

Regional Freight Plan FTAC Meeting #2

presented to

*Regional Planning Commission of
Greater Birmingham*

presented by

Cambridge Systematics, Inc.

with

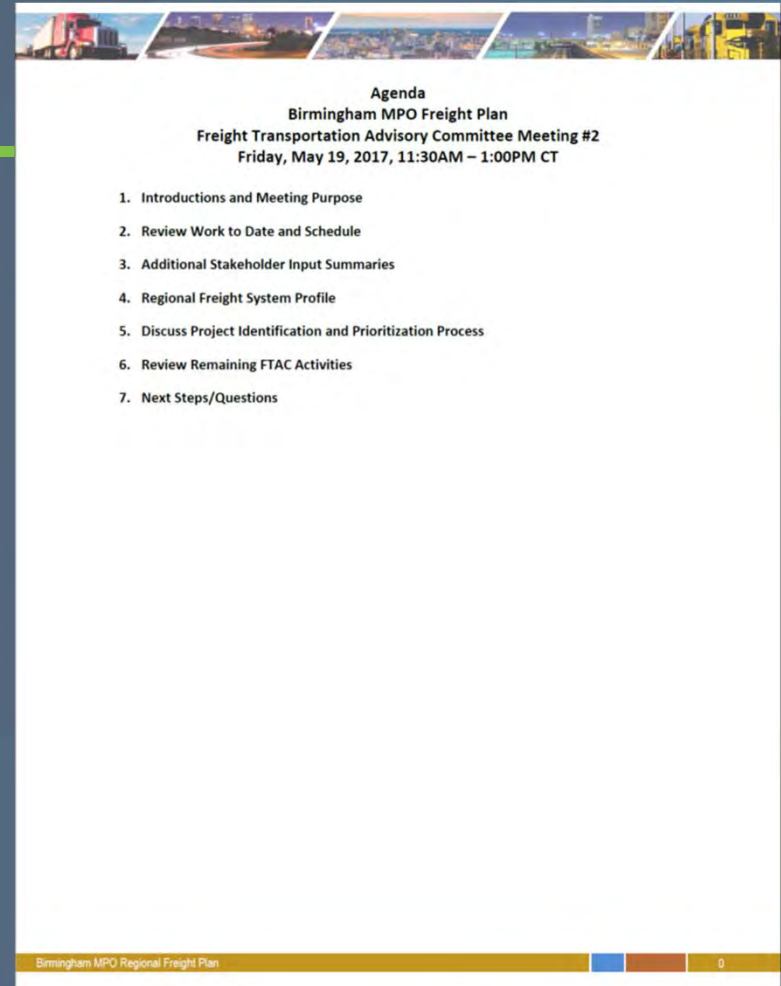
Volkert, Inc.

Creative Directions, Inc.

May 19, 2017

Agenda

- Introductions and Meeting Purpose
- Review Work to Date and Schedule
- Additional Stakeholder Input Summaries
- Regional Freight System Profile
- Discuss Project Identification and Prioritization Process
- Review Remaining FTAC Activities
- Next Steps



Agenda
Birmingham MPO Freight Plan
Freight Transportation Advisory Committee Meeting #2
Friday, May 19, 2017, 11:30AM – 1:00PM CT

1. Introductions and Meeting Purpose
2. Review Work to Date and Schedule
3. Additional Stakeholder Input Summaries
4. Regional Freight System Profile
5. Discuss Project Identification and Prioritization Process
6. Review Remaining FTAC Activities
7. Next Steps/Questions

Birmingham MPO Regional Freight Plan

Introductions

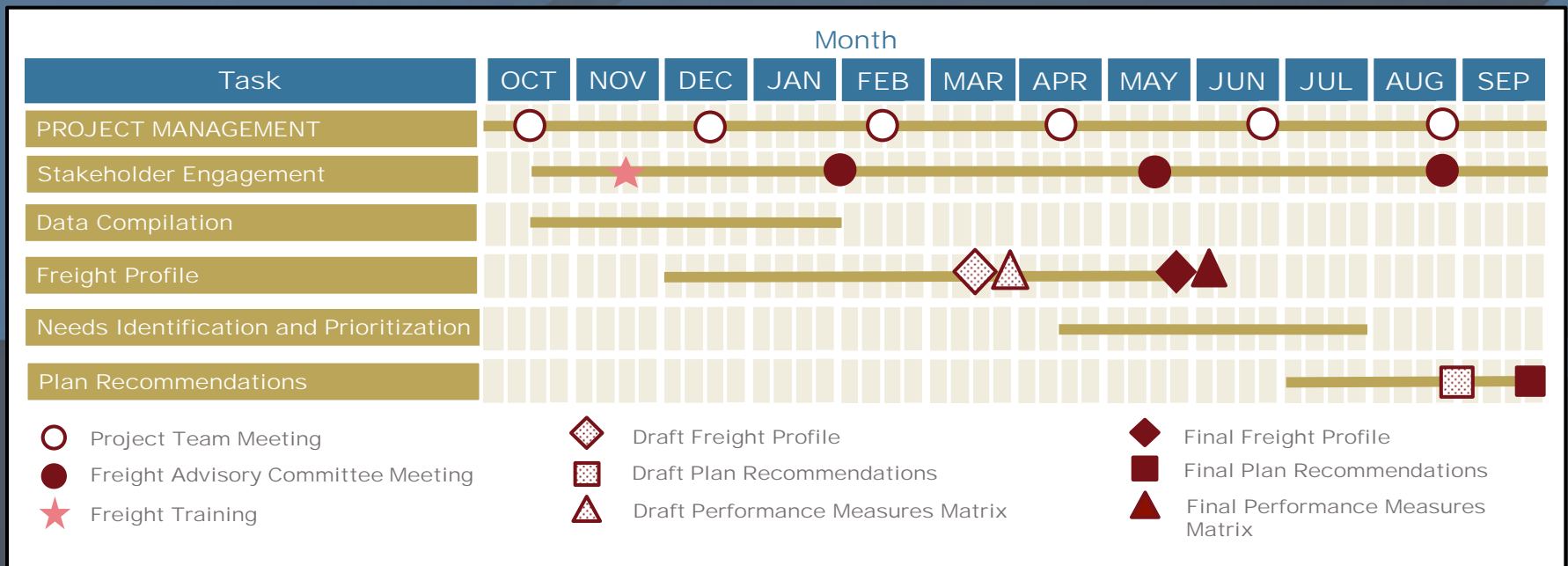
- Name
- Title and affiliation
- Role in Region's Freight System

Review Work to Date and Schedule

- Task 1. Stakeholder Engagement [ongoing]
- Task 2. Data Compilation [complete]
- Task 3. Freight Profile [under development]
- Task 4. Needs Identification and Prioritization [underway]
- Task 5. Plan Recommendations

Review Work to Date and Schedule

Project Largely on Schedule



Additional Stakeholder Interviews

Twenty-Five Stakeholder Interviews

- Interviews have captured input from
 - » Government
 - » Economic development
 - » Industry associations
 - » Motor carriers
 - » Railroads
 - » Airport
 - » Port
 - » Logistics providers (3PLs, brokers)
 - » Shippers/manufacturers
- Shippers added to list since last meeting:
 - » Vulcan Materials Company
 - » Honda Manufacturing of Alabama, LLC
 - » EBSCO Industries, Inc.
 - » KAMTEK

Additional Stakeholder Input

Shippers and Manufacturers

- Limestone aggregate industry serves variety of businesses (concrete, asphalt, road and home construction)
 - » Growth is driven by key factors including population, tax base, etc.; Birmingham is not a high growth market
 - » Product movement is complicated by weight restrictions on bridges; trucks often are prohibited from using the Interstate System
 - » Rail is used for some movements



Additional Stakeholder Input

Shippers and Manufacturers

- Automobile manufacturing and assembly industry produces variety of models
 - » Components consist of domestic and international suppliers
 - » Supplier shipments are time sensitive; order fulfillment requirements can be hours from time of order
 - » Suppliers often serve multiple companies and product lines
 - » Seaports, railroads, trucks, and air are used for inbound and outbound shipments
 - » Carriers (and modes) are selected based on service and ease of negotiations/price

Additional Stakeholder Input

Shippers and Manufacturers

- Manufacturing and distribution industry relies on efficient movement of goods (inbound and outbound)
 - » Specialized transportation services are required for project specific materials
 - » Intermodal rail service and seaport connections are important
 - » E-commerce has resulted in smaller shipments and faster delivery times; this can change sourcing decisions, warehouse locations, and puts pressure on transportation system reliability
 - » Effective use of technology (artificial intelligence, autonomous vehicles, drones) will impact competitiveness of companies and regions



Additional Stakeholder Input

Strengths

- Interstate system provides access in all directions
- Northern Beltline will help complete the network
- I-22 connection improves access to Memphis
- Region has good alternate routes and detours avoid problem areas
- Extensive rail system serves regional industries
- Region has reliable weather

Additional Stakeholder Input Weaknesses

- Pavement condition and lack of ongoing maintenance
- Constrained availability of trained/qualified workforce, including truck driver shortage
- Congestion/lack of capacity on key roadway corridors
- Impact of construction zones on traffic flow/congestion
- Local regulations reduce system efficiencies; weight restrictions on bridges create circuitous routes
- Inclement weather (snow, ice) shuts the system down
- Poor street lighting on secondary roads
- Limited bike lanes and sidewalks create safety concerns
- Limited direct flights impact business opportunities

Additional Stakeholder Input

Identified Needs

- Highway 79 mixed traffic, pavement condition, and heavy congestion/needs additional lane
- Highway 150 near Hoover has heavy congestion
- I-459/I-65 interchange has significant backups limiting mobility
- I-459/I-20 interchange has rough spot on ramp that causes load shifts
- Improved notification of roadway construction projects
- Weather notification system
- Congestion along I-280
- Intermodal rail connection to Port of Mobile and Port Birmingham
- 2059/65 interchange

Additional Stakeholder Input

Truck Driver Survey Results

- 10 drivers completed the entire survey, roughly half of the people who began it
 - » 100% responded that congestion is the worst problem they experience on the roadways
 - » 80% have issues with pavement conditions
 - » 50% indicated issues with truck parking
 - » None stated issues with enforcement, signage, turn pocket storage, distance between signals, HAZMAT routing, or the availability of CNG refueling

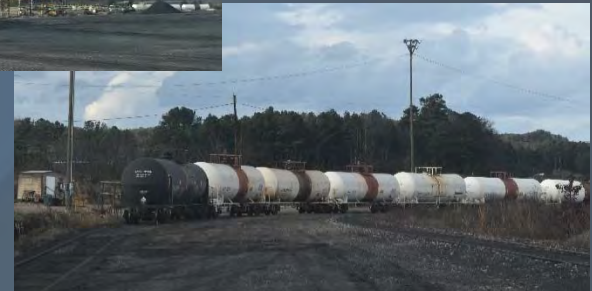
Additional Stakeholder Input

Truck Driver Survey Results

- Drivers provided a variety of locations where they experience issues:
 - » Oxmoor Road at Barber Court/Montevallo Road SW (pavement conditions, dangerous)
 - » Industrial Drive/Oxmoor Road – pavement conditions/markings
 - » Oxmoor Road as a whole – dangerous intersections/merge lanes
 - » I-459 bypass overpasses between Hoover and Bessemer – bumpy
 - » I-65 from exit 250 – 261 – rough pavement, often congested
 - » Alabaster exit and on ramp to I-65 – bottleneck
 - » I-20/I-59 interchange
 - » Congestion on I-65 from Calera to Birmingham – 4 lane
 - » Merging traffic congestion on I-65 – need ramp meters
 - » US 280 from Chelsea to I-459 – heavy congestion
 - » Highway 79 as a whole – pavement conditions/markings, lights/signals

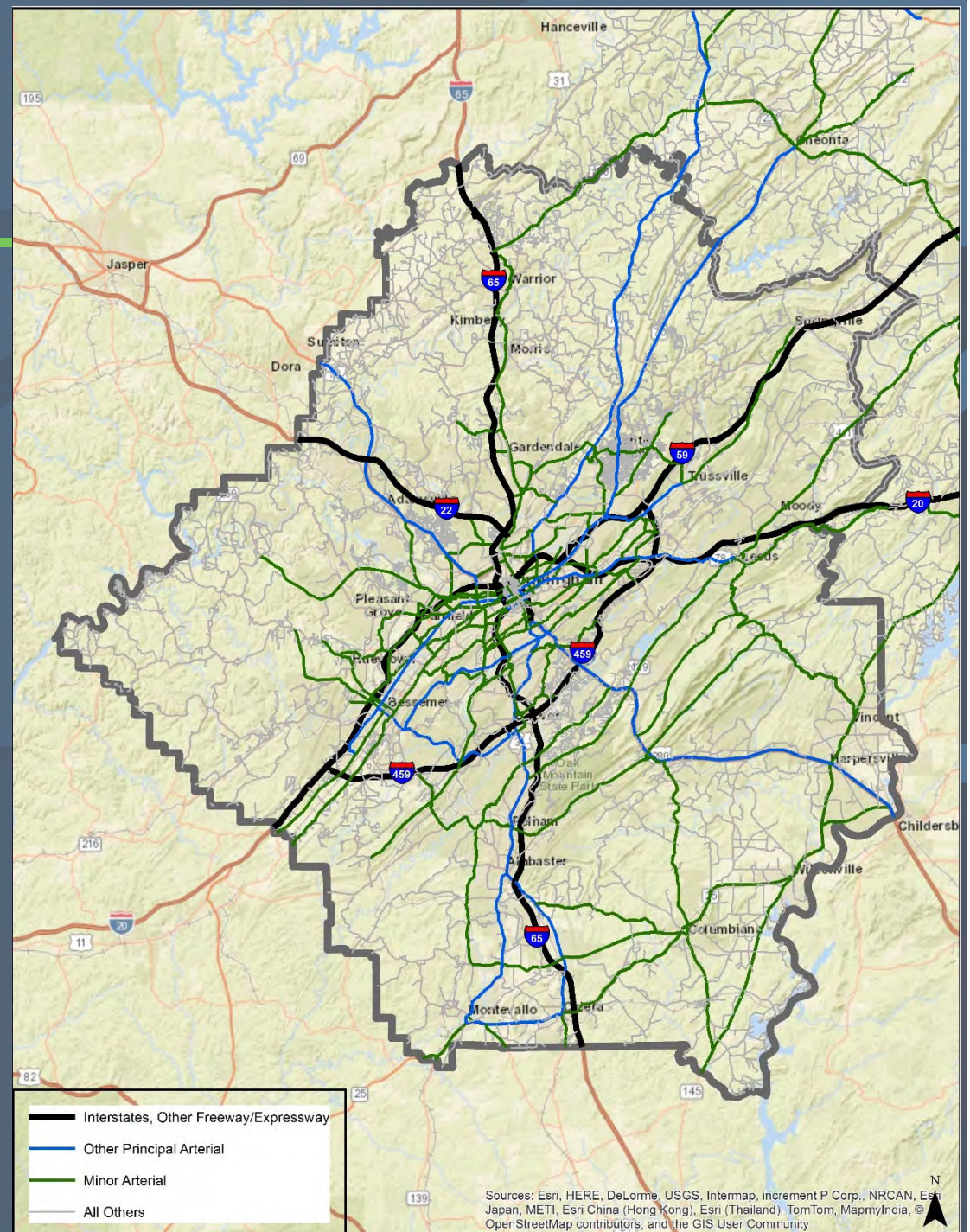
Regional System Profile

- What makes up the freight and logistics system?
- What moves on the freight system?
- What is the economic impact of the freight industry?
- How does the region fit into the National Freight System?



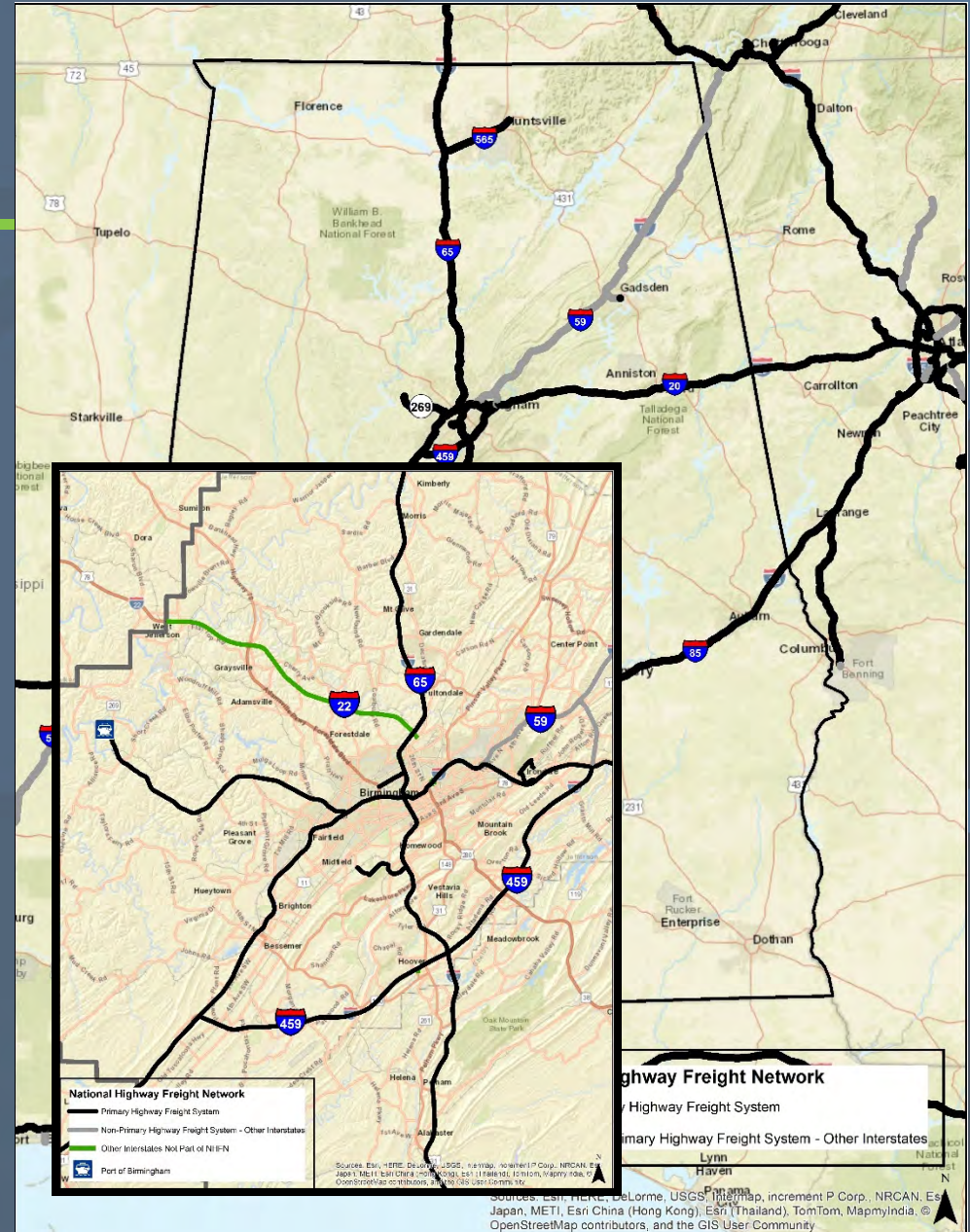
Regional Roadways

- Roadways
 - » National Highway Freight Network
 - » Other Non-NHFN Interstates
 - » CUFC/CRFC
 - » Other key state highways, arterials, and connectors



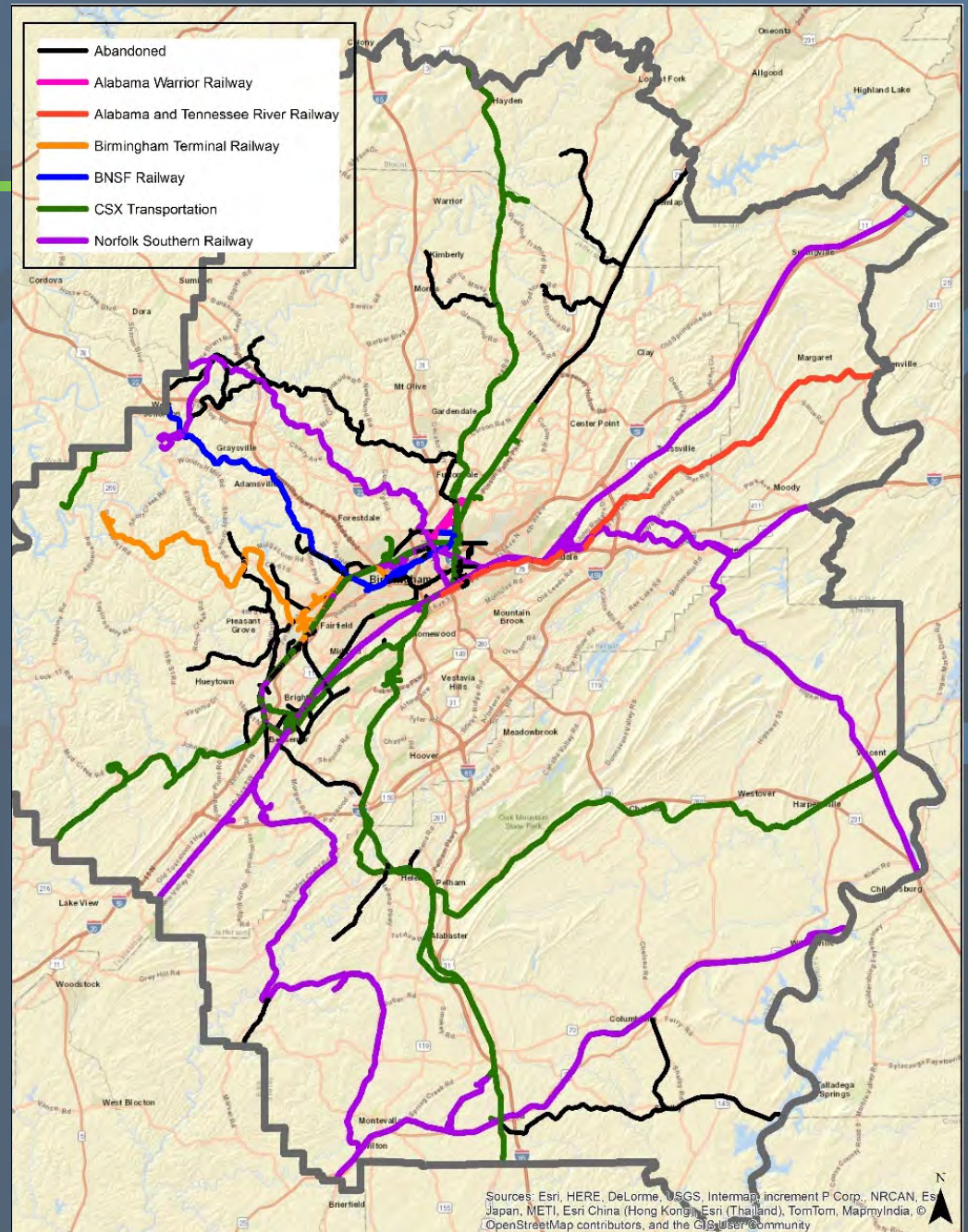
National Highway Freight Network

- NHFN was designated as part of the FAST Act building on MAP-21
- In Birmingham, this includes I-65, I-20, and I-459
 - » I-22 is not considered in this designation as it was not an interstate at the time
 - » I-59 east of Birmingham is also not included
- Intermodal Connectors include:
 - » Burlington Northern RR Dixie Hub Center
 - » Port Birmingham
 - » Colonial Pipeline
 - » Ernest Norris RR Yards



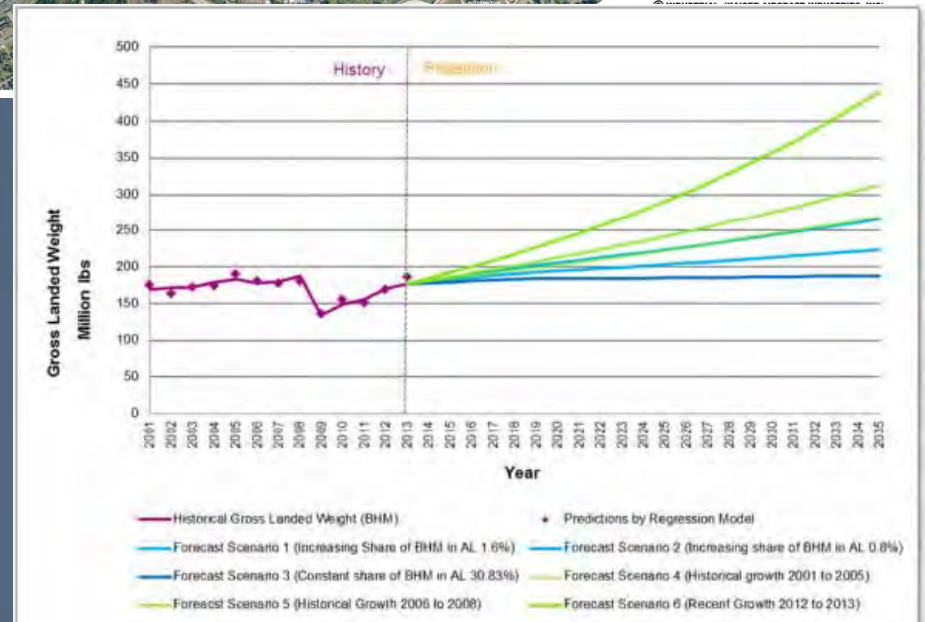
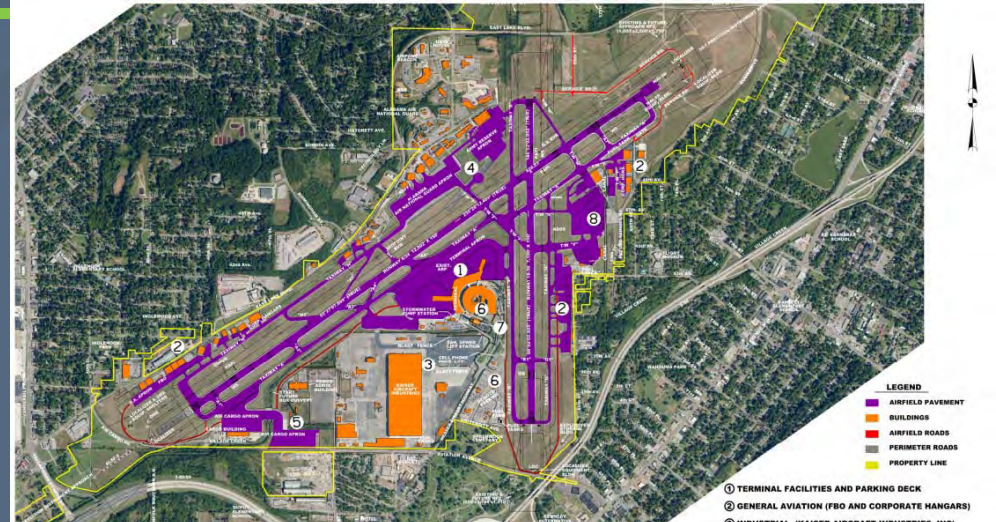
Rail Network

- Class I Railroads include:
 - » BNSF Railway: 36 miles
 - » CSX Transportation: 223 miles
 - » Norfolk Southern Railway: 267 miles
- Class III Railroads include:
 - » Alabama Warrior Railway: 7 miles
 - » Alabama and Tennessee River Railway: 29 miles
 - » Birmingham Terminal Railway: 37 miles
- Abandoned: 192 miles



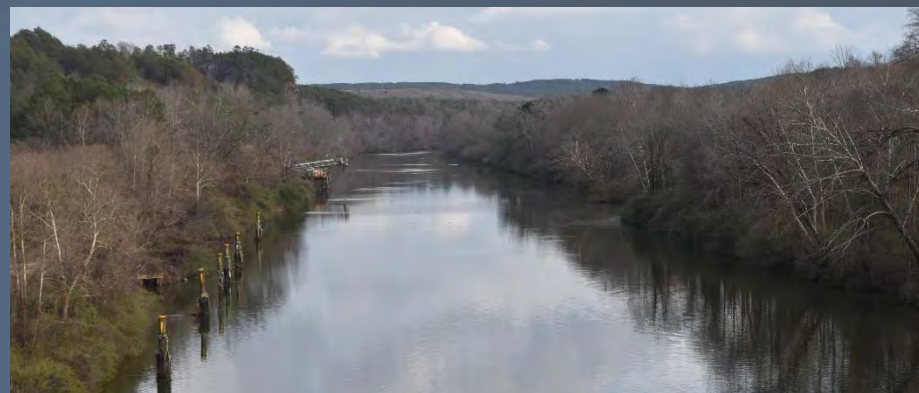
Birmingham-Shuttlesworth International Airport

- Operates as a joint civil-military airport with two runways (12,007 feet and 7,099 feet)
- Airport master plan anticipates continued growth at BHM
- Various identified improvements focus on cargo enhancements
 - » East Cargo Area – construct new cargo building and slurry seal (short term - \$2.2M)
 - » Air Cargo Facility Expansion (long term - \$30M)



Ports and Waterways

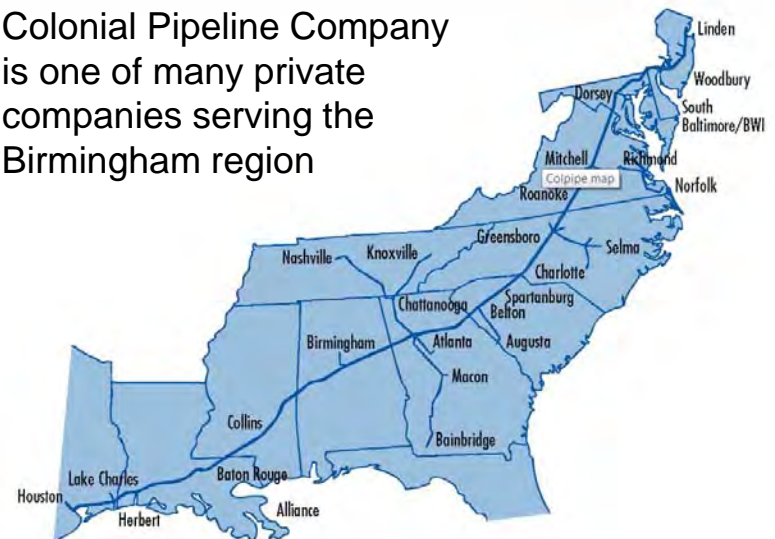
- Region relies on access to deep water seaports outside the Birmingham area
- Access to the inland waterway system provided by Port Birmingham and other private terminals
- Highway and rail access to inland and deep water port facilities is critical



Pipelines and Energy

- Pipelines move a significant volume of cargo into, out of and through the region
- Access to transfer stations (where product is exchanged with other modes) is the key consideration
- Pipeline data is difficult to access given security considerations
- Work underway to map out key facilities

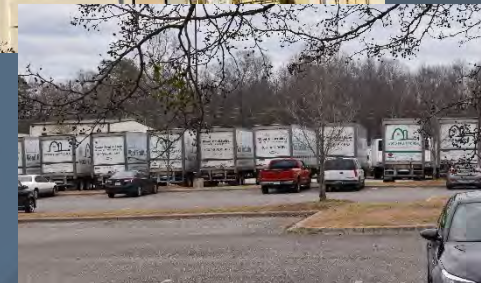
Colonial Pipeline Company is one of many private companies serving the Birmingham region



<http://www.colpipe.com/home/about-colonial/system-map>

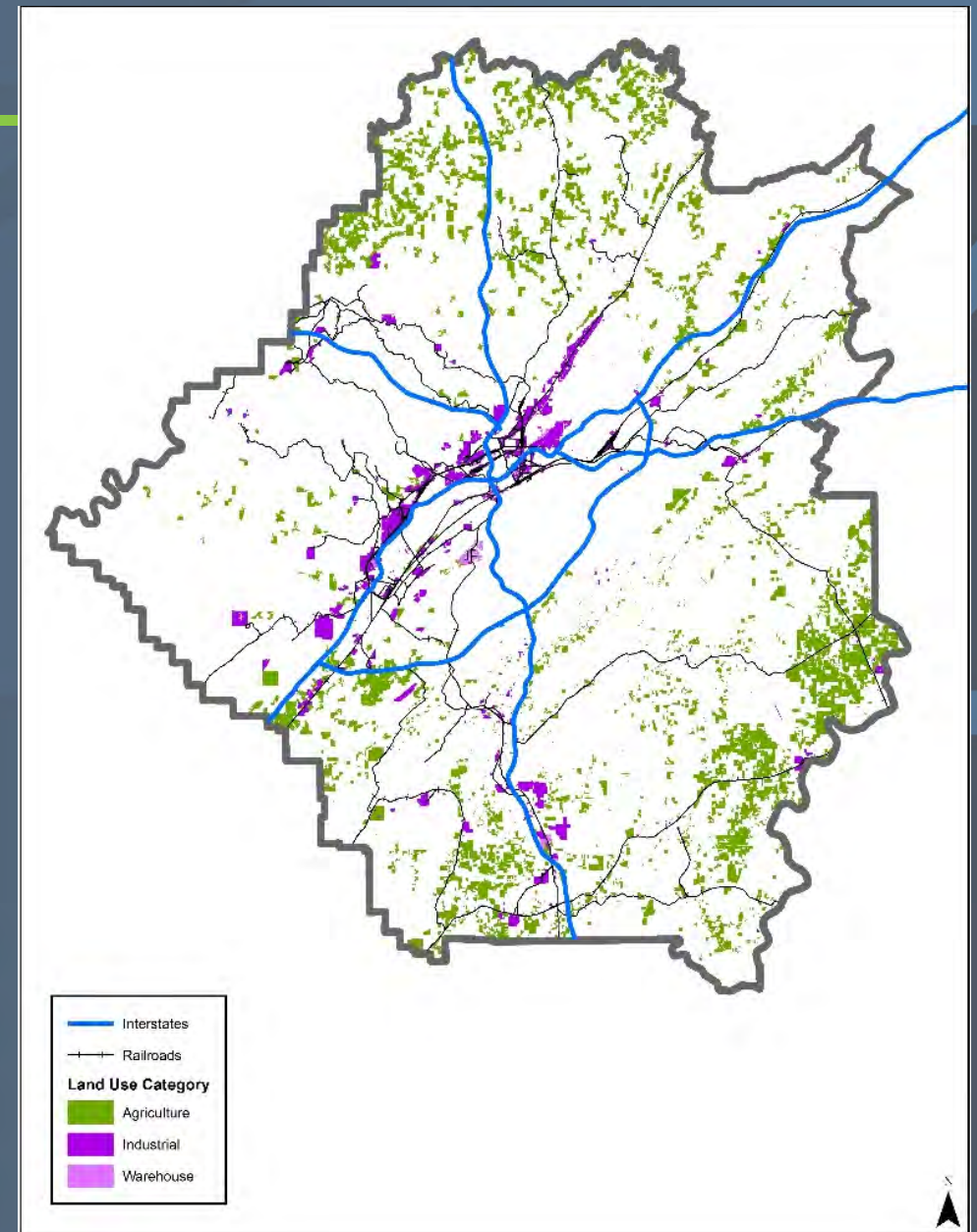
Other Key Logistics Facilities

- Foreign Trade Zones (FTZs)
- Industrial parks
- Trucking terminals
- Manufacturers and distributors
- Retail/consumers



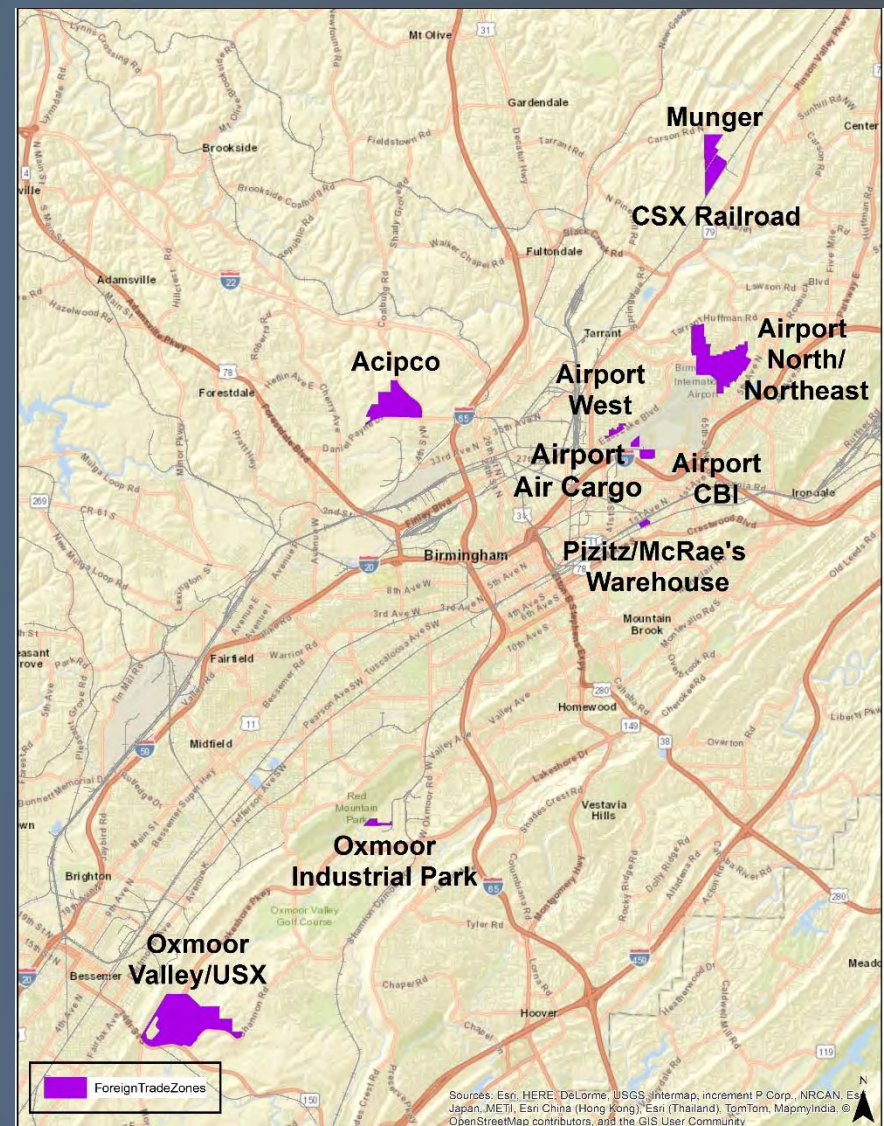
Land Use Impacts

- Significant portion of region consists of open space
- Terrain increases cost of land development
- Significant inventory of underutilized industrial property
- Residential and commercial uses are centered in the urban core
- Warehouse and distribution uses are focused along key roadway and rail corridors



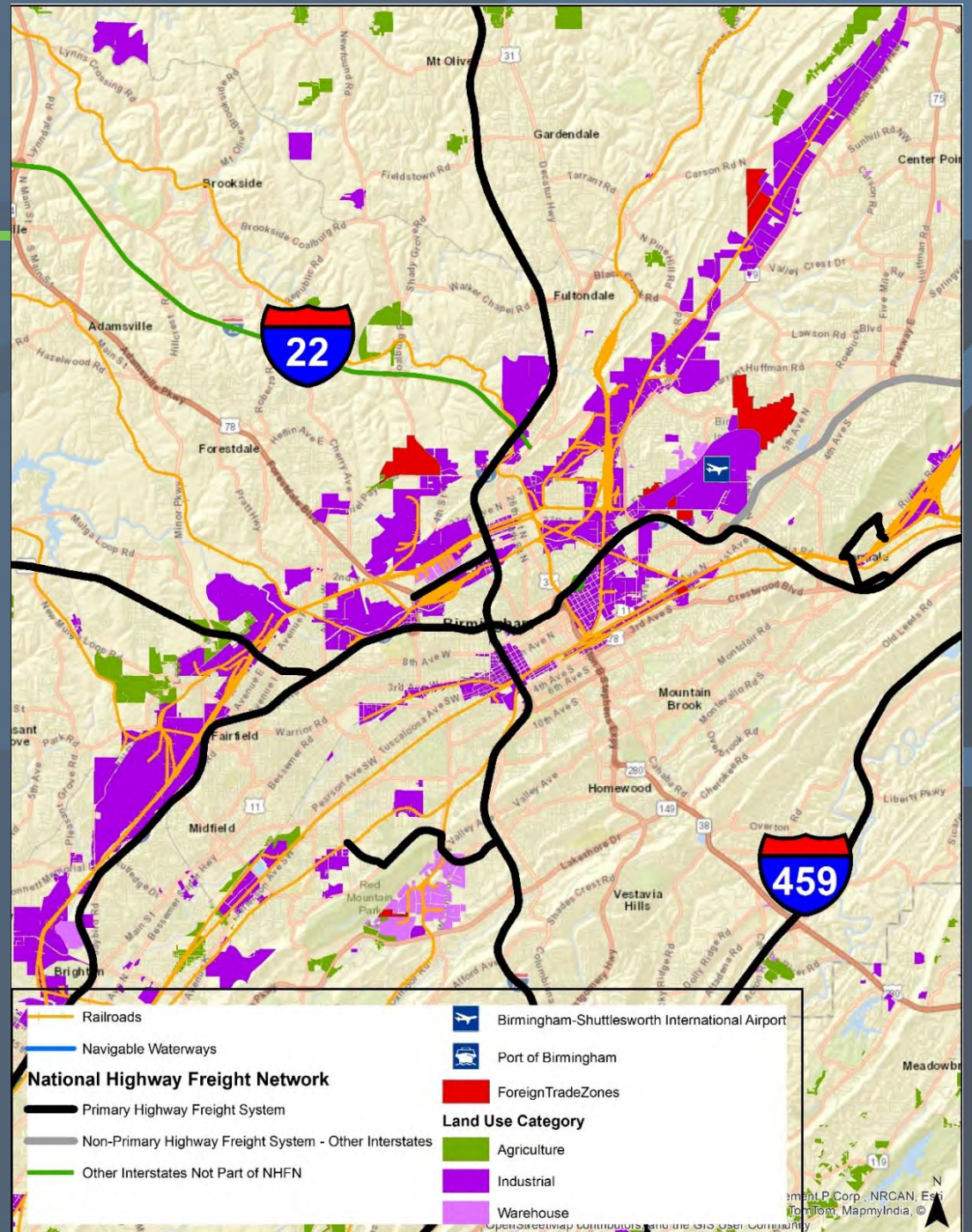
Foreign Trade Zones

- Birmingham is home to FTZ No. 98, includes subzones:
 - » 98A Mercedes-Benz
 - » 98B ZJ Industries
 - » 98C JVC America
 - » 98D NACCO Materials Handling Group, Inc.
- Locations within Birmingham are:
 - » Acipco – 314 acres
 - » Airport Air Cargo – 50.5 acres
 - » Airport CBI – 33.2 acres
 - » Airport North/Northeast – 442 acres
 - » Airport West – 24.8 acres
 - » CSX Railroad – 100 acres
 - » Munger – 96.35 acres
 - » Oxmoor Valley/USX – 705 acres
 - » Oxmoor Industrial Park – 28.8 acres
 - » Pizitz/McRae's Warehouse – 13.9 acres



Access to the System

- Industrial land uses and FTZs are concentrated along key transportation corridors
- Roadway and rail corridors and connectors provide access



Commodity Flow Analysis

Tonnage Moved by Mode and Modal Share, 2015

Mode	Origin (1,000 tons)	Destination (1,000 tons)	Internal (1,000 tons)	Total (1,000 tons)
Truck	33,751	26,116	33,836	93,703
Rail	7,843	19,044	1,389	28,275
Pipeline	872	11,698	0	12,570
Multiple Modes & Mail	1,475	2,161	126	3,763
Air (Includes Truck-Air)	10	7	0	17
Other/Unknown	1	2	0	3
Water	0	0	0	0
Total	43,951	59,028	35,352	138,331
Mode	Origin	Destination	Internal	Total
Truck	77%	44%	96%	68%
Rail	18%	32%	4%	20%
Pipeline	2%	20%	0%	9%
Multiple Modes & Mail	3%	4%	0%	3%
Air (Includes Truck-Air)	0%	0%	0%	0%
Other/Unknown	0%	0%	0%	0%
Water	0%	0%	0%	0%
Total	100%	100%	100%	100%

Commodity Flow Analysis

Top Commodities by Tonnage, 2015

Commodity	Origin (1,000 tons)	Destination (1,000 tons)	Internal (1,000 tons)	Total (1,000 tons)	Percent of Total
Coal	9,057	14,366	4,514	27,938	20%
Coal – n.e.c.	1,838	14,197	622	16,657	12%
Gravel	4,096	817	8,651	13,564	10%
Nonmetal Min. Prods.	6,220	861	3,160	10,241	7%
Base Metals	3,906	3,216	800	7,923	6%
Woods Prods.	3,619	1,506	1,451	6,577	5%
Motorized Vehicles	786	1,521	2,767	5,074	4%
Other Foodstuffs	3,750	1,688	507	4,946	4%
Articles – Base Metal	3,546	886	399	4,831	3%
Waste/Scrap	131	1,797	2,545	4,472	3%
All Others	8,000	18,173	9,936	36,109	26%
Total	43,951	59,028	35,352	138,331	100%

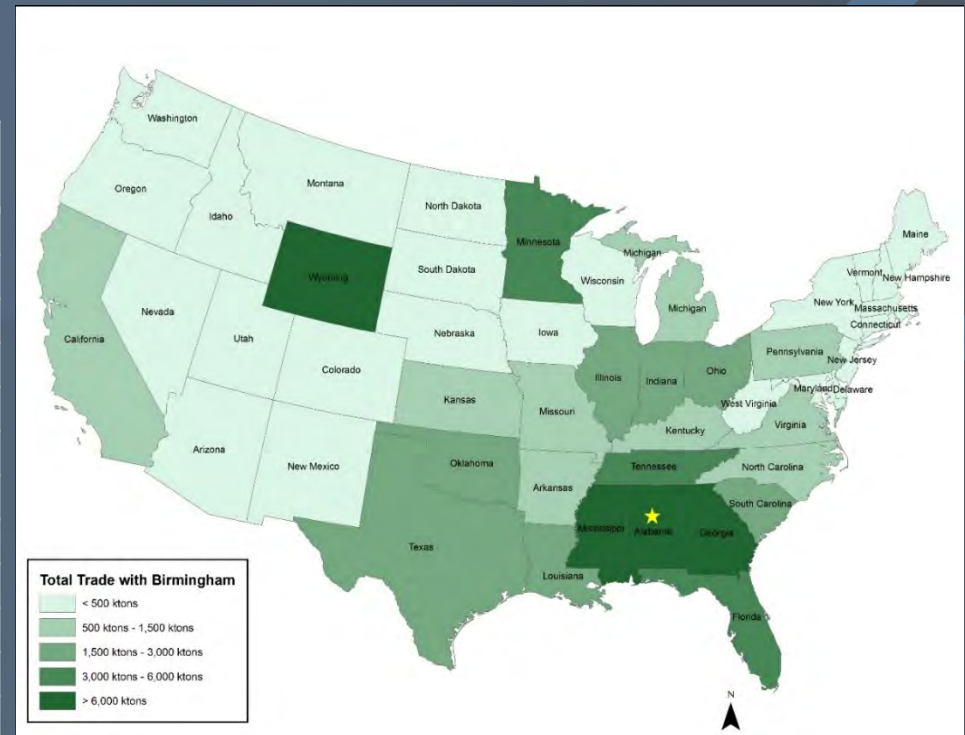
Source: FHWA – FAF4

Commodity Flow Analysis

Trading Partners - Total

- Overall, trade is predominately concentrated in the southeastern United States
 - » 34% more goods come into the Birmingham region than leave it

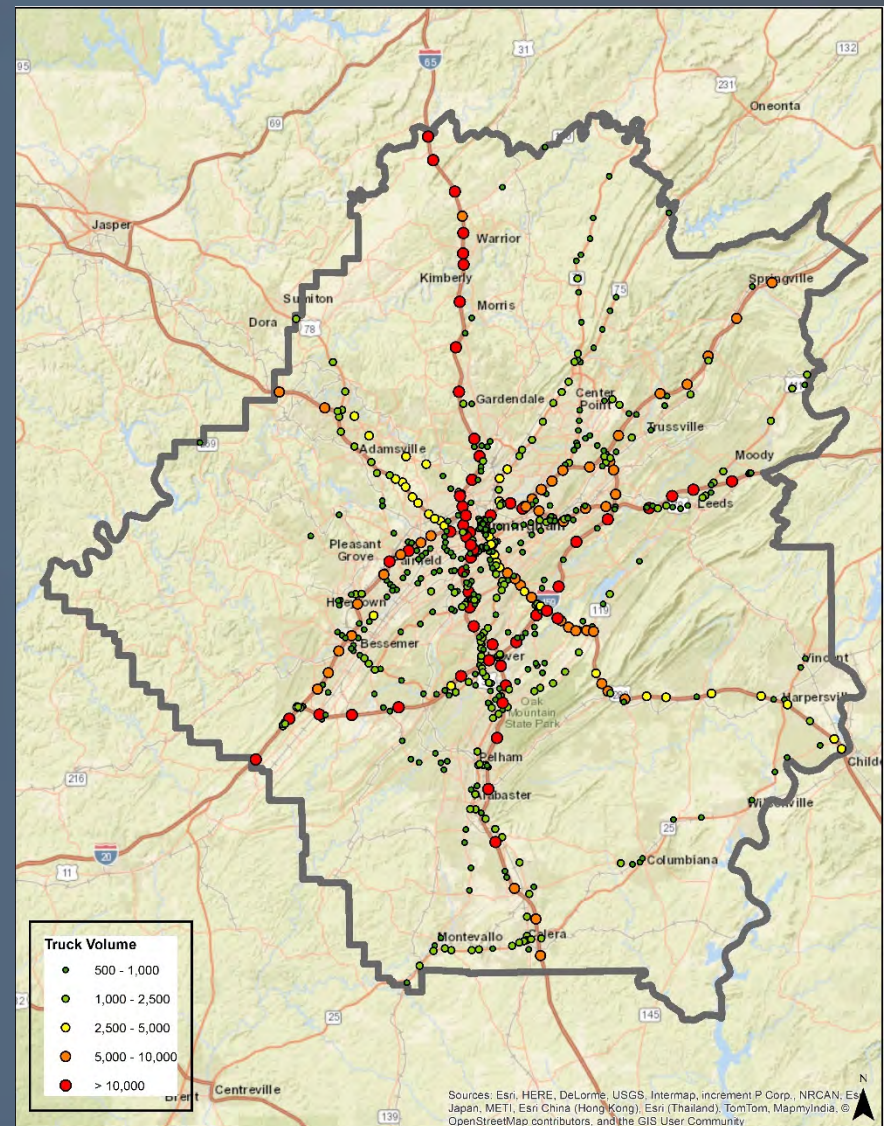
Commodity	Total (1,000 tons)	Percent of Total
Alabama	71,555	52%
Mississippi	14,305	10%
Wyoming	9,113	7%
Georgia	6,104	4%
Tennessee	4,658	3%
Minnesota	3,233	2%
Florida	3,189	2%
Indiana	2,408	2%
Oklahoma	2,406	2%
Illinois	2,322	2%
Ohio	2,291	2%
All Others	16,745	12%
Total	138,331	100%



Source: FHWA – FAF4

Truck Traffic Volumes, 2015

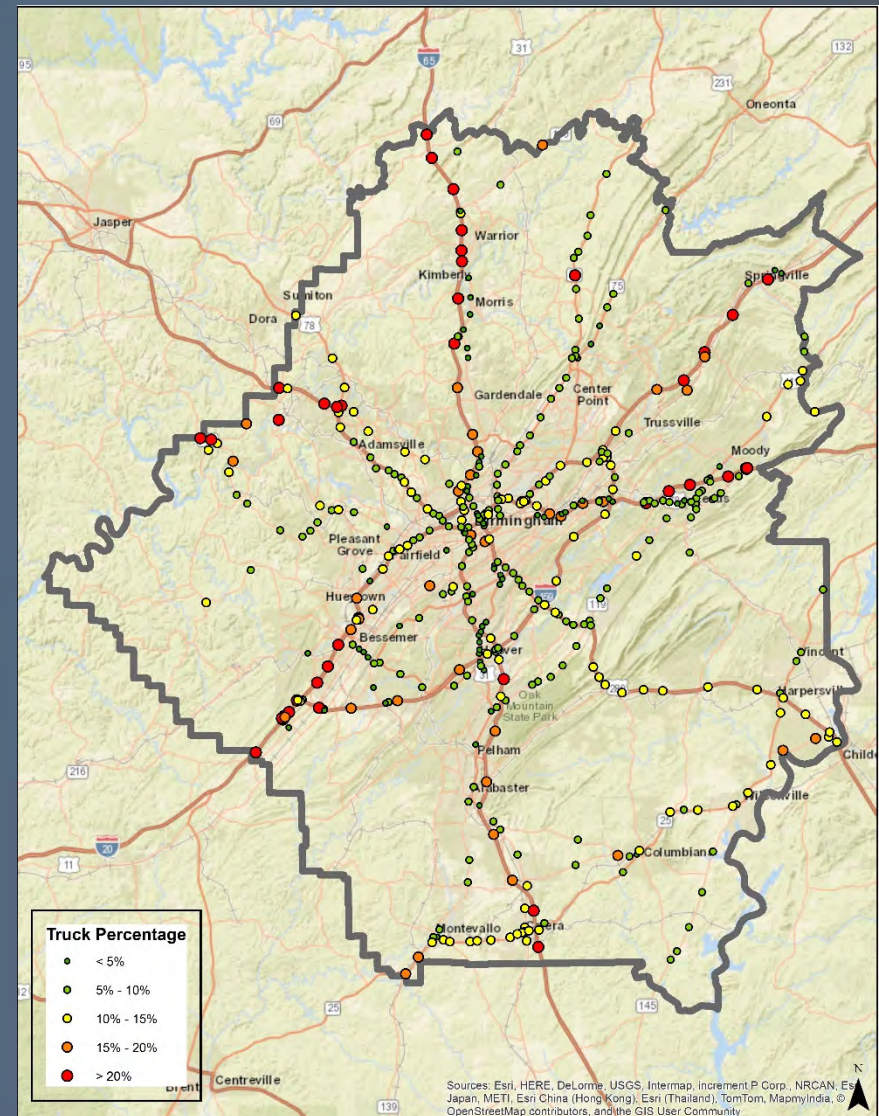
- Highest truck volumes observed along I-65, I-20, I-459, I-59, and 280
- I-22 volumes likely to increase with connection complete
- I-65 handles the largest volumes of trucks throughout the region



Source: Birmingham MPO

Truck Share of Traffic, 2015

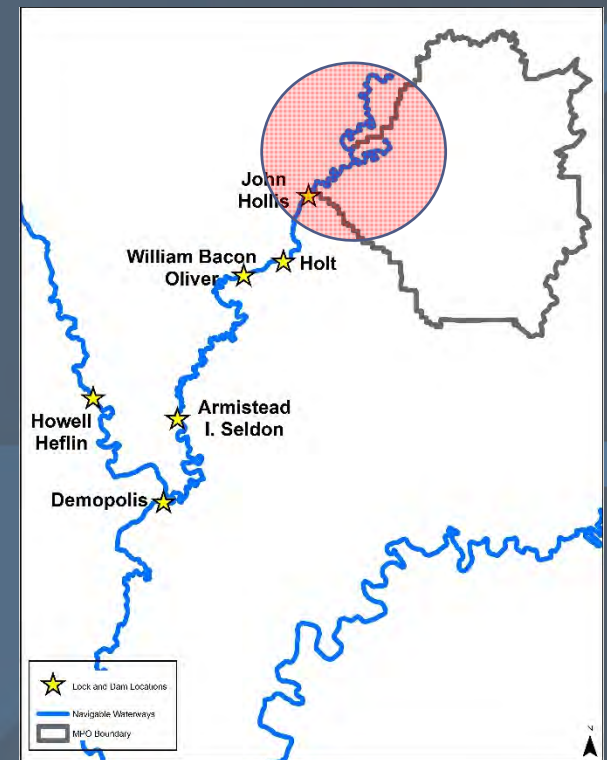
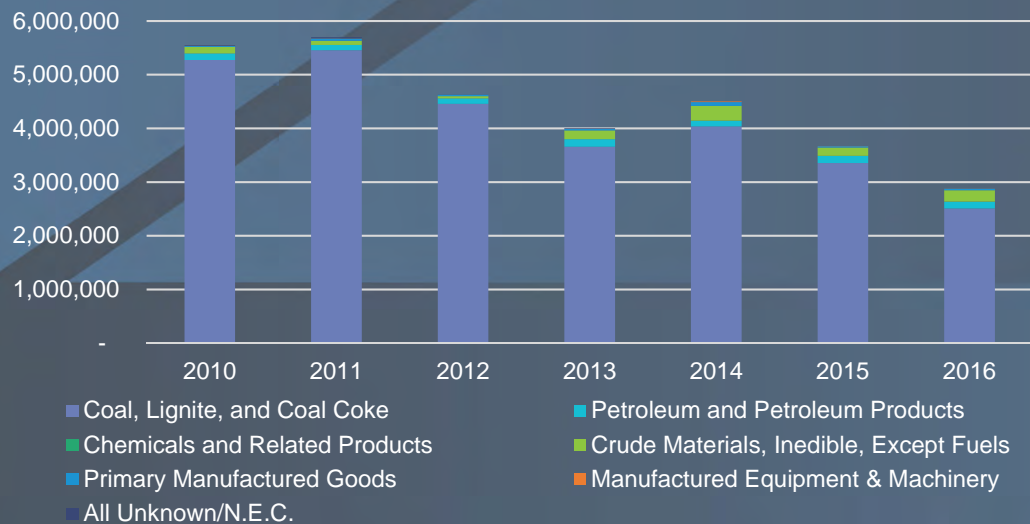
- Trucks make up more than 10 percent of the traffic flow on the core roadway network
- Highest concentrations of trucks occur outside the urban centers
- Non-Interstates emerge as key truck corridors including:
 - » SR 269 from Birmingham to Port Birmingham
 - » SR 79 and SR 75 to the North
 - » SR 25 East and West of I-65
 - » US 78 in Leeds



Source: Birmingham MPO

Waterway Movements

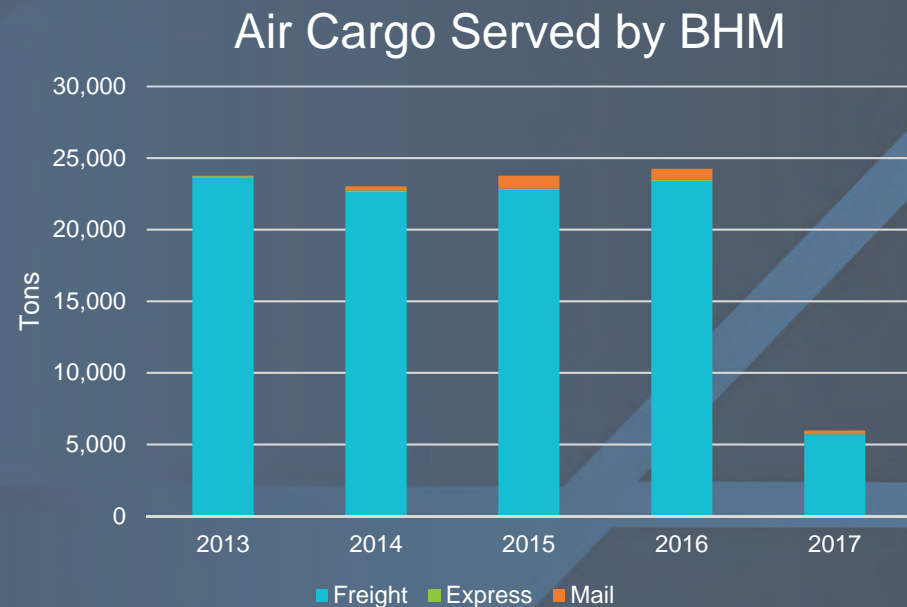
John Hollis



Source: USACE Navigation Data Center

Air Cargo

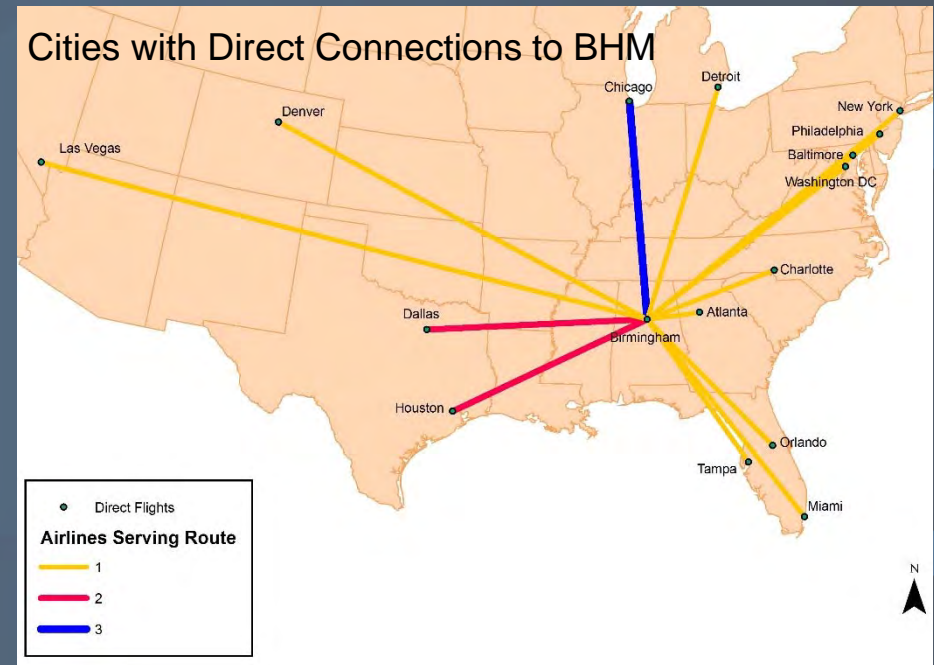
- Air Cargo is typically the least used mode for freight transportation
- Goods transported by air are usually high value and/or time sensitive
- Air cargo volumes have held steady at BHM
 - » Average of 23,704 tons/year since 2013
 - » Largest percent growth has been in outbound mail
 - » Jan – Mar 2017 volumes are 4% higher than the average for 2013 - 2016



Source: Birmingham-Shuttlesworth International Airport

Air Cargo

- Success of air cargo is tied to passenger services when dedicated air cargo carriers are not present
 - » Much of air freight nationally is transported as belly cargo
- Limited air services at BHM impact flexibility of freight supply chains
 - » 15 cities have direct air connections to Birmingham, many with only one direct flight per day
 - » This also has an impact on businesses which have personnel flying into and out of the region



Source: Birmingham-Shuttlesworth International Airport

Economic Impacts of Freight

- Birmingham's freight industry is a critical component to the regional economy
 - » 91K freight jobs (15%)
 - » \$29 billion in economic output (28%)
 - » \$65K average salary (45% higher than all others)

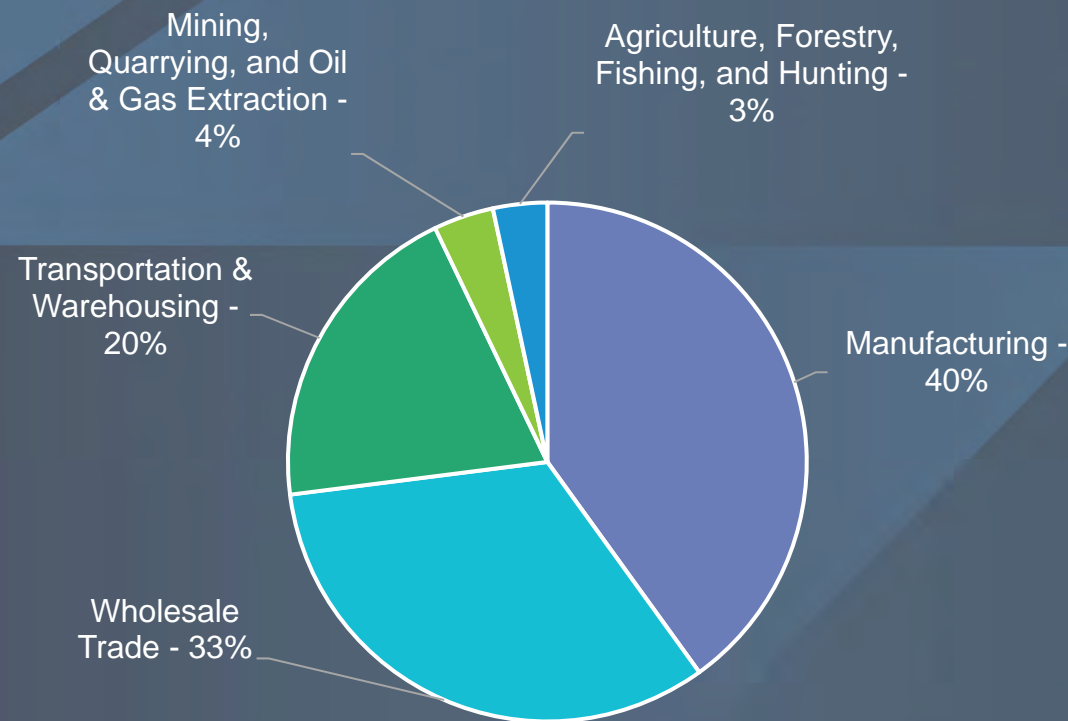


Source: IMPLAN, 2014.

Economic Impacts of Freight

- ➔ Manufacturing has the largest impact on employment, employing nearly 37,000 persons or 40% of all freight-related employment

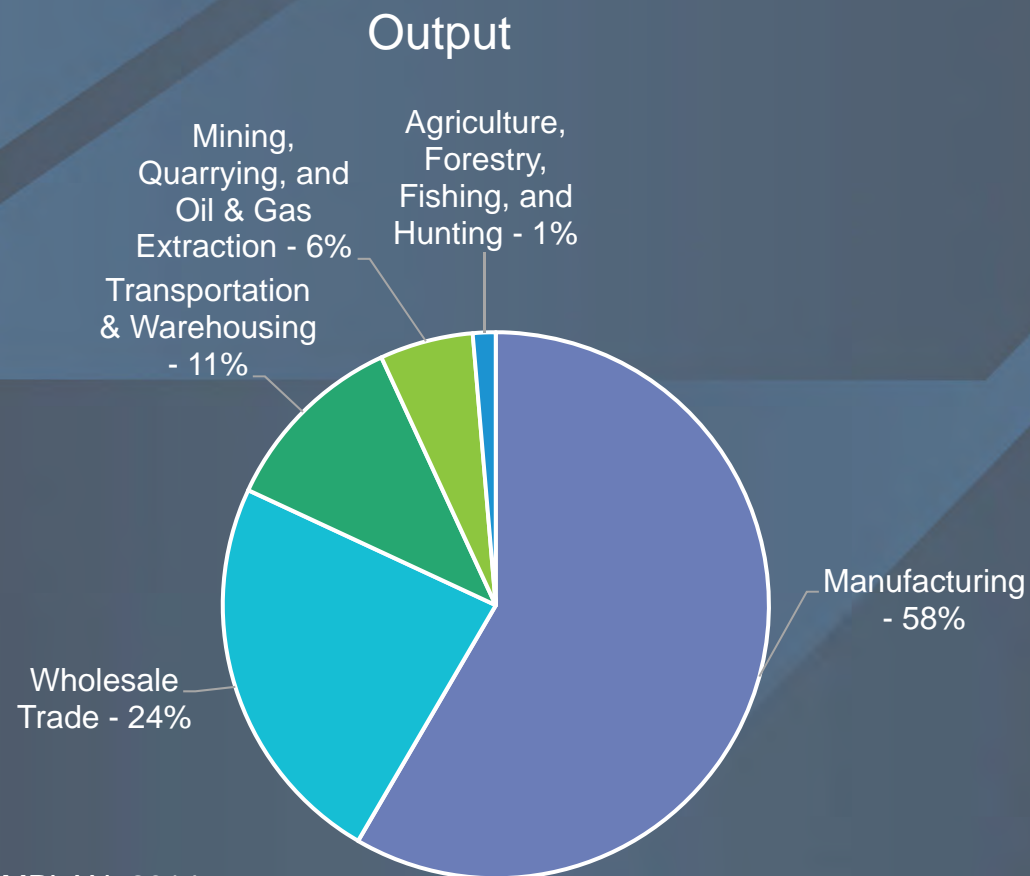
Employment



Source: IMPLAN, 2014.

Economic Impacts of Freight

- Industries which generate finished products contribute more towards the region's economic output



Source: IMPLAN, 2014.

Economic Impacts of Freight

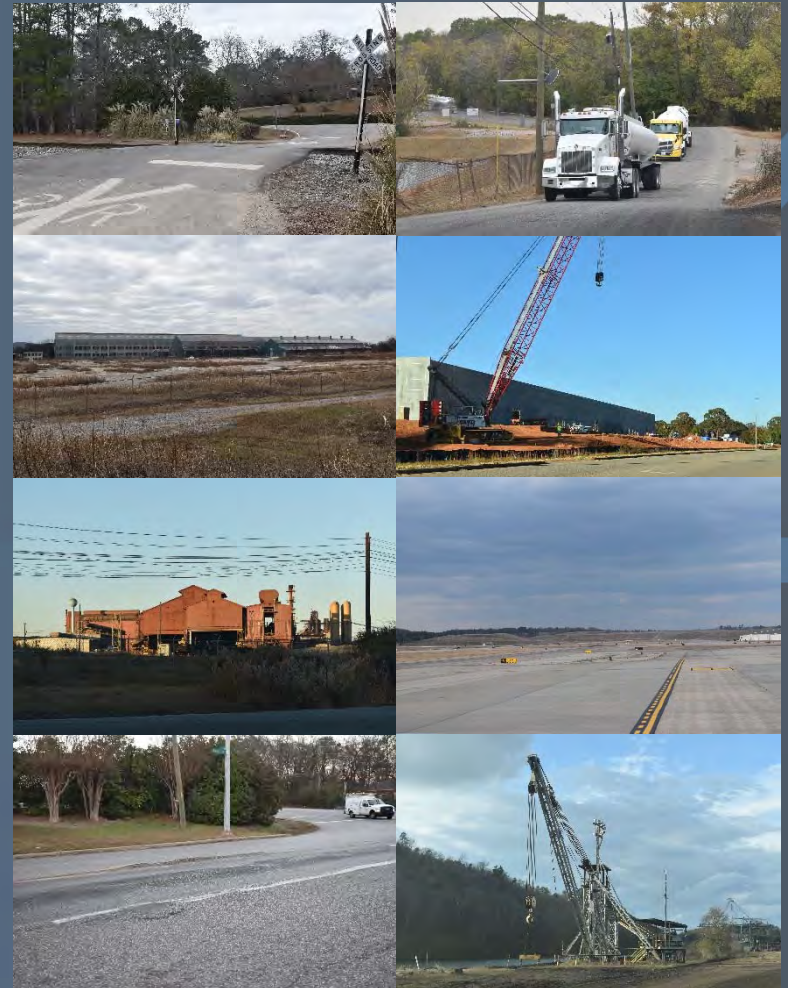
- Freight-related employment generates nearly \$6 billion in employee compensation
 - » Employees are paid roughly \$20,000 more than non-freight related jobs
 - » Employees are paid roughly \$40,000 more than an average job in retail trade or accommodation and food services

Industry	Average Compensation
Wholesale Trade	\$73,883
Manufacturing	\$66,961
Mining, Quarrying, and Oil & Gas extraction	\$58,330
Transportation and Warehousing	\$57,636
Agriculture, Forestry, Fishing and Hunting	\$7,431
Freight Related	\$65,056
Non-Freight Related	\$44,952
Statewide Average	\$47,946

Source: IMPLAN, 2014.

Identification of Needs

- Review needs identified to date
 - » Roadway needs largely available
 - » Other modal needs limited
- Discuss best way to finalize needs lists by mode
 - » Roadway needs
 - » Roadway connectors to other modal hubs
 - » Non-roadway network needs



Roadway Needs

- Current RTP lists many funded and unfunded projects that support freight movement
- Stakeholders identified many needs including capacity, maintenance, operational, regulatory, and development related
- Consolidated list will be developed for prioritization
- Some project types will be addressed through Plan recommendations



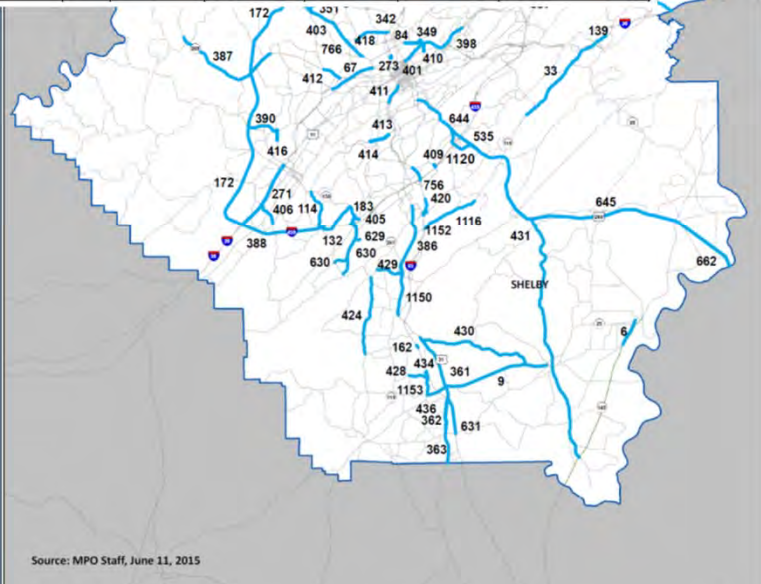
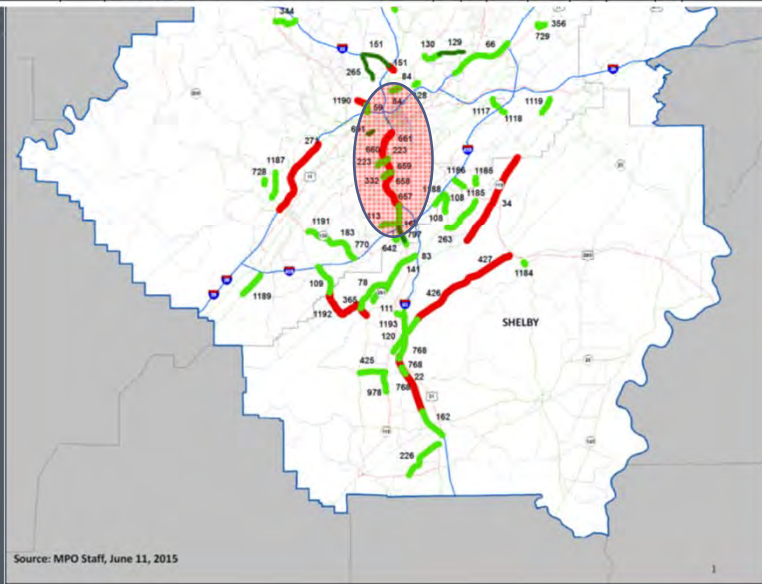
Roadway Needs

2040 Regional Transportation Plan Non-Exempt Projects (Capacity Projects) Birmingham Metropolitan Planning Area Based On US 2010 Census Data

2040 Regional Transportation Plan Visionary Plan Capacity Projects Birmingham Metropolitan Planning Area Based On US 2010 Census Data

TABLE 1. 2040 Regional Transportation Plan, Non-Exempt Projects (Capacity Projects) sorted by Analysis Year, then by sponsor, then by MAP ID

Sponsor	MAP (MPO) ID	Project Descriptions	Lane Before	Lane After	Length	Proposed Fiscal Year	Regional Significant	Conformity Analysis Years	TELLUS Table #	ALDOT Project #	Scope	Type of Work	Funding Program	Total Cost (Year of Expenditure)	Federal Cost (Year of Expenditure)	Total Cost (2015 \$)	Federal Cost (2015 \$)	changes since January 2015
ALDOT	657	I-65 Auxiliary Lane Hoover - From US 31 NB to Alford Avenue	6	8	1.50	2025	Yes	2030	1	500000309	CN	Additional Roadway Lanes	STPBH	\$6,883,136	\$5,506,509	\$2,653,747	\$2,122,997	no change
ALDOT	658	I-65 Auxiliary Lanes Homewood/Hoover - From Alford Avenue NB to Lakeshore Parkway/Lakeshore Pkwy SB to Alford Avenue	6	8	1.00	2025	Yes	2030	1	500000310	CN	Additional Roadway Lanes	STPBH	\$14,861,653	\$11,889,322	\$5,729,810	\$4,583,848	no change
ALDOT	659	I-65 Auxiliary Lanes Homewood - From Lakeshore Parkway NB to Oxmoor Road/Oxmoor Road SB to	6	8	1.00	2026	Yes	2030	1	500000312	CN	Additional Roadway Lanes	STPBH	\$7,589,508	\$6,071,607	\$2,660,076	\$2,128,061	adding lanes
ALDOT	660	I-65 Auxiliary Lanes Birmingham - From Oxmoor Road NB to Greensprings Avenue/Greensprings Road SB to Oxmoor Road, Bridge replacement at Valley Ave	6	8	1.00	2027	Yes	2030	1	500000313	CN	Additional Roadway Lanes/Bridge	STPBH	\$6,740,354	\$5,392,283	\$2,147,684	\$1,718,148	adding lanes and widening a bridge



Rail Needs

- Resolve conflicts with roadways (crossings, etc.)
- Preserve rail-served industrial property for rail-served industrial use
- Promote use of rail at rail served properties



Port/Waterway Needs

- Waterways, locks, berths are mostly in good condition
- Needs include:
 - » Continue to maintain locks, dams, and dredging
 - » Improve utilities, especially internet, and access to waterside properties
 - » Promote Port of Birmingham through marketing of services
 - » Develop climate controlled warehouse space to attract new markets
 - » Designate Port Birmingham as FTZ
 - » Create stronger rail links to commodity-appropriate industries and markets (e.g., to agricultural markets in the Midwest)



Airport Needs

- ➔ Main runway and taxiway are too close
- ➔ Second runway is inadequate
- ➔ East cargo area would require new roadway access
- ➔ Additional passenger flights would facilitate growth in air cargo
- ➔ Master Plan defines short, medium and long term needs

SHORT-TERM (2018-2022) DEVELOPMENT PROGRAM

Project	Project Cost Estimate ¹		
	Total	Federal Share	Local Share
Environmental Assessment: Taxiway A / Village Creek	\$1,000,000	\$900,000	\$100,000
Taxiway F Grading, Drainage, and Conduit Repair	450,000	405,000	45,000
Taxiway B Grading, Drainage, and Conduit Repair	230,000	207,000	23,000
TOTAL	1,680,000	1,512,000	168,000

LONG-TERM DEVELOPMENT COST ESTIMATE SUMMARY

Project	Project Cost Estimate ¹		
	Total	Federal Share	Local Share
Airport Master Plan Update	\$1,400,000	\$1,260,000	\$140,000
Realign East Lake Boulevard	4,200,000	3,780,000	420,000
Realign Runway Drive	1,000,000	0	1,000,000
Air Cargo Avenue Realignment	650,000	585,000	65,000
Site Development Build Out, Continued	2,000,000	0	2,000,000
Runway 18-36 – Phase II, North Extension	30,500,000	27,450,000	3,050,000
Obstruction Removal	1,000,000	900,000	100,000
Runway 6-24 Rehabilitation	13,500,000	12,150,000	1,350,000
Terrain Removal –North of Runway 24 (890 CY)	2,400,000	2,160,000	240,000
Air Cargo Facility Expansion	30,000,000	13,500,000	16,500,000 ²
TOTAL (FY 2027 – FY 2038)	\$86,650,000	\$61,785,000	\$24,865,000

Notes: 1-Costs are in 2016 dollars
2- Federal and BHM shares of costs based on taxiway portion of apron. Tenant costs form the bulk of the local share

Conduct Area Plan Feasibility Investigations	500,000	450,000	50,000
TOTAL	1,180,000	1,062,000	118,000

INTERMEDIATE-TERM DEVELOPMENT COST ESTIMATE SUMMARY

Project	Project Cost Estimate ¹		
	Total	Federal Share	Local Share
Village Creek Relocation ²	\$100,000,000	\$50,000,000	\$50,000,000
Taxiway A Realignment	4,100,000	3,690,000	410,000
Taxiway H Extension –AANG to the Runway 24	13,500,000	12,150,000	1,350,000
RW 18 Terrain Removal – 375,000 CY	4,300,000	3,870,000	430,000
Runway 18-36 Improvements – Phase I, South			
Aviation Area Site Preparation			
Aviation-Compatible Site Preparation			
Obstruction Removal			
Aviation Site Development			
Aviation Compatible Site Development			
TOTAL (FY 2023 – FY 2027)	\$118,900,000	\$59,450,000	\$59,450,000

Notes: 1-Costs are in 2016 dollars
2- Assumes 50% federal funding. Local funds are potential airport portion only.



<http://bhmmasterplan.com/wp-content/uploads/2017/04/Chapter-6-Proposed-Development-Implementation-and-Finance.pdf>

Finalizing Needs List

- Roadways
 - » Review RTP needs and add in any identified projects from field review and stakeholder input
- Railroads
 - » Requests will be send to each railroad contact asking for specific projects
- Ports/Waterways
 - » Requests will be sent to Port Birmingham and the waterway associations asking for specific projects
- Airport
 - » Review master plan and discuss project list with airport staff

Prioritization of Needs

- Review performance-based approach
- Define agreed upon approach for this Plan
- Discuss possible performance metrics
- Discuss available data
- Identify direction for next steps

Performance-Based Planning



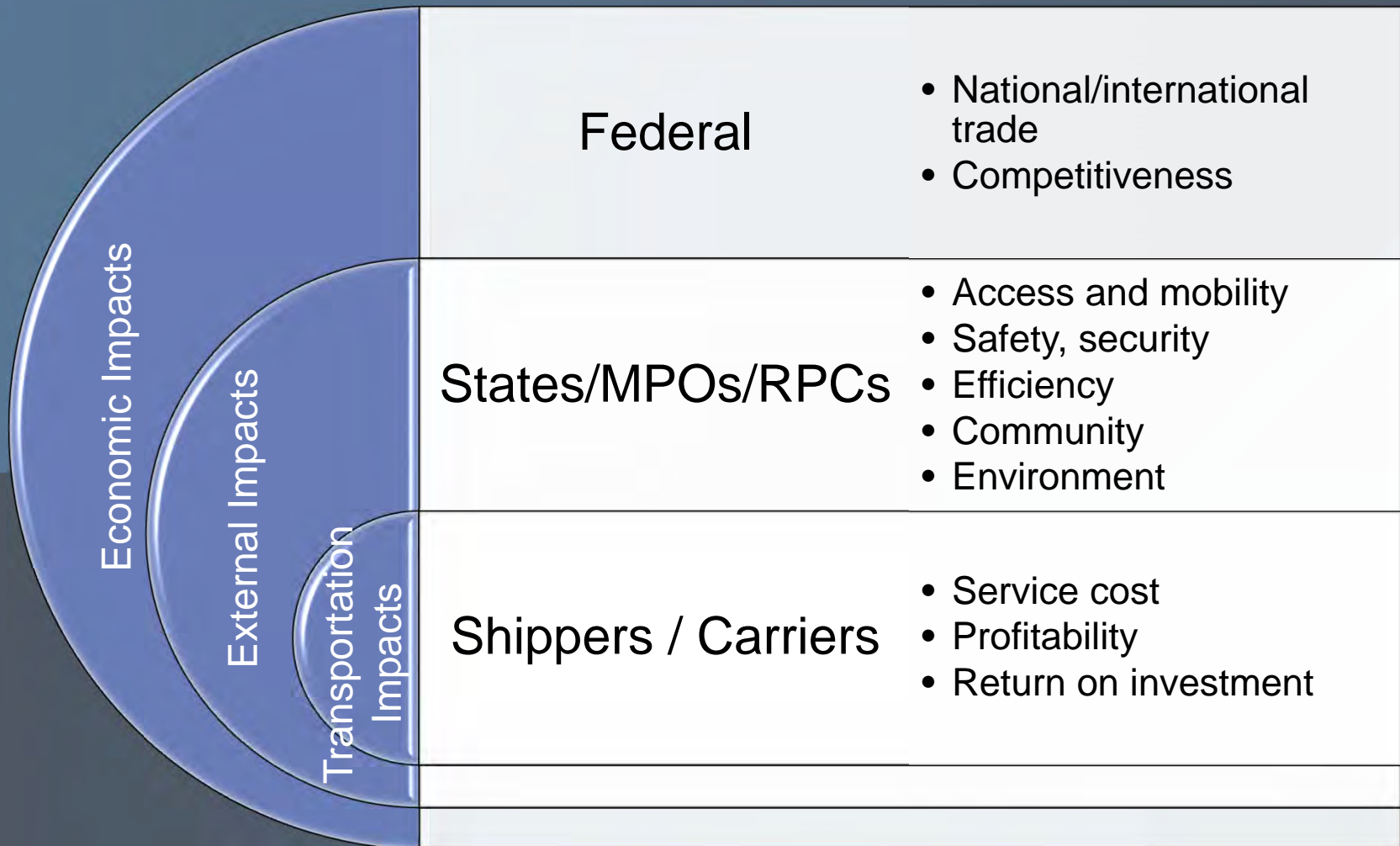
Performance-Based Planning

- Supports transparent decision-making in competitive funding environment
- Provides context for plan development and helps balance analysis across competing needs
- Ensures investment decisions align with long-term goals
- Allows agency to manage expectations

Guiding Principles for Regional Freight Plan

- Define a strategic set of freight investment goals/objectives to guide investment
- Focus on “vital few” performance measures that align with freight investment goals and are easily understood
 - Combination of qualitative and quantitative performance metrics is preferred
 - Support federal and state performance focus areas
 - Nest within upcoming RTP update process
- Yield High/Medium/Low project ranking to inform future 2045 Regional Transportation Plan update

Focus Areas for Performance Evaluation



Draft Performance Framework

Performance Area	Goals	Objectives	Performance Measures
Economic Impacts	Advance regional economic development through strategic freight investments	Improve access to critical freight assets	Project improves last-mile access to designated freight facility/asset
		Improve (intermodal) connections on freight network	Project improves network connection
			Project provides capacity for designated freight network
		Enhance freight related employment and development opportunities	Number of jobs created/served (short-term, long-term)
External Impacts	Identify opportunity to leverage freight investment for benefit of all	Mitigate negative impacts of freight development	Project scope minimizes impact to surrounding community
		Improve safety for all freight system users	Crash reduction (or Existing number/rate of crashes)
Transportation Impacts	Improve freight mobility	Reduce delay on freight network	(Truck) Vehicle-hours delay reduced
		Reduce costs for shippers, operators, and consumers	Travel cost savings
		Enhance travel time reliability	Project improves network reliability

Other Selection Criteria For Discussion and Consideration

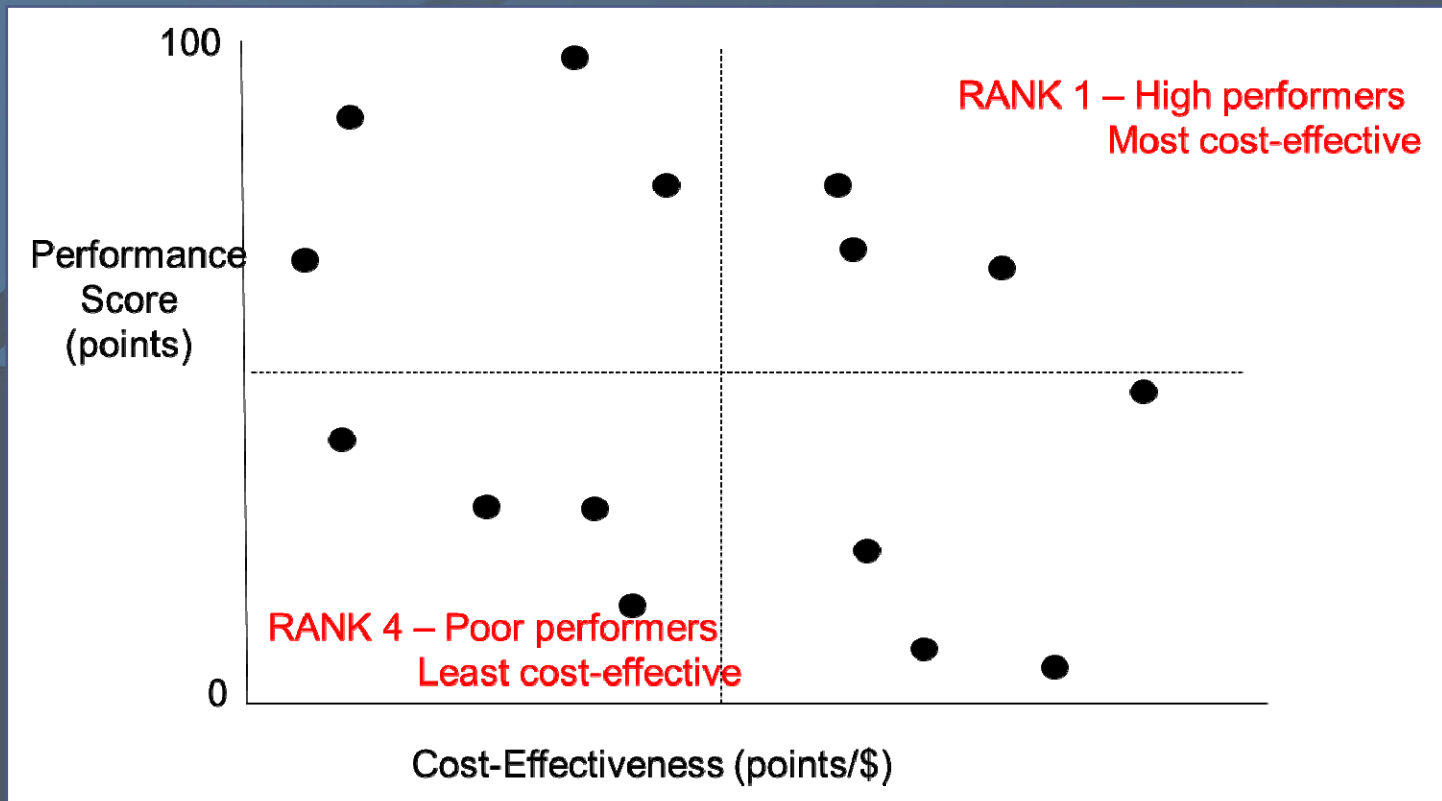
- Improves export/import capability and capacity of intermodal asset
- Responds to identified market need
- Eliminates freight bottleneck
- Provide dedicated freight facility (additional capacity detail)
- Uses technology to improve freight operations
- Improves safety/security at rest stops, layover areas or other freight facilities
- Stimulates use of marine highways or short sea shipping
- Project reduces empty backhaul movements (to cut shipping costs)
- In local freight plan
- Private/public fund split
- Provide cross-modal benefits
- Project readiness
- Dependency on other projects
- Improves asset condition

Option 1: Evaluate by Mode

- Assign and evaluate projects by mode (air, rail, water, road)
- Projects evaluated and scored against same set of evaluation criteria, but criteria weighted differently to reflect unique needs of each mode; e.g.,:
 - Air: capacity weighted higher
 - Rail: Intermodal connections weighted higher
- Rank projects based on performance impacts (within mode or across all modes)

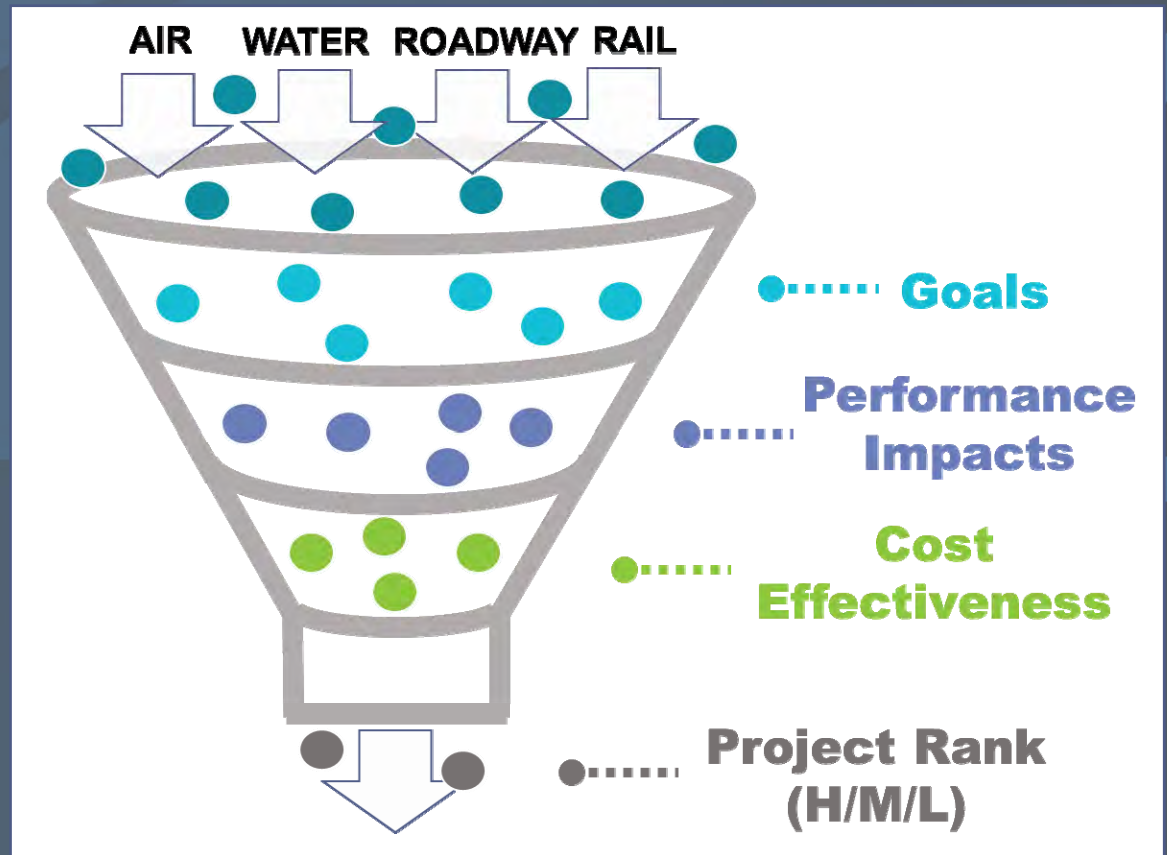
Option 2: Integrate Cost Considerations

- Combine effectiveness (how well a project is performing) with cost-effectiveness (how expensive the performance impacts will be)



Project Prioritization Process Discussion

- Level of technical detail
- Weighting performance criteria
- Modal distinction
- Cost considerations
- Other stakeholder considerations



Remaining FTAC Activities

- Review draft needs and priorities
- Review draft plan
- Attend one more FTAC meeting

- Question: Would you be willing and/or interested to add a fourth meeting?
 - » FTAC Meeting #3 to review prioritized needs
 - » FTAC Meeting #4 to review final plan

Next Steps

- Complete profile
- Develop list of project needs
- Finalize prioritization methodology
- Calculate priorities
- Develop outline for final plan

Additional Slide Material

- The below slides provide additional details in support of the above presentation

What Did We Learn from Last FTAC Discussion?

- Morning delivery and afternoon pickup are difficult due to congestion
- Manufacturing and distribution volumes vary with the economy
- Plan should focus on multimodal list of needs/projects
- Opportunities should address economic development
- Region needs to find opportunities to replace shrinking industries
- Urban delivery is difficult with insufficient loading/unloading facilities
- Key Interstate interchanges have dangerous weaving areas

What Did We Learn from Last FTAC Discussion?

- Rail corridors should be preserved for industrial use and operations
- Rail served sites do not always take advantage of rail service; and there is an overall lack of rail served sites available
- Key at grade rail crossings should be identified
- Consider grade separation projects to address rail operations and community quality of life and safety
- Region is home to network of industrial parks, FTZs, private warehouse and distribution centers
- Growth in demand for air cargo service is needed to stimulate airport growth
- Effective development and use of incentive programs to attract and retain businesses is needed

Designation Critical Urban Freight Corridors

- What are the requirements for designating a CUFC?
 - » For an urbanized area with a population of 500,000 or more, the MPO, in consultation with the State, may designate a CUFC
 - » A public road designated as a CUFC must be in an urbanized area, and meet one or more of the following four elements:
 - (A) connects an intermodal facility to:
 - the PHFS;
 - the Interstate System; or
 - an intermodal freight facility;
 - (B) is located within a corridor of a route on the PHFS and provides an alternative highway option important to goods movement;
 - (C) serves a major freight generator, logistic center, or manufacturing and warehouse industrial land; or
 - (D) is important to the movement of freight within the region, as determined by the MPO or the State

https://ops.fhwa.dot.gov/fastact/crhc/sec_1116_gdnce.htm

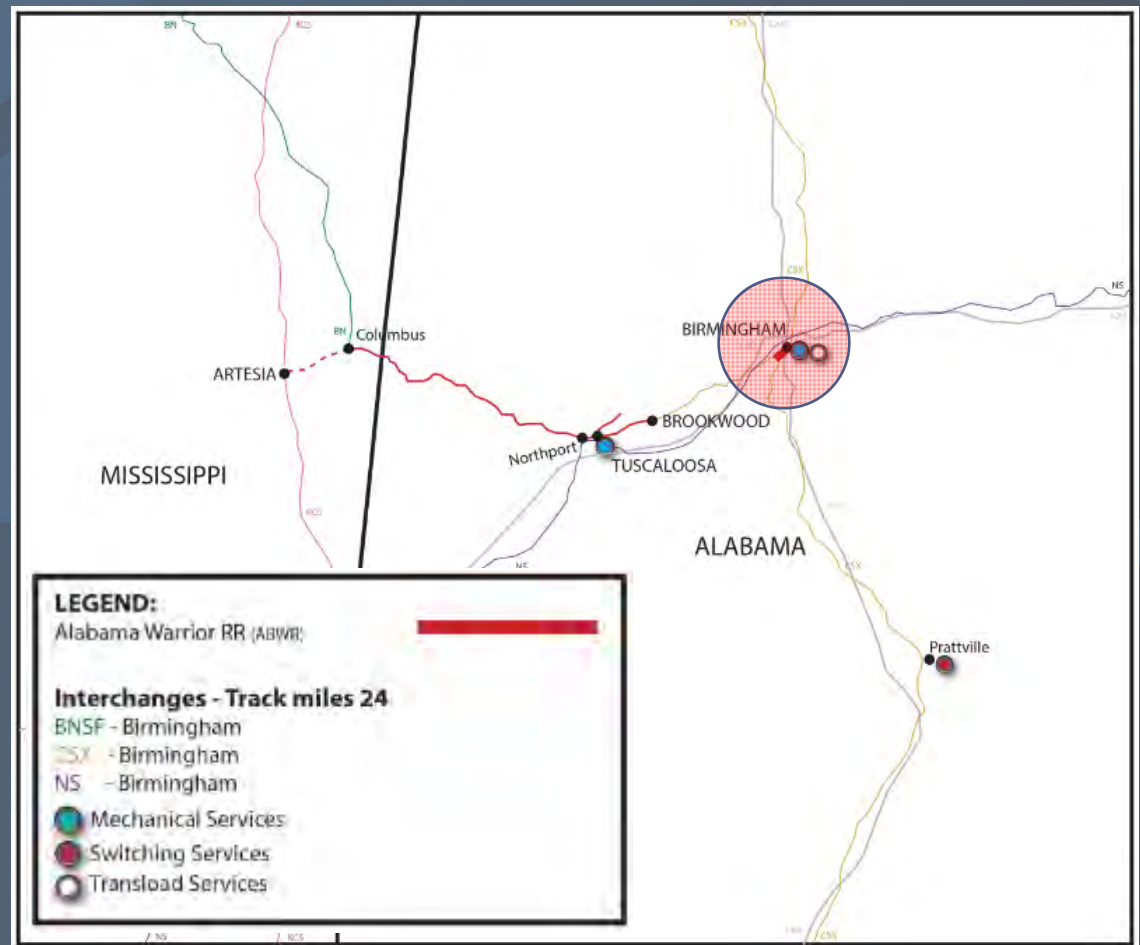
Designation Critical Urban Freight Corridors

- FHWA encourages States to consider first or last mile connector routes from high-volume freight corridors to freight-intensive land and key urban freight facilities, including ports, rail terminals, and other industrial-zoned land
- For each State, a maximum of 75 miles of highway or 10 percent of the PHFS mileage in the State, whichever is greater, may be designated as CUFCs
- States and MPOs (for urbanized areas over 500,000) are responsible for jointly determining how to distribute the CUFC mileage among the urbanized areas
- CUFC Maximum Mileage Limit for Alabama is 81.30

https://ops.fhwa.dot.gov/fastact/crhc/sec_1116_gdnce.htm

Alabama Warrior Railway

- 24 miles of rail with a track capacity of 268,000 lbs
- Currently owned by Watco
- Predominately used to ship coal



Source: Watco.

Alabama and Tennessee River Railway

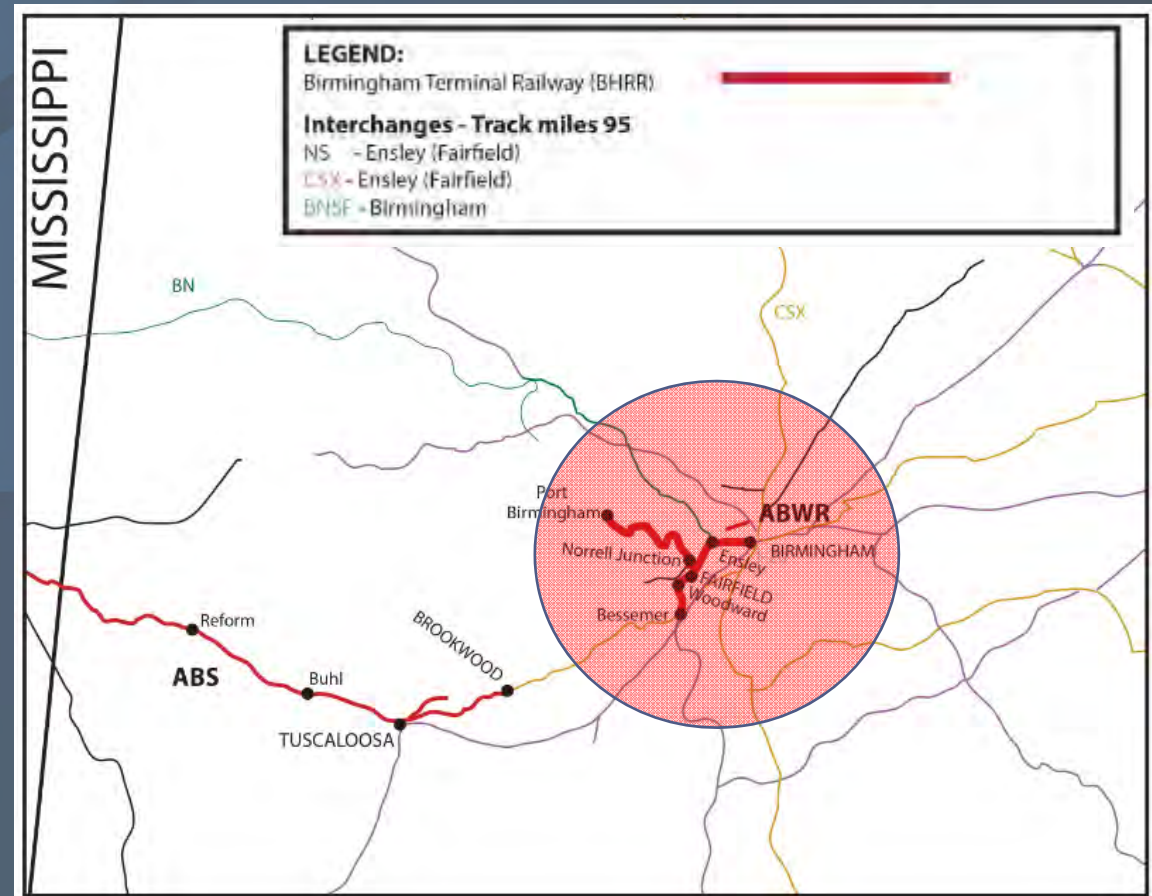
- Connects Birmingham to the Port of Guntersville via rail
- Owned by OmniTRAX and operates 120 miles of track



Source: OmniTRAX.

Birmingham Terminal Railway

- 96 miles of rail serving more than 30 customers, including access to the Port Birmingham Terminal
- Current track has a capacity of 286,000 lbs
- Owned by Watco



Source: Watco.

BNSF Railway

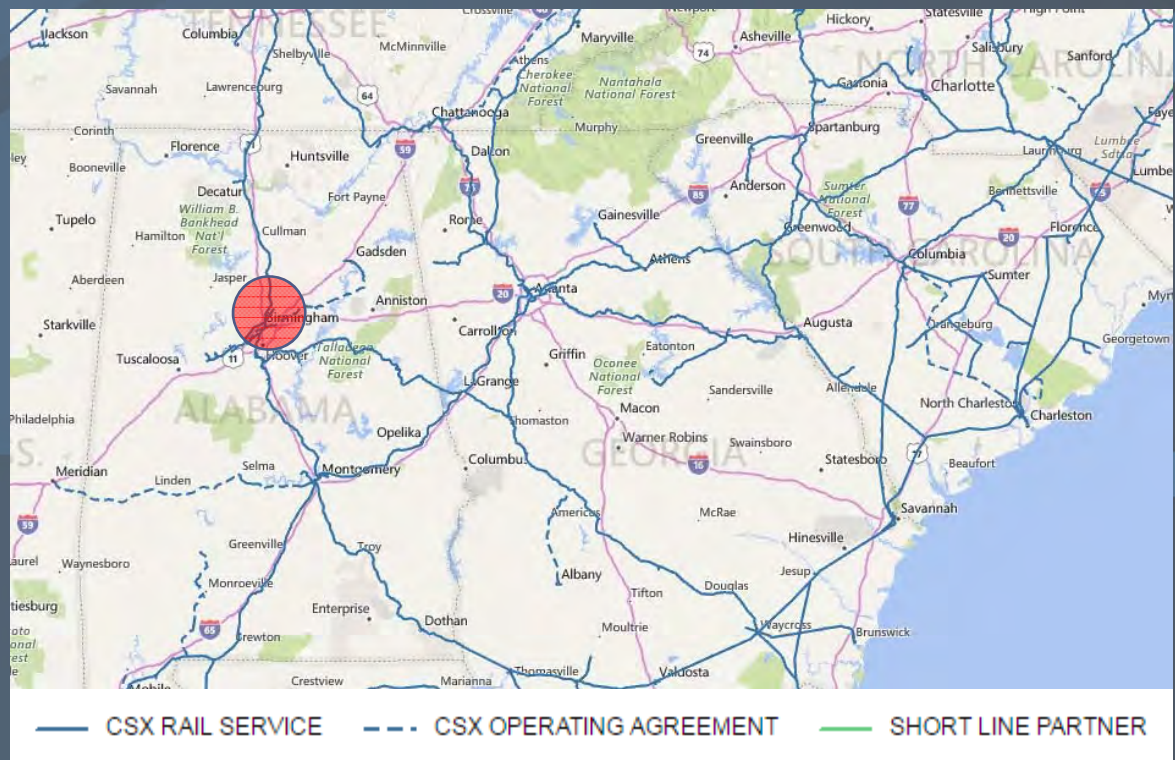
- Birmingham is part of BNSF's Heartland Division
- As one of the largest railroads in the country, BNSF connects Birmingham with most of the western United States



Source: BNSF.

CSX Transportation

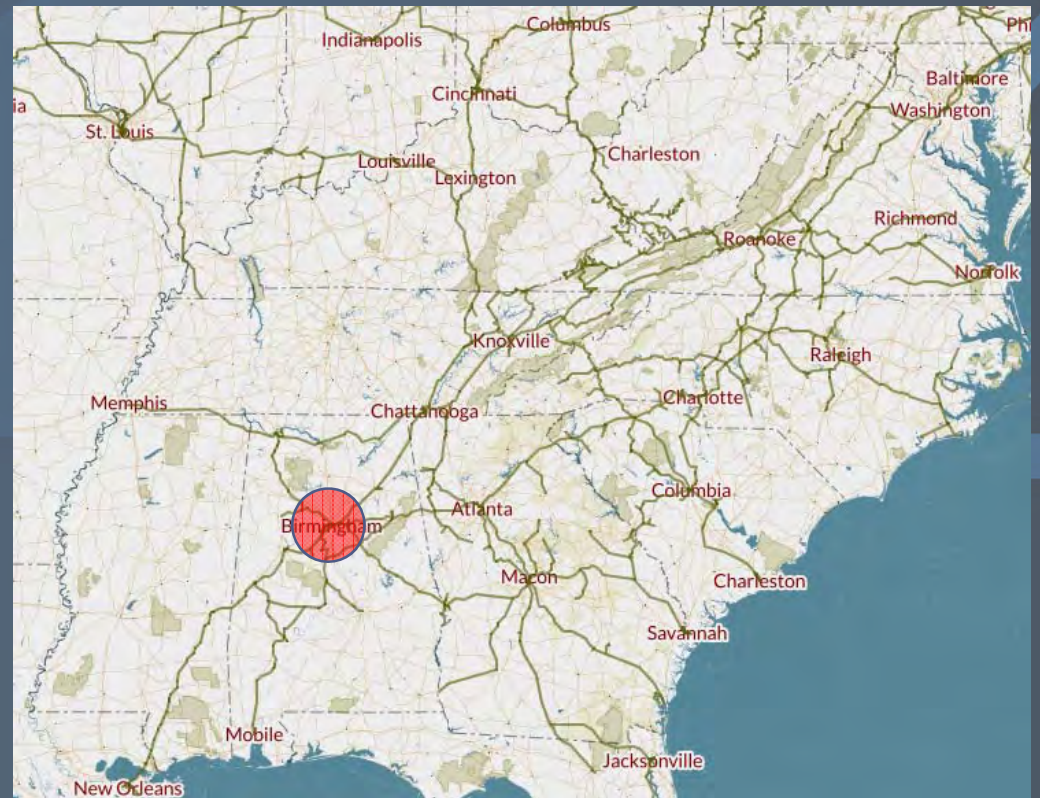
- CSX's extensive network connects Birmingham with much of the east coast
- Facilities in Birmingham (Boyles) include a major rail yard, TDSI auto distribution terminal, and a TRANSFLO Terminal Service Bulk Transfer Terminal



Source: CSX.

Norfolk Southern Railway

- Norfolk Southern also provides service to the eastern portion of the United States
- Terminal in Birmingham handles TOFC/COFC, STACK Cars, and ExpressNS



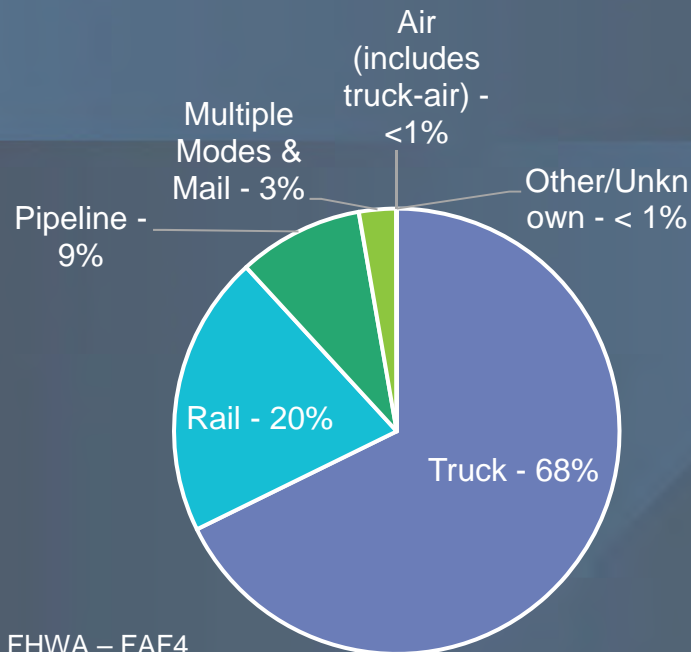
Source: Norfolk Southern.

Commodity Flow Analysis

Movements by Mode

- Majority of goods move by truck, followed by rail and pipeline
 - » With last mile deliveries, trucks effectively handle near all shipments
 - » Note water is not captured by FAF due to the waterway system's position relative to FAF zones

Share of All Tonnage Moved, 2015



Source: FHWA – FAF4

Commodity Flow Analysis

Value Moved by Mode and Modal Share, 2015

Mode	Origin (\$M)	Destination (\$M)	Internal (\$M)	Total (\$M)
Truck	\$38,445	\$45,424	\$35,838	\$119,707
Rail	\$3,994	\$4,321	\$182	\$8,498
Pipeline	\$199	\$2,992	\$0	\$3,191
Multiple Modes & Mail	\$4,958	\$8,100	\$898	\$13,956
Air (Includes Truck-Air)	\$473	\$435	\$0	\$908
Other/Unknown	\$3	\$14	\$0	\$17
Water	\$0	\$0	\$0	\$0
Total	\$48,072	\$61,287	\$36,918	\$146,277
Mode	Origin	Destination	Internal	Total
Truck	80%	74%	97%	82%
Rail	8%	7%	0%	6%
Pipeline	0%	5%	0%	2%
Multiple Modes & Mail	10%	13%	2%	10%
Air (Includes Truck-Air)	1%	1%	0%	1%
Other/Unknown	0%	0%	0%	0%
Water	0%	0%	0%	0%
Total	100%	100%	100%	100%

Source: FHWA – FAF4

Commodity Flow Analysis

Top Trading Partners by Tonnage, 2015

Commodity	Origin (1,000 tons)	Destination (1,000 tons)	Internal (1,000 tons)	Total (1,000 tons)	Percent of Total
Alabama	20,409	15,795	35,352	71,555	52%
Mississippi	2,765	11,540	0	14,305	10%
Wyoming	2	9,111	0	9,113	7%
Georgia	2,906	3,198	0	6,104	4%
Tennessee	2,986	1,672	0	4,658	3%
Minnesota	166	3,067	0	3,233	2%
Florida	2,088	1,102	0	3,189	2%
Indiana	1,296	1,111	0	2,408	2%
Oklahoma	69	2,337	0	2,406	2%
Illinois	1,020	1,302	0	2,322	2%
Ohio	1,125	1,166	0	2,291	2%
All Others	9,118	7,627	0	16,745	12%
Total	43,951	59,028	35,352	138,331	100%

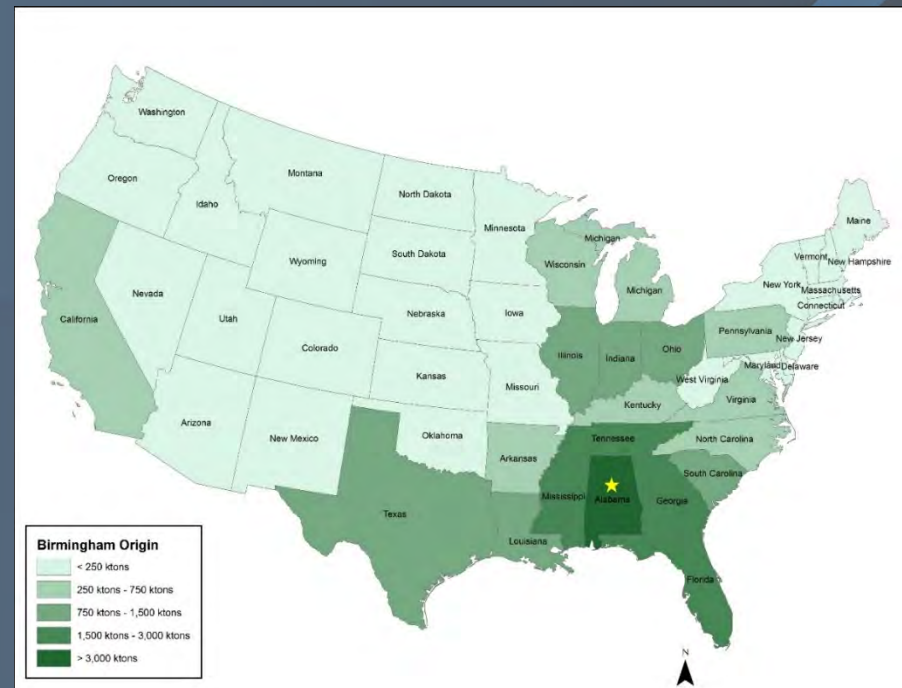
Source: FHWA – FAF4

Commodity Flow Analysis

Trading Partners - Outbound

- Commodities originating in the region typically do not travel far and very little is sent west
 - » Largest receivers of this freight are Alabama, Tennessee, Georgia, Mississippi, and Florida

Commodity	Origin (1,000 tons)	Percent of Total
Alabama	20,409	46%
Tennessee	2,986	7%
Georgia	2,906	7%
Mississippi	2,765	6%
Florida	2,088	5%
Indiana	1,296	3%
Ohio	1,125	3%
Illinois	1,020	2%
Minnesota	166	<1%
Oklahoma	69	<1%
Wyoming	2	<1%
All Others	9,118	21%
Total	43,951	100%



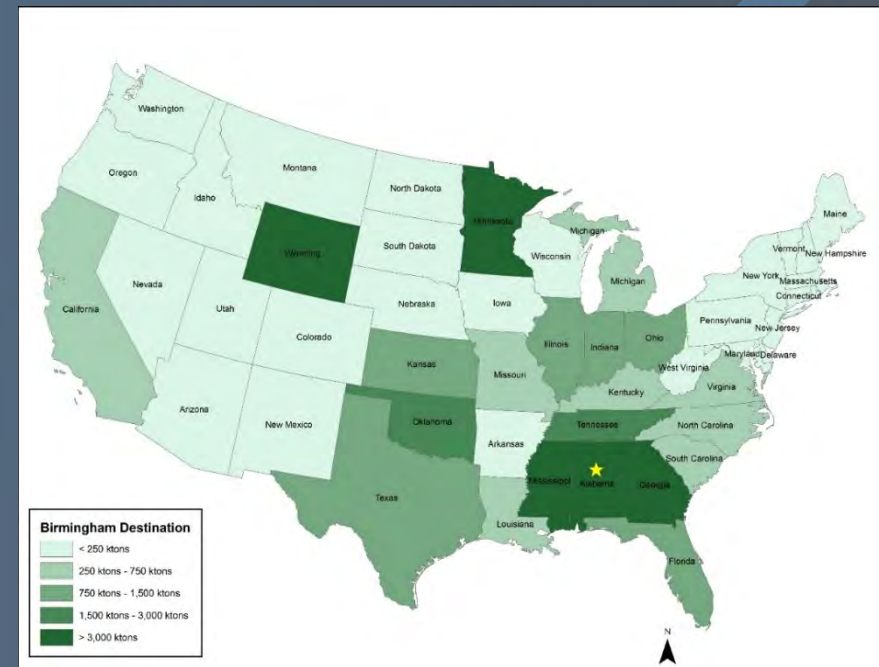
Source: FHWA – FAF4

Commodity Flow Analysis

Trading Partners - Inbound

- More goods come into the region than leave it
 - » These goods come from similar states as the outbound movements are sent to with some exceptions (Wyoming (coal) and Minnesota (metallic ores))

Commodity	Destination (1,000 tons)	Percent of Total
Alabama	15,795	27%
Mississippi	11,540	20%
Wyoming	9,111	15%
Georgia	3,198	5%
Minnesota	3,067	5%
Oklahoma	2,337	4%
Tennessee	1,672	3%
Illinois	1,302	2%
Ohio	1,166	2%
Indiana	1,111	2%
Florida	1,102	2%
All Others	7,627	13%
Total	59,028	100%



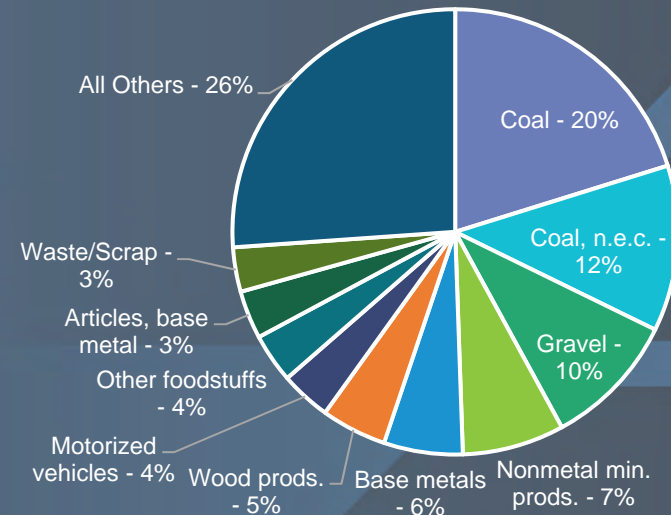
Source: FHWA – FAF4

Commodity Flow Analysis

Top Commodities

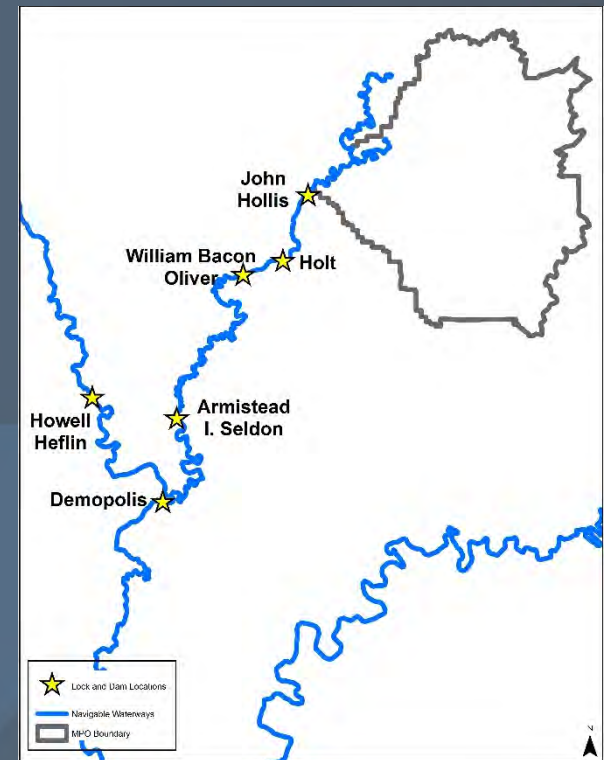
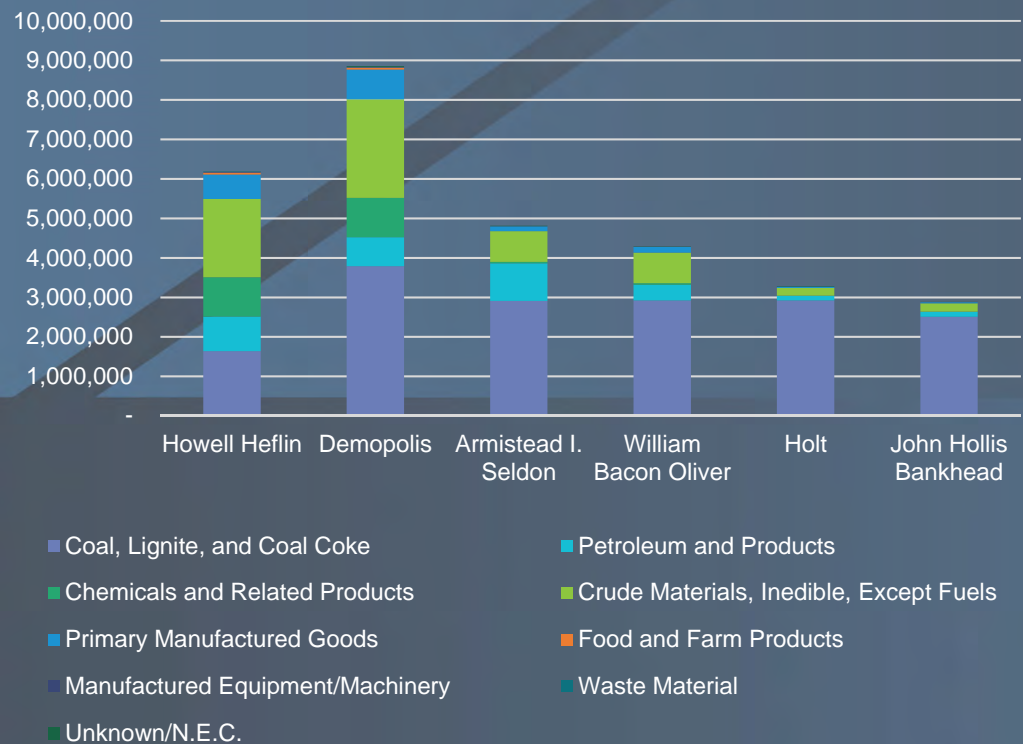
- The largest commodity in the region by tonnage is coal
 - » Stakeholder input suggests this commodity is decreasing
 - » Anticipated to decrease at least another 9% by 2040
 - » Largest percentage growth of these anticipated to be from waste/scrap with a 72% growth by 2040
 - » Largest growth in tonnage expected from nonmetal mineral products with an additional 5,640 tons by 2040 (+55%)

Significant Commodities, 2015



Source: FHWA – FAF4

Waterway Movements, 2016



Source: USACE Navigation Data Center