According to the best available information, the permits in place for this site are still valid.

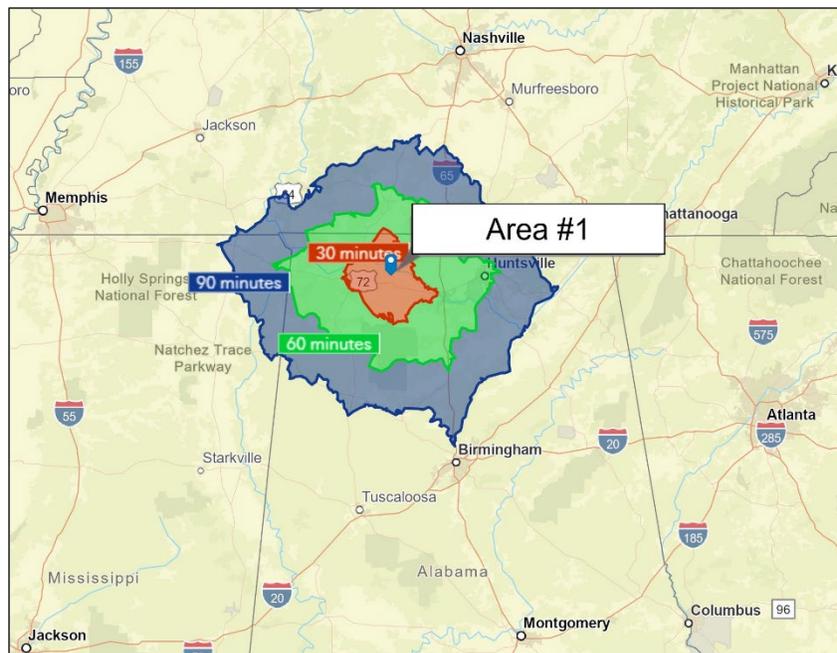


Figure 23. Hood Harris/IP Area 90-minute Drivetime

Lawrence County – Courtland Industrial Air Park

Key characteristics:

- This area has good airport access, highway access (US-20/72), and rail access.
- There are more white-collar employees in this area than blue-collar employees, and over half own rather than rent.
- The unemployment rate is nearly double for the 16-24 demographic, indicating a shortage of entry-level jobs.

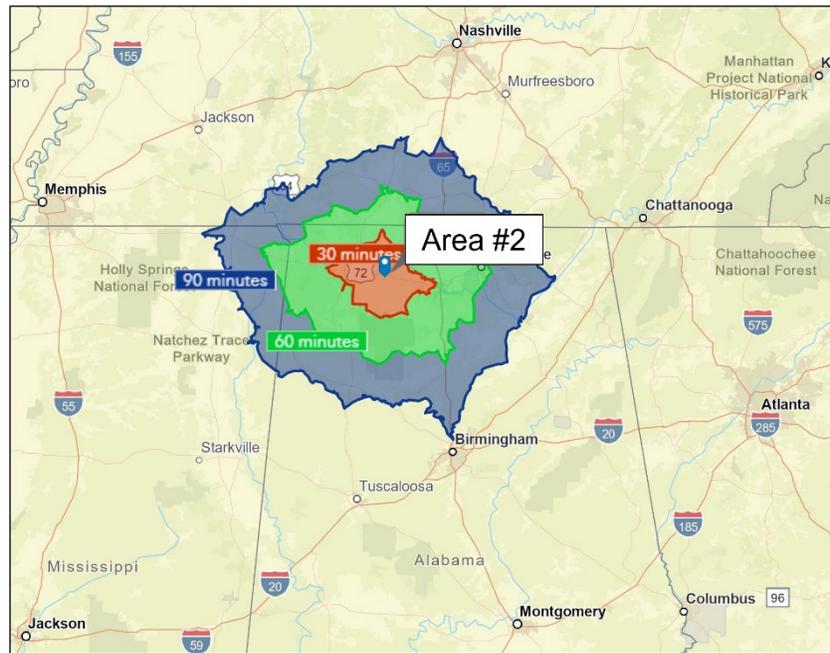


Figure 24. Courtland Industrial Air Park 90-minute Drivetime

Lawrence County – Mallard Fox West

Key characteristics:

- The area is a relatively short distance west of Huntsville in Morgan County and is close to the Jack Daniels Cooperage site.
- There is good highway and rail access and a relatively short distance to various airports, including the regional airport facility at Huntsville, which is just touched by the 30-minute drive time radius.
- The 90-minute drive time radius also touches the Birmingham area.
- As with other areas, the unemployment rate for ages 16-24 is significantly higher than other groups.

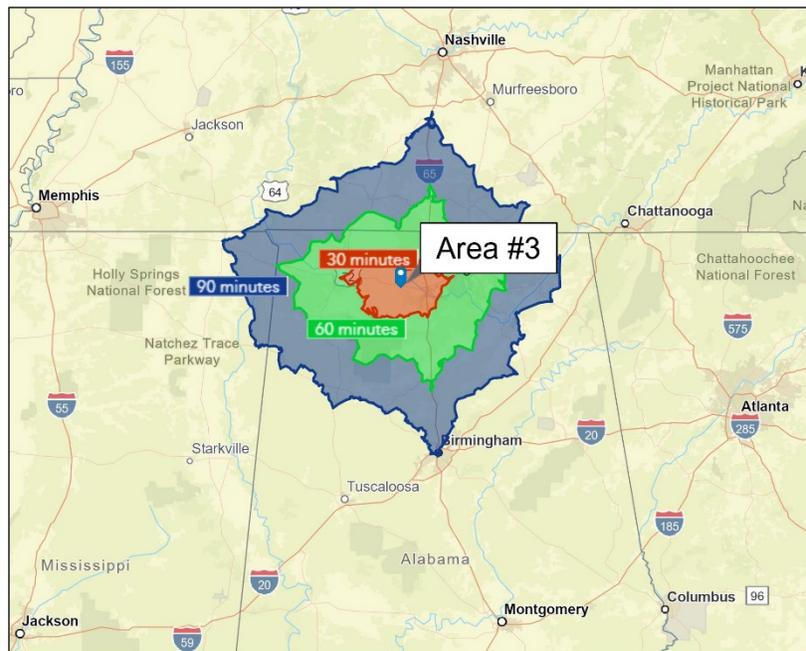


Figure 25. Mallard Fox West 90-minute Drivetime

Limestone County – Delphi Area

Key characteristics:

- The Delphi area has superior highway accessibility, good connectivity to I-65, and NS and CSX railroads access.
- The airport at Huntsville is within the 30-minute driving window.
- As with the other areas, the unemployment rate for ages 16-24 is significantly higher than for other age groups.

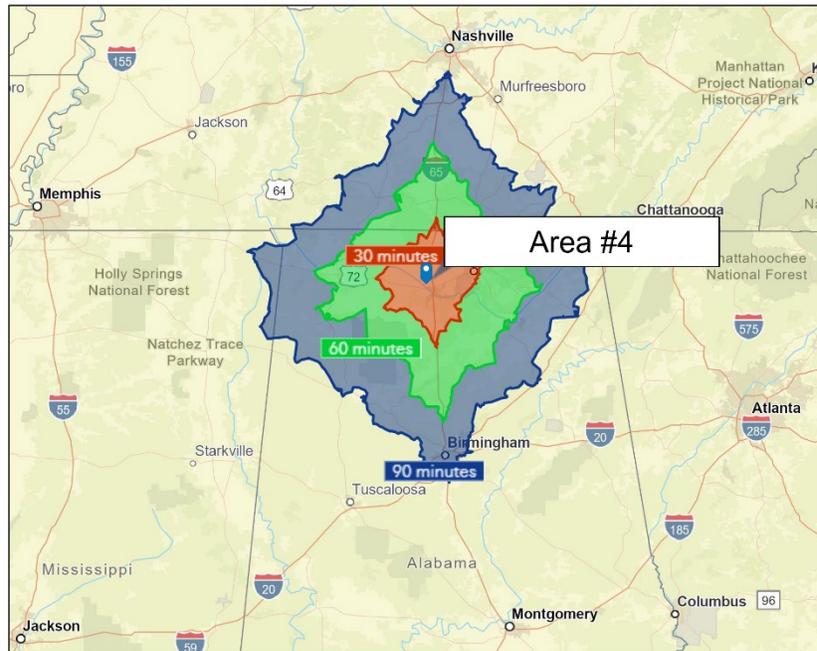


Figure 26. Delphi Area 90-minute Drivetime

Limestone County – Murphy Area

Key characteristics:

- The area is located near the Mazda-Toyota manufacturing area in Greenbrier, Alabama
- This area is located near the interchange of I-65 and I-565 between Decatur and Huntsville. Because of its proximity to two interstate corridors, the 90-minute drive time radius touches the Birmingham and Nashville areas. Its highway accessibility is superior amongst the areas.
- The 60-minute drive radius market area shows a closer match between white-collar and blue-collar job opportunities (55.3% - 32.0%) than is found in many of the other areas, which may be due in part to the Mazda-Toyota manufacturing facility.

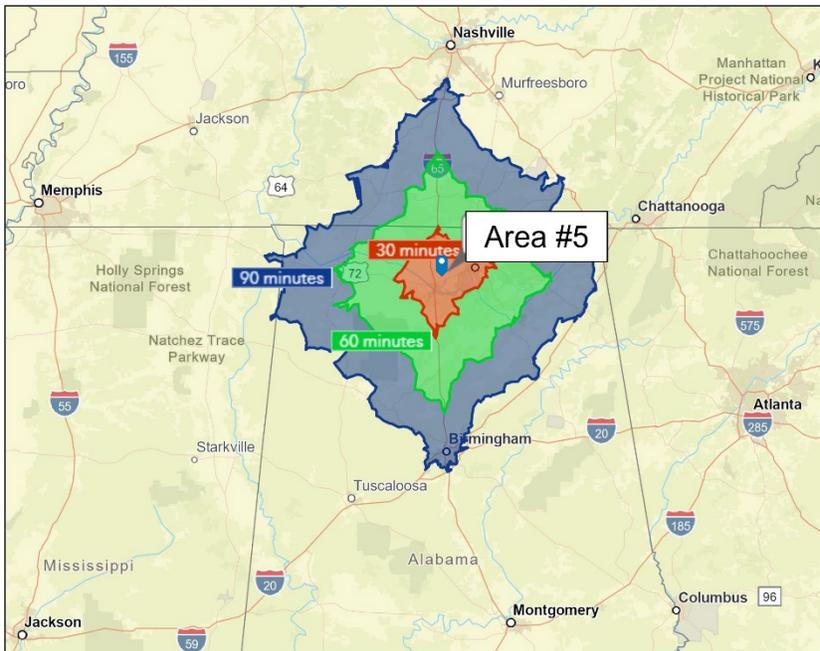


Figure 27. Murphy Area 90-minute Drivetime

- The average household income and the per capita income are projected to increase by approximately 2.4% per year from 2021-2026.

Morgan County - Falkville Area

Key characteristics

- Both north and south of Falkville along the I-65 corridor have excellent highway access to both I-65 and US-31 Highway via State Route 55.
- The interchange of I-65 at SR-55 is an exceptional feature that places Birmingham within the 60-minute drive radius.
- The average household income and per-capita income in this area are expected to increase 2.4% to 2.5% annually from 2021-2026, and there is currently approximately 11.3% vacancy in this housing market.
- As with other areas, the unemployment rate for ages 16-24 is higher for the 60-minute drive radius, but the gap is narrower than is observed for other areas.

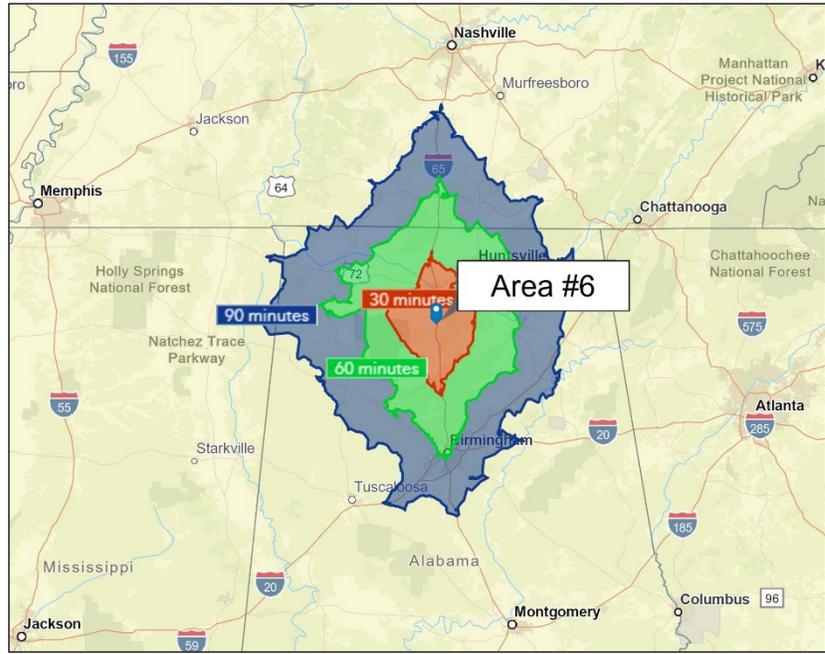


Figure 28. Falkville/Hartselle Area 90-minute Drivetime

Morgan County – Lacon

Key characteristics:

- Though significant improvement to Wilhite Road would be required, this area’s accessibility to I-65, and US-31 Highway, and the CSX rail line makes it a particularly attractive area.
- Both Huntsville and Birmingham are within a 60-minute drive radius. Consistent with the Falkville area, the annual increase in household income and per-capita income within the 60-minute drive radius is expected to be 2.45% to 2.50% from 2021-2026.
- However, it is interesting that the disparity of white-collar versus blue-collar employment in the 60-minute drive radius for this area is larger (62.2% to 23.3%).

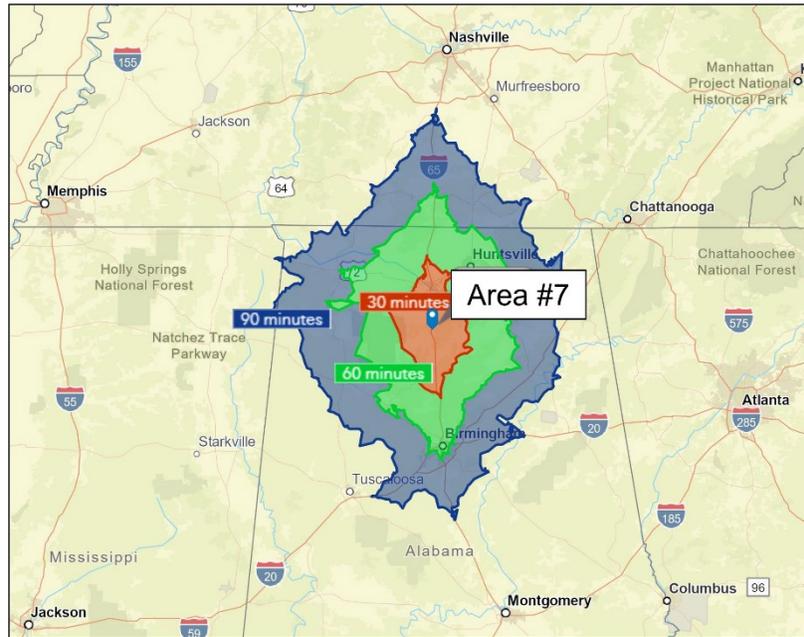


Figure 29. Lacon Area 90-minute Drivetime

Cullman County – Vinemont/Cullman Airport Area

Key characteristics:

- Connectivity to air, rail, and highway modes is a strong advantage for this area. However, the connectivity to US-31 and ultimately to I-65 should be managed carefully to avoid routing numerous heavily laden commercial vehicles through Vinemont.
- Depending upon the specific user, it may be necessary to improve connectivity to US-31 Highway north of Vinemont and then route

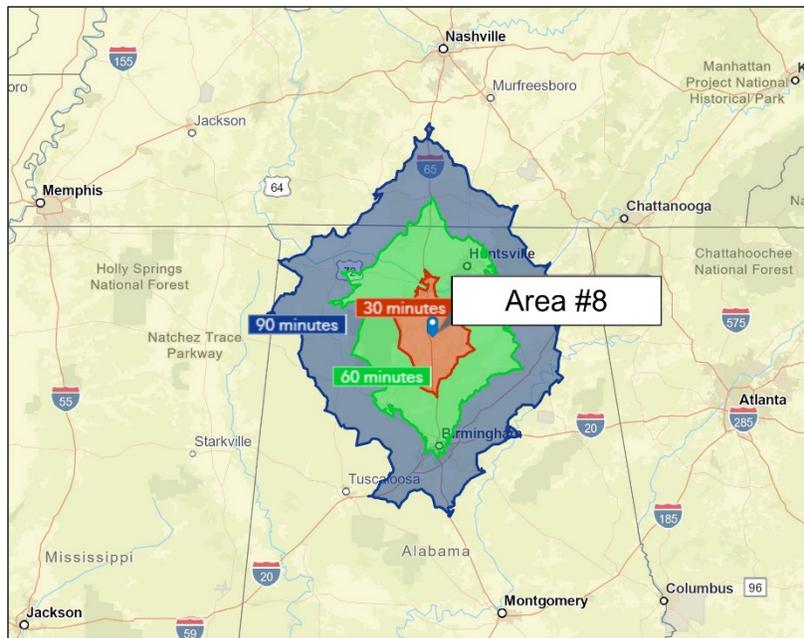


Figure 30. Vinemont/Cullman Airport 90-minute Drivetime

trucks north to interchange I-65. Interestingly, the total daytime population within a 60-minute driving radius is nearly evenly split, indicating that a significant number of people commute into this area for work.

- Like other areas, however, the unemployment rate for ages 16-24 within the 60-minute driving radius is higher than for other age groups.

Cullman County – Hanceville

Key characteristics:

- The accessibility to rail for this area is good; however, the access to interstate highways is limited.
- The Birmingham area is well within the 60-minute driving radius, but Huntsville is within the 90-minute driving radius.
- The owner-occupied houses within the 60-minute driving radius area outnumber the renter-occupied houses by about 2:1, and the median household income, per-capita income, and median home value within all three

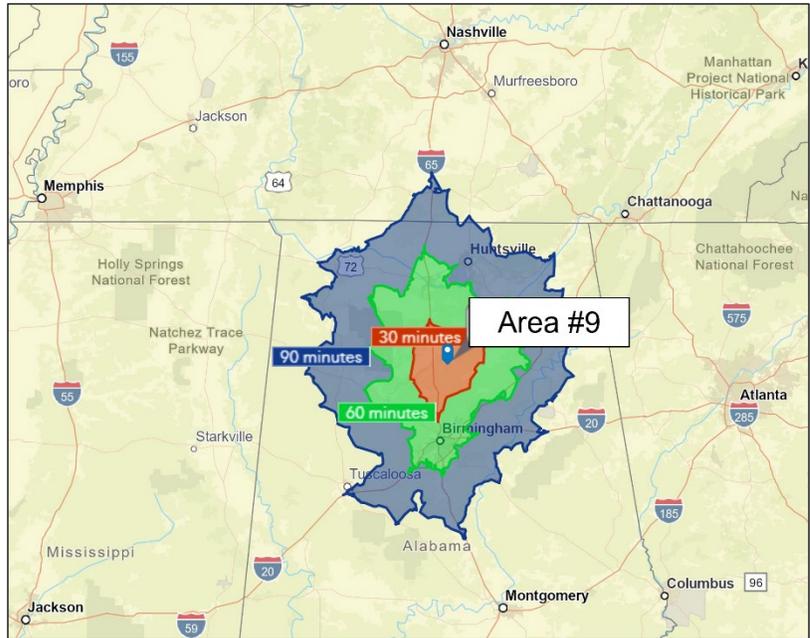


Figure 31. Hanceville Area 90-minute Drivetime

driving radii are projected to increase from 2021 to 2026.

Highest and Best Use by Area

Table 32. Highest and Best Use by Area

Site Description	Highest and Best Use	Alternative Use
1. Lawrence - Hood Harris/IP	Intermodal (Bulk) Transfer	Heavy Manufacturing *
2. Lawrence - Courtland Air Park	Warehouse / Transit	Light Manufacturing
3. Lawrence - Mallard Fox West	Heavy Manufacturing	Intermodal (Bulk) Transfer
4. Limestone - Delphi Area	Intermodal (Bulk) Transfer	Industrial Flex
5. Limestone - Murphy Area	Industrial Flex	Light Manufacturing **
6. Morgan - Falkville	Warehouse / Transit	Light Manufacturing
7. Morgan - Lacon	Light Manufacturing	Intermodal (Bulk) Transfer
8. Cullman - Vinemont/Airport	Warehouse / Transit	Intermodal (Bulk) Transfer
9. Cullman - Hanceville	Heavy Manufacturing	Intermodal (Bulk) Transfer

* The highest and best uses of Area 1 are tied to one another because of their proximity. If the former International Paper site is repurposed to an Intermodal (Bulk) Transfer, then the best use of the Hood-Harris site could be for overflow storage or Heavy Manufacturing. If, instead, the former International Paper site is repurposed as another Heavy Manufacturing use, then the best use of Hood-Harris is likely to support Light Manufacturing use.

** The Murphy area, because of its proximity to Mazda / Toyota site, might be automatically relegated to a Light Manufacturing use in support of Mazda / Toyota. However, NAIDA is actively marketing dozens of sites for Mazda / Toyota support purposes. Rather than compete against NAIDA, focusing on developing a high-tech campus that develops and tests technologies like AV/CV technologies, composite materials technologies, and other innovative automotive technologies would face much less market competition.

Section 12: Next Steps

The activities to follow include:

- An outreach program to build consensus on the recommendations within this report, including:
 - A Stakeholder Committee meeting of representatives from all four counties.
 - Interviews with key business owners and leaders to gather input on the recommendations and action plan.
 - Outreach with Port of Mobile, CSX, Norfolk Southern, and other facilities to gauge their input on the potential for inland port utilization for the region.
 - Upon acceptance of this report, we will proceed into Task 2, development of the implementation plans, through the following steps:
 - Review Task 1 recommendations and analysis by area stakeholders to refine recommendations in a stakeholder meeting and specific interviews.
- Assessment of each area through the lens of its accepted highest and best use will include developing an inventory of the area as-is and where it needs to be to achieve its highest and best use.
 - Analyze the gaps between current and desired conditions and cost estimates developed.
 - Identify potential public and private partners to address these gaps.
 - Recommendations for needed transportation and land use improvements.
 - Develop an action plan focused upon maximum utilization of grants and innovative financing options.

The highest and best use analysis and implementation planning templates are developed to enable NARCOG to apply them to a limited number of future endeavors.

Attachment A

Evaluation Criteria by Facility Type

Warehousing/Transit (i.e., Fulfillment Center)

- Adverse Travel
 - Distance to NHS Route – High
 - Distance to Rail – Low (Customer Dependent)
 - Distance to Port – Medium/High
 - Distance to Air – High
- Direct Rail Access – Low (Customer Dependent)
- Direct Waterway Access - Low
- Land Needs
 - Acreage (Land-to-Building ratio of 3:1 – 5:1)
 - Needed Acquisition of Additional Parcels – Same for all types
 - Land Utilization Ratio (>70%)
- Utility Needs – Capacity and Resiliency
 - Electrical Power – High
 - Gas – Low/Medium
 - Water – Low/Medium
 - Sewer – Low/Medium
 - Fiber - Low
- Competitive Set (What are the other similar facility types in the region and areas of influence)
 - By Facility Type – Same Priority Across Facility Types
 - Proximity to Market – Same Priority Across Facility Types
 - Commodity Flows – Same Priority Across Facility Types
- Linkages to Compatible Land Uses (i.e., population centers, manufacturing centers)
- Workforce Demographics (within 60 minutes)
 - Workforce Age Distribution – Same Priority Across Facility Types
 - Educational Attributes – Same Priority Across Facility Types

Light Manufacturing Facility (i.e., Parts Manufacturing)

- Adverse Travel
 - Distance to NHS Route – High
 - Distance to Rail – Low (Customer Dependent)
 - Distance to Port – Medium/High
 - Distance to Air – Low
- Direct Rail Access – Low/Medium (Customer Dependent)
- Direct Waterway Access - Low
- Land Needs
 - Acreage (Land-to-Building ratio of 4:1 – 6:1)
 - Needed Acquisition of Additional Parcels – Same for all types
 - Land Utilization Ratio (>65%)
- Utility Needs – Capacity and Resiliency
 - Electrical Power – High
 - Gas – Medium/High
 - Water – Medium/High
 - Sewer – Medium
 - Fiber - Medium
- Competitive Set (What are the other similar facility types in the region and areas of influence)
 - By Facility Type – Same Priority Across Facility Types
 - Proximity to Market – Same Priority Across Facility Types
 - Commodity Flows – Same Priority Across Facility Types
- Linkages to Compatible Land Uses (i.e., population centers, manufacturing centers)
- Workforce Demographics (within 60 minutes)
 - Workforce Age Distribution – Same Priority Across Facility Types
 - Educational Attributes – Same Priority Across Facility Types

Heavy Manufacturing Facility (Converting Raw Materials)

- Adverse Travel
 - Distance to NHS Route – High
 - Distance to Rail – High
 - Distance to Port – Medium/High
 - Distance to Air – Low
- Direct Rail Access – Medium/High
- Direct Waterway Access – Medium/High
- Land Needs
 - Acreage (Land-to-Building ratio of 5:1 – 9:1)
 - Needed Acquisition of Additional Parcels – Same for all types
 - Land Utilization Ratio (>60%)
- Utility Needs – Capacity and Resiliency
 - Electrical Power – High
 - Gas – High
 - Water –Medium/High
 - Sewer – Low/Medium
 - Fiber - Medium
- Competitive Set (What are the other similar facility types in the region and areas of influence)
 - By Facility Type – Same Priority Across Facility Types
 - Proximity to Market – Same Priority Across Facility Types
 - Commodity Flows – Same Priority Across Facility Types
- Linkages to Compatible Land Uses (i.e., population centers, manufacturing centers)
- Workforce Demographics (within 60 minutes)
 - Workforce Age Distribution – Same Priority Across Facility Types
 - Educational Attributes – Same Priority Across Facility Types

Industrial Flex – (i.e., High Tech/Business Park, Laboratory, Robotics)

- Adverse Travel
 - Distance to NHS Route – High
 - Distance to Rail – Low (Customer Dependent)
 - Distance to Port – Low
 - Distance to Air – High
- Direct Rail Access - Low
- Direct Waterway Access - Low
- Land Needs
 - Acreage (Land-to-Building ratio of 3:1 – 5:1)
 - Needed Acquisition of Additional Parcels – Same for all types
 - Land Utilization Ratio (>75%)
- Utility Needs – Capacity and Resiliency
 - Electrical Power – High
 - Gas –Medium
 - Water – High
 - Sewer – High
 - Fiber - High
- Competitive Set (What are the other similar facility types in the region and areas of influence)
 - By Facility Type – Same Priority Across Facility Types
 - Proximity to Market – Same Priority Across Facility Types
 - Commodity Flows – Same Priority Across Facility Types
- Linkages to Compatible Land Uses (i.e., population centers, manufacturing centers)
- Workforce Demographics (within 60 minutes)
 - Workforce Age Distribution – Same Priority Across Facility Types
 - Educational Attributes – Same Priority Across Facility Types

Intermodal/Bulk Transfer

- Adverse Travel
 - Distance to NHS Route – High
 - Distance to Rail – High
 - Distance to Port – High
 - Distance to Air – High
- Direct Rail Access - High
- Direct Waterway Access - High
- Land Needs
 - Acreage (Land-to-Building ratio of 20:1 or greater)
 - Land Utilization Ratio (>60%)
- Utility Needs – Capacity and Resiliency
 - Electrical Power – Low
 - Gas – Low
 - Water – Low
 - Sewer – Low
 - Fiber - Low
- Competitive Set (What are the other similar facility types in the region and areas of influence)
 - By Facility Type – Same Priority Across Facility Types
 - Proximity to Market – Same Priority Across Facility Types
 - Commodity Flows – Same Priority Across Facility Types
- Linkages to Compatible Land Uses (i.e., population centers, manufacturing centers)
- Workforce Demographics (within 60 minutes)
 - Workforce Age Distribution – Same Priority Across Facility Types
 - Educational Attributes – Same Priority Across Facility Types



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