



MISSOURI State Freight & Rail Plan

presented to
*State Freight and Rail Plan Steering
Committee*

presented by
***Cambridge Systematics, Inc. with
HNTB Corporation, Hg Consult, Inc.,
Quetica***



August 17, 2020



Guidelines for Virtual Meetings

01

Plan to log in a few minutes early to avoid any technology issues.

02

Mute yourself if you aren't speaking, but don't put on hold, to avoid background noise.

03

Raise hand or take yourself off mute to ask a comment or interject a statement.

04

Use the chat box to send comments to the moderator during portions of the presentation to be sure that your thought is captured.

05

If bandwidth is a concern for you, consider taking yourself off video during the presentation portion.

We will be using an interactive polling software-
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www.menti.com

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Today's Agenda

- Introductions
- Overview of Steering Committee
- Overview of State Freight & Rail Plan
- Goals & Objectives
- How is COVID-19 Impacting Freight
- Missouri Freight and Rail Profile
- Designating the MO Multimodal Freight Network
- Economic Impact of Passenger Rail
- Next Steps & Discussion

Introductions



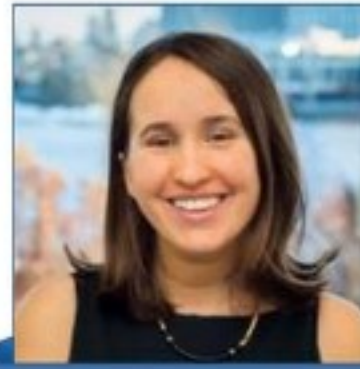
Cheryl Ball
MoDOT Project Manager



Liz Prestwood
MoDOT Deputy Project Manager



Paula Dowell
Project Director



Katie Kirk
Technical Project Manager



Lisa Destro
Technical Lead



Kip Strauss
Deputy Project Manager



Mark Berndt
Supply Chains and Logistics



Ben Zietlow
Freight Tool Development



Steve Wells
*LRTP Liaison/
Stakeholder Outreach*



Aaron Bowe
Rail Plan



Buddy Desai
Safety



Robyn Arthur
Stakeholder Outreach

Steering Committee Introductions

Name	Organization	Name	Organization	Name	Organization
Steve Johns	24/7 Express Logistics	Chris Gutierrez	KC Smart Port	Todd Spencer	Owner Operator Independent Drivers (OOIDA)
Todd Cantrell	3M Nevada	Jane Johnson	KCI Regional Air Cargo Association	Linda Greaser	Procter & Gamble Paper Products
Jonathan Aspenlieder	Alliance International/ Alliance Shipper	Rhonda Hamm-Niebruegge	Lambert-St. Louis International Airport Commission	Lori Cohee	Smart Warehousing
Ingrid De Ryck	Anheuser-Busch	Brian Thompson	Lebanon Regional Economic Development, Inc. (REDI)	Mike Steenhoek	Soy Transportation Coalition
Steve Pienaar	Big River Steel	Darryl Fields	Mid-America Regional Council	Mary Lamie	St. Louis Regional Freight Way
Darrell Coffey	BNSF	Greg Buckman	MO Cattleman's Board Members	Mark Campbell	Triumph Foods
Craig Bussen	Bussen Quarries, Inc.	Allen Rowland	MO Chamber of Commerce Executive Committee	Ben Jones	Union Pacific
Tim Aschoff	Crete Carrier	Jim Stuever	MO Corn Growers Association	Kimberly Bonhart Johnson	United Parcel Service
Jim Wild	East West Gateway Council of Governments (EWGOG)	Mark Stombaugh	MO Dept. Economic Development	Jeff Kintz	US Foods
Edward Moore	FedEx	Chris Klenklen	MO Dept. of Agriculture	Rocky Griffith	Walmart Transportation
Kevin Ward	FHWA	Eric Bohl	Missouri Farm Bureau	Doug Conway	WATCO Companies
Tony Reinhart	Ford Motor Company	Andy Clay	MO Petroleum Marketers & Convenience Store Operators	Jefferey Schriener	Whiteman AFB
Jim Simmons	Hays Lemmerz International	Tom Crawford	Missouri Trucking Association		
Kevin McIntosh	Kansas City Southern	Bonita Tillman	Nestle Purina		



Overview of SFRP Steering Committee

➤ Who?

- » Advisors, stakeholders and subject matter experts

➤ Why?

- » Confirm goals and objectives
- » Offer insight on local and regional freight and rail related issues, trends and needs
- » Inform recommendations, solutions and strategies
- » Provide input on processes and decisions throughout the projects
- » Define and communicate the importance of freight and rail activity at the regional, State, and national levels

➤ When?

- » Six meetings over next 12 months
 - 2020- Aug and Nov
 - 2021 = Feb, May, July, Sept



Overview of the SFRP



Motivation for SFRP

*Federal requirement to use National Freight Program Funds (FAST Act)
Rail Plan updated 2012 and State Freight Plan updated 2017*

How does transportation maintain/grow/support our economy?

How do we leverage our assets for economic growth and quality of life?

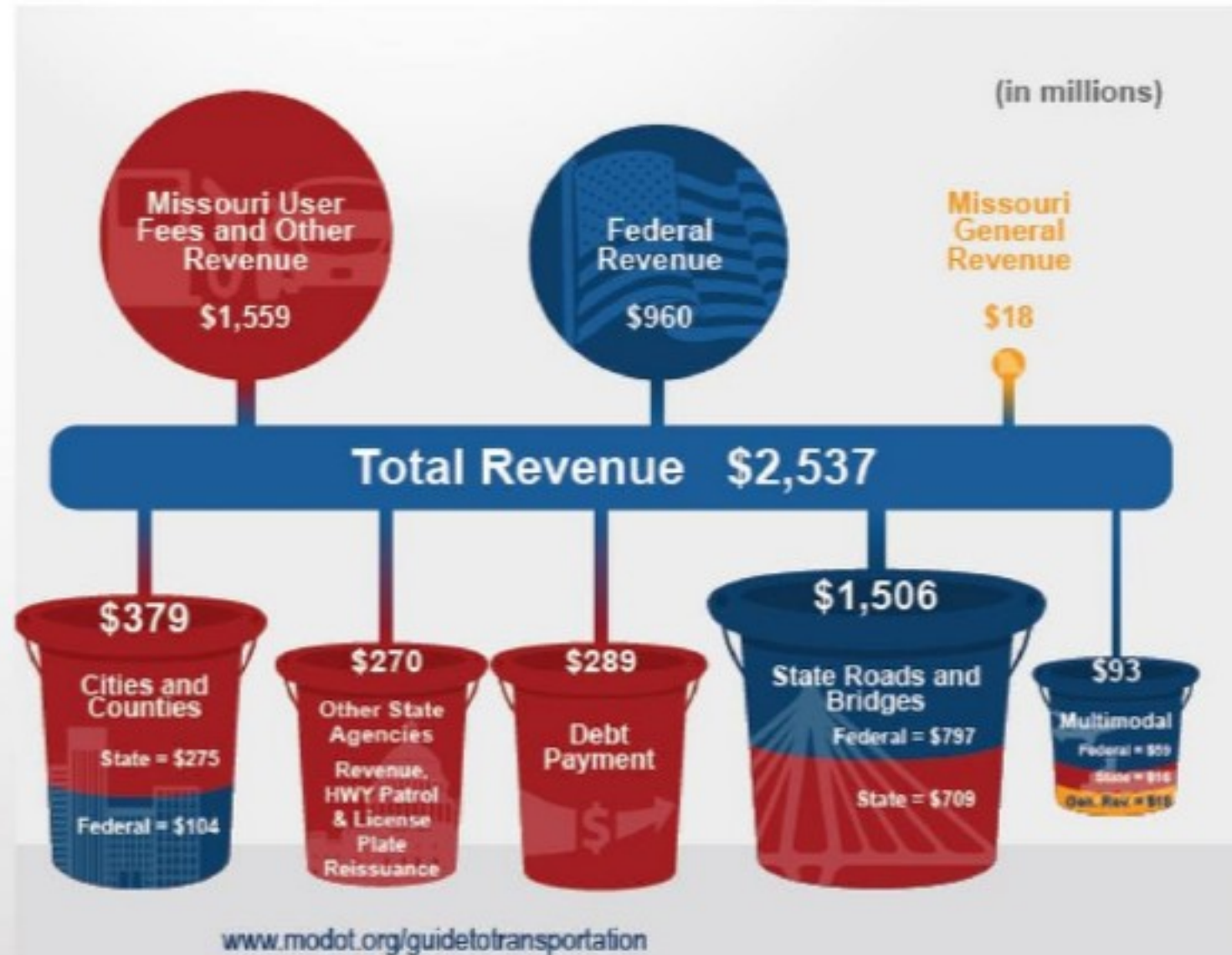
How do we make the business case for freight investment?

How do we plan for and manage a shared network?

What is going to happen in the future and how do we plan for it?

How do we balance freight and passenger needs?

Funding Transportation in Missouri



Next Generation of Freight & Rail Planning in Missouri



Expands capabilities using new data, tools and analytical methods



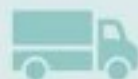
Advances the business case for freight and rail investments



Incorporates uncertainty into the decision-making process

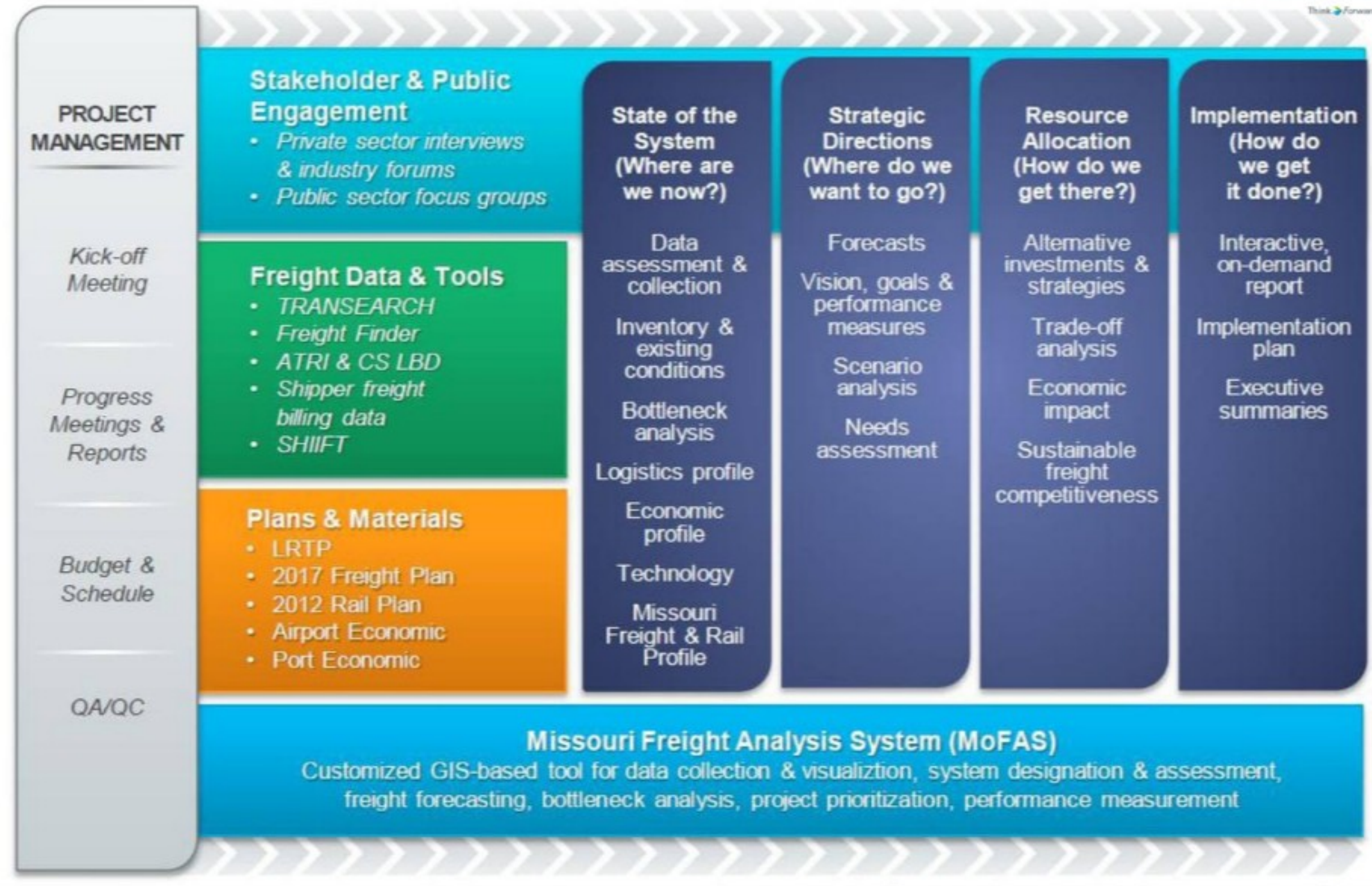


Informs and supports economic growth opportunities

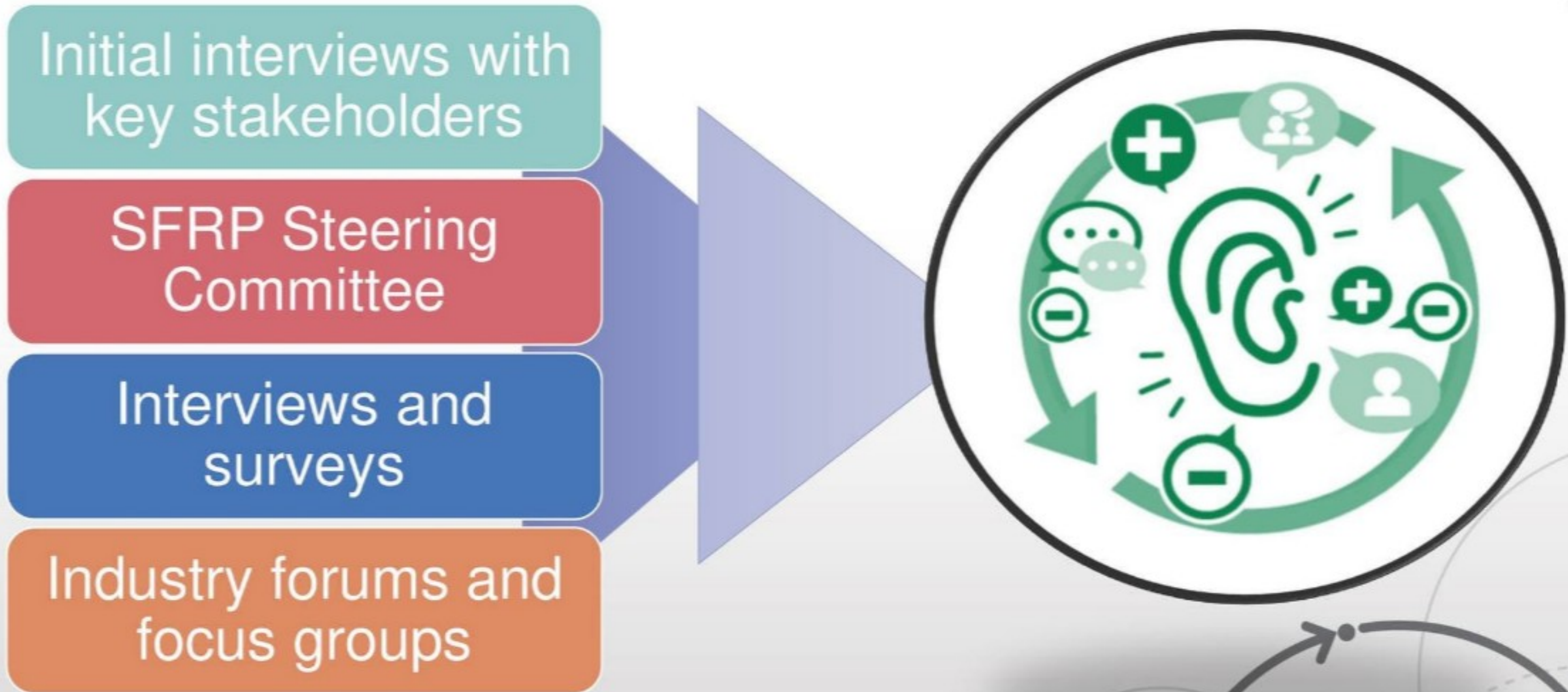


Monitors resiliency and fluidity across the freight network

Approach Overview



Stakeholder Engagement



Schedule and Key Milestones



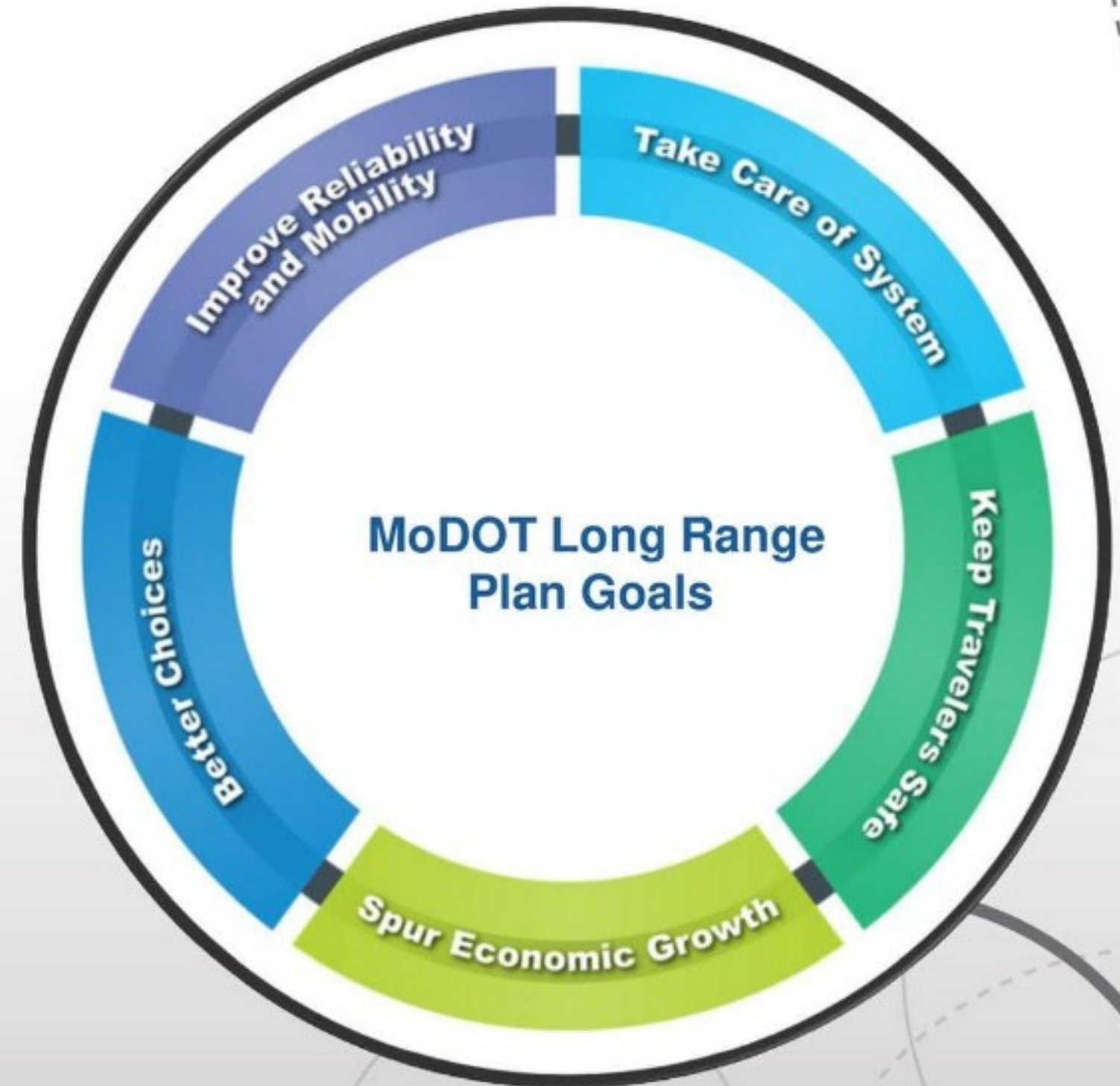
Goal and Objectives

➤ Goal Areas

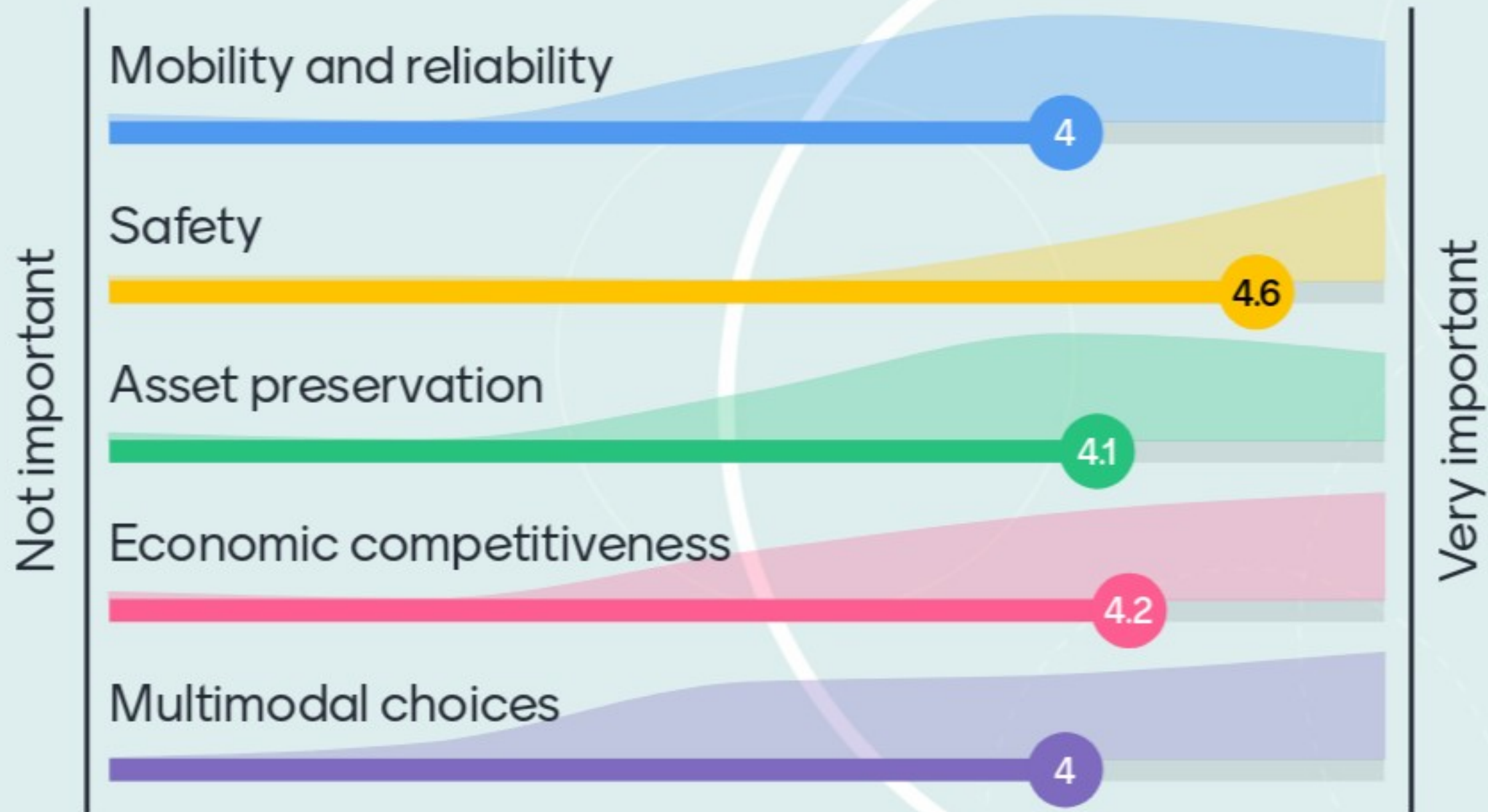
- » Mobility and Reliability
- » Safety
- » Asset preservation
- » Economic competitiveness
- » Multimodal choices
- » Others?

➤ Objectives

- » Desired outcomes critical to advancing goals



How important are the following goal areas?



What do you think is an important outcome of the State Freight and Rail Plan?

Investment Guidance

Strategies to support Missouri's economic development

A resilient and reliable system

more sustainable and cost-effective infrastructure investments

Framework for project prioritization

Resiliency

reliability

sustainability

At the core, a plan that meets federal requirements and allows for federal funding.

What do you think is an important outcome of the State Freight and Rail Plan?

Integration with plans of adjacent states.Sustainability

Improvements and sustainability of existing system

Funding opportunities

To understand how we can support each other throughout the entire state and grow the entire state and not be selfish by city/region/county

Freight movement fluidity.

Consensus on priority public investments in freight infrastructure in Missouri and each region.

A safe and reliant system that removes conflict with other road users.

Infrastructure investment supports existing manufacturing and logistics industries and creates opportunities for growth and expansion.

We need to identify and expand multimodal choices for passengers; future of emerging technology; asset management of state roadways; address climate crisis and concerns

What do you think is an important outcome of the State Freight and Rail Plan?

sustainable freight system that keeps Missouri competitive

Increased usage of Missouri River for freight purposes.

Federal compliance. Guidance on investment of limited resources. Materials to help easily explain the plan.

Identify clear goals with specific measures on how to implement

Expansion

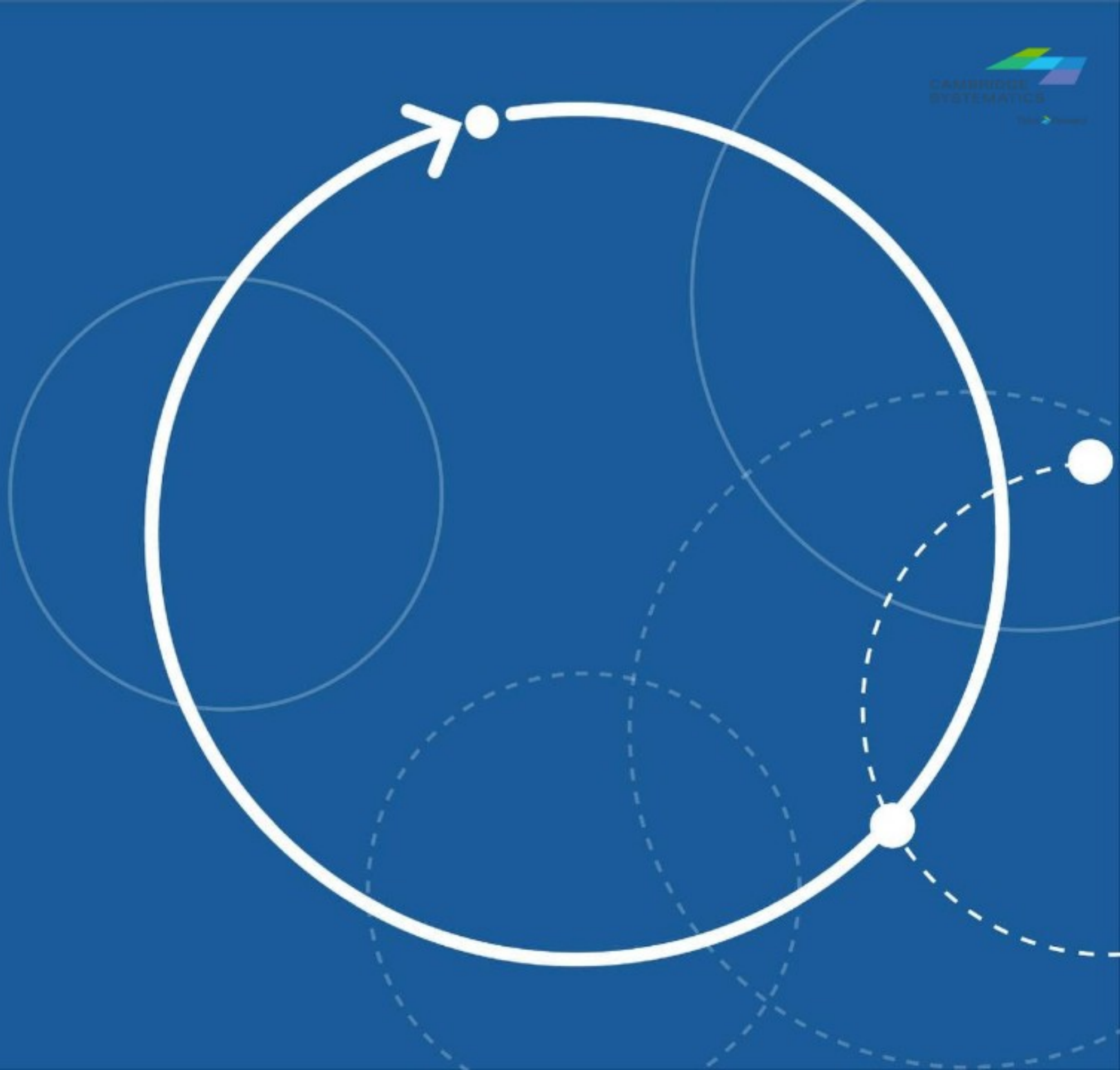
statewide opportunities

Demonstrate how different modes help each other

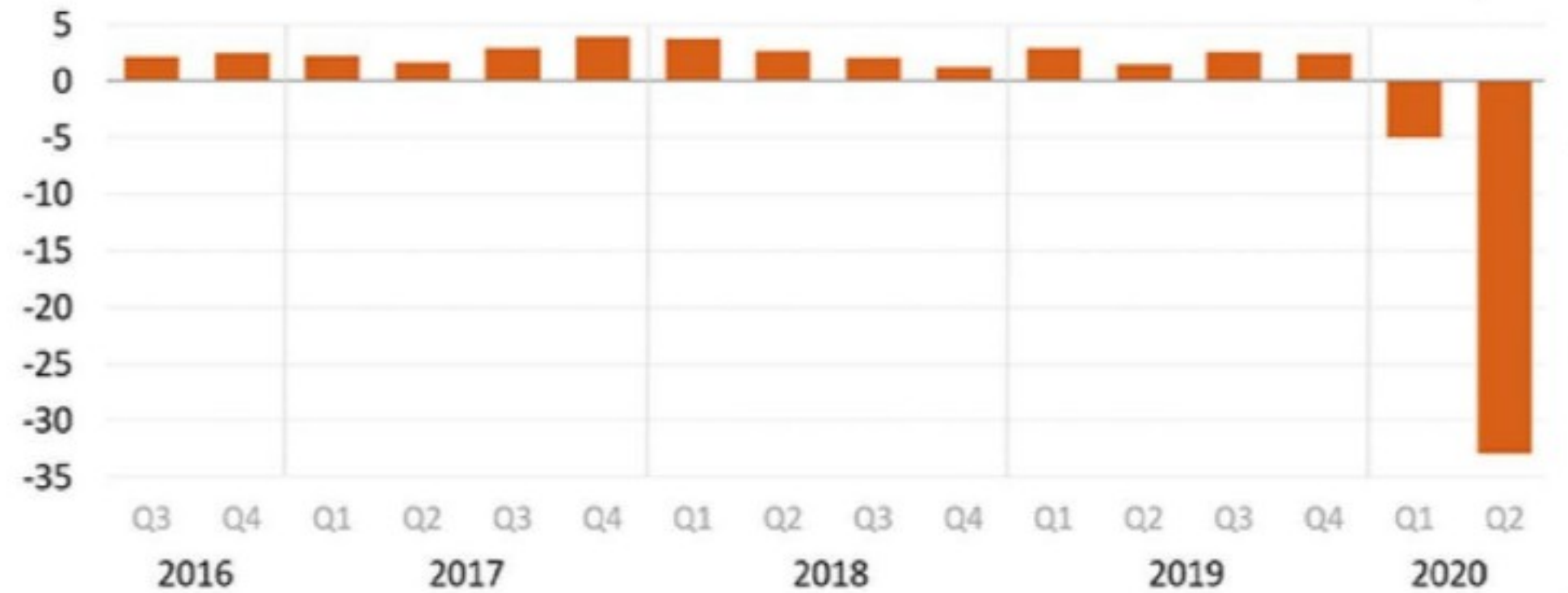
Clear path for priorities and related investment in those priorities. Focus on key stakeholders and roles and responsibilities.

A plan that supports economic growth through a sustainable system through a safe, predictable, and reliable system

COVID-19 Impacts



COVID-19 Impacts: GDP



U.S. Bureau of Economic Analysis

Seasonally adjusted at annual rates

COVID-19 Modal Impacts

- Shifted to personal protective equipment (PPE), food and perishables. Local deliveries spiked, driver shortage surged. Travel times improved significantly.

Trucks



- Traffic decreased 20% as demand for manufactured goods dropped.

Railroad



- Revenues and activities plunged—using passenger aircraft for air cargo operations to support e-commerce.

Airlines



- Volumes declined as traffic from Asia, petroleum, and manufacturing dropped.

Marine
cargo



- Disruptions changed pipeline flows, with less demand for gasoline and jet fuel and more demand for diesel to fuel the freight industry.

Petroleum
supply chain



US freight by commodity type in 2018, million tons

Key factors impacting COVID-19 recovery

- Faster to return
 - ⬆ Increased demand for consumer essentials
 - ⬆ National priority
 - ⬆ Acceleration of e-commerce
- Neutral
 - ⬇ Lower income and consumer demand for nonessential goods
 - ⬆ Potential reshoring
- Longer to return
 - ⬇ Slowdown in US oil and gas production
 - ⬇ Declining demand for nonessentials
 - ⬆ Potential reshoring



Note: Nonfood basic commodity includes stone, gravel, minerals; manufacturing and construction includes metal articles, machinery, plastics, rubber; other includes waste, scrap, and unknown.

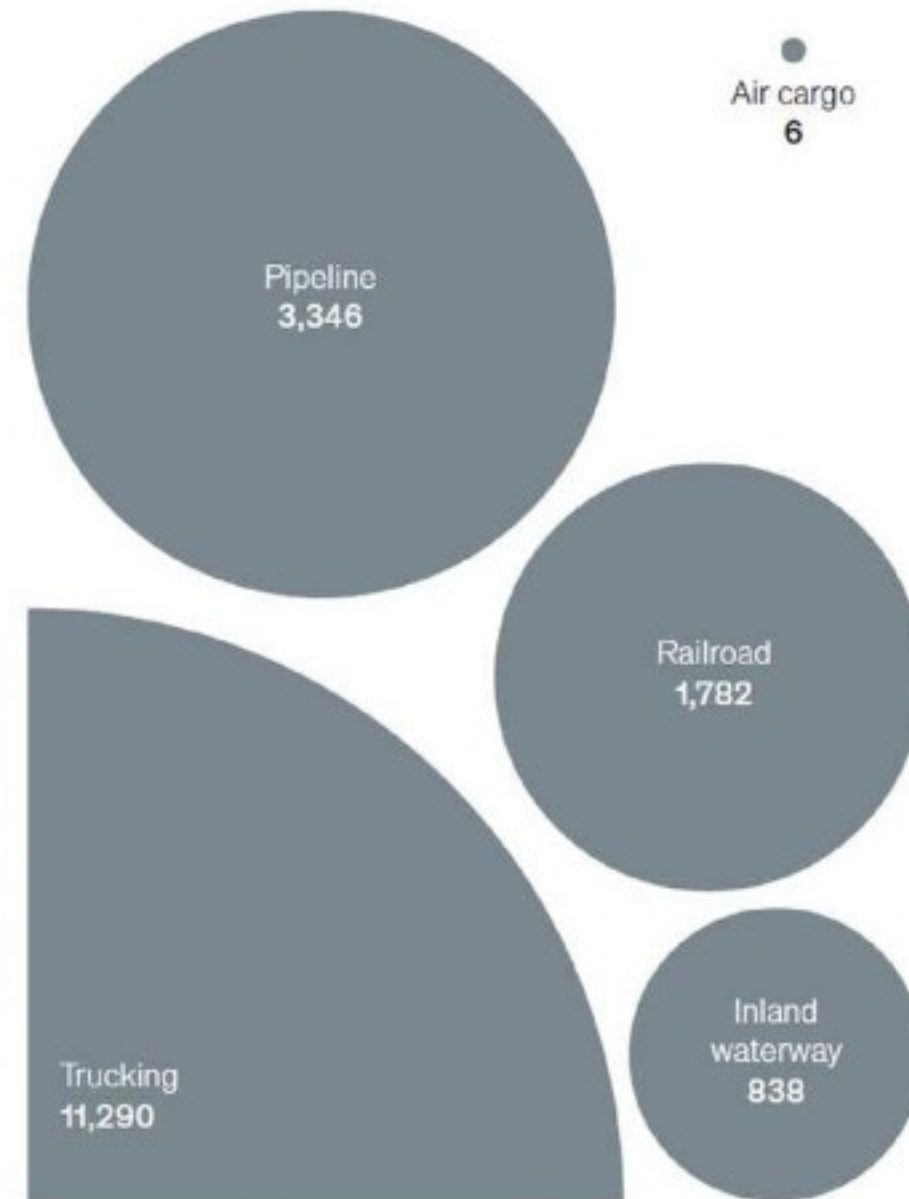
Source: Freight Analysis Framework.

Anticipated Longer-term Impacts

Recovery in Each Mode

Recovery in each mode will depend on its commodity mix.

2018 US freight, by mode, million tons



Exposure to commodities by anticipated recovery time, % share

Pipeline

100

Inland waterway

27

3

70

Railroad

39

10

51

Air cargo

28

46

26

Trucking

63

15

22

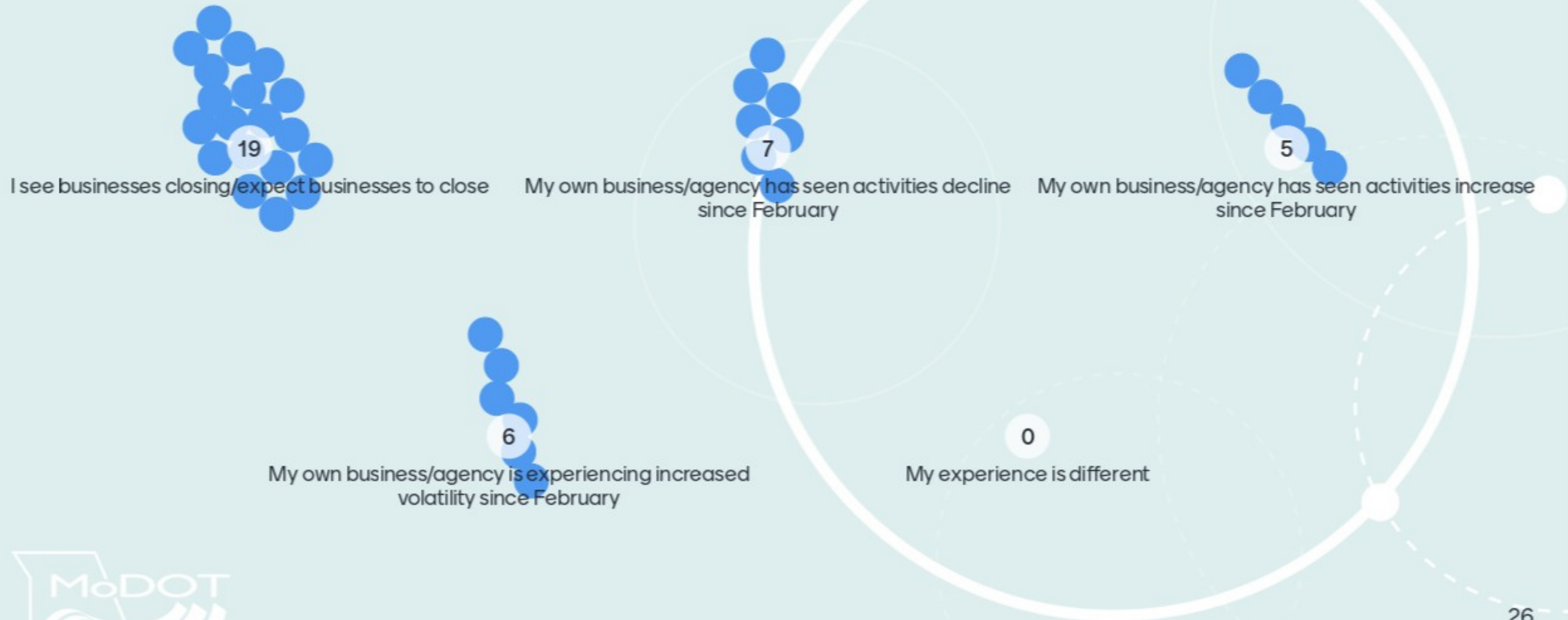
Faster
to return

Neutral

Longer
to return

Source: Freight Analysis Framework; excludes multiple-modes and mail, others and unknown

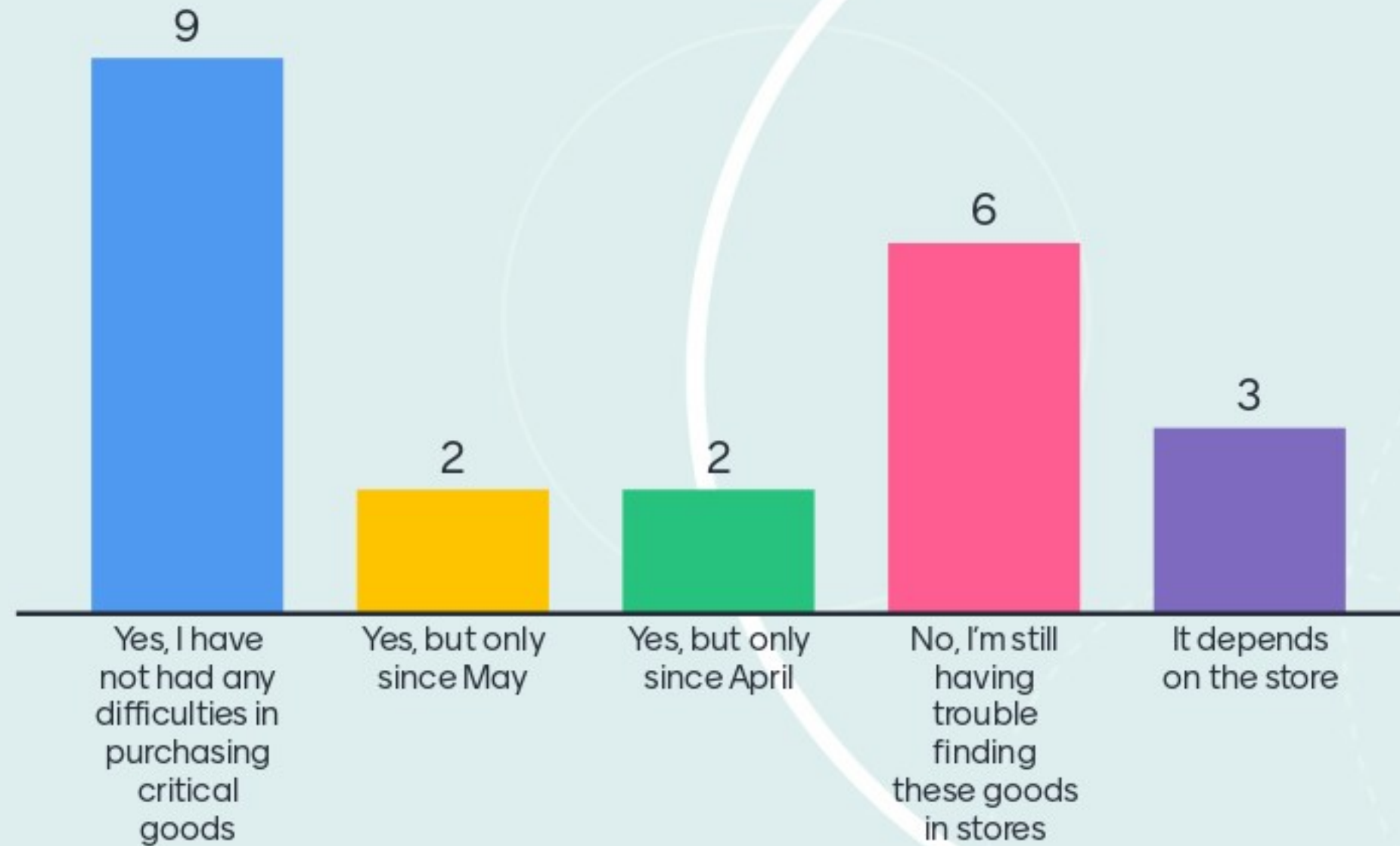
How is Covid-19 affecting Missouri's freight-related businesses?



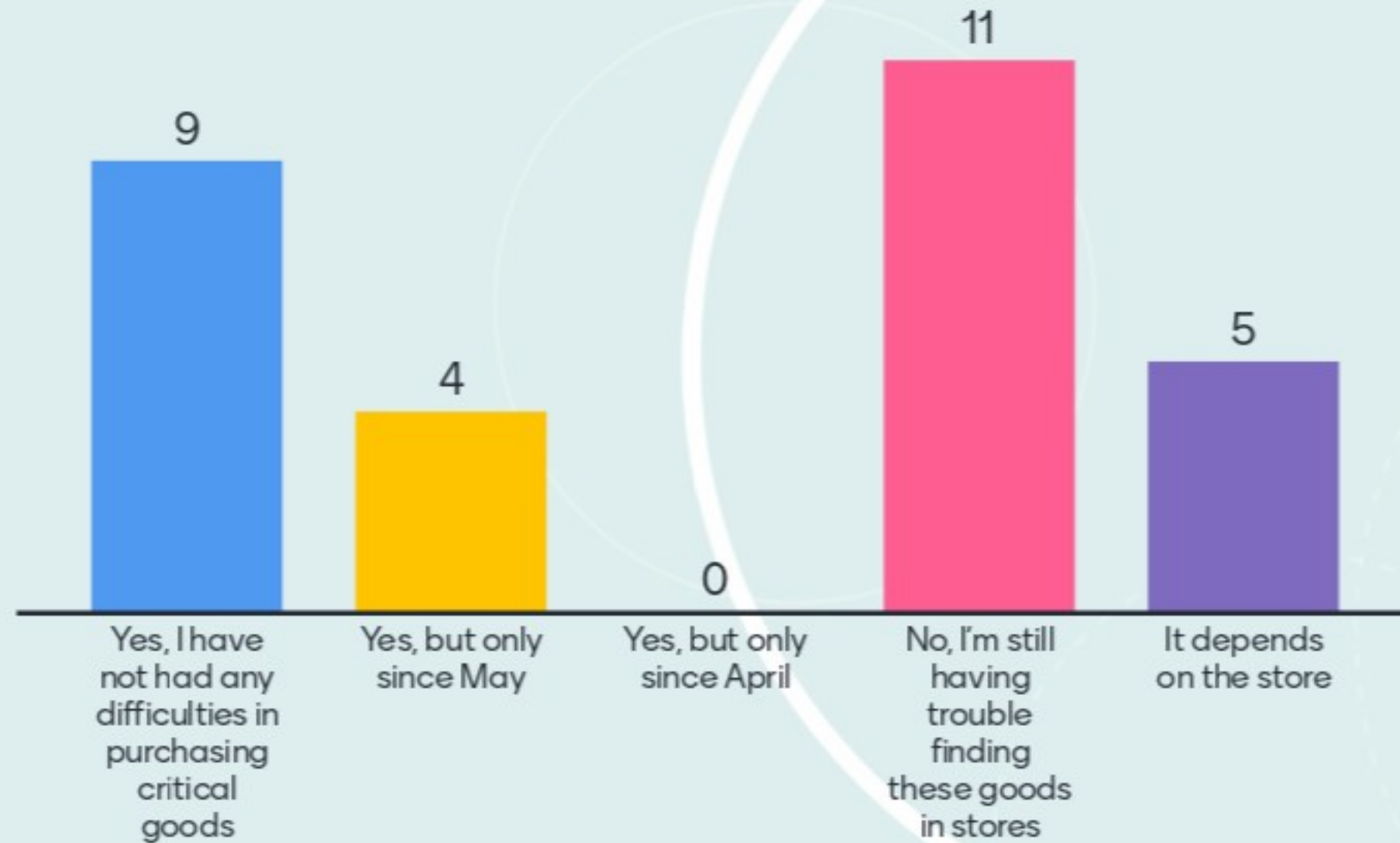
How has your business/agency been affected by Covid-19?



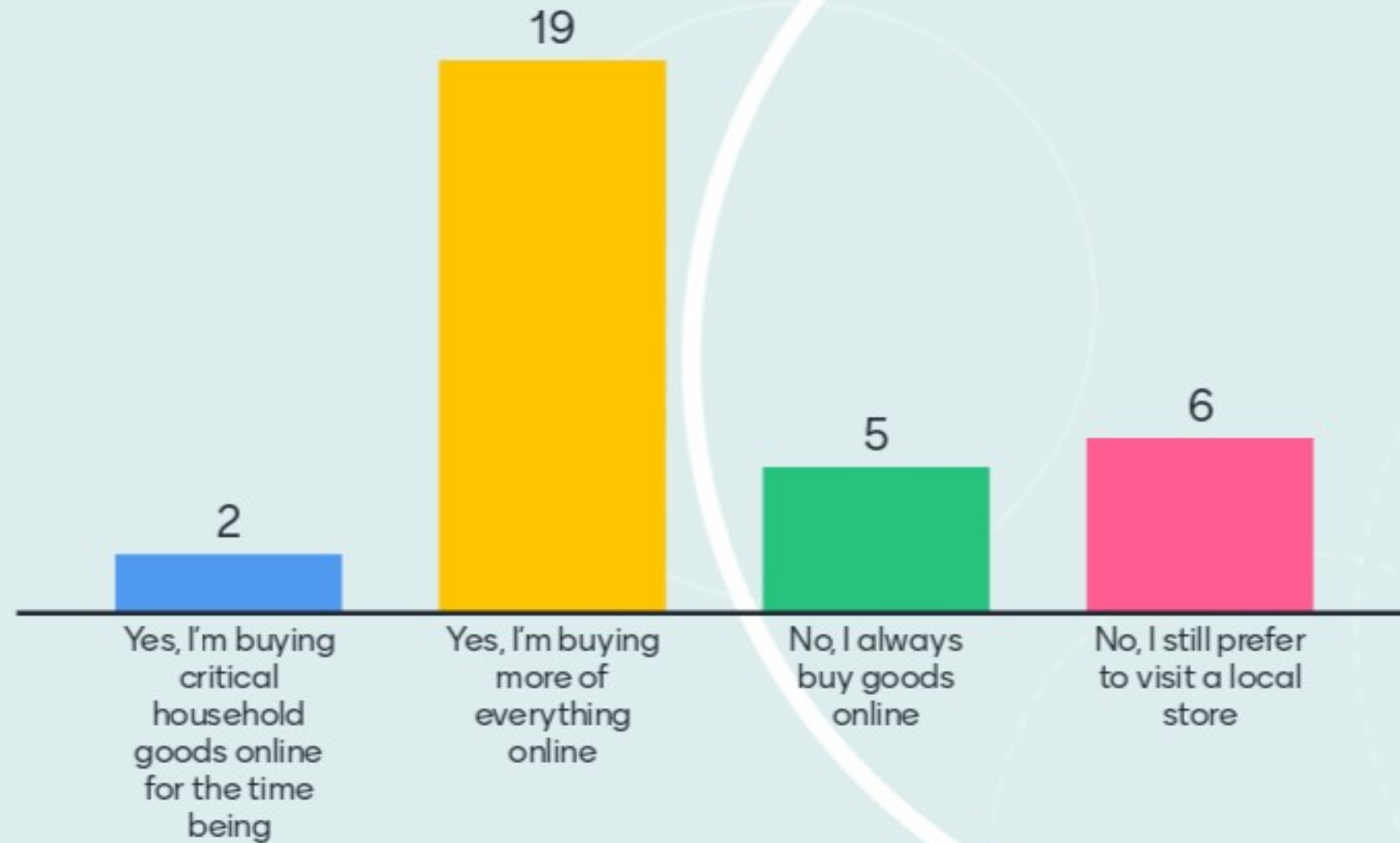
Is your business/agency able to get critical goods and supplies?



Are you readily able to purchase necessary personal goods?



Are you as a consumer buying more goods online?

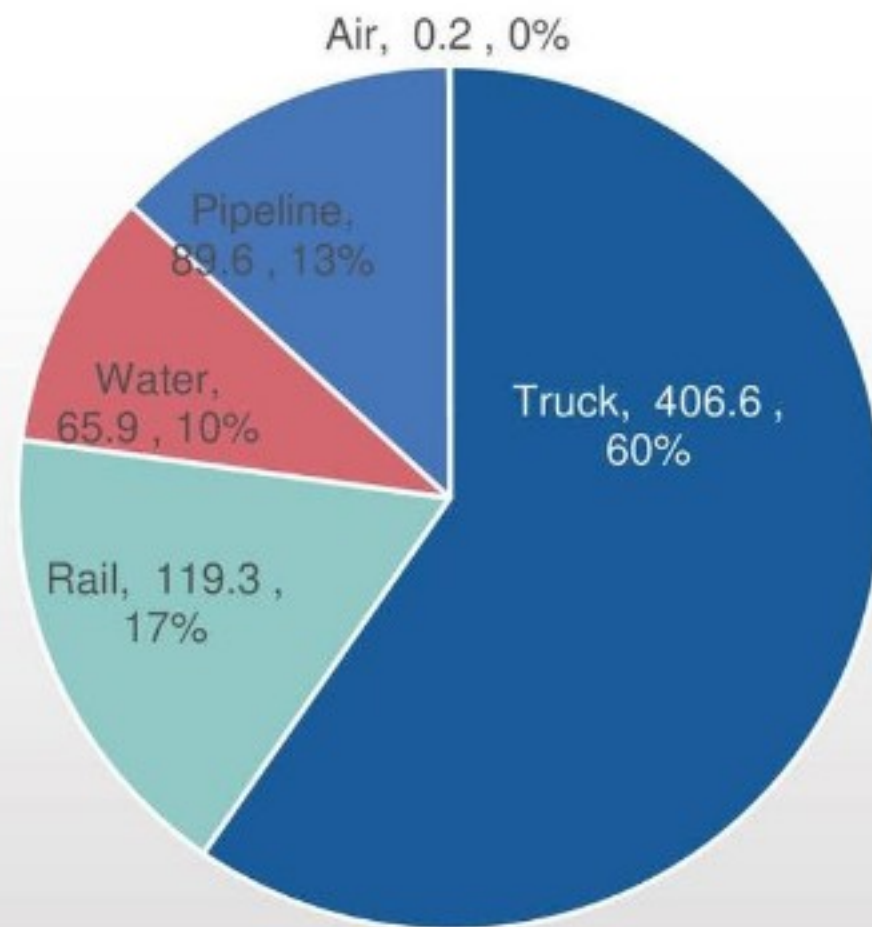


Missouri Freight Profile

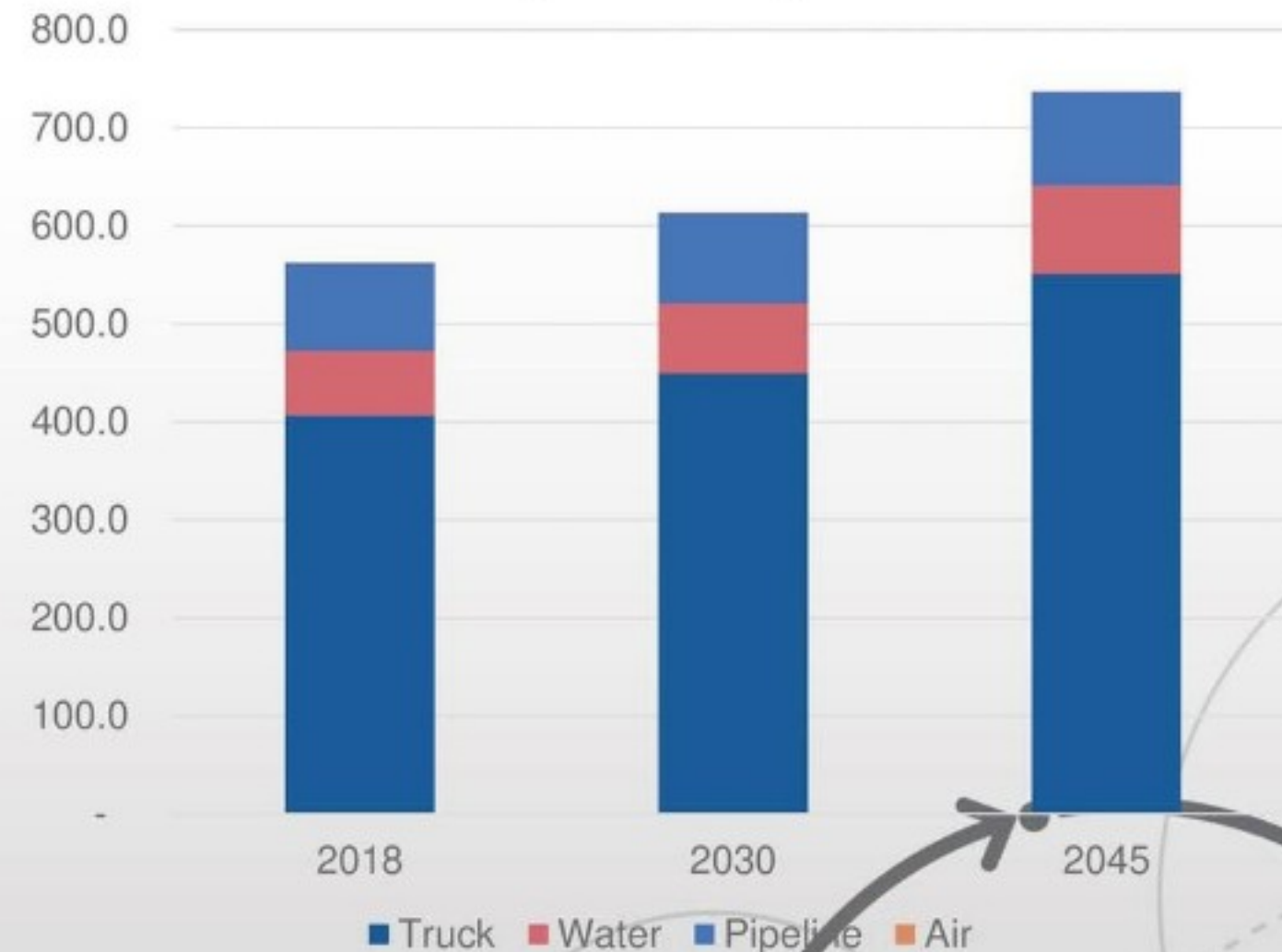


Commodity Flow Summary – Tonnage

2018 Freight Tons by Mode (Millions of Tons)

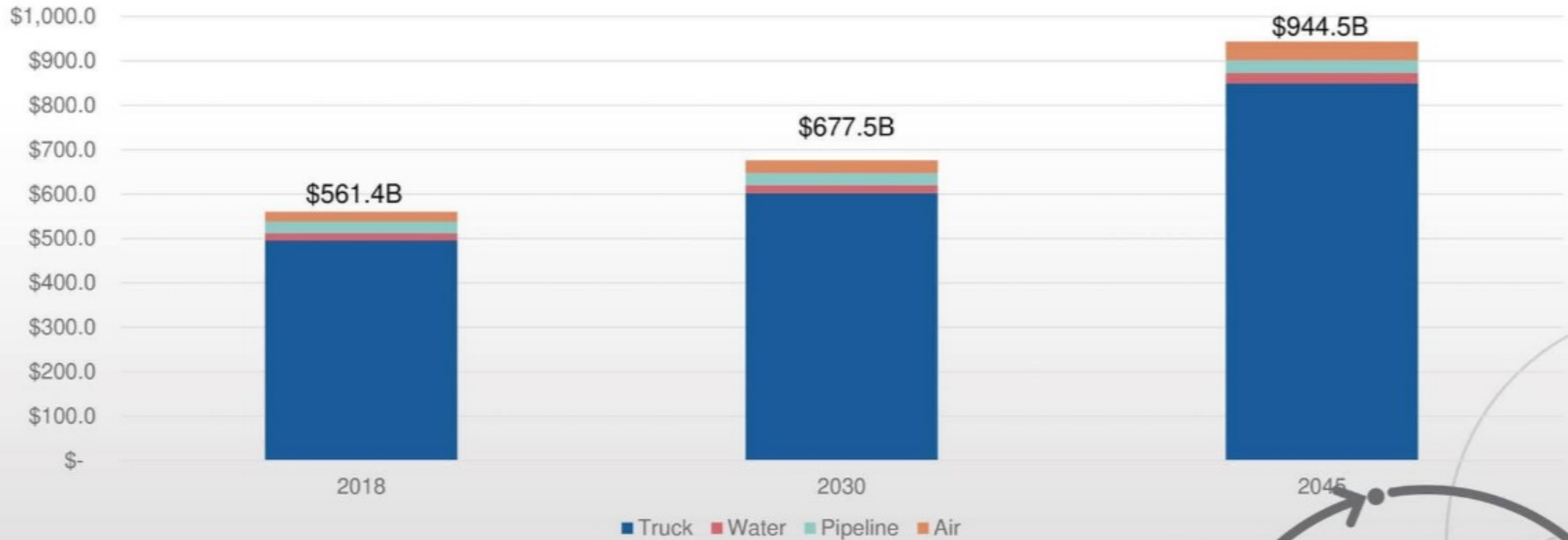


Freight Tonnage Projections by Mode (excl. Rail)



Commodity Flow Summary – Value

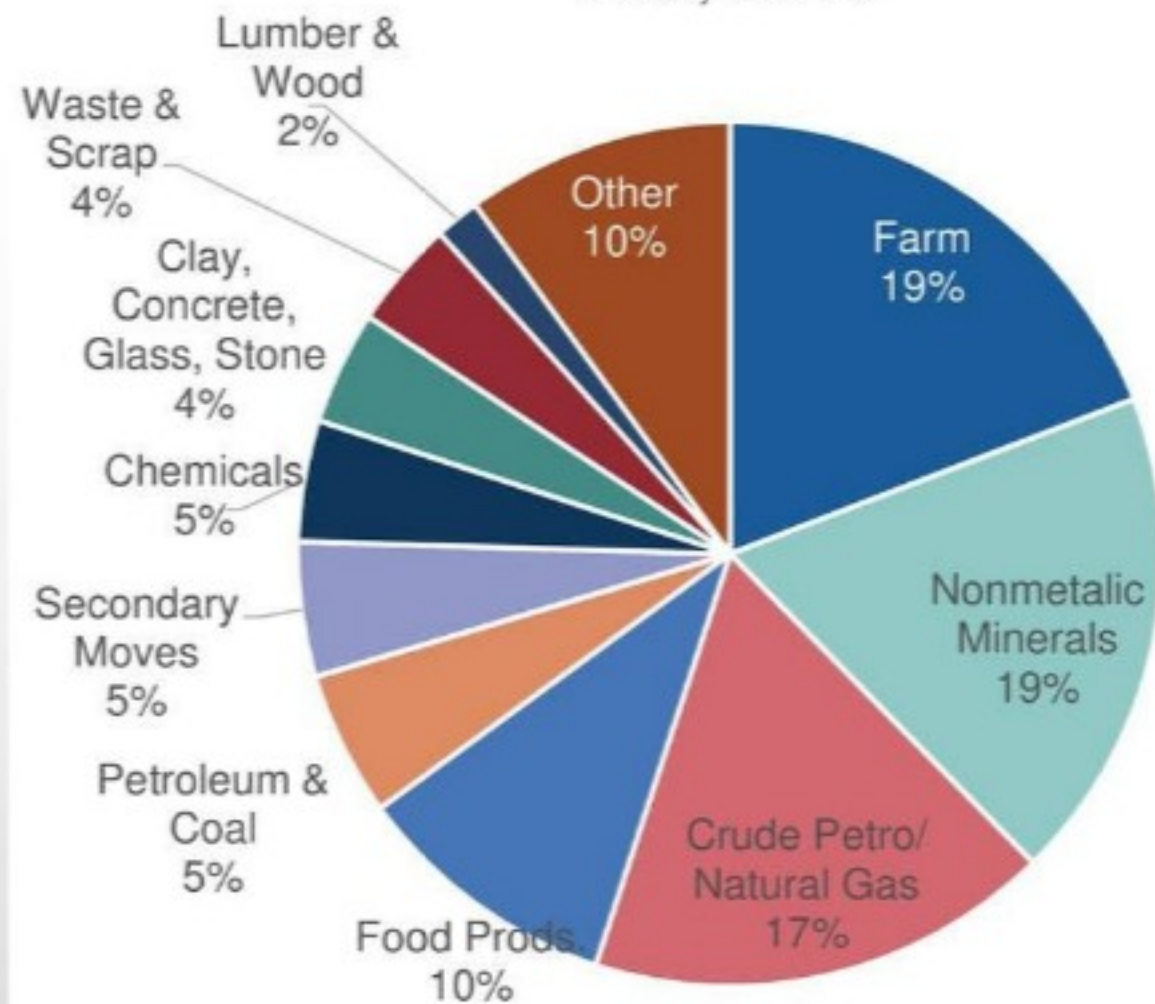
Freight Value Projections by Mode (Excl. Rail)



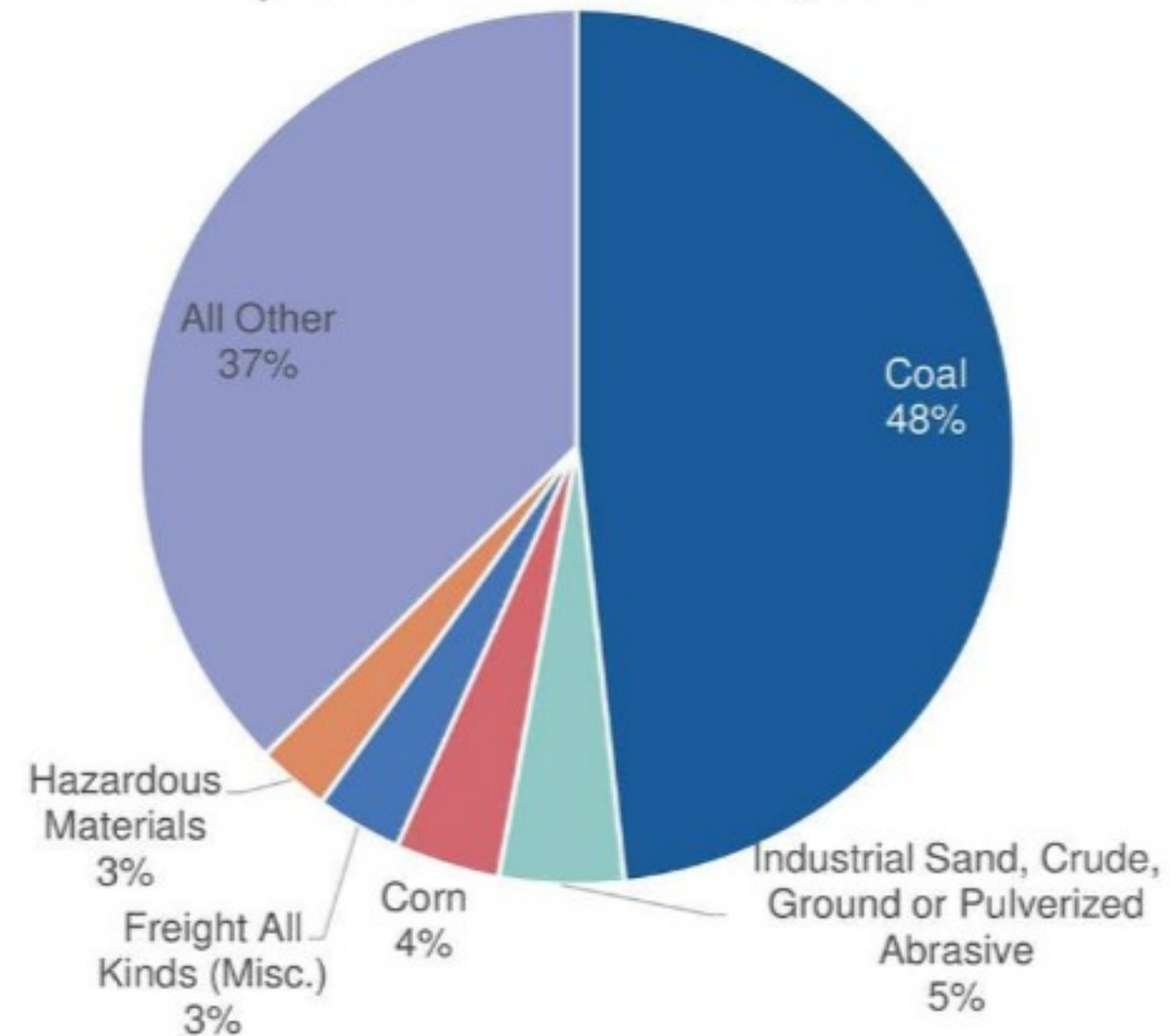
Source(s): IHS Transearch

Top Commodities by Tonnage

Top Commodities, All Modes Except Rail, 2018



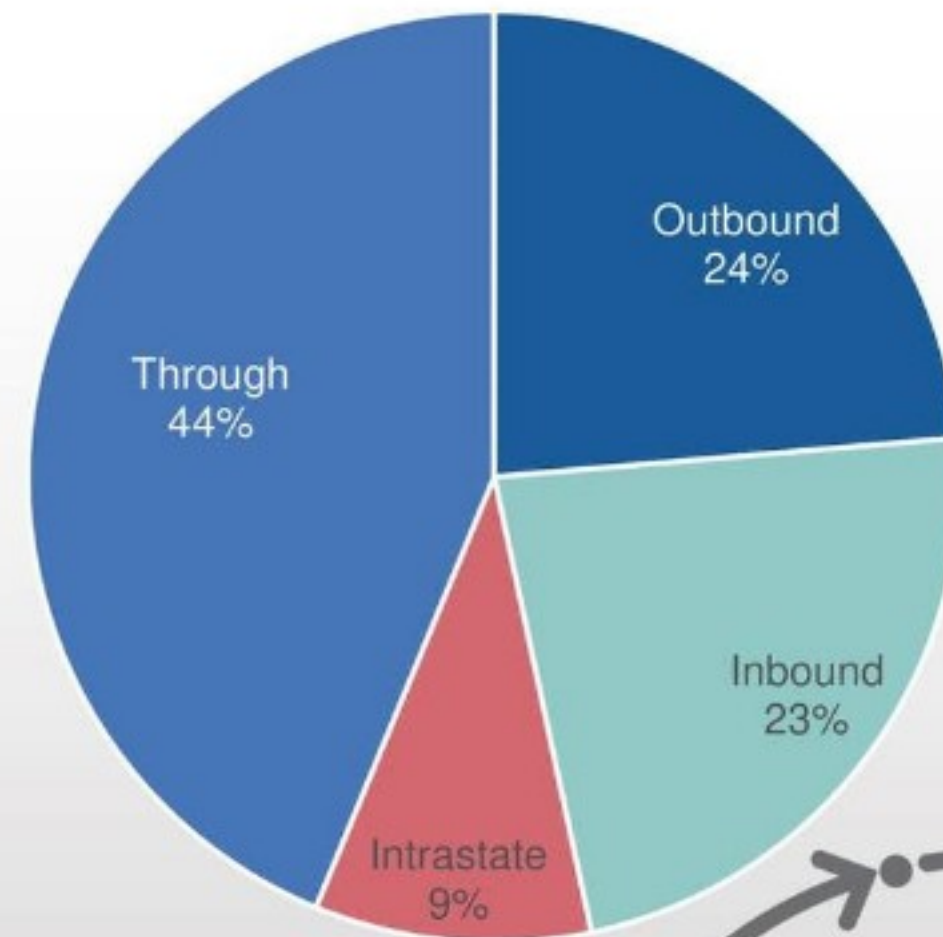
Top Rail Commodities, 2018



Directional Flow

- Through traffic comprises the largest share – 44%
- Inbound & outbound flows roughly even
- Rail traffic is primarily inbound – 58% of all rail flows

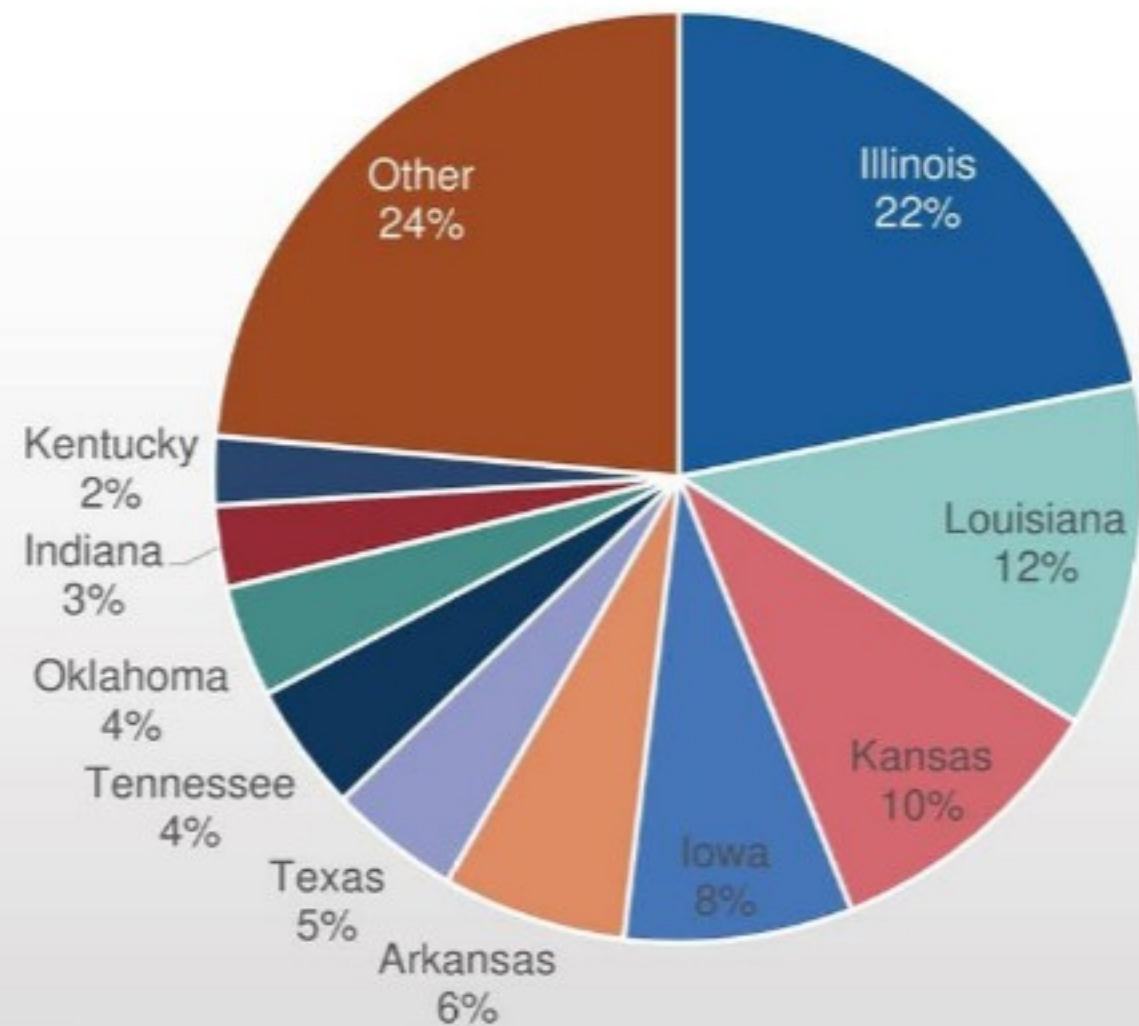
Freight Flows by Direction, All Modes



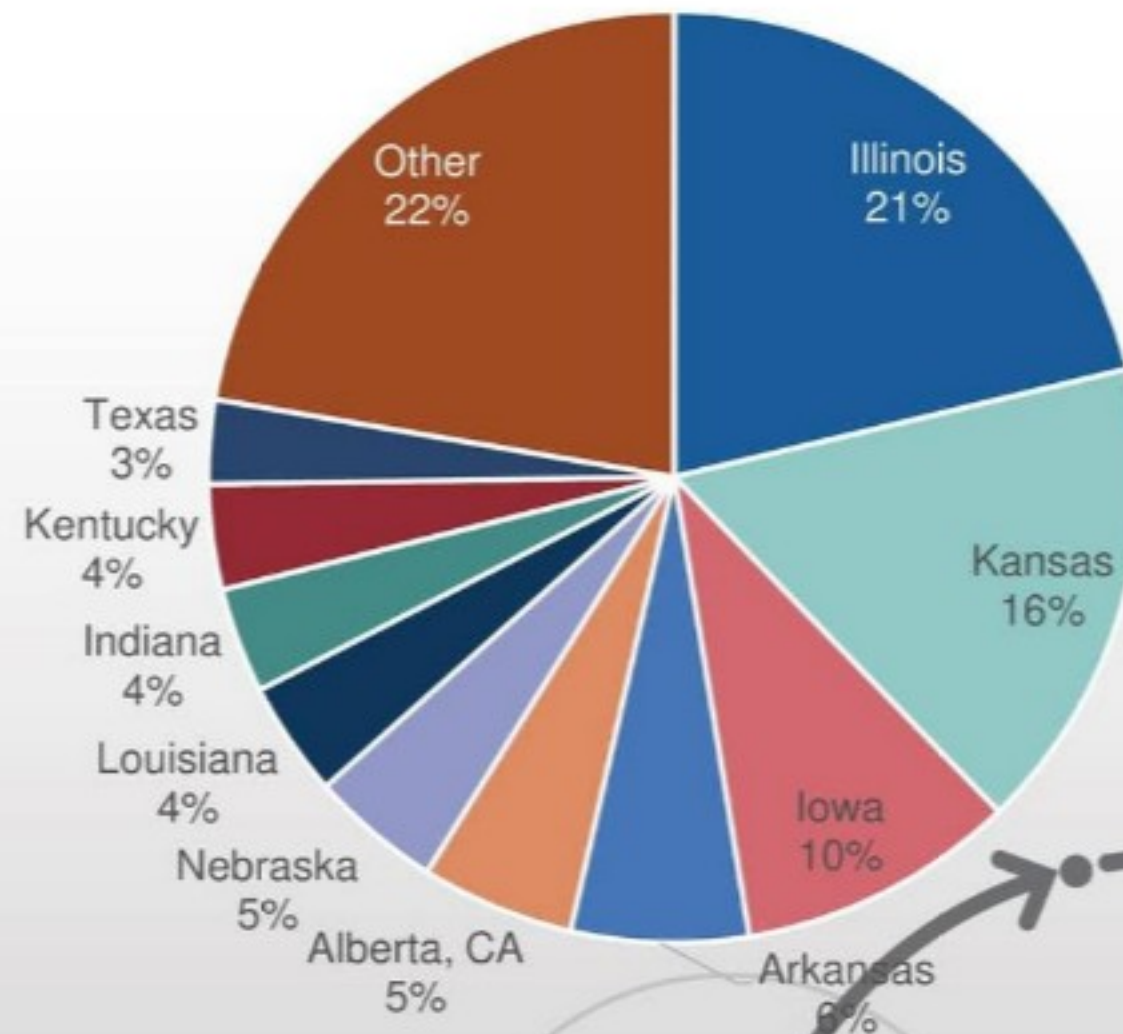
Source(s): IHS Transearch, STB Waybill

Missouri's Trading Partners

Top Outbound Trading Partners, 2018



Top Inbound Trading Partners, 2018

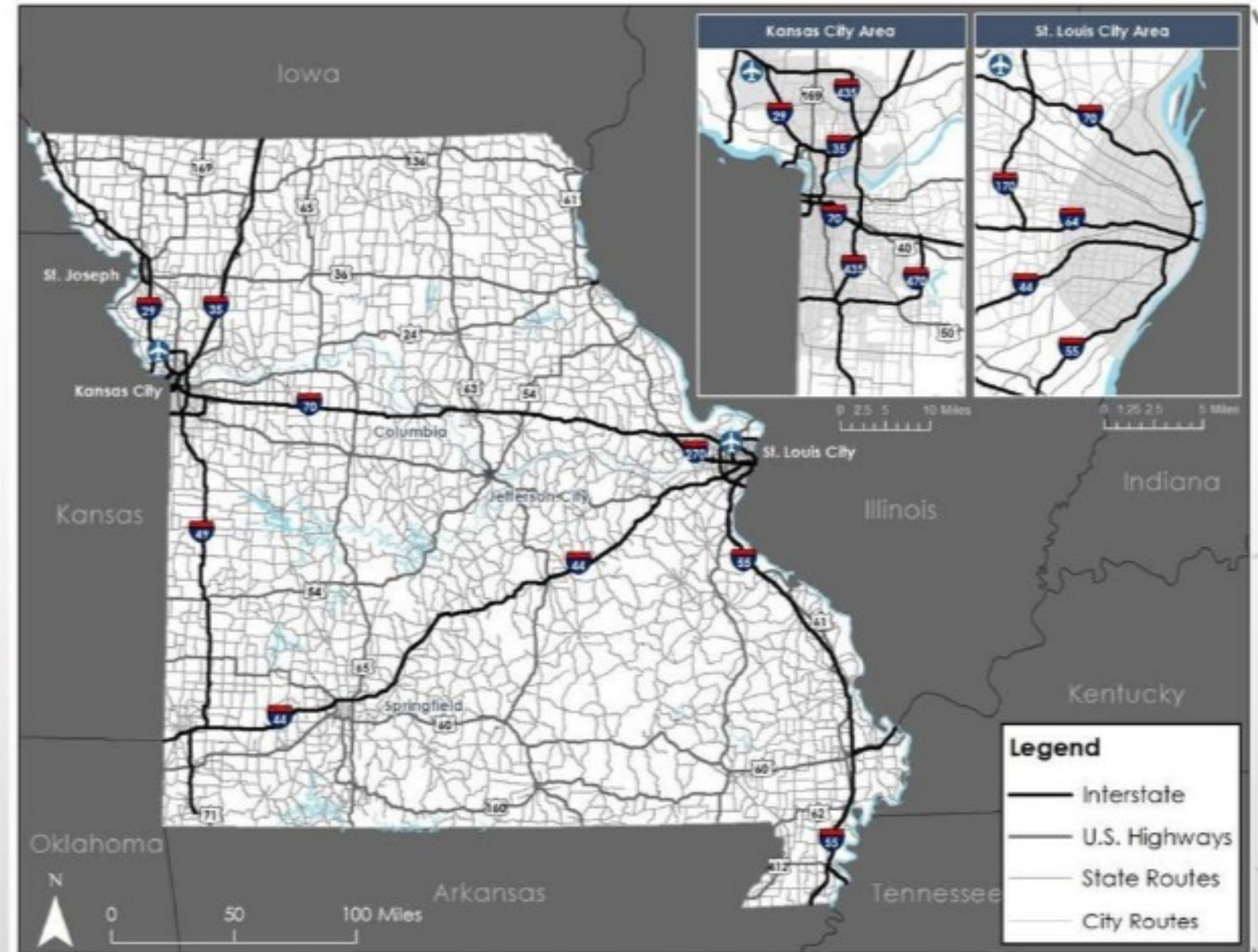


Missouri's Freight Assets



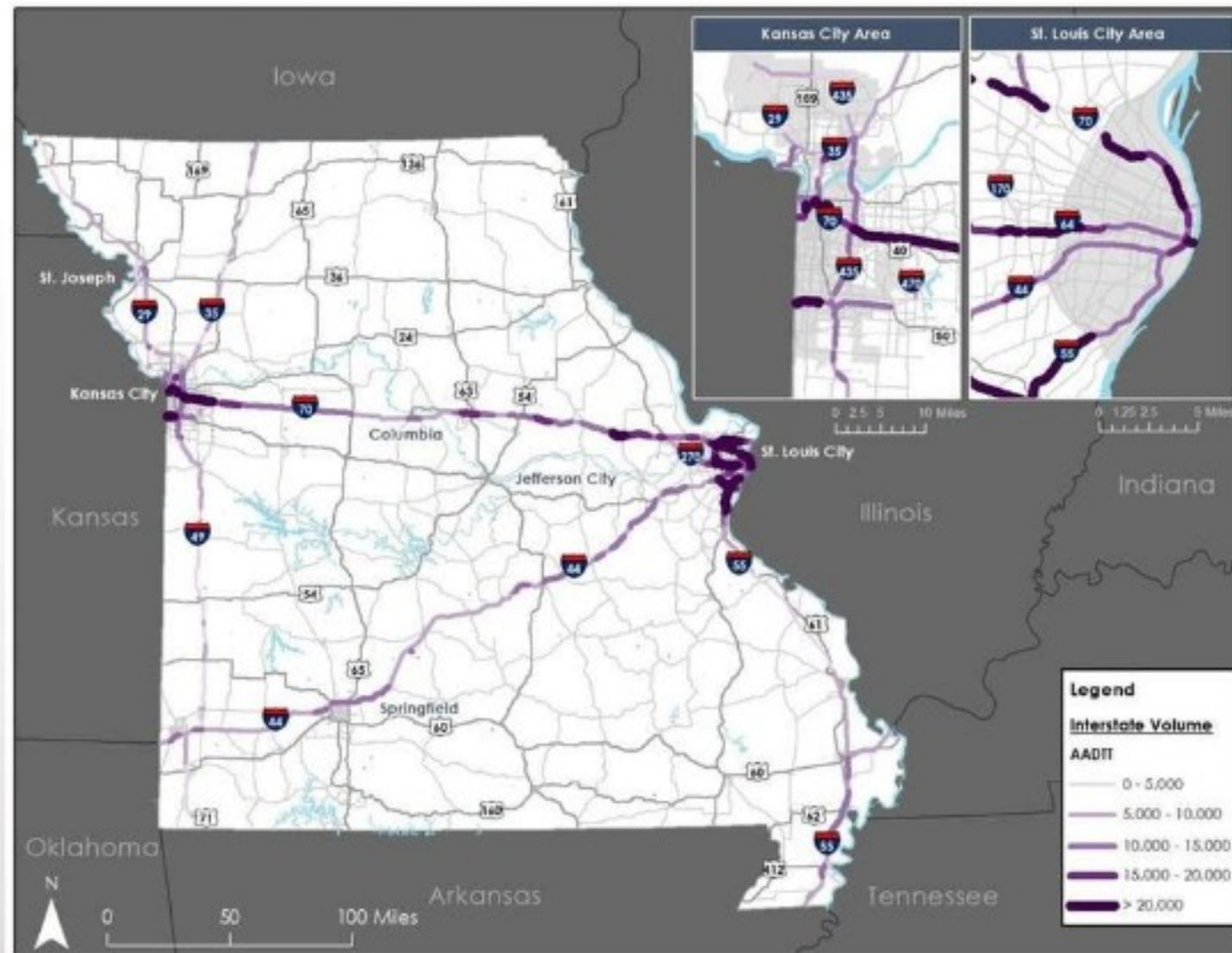
Highway Inventory

- ▶ Trucks are the dominant method of moving freight to, from, within, and through MO
- ▶ MO ranks 7th in nation in state highway miles, over 33,800 miles
 - » Interstate highways comprise 1,380 miles – 5th in the nation
 - » Major routes – 5,542 miles carry approx. 76% of traffic
 - » Minor routes – 28,290 miles carry approx. 24% of traffic

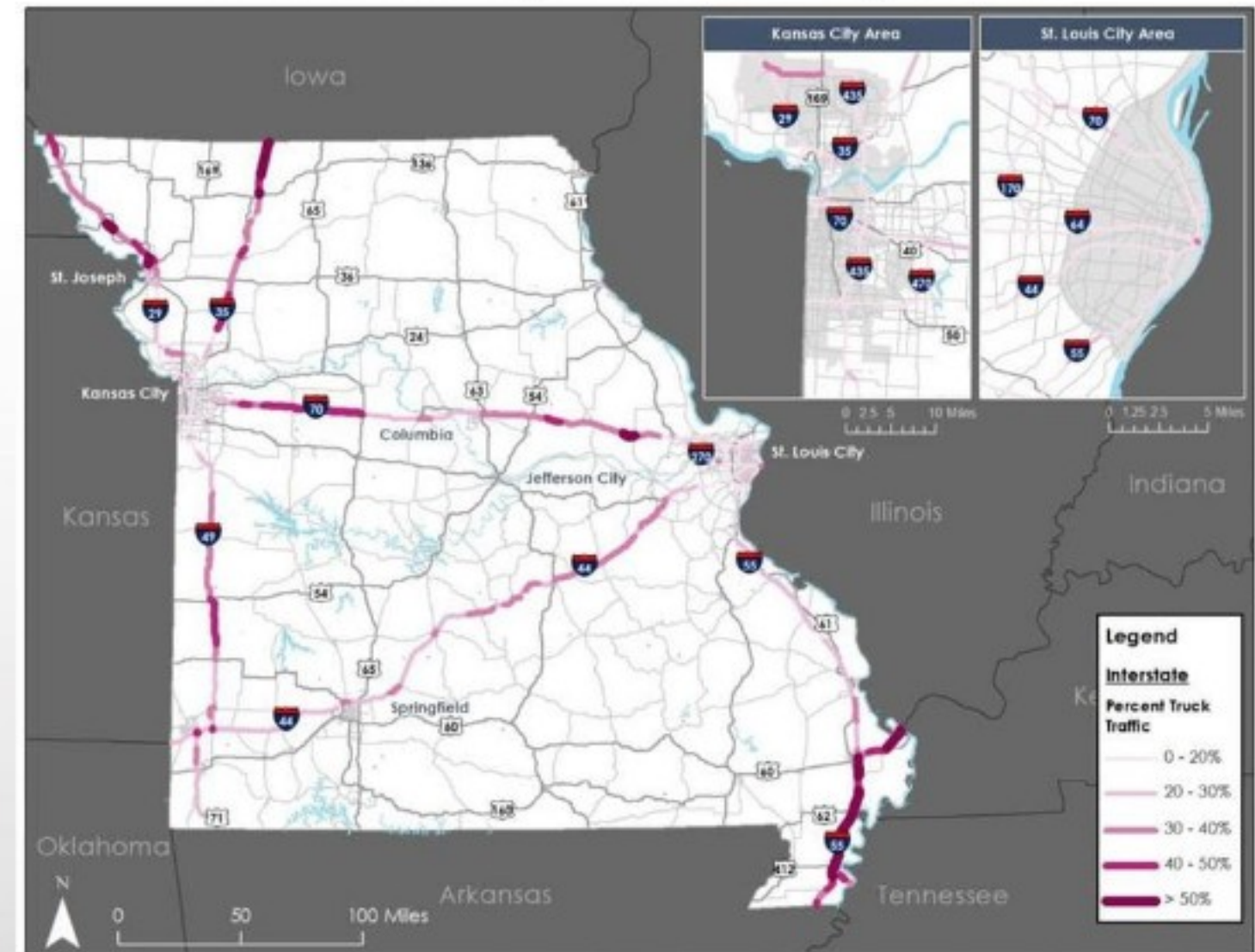


Highway Traffic

Interstate Average Annual Daily Truck Traffic

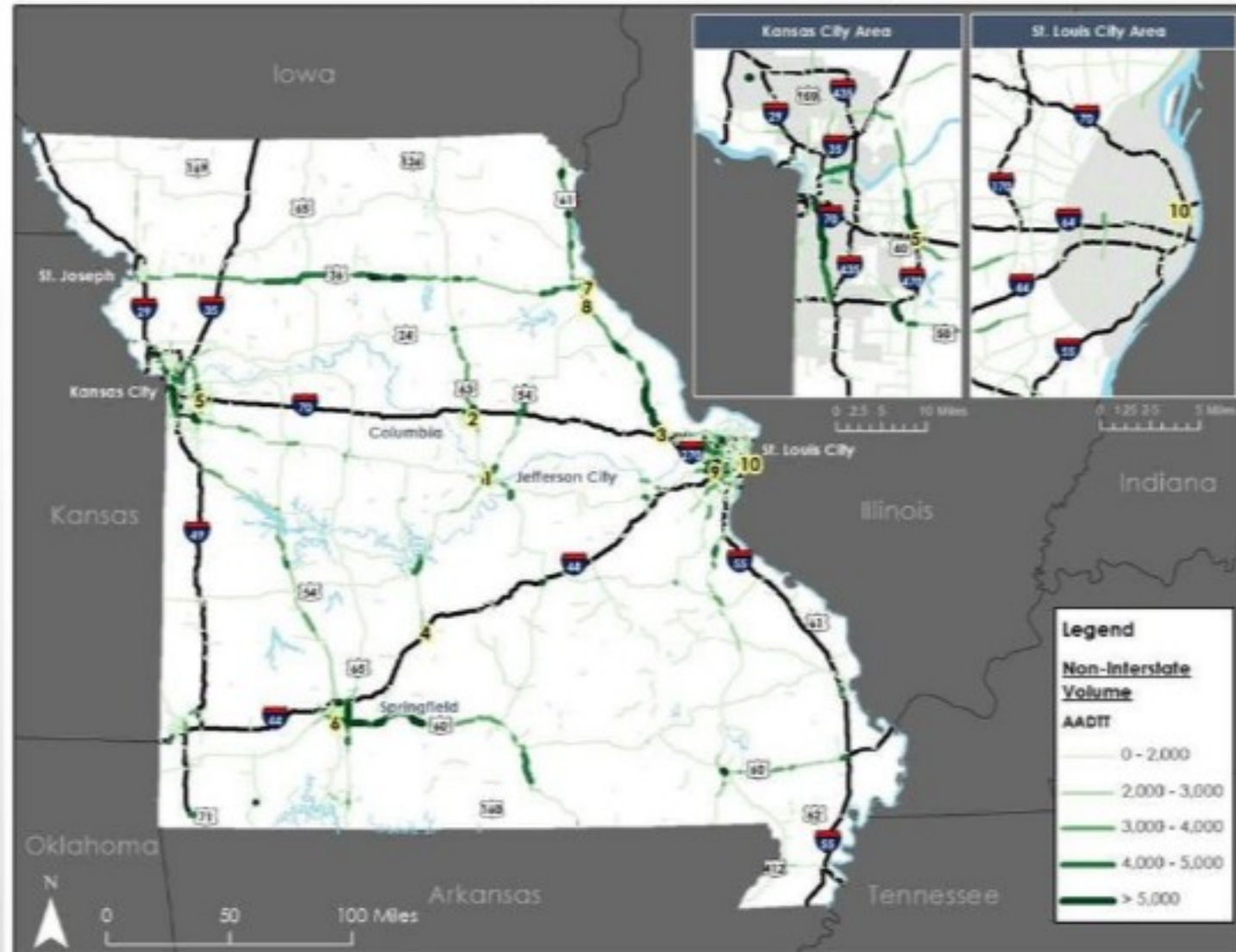


Interstate Average Annual Daily Truck Traffic as a % of Average Annual Daily Traffic



Highway Traffic

Non-Interstate Average Annual Daily Truck Traffic

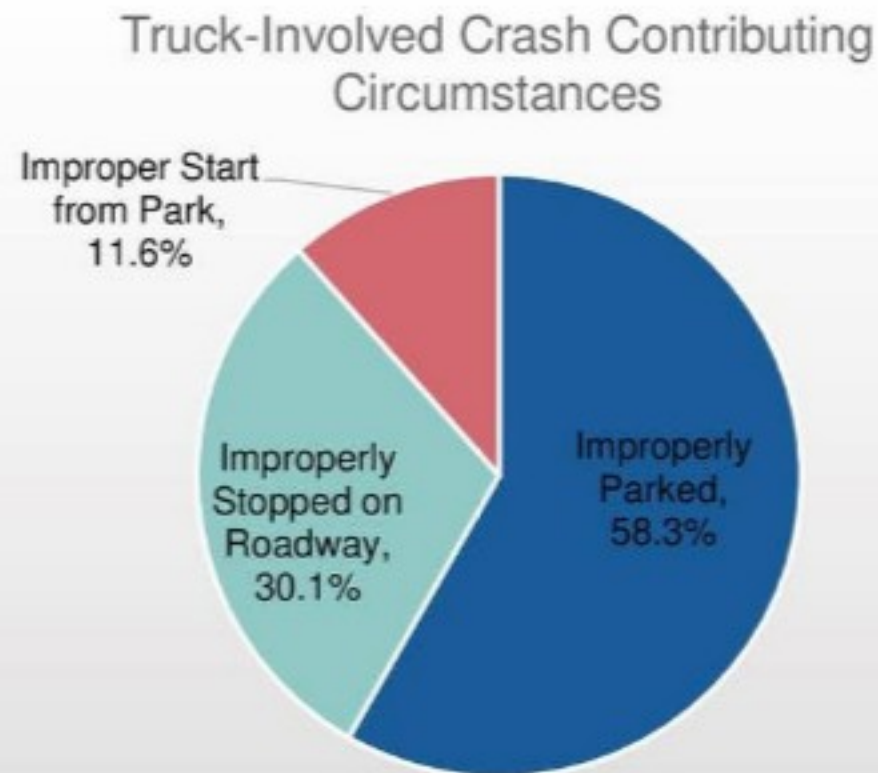


Non-Interstate Average Annual Daily Truck Traffic as a % of Average Annual Daily Traffic

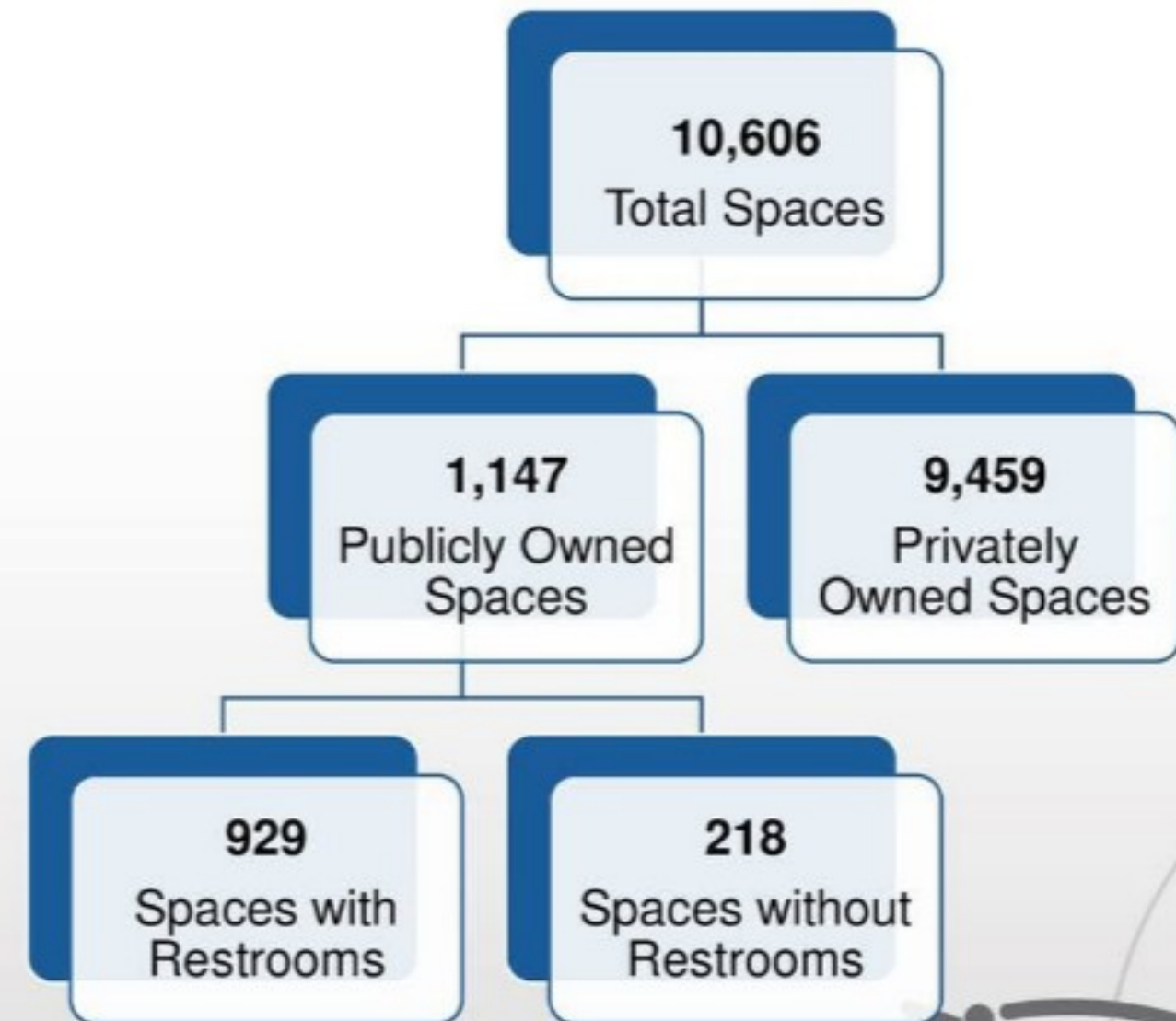


Truck Parking Inventory

Trucks parked in unauthorized locations can be unsafe for drivers and the traveling public

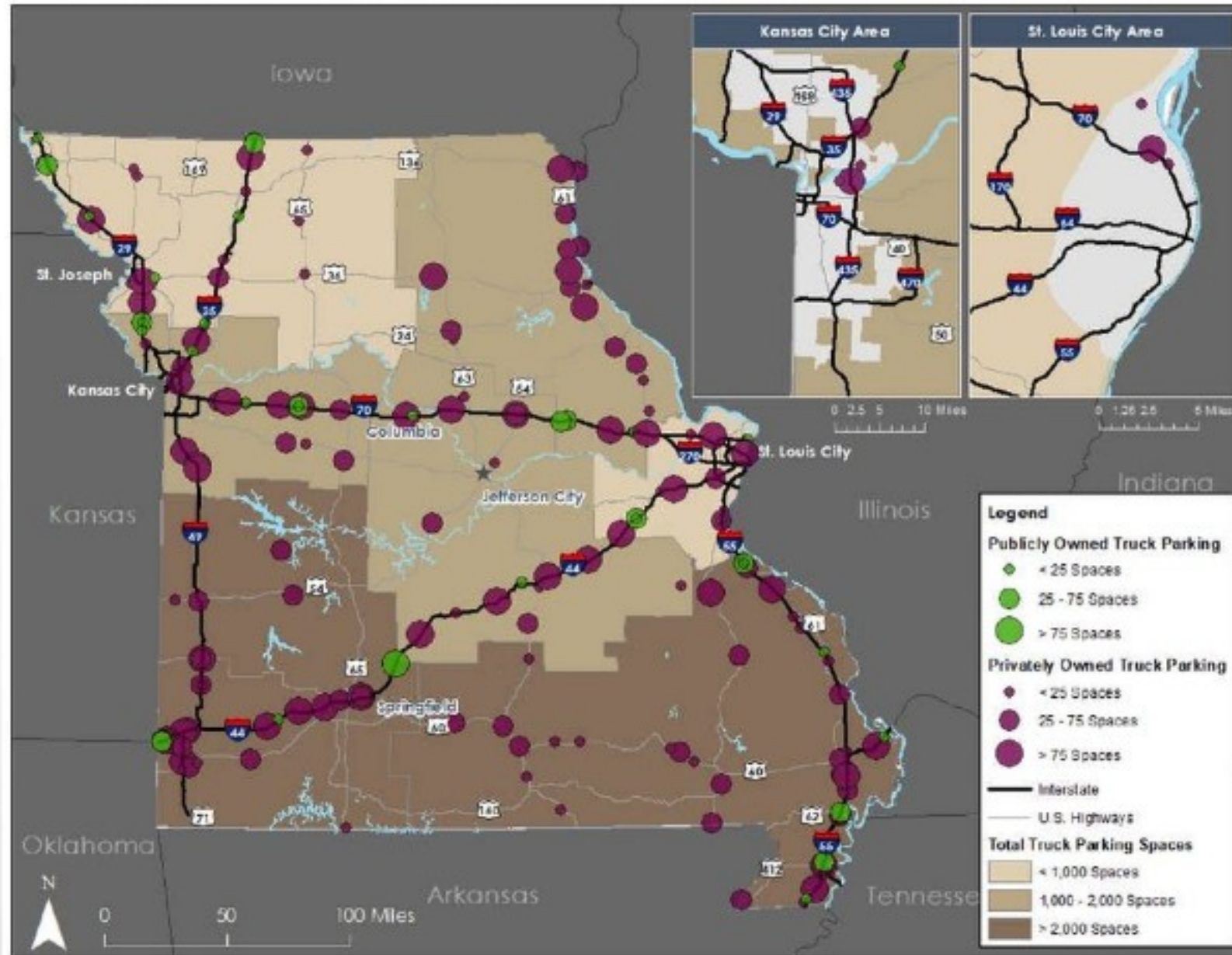


Source: MoDOT, Cambridge Systematics (2020).



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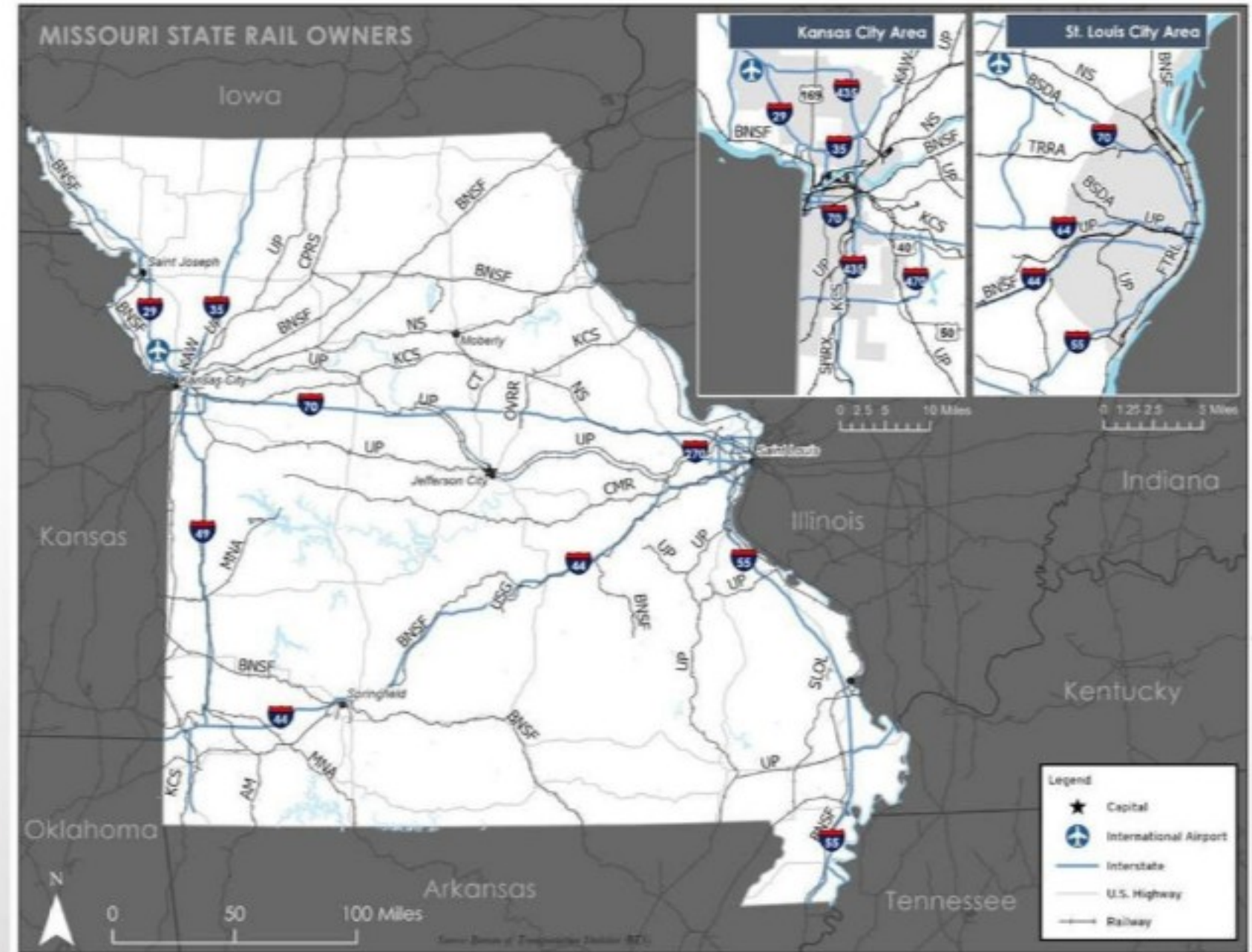
Truck Parking Inventory



- I-44 has the highest concentration of parking spaces on a per-mile basis, followed by I-70 and I-55
- I-270 has the lowest concentration, likely due to its unique purpose as a loop highway in urban/suburban region
- Higher land prices and land use/zoning restrictions likely contribute to the limited development of truck parking options

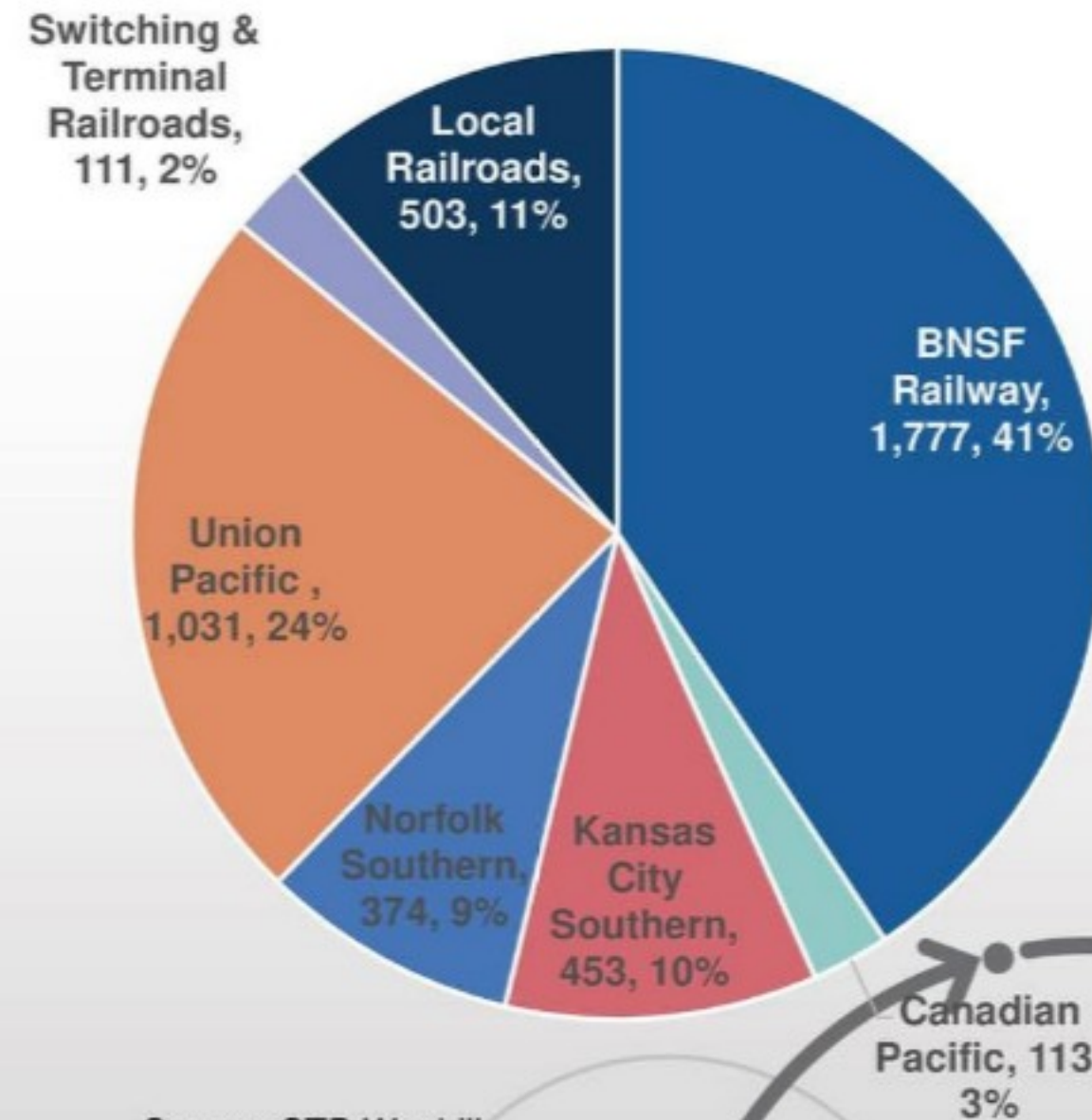
Rail Inventory

- 20 railroads operating across 5,000 miles of track
- Nationally, Missouri is ranked:
 - » 3rd in rail carloads carried
 - » 5th in rail tons carried
 - » 5th in freight railroad employment
 - » 9th in total rail miles



Rail Inventory

- Majority of track is owned by BNSF and Union Pacific
- Shortline railroads comprise smaller proportion of track ownership:
 - » Switching & terminal – 2%
 - » Local railroads – 11%

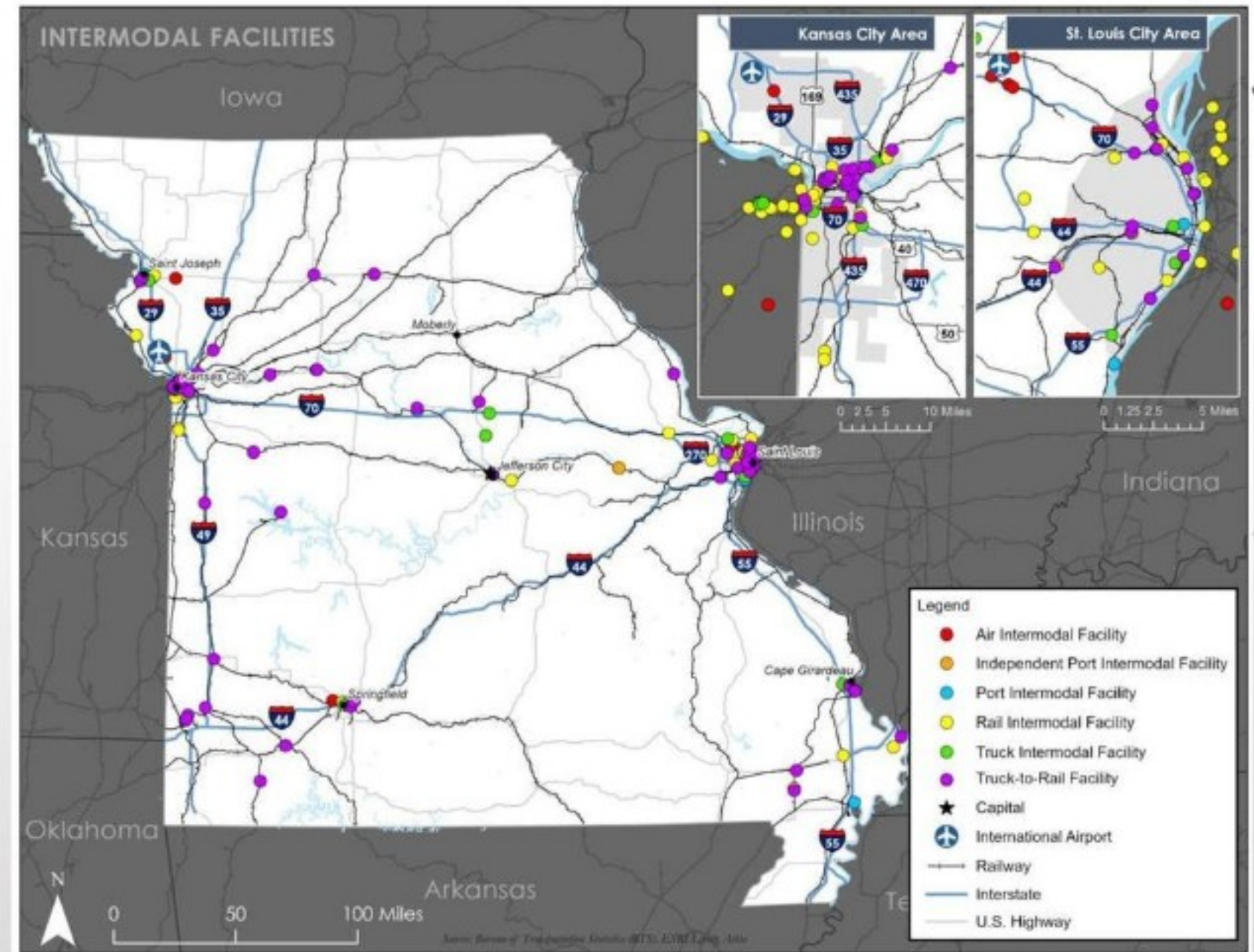


Source: STB Waybill

Intermodal Facilities

➤ MO's highway & rail network facilitates connection to intermodal and multimodal facilities:

- » Air cargo intermodal
- » Public & private marine port terminals
- » Truck-to-rail intermodal
- » Transload facilities



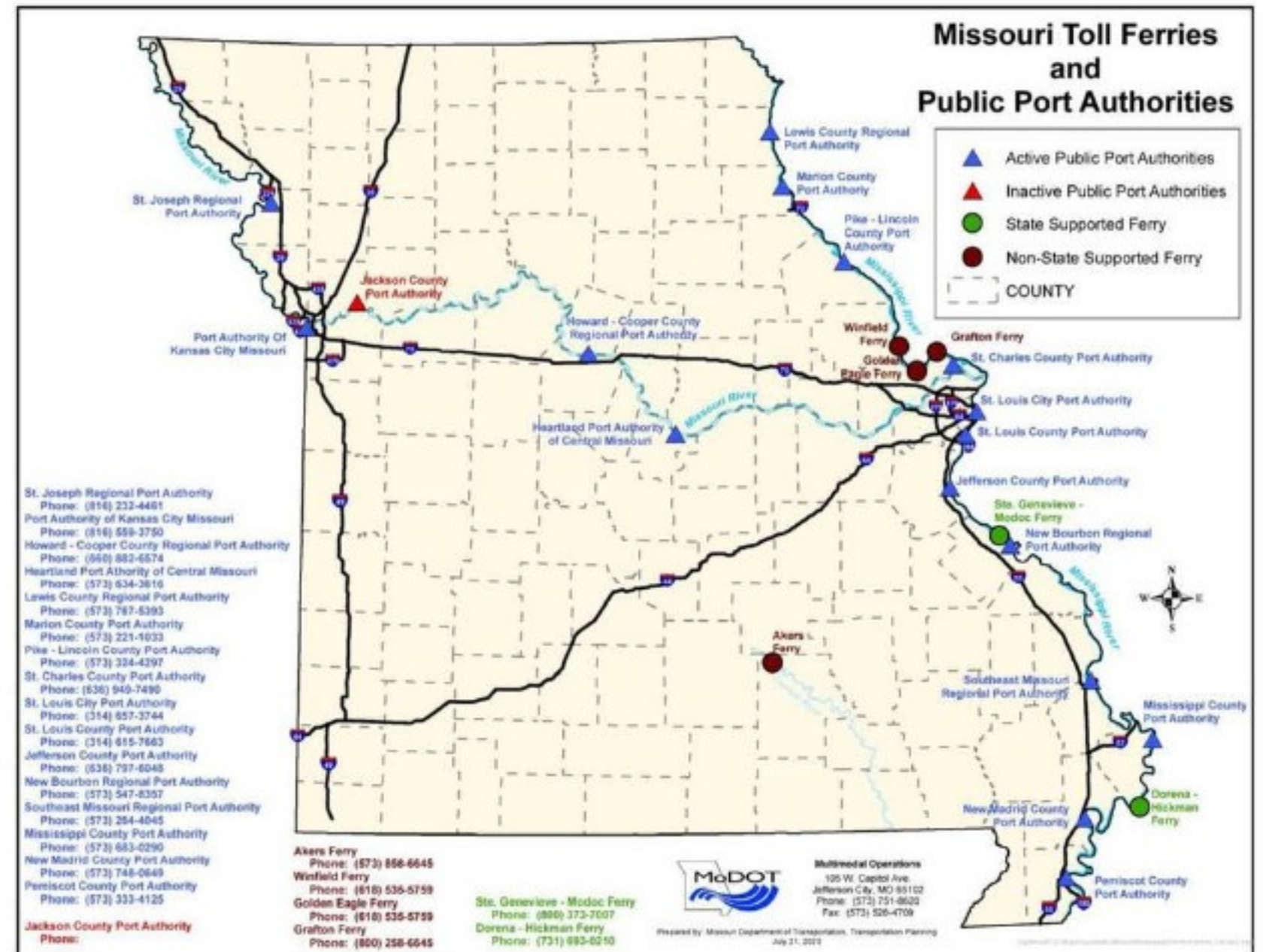
Ports & Waterways

➤ 17 Port Authorities

- » 16 active
- » 1 inactive

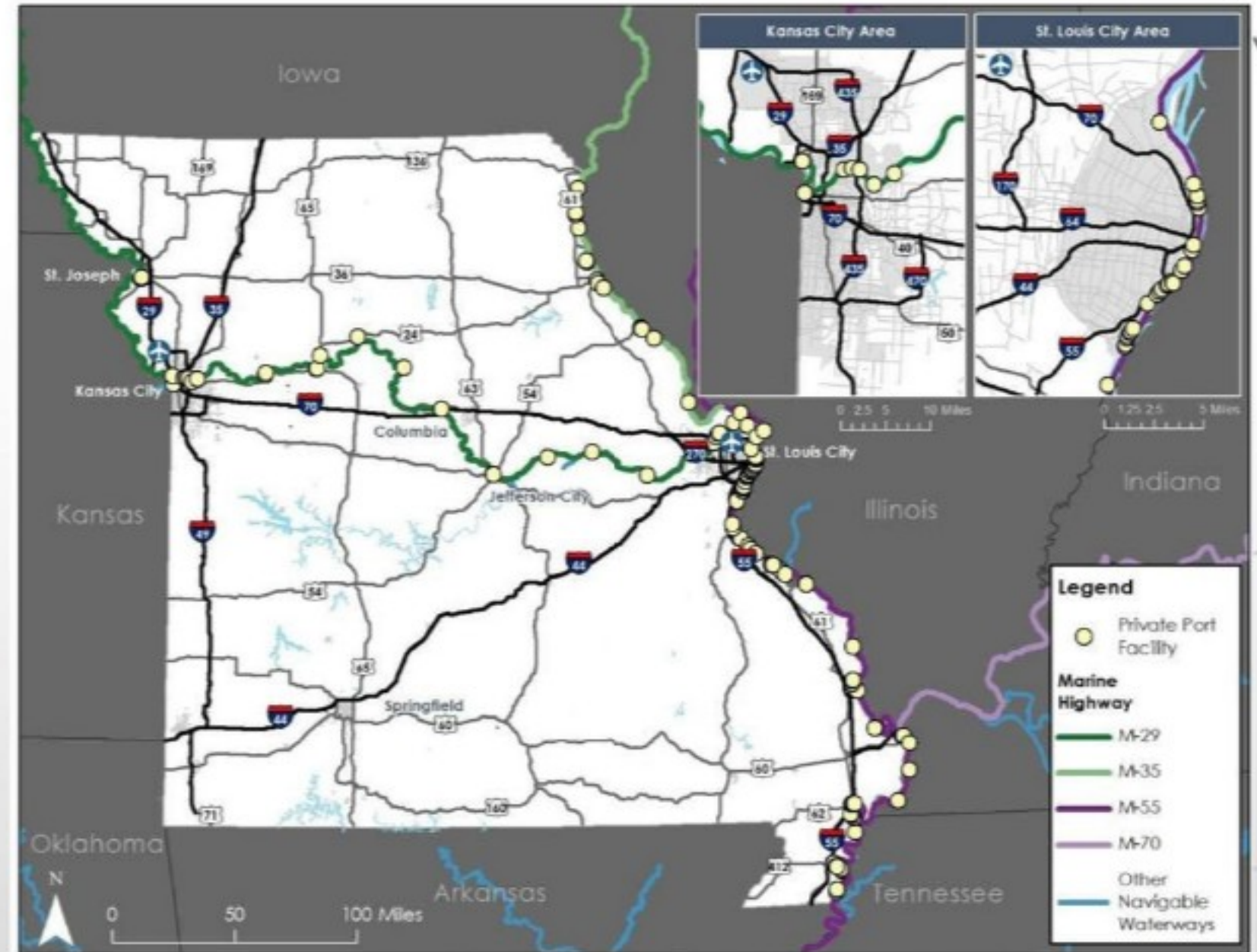
➤ 4 Marine Highways

- » M-29 – St. Louis to Omaha via Missouri River
- » M-35 – St. Louis to Minneapolis via Mississippi River
- » M-55 – St. Louis to Great Lakes via Illinois River and to Gulf of Mexico via Mississippi River South
- » M-70 – Ohio River to Pittsburgh



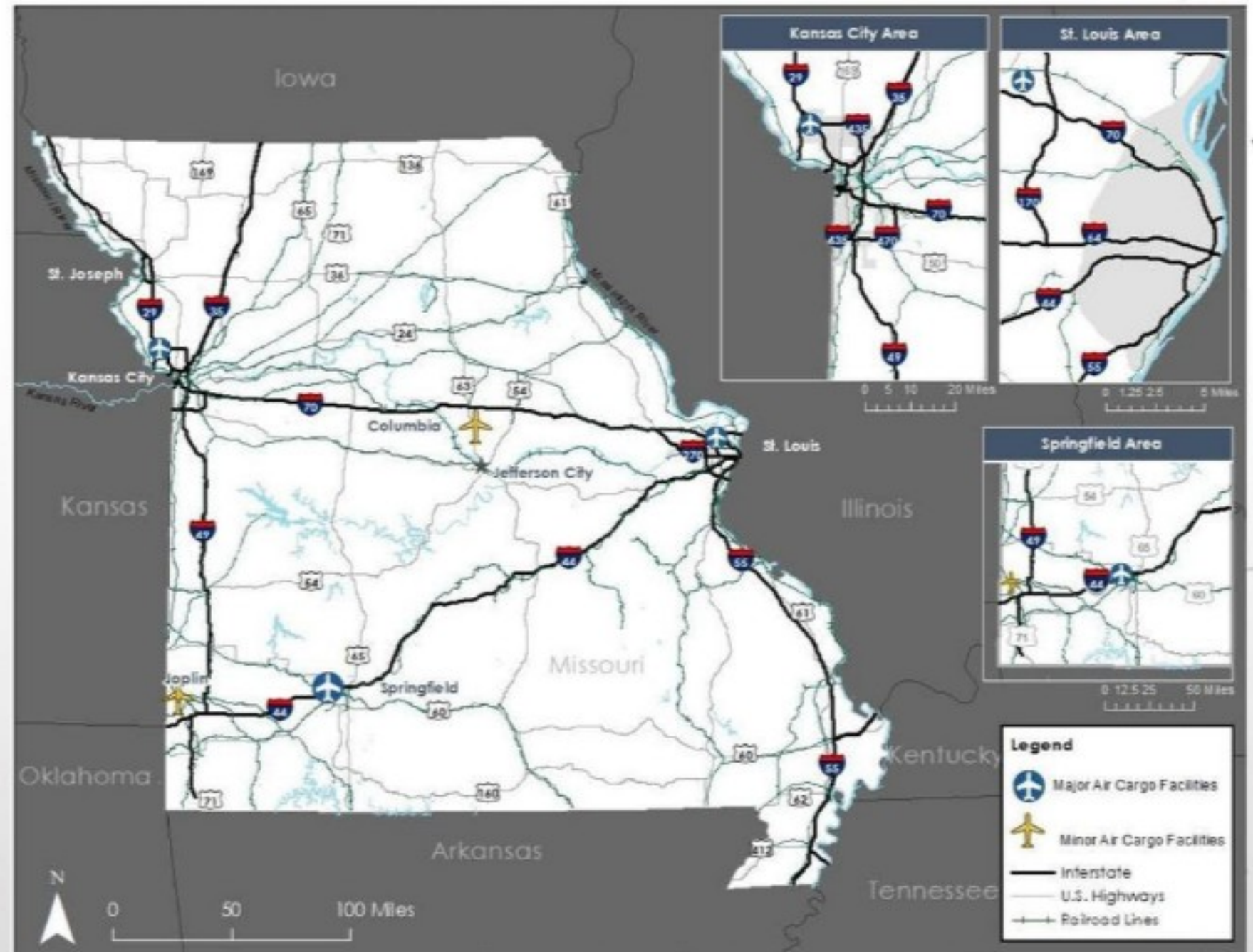
Ports & Waterways

- 150+ privately-owned and operated docks along Mississippi & Missouri rivers
 - » Grain elevators
 - » Dry bulk and open-air storage
 - » Liquid storage terminals
- Top port users include chemical mfg., crop production, primary metal mfg., mining, and non-metal product mfg. industries



Air Cargo

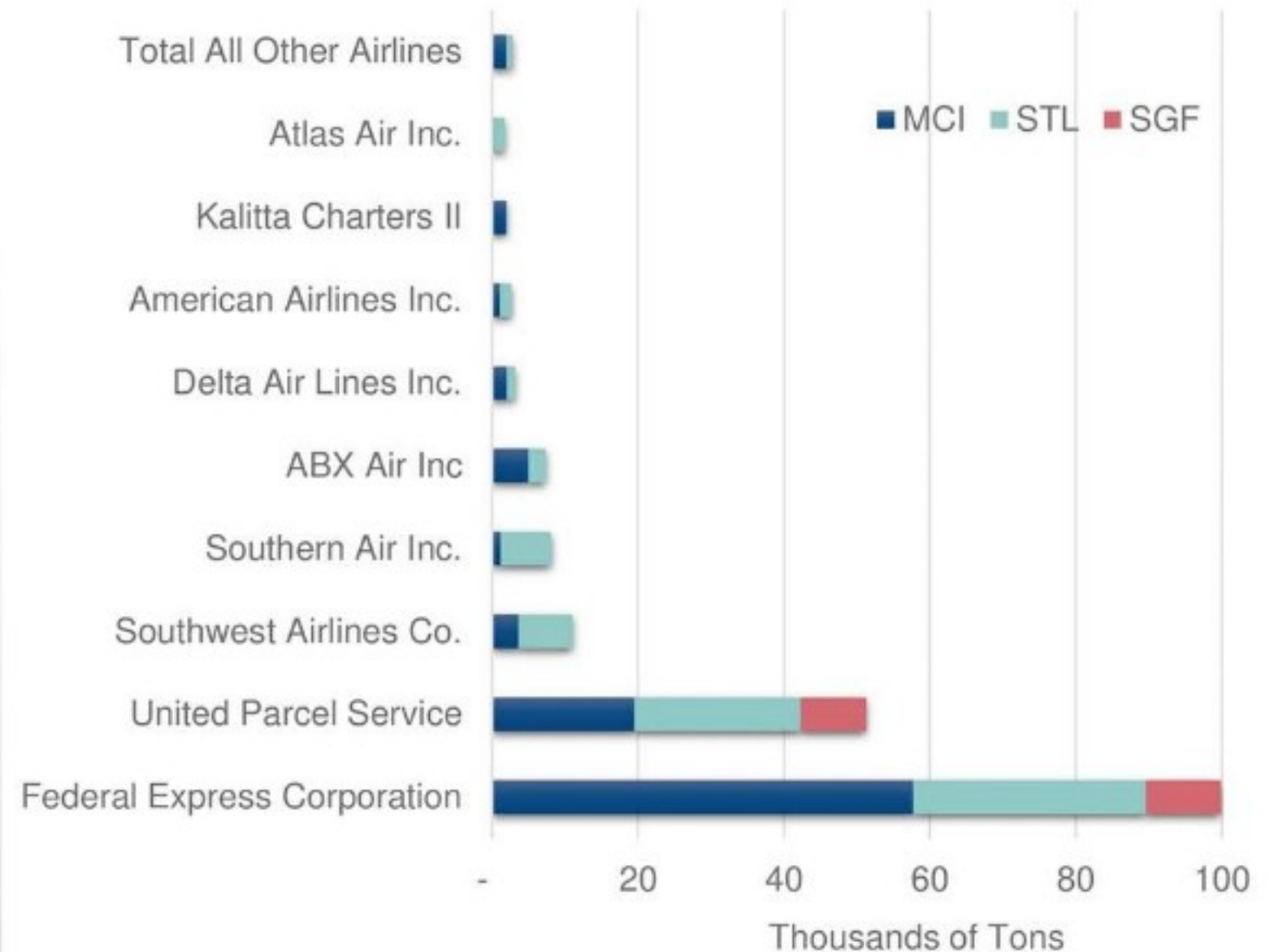
- MO aviation system includes 121 public + 248 private use airports
- 5 airports handle air cargo activity:
 - » Kansas City (MCI) – 50%
 - » St. Louis (STL) – 40%
 - » Springfield (SGF) – 10%
 - » Columbia (COU) – <1%
 - » Joplin (JLN) – <1%



Air Cargo

- Top air cargo origins & destinations are cities with FedEx and UPS hubs
 - » Memphis
 - » Louisville
 - » Indianapolis
- Expedited carriers serve rural parts of MO and are critical to mail & e-commerce demand in those areas

Top Exporting Cargo Carriers at Top Three Missouri Airports



Source: Bureau of Transportation Statistics

Freight System Designation



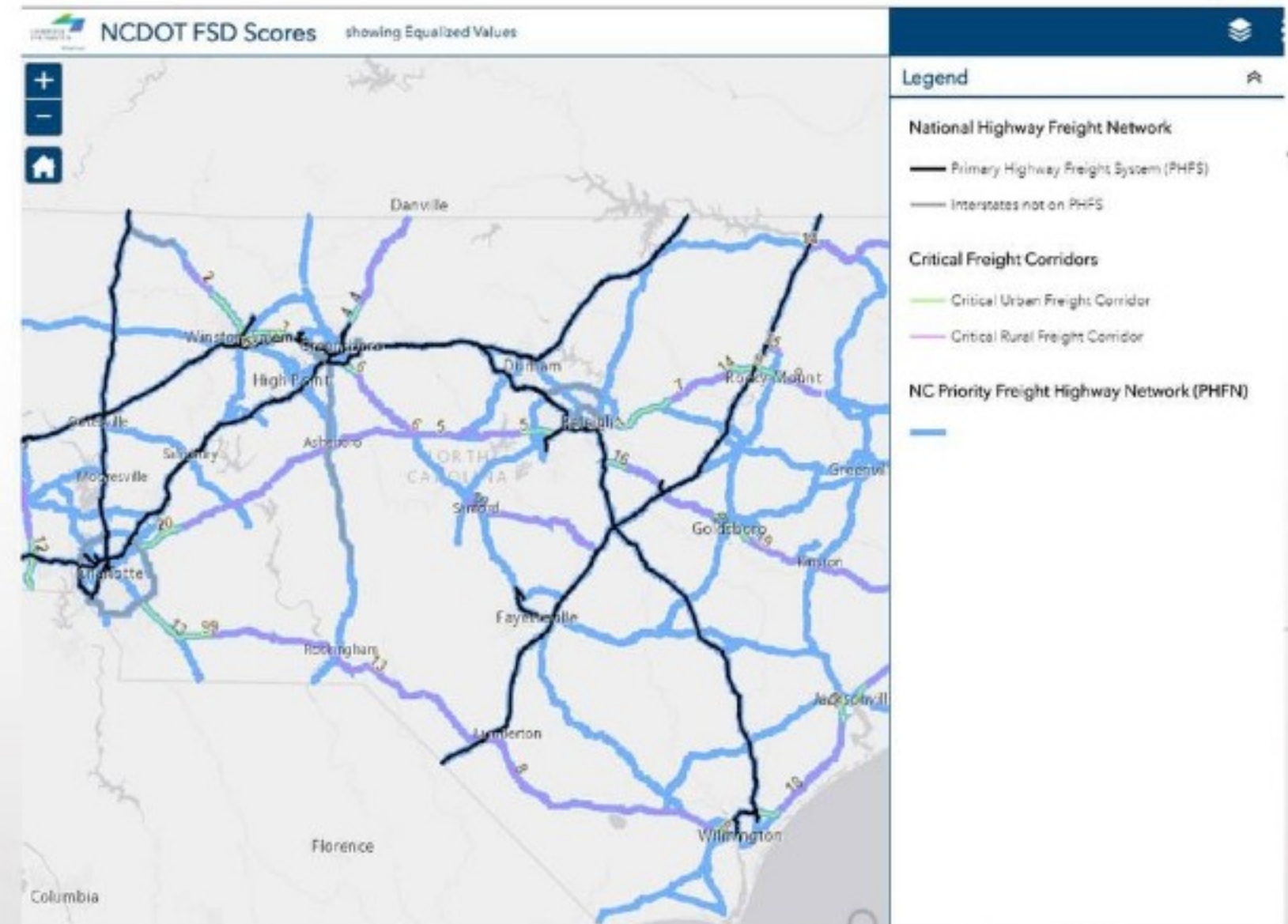
Federal Requirements

- FAST Act established the National Highway Freight Program to allocate money across essential freight assets
- National Highway Freight Network (NHFN) comprised of:
 - » Primary Highway Freight System (PHFS)
 - » Portions of NHS not part of the PHFS
 - » Critical urban freight corridors
 - » Critical rural freight corridors

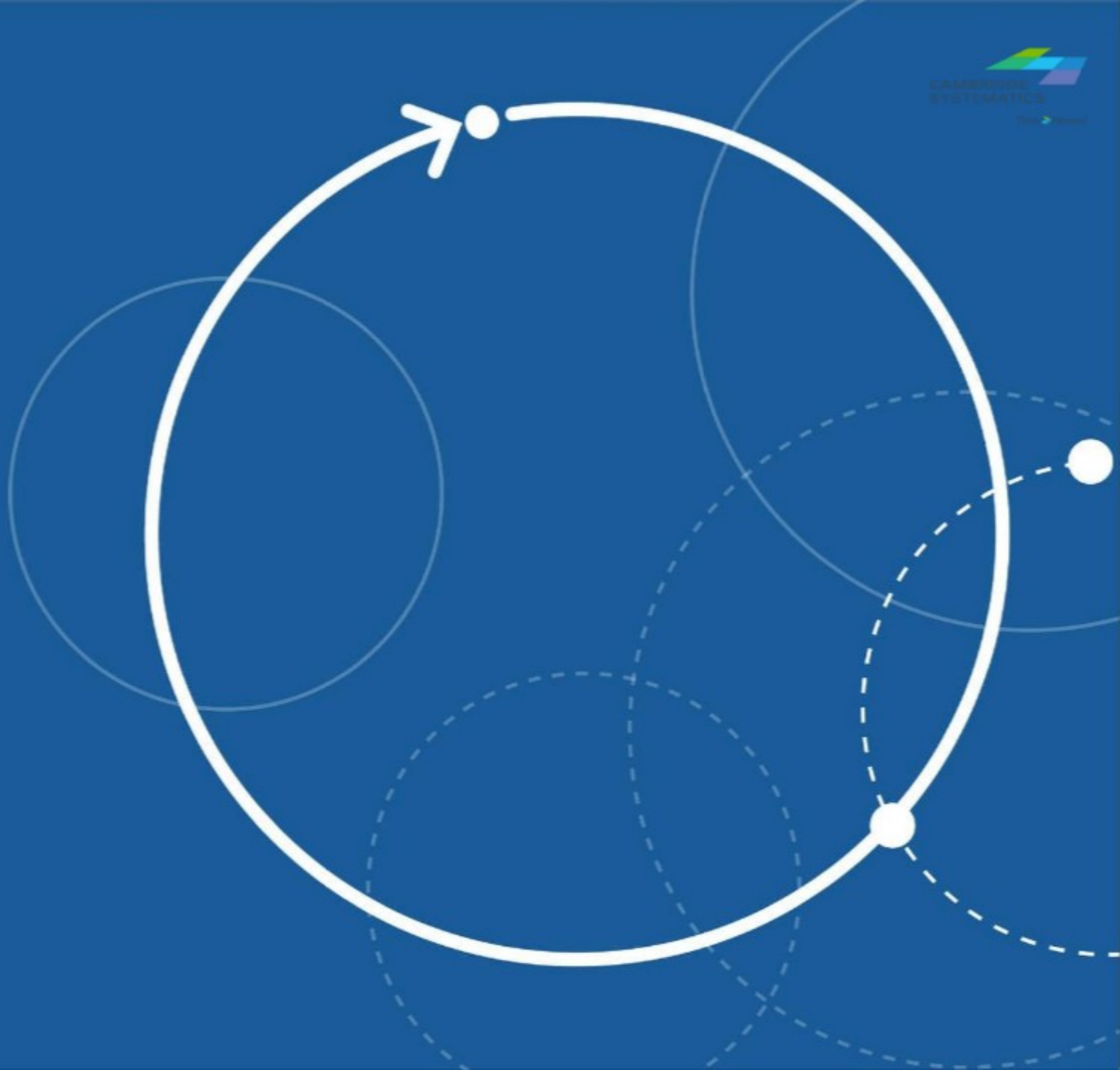


Desired Outcome for MoDOT

- Establish Missouri Priority Freight Network (MPFN) to:
 - » Identify MO's most critical freight assets across all modes
 - » Support project prioritization
 - » Serve as baseline in Missouri Freight Analysis System (MoFAS) tool



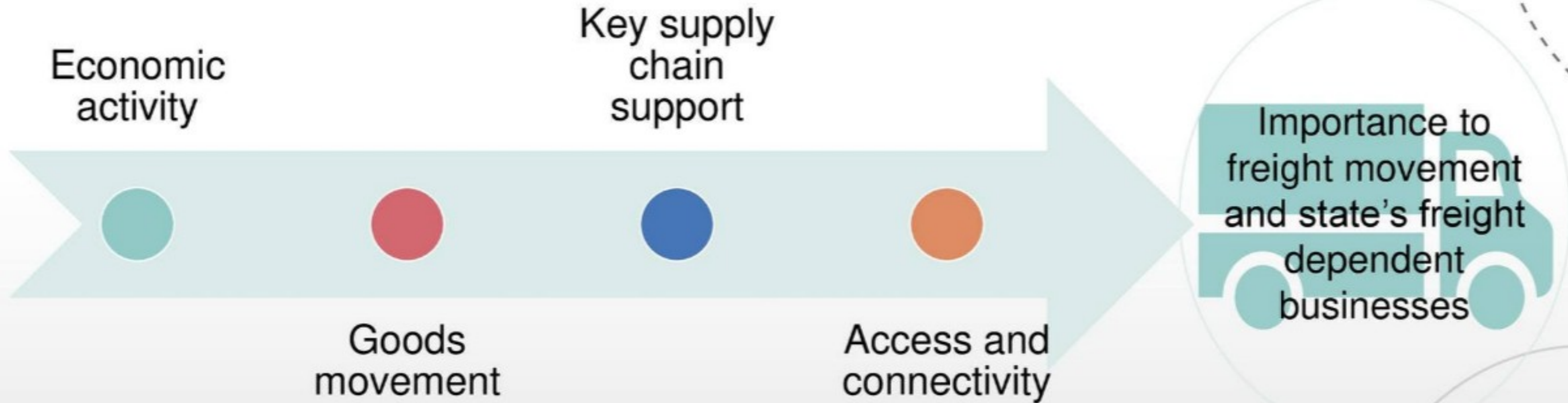
Highway Designation Process



MO Highway Freight Network Designation Process



Designation Criteria



Economic Competitiveness



- Measures economic activities that support economic growth:
 - » Demographic preparedness
 - » Freight intensity and supported industries
- Based on latest U.S. Census data

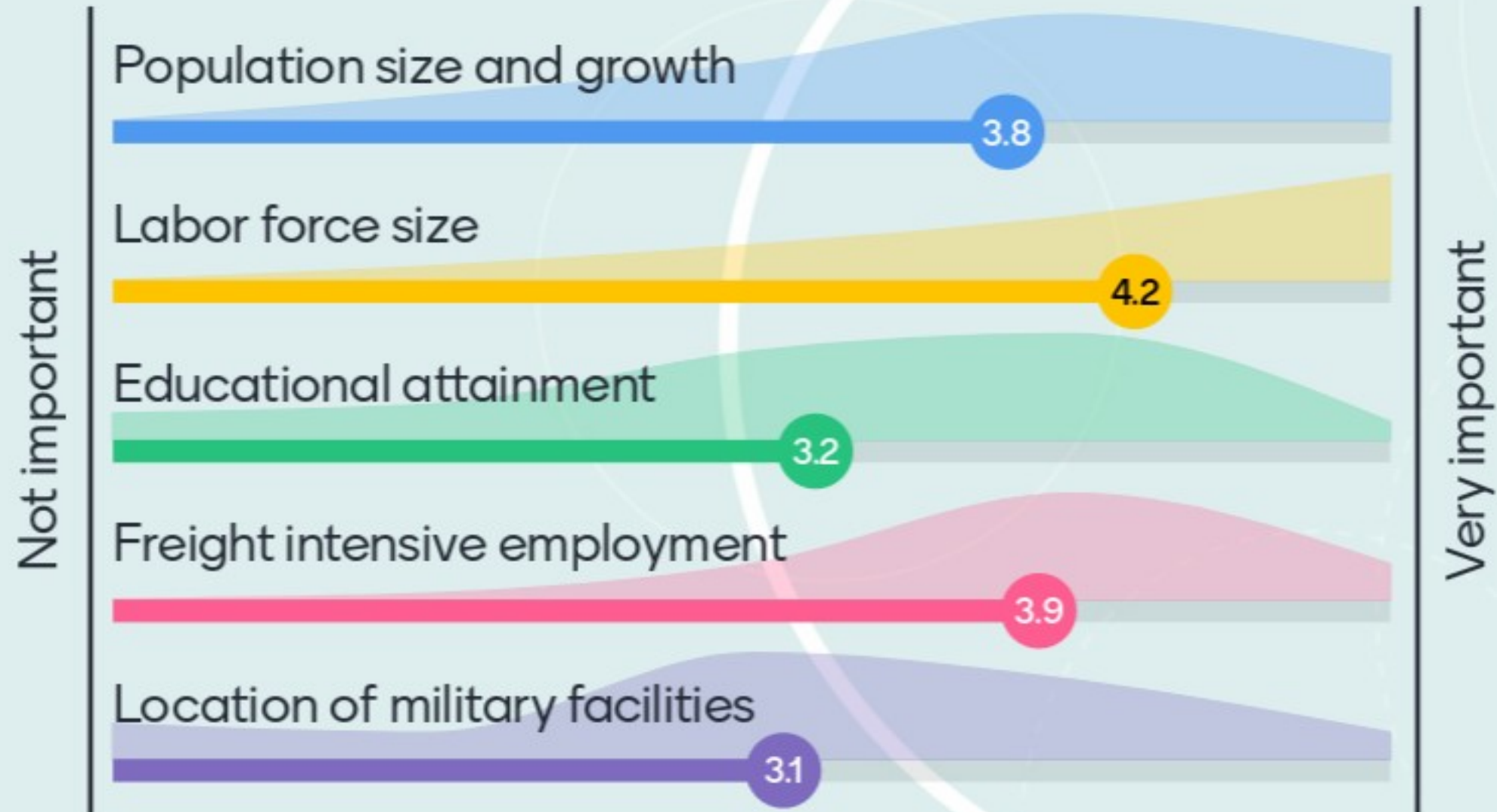
Demographic Preparedness

- Population size and growth
- Workforce size
- Educational attainment

Freight Intensity and Supported Industries

- Freight employment intensity
- Key military facilities

How important are the following economic activity criteria?



Goods Movement

- Measures the role of facilities in movement of goods
- Primary data sources include IHS Transearch and MoDOT

Goods Movement Metrics

- Daily truck volumes
- Absolute Vehicle Miles Traveled (VMT)
- VMT by lane mile
- Percent truck volume
- Total tonnage
- Total value
- Tonnage growth
- Value growth

How important are the following criteria for measuring goods movement?



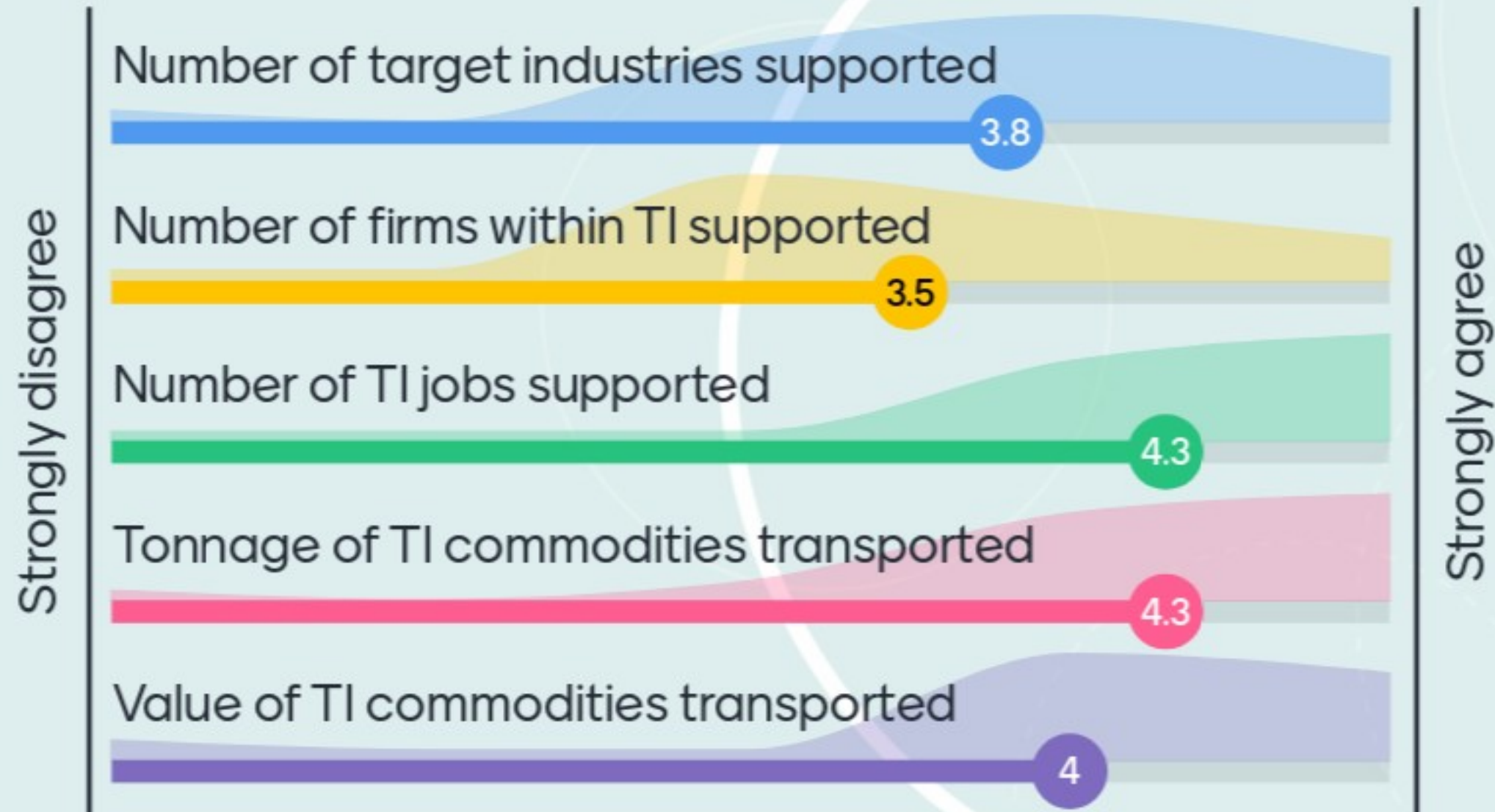
Strategic Supply Chains

- Examines how highway facilities support key freight-generating businesses and their global supply chains
- Based establishment data and Transearch

Strategic Supply Chains Metrics

- Support of Targeted Industries (TI)
- Level of support for TI businesses
- Employment size of TI businesses
- Support for commodities associated with TI (tonnage)
- Support for commodities associated with TI (value)

How important are the following supply chain support criteria?



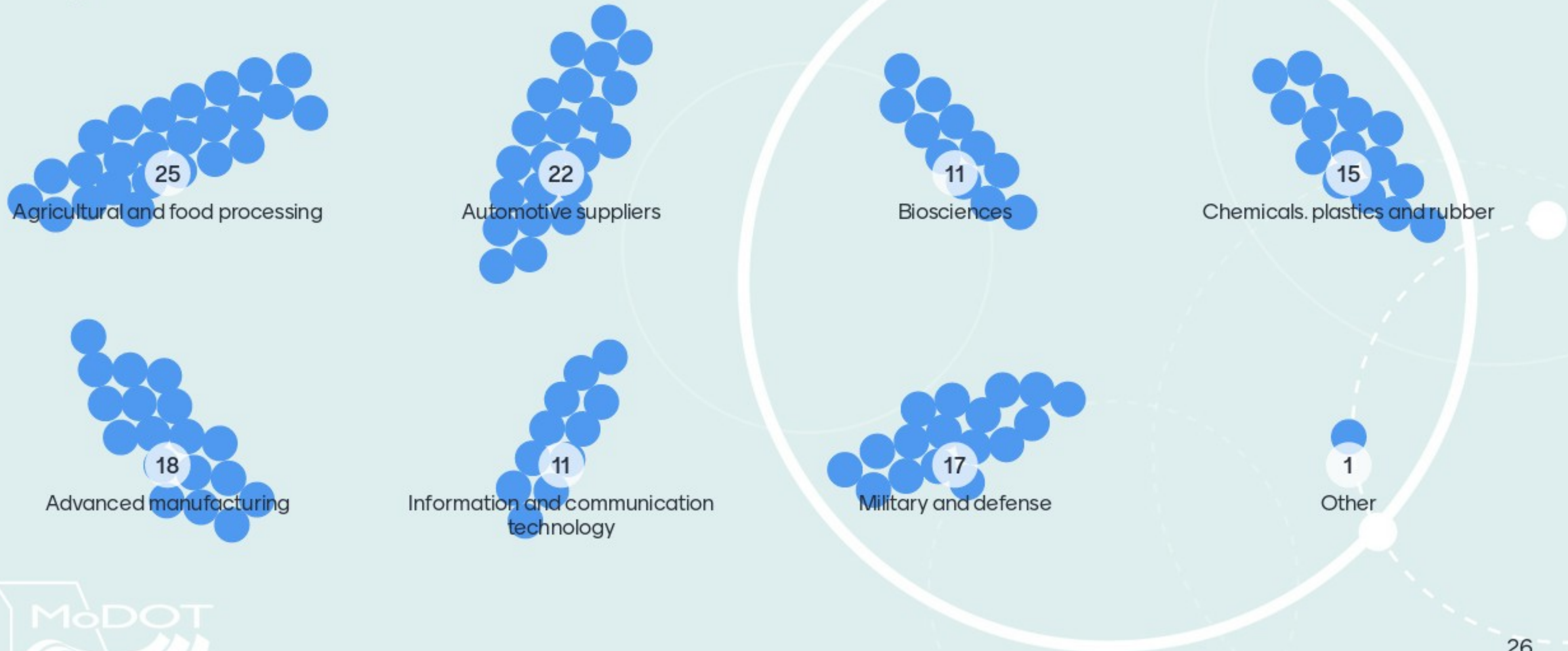
Strategic Supply Chains

- Key MO sectors identified via:
 - » MO Dept. of Economic Development target industries
 - » Reports from MO Dept. of Agriculture
 - » Shift-share and LQ analysis for MO sectors using BLS data
- Each industry sector is comprised of various NAICS codes and primary commodities

Proposed Industry Sectors

- Agriculture and food & goods processing
- Automotive suppliers
- Biosciences
- Chemicals, plastics, and rubber
- Aggregates & non-metallic minerals
- Advanced manufacturing
- Information & communications technology
- Transportation & logistics
- Wholesale
- Military & Defense

What industries should be considered as strategic freight intensive industries?



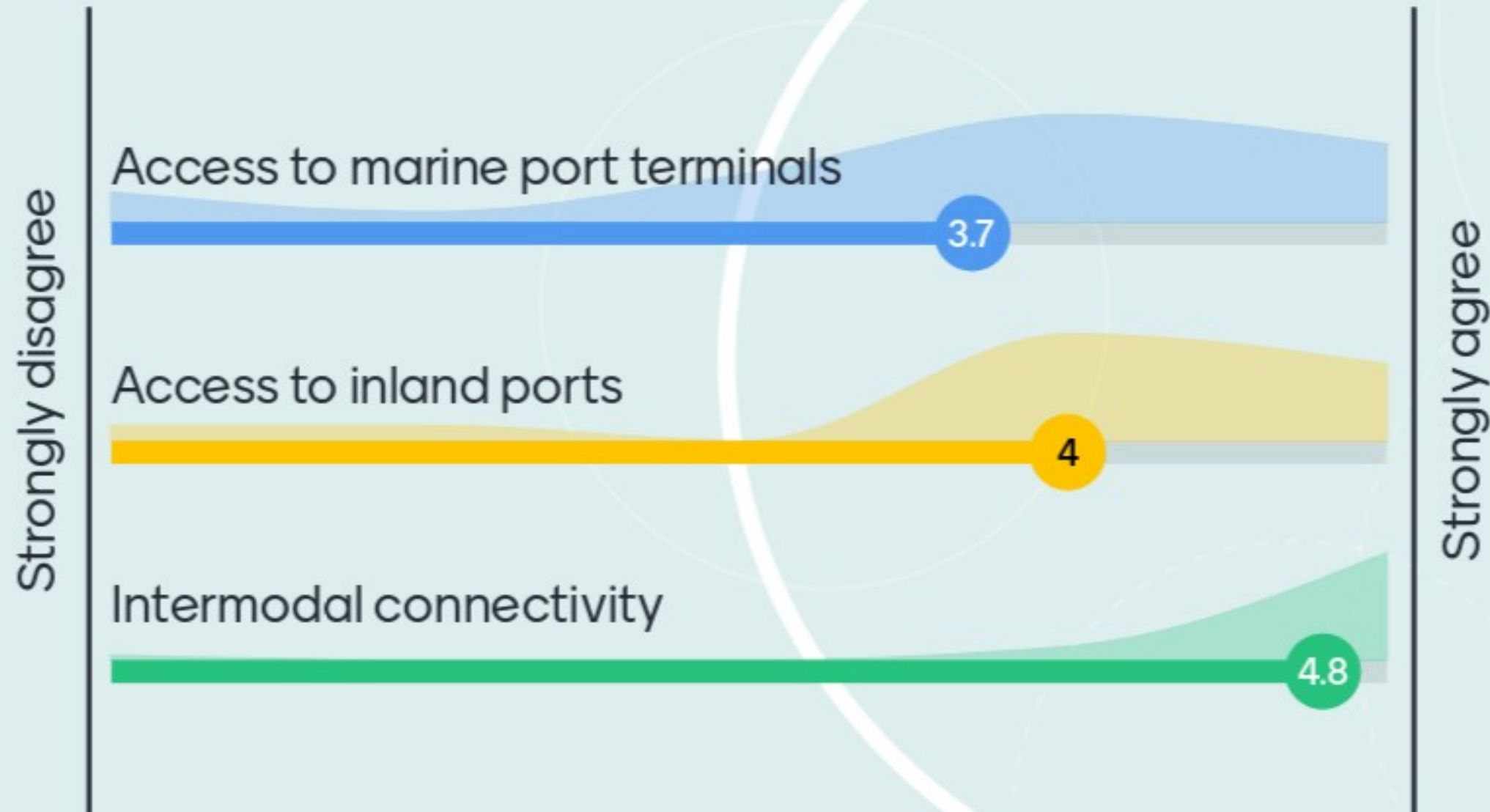
Market Access and Connectivity

- Evaluates intermodal connectivity and connectivity to trading partners and international gateways
- Data sources include BTS National Transportation Atlas Database & ESRI geoprocessing tools

Market Access and Connectivity Metrics

- Intermodal connectivity
- Access to marine port terminals
- Access to inland port terminals

How important are the following access and connectivity criteria?



Analysis Criteria

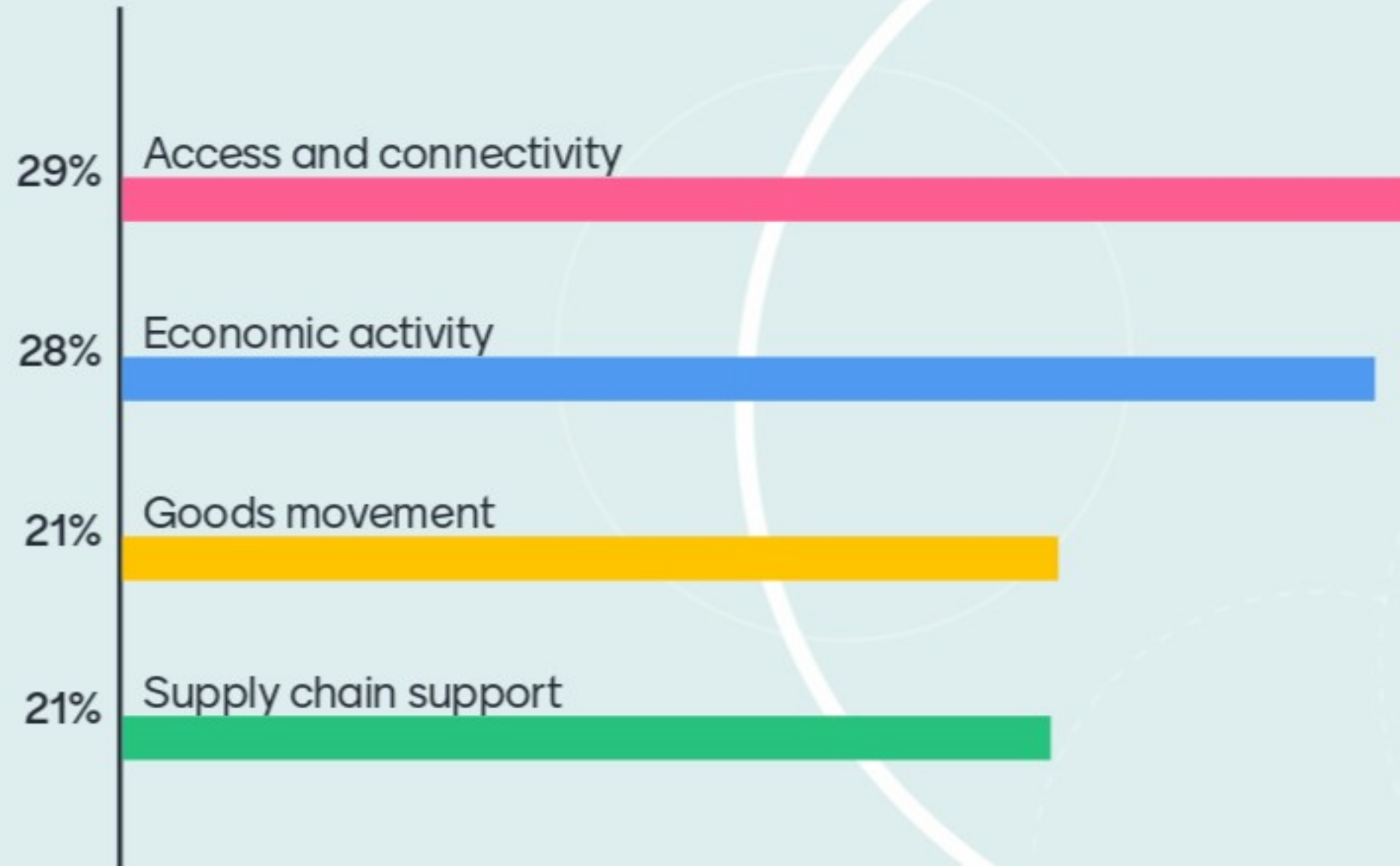
Economic
Competitiveness
25%

Goods
Movement
25%

Strategic Supply
Chains
25%

Market Access
and Connectivity
25%

Please distribute 100 points across the freight network designation categories



Non-Highway Designation Process



Priority Rail Freight Assets

U.S. DOT includes:

- Class I railroads
- Classification yards
- Intermodal terminals
- Transload facilities on the Class I railroad system

Designation of Shortline Railroads

- Potential to apply scoring methodology to MO's shortline railroad network
- Can be used internally or published as part of SFRP

Category	Metric
Economic Competitiveness	Freight intensive employment
Strategic Supply Chain	Support for freight-generating industries
	Support for freight-generating businesses
	Employment of freight-generating businesses
Market Access & Connectivity	Intermodal connectivity

Priority Marine Freight Assets

U.S. DOT includes:

- St. Louis City Port
- Marine Highway Corridors: M-55, M-70, M-29, M-35

Potential additions:

- All freight-handling ports; or
- Ports that meet a certain tonnage threshold

Priority Air Cargo Freight Assets

U.S. DOT includes:

- Kansas City International

Potential additions:

- St. Louis Lambert
- Springfield-Branson

Next Steps



Develop draft MO Highway Freight Network



Incorporate & compare against initial stakeholder input



Rank roadways based on scores



Draft final system for Steering Committee approval



Finalize MO Highway Freight Network

Economic Impact of the Missouri River Runner Passenger Rail Service



Study Purpose

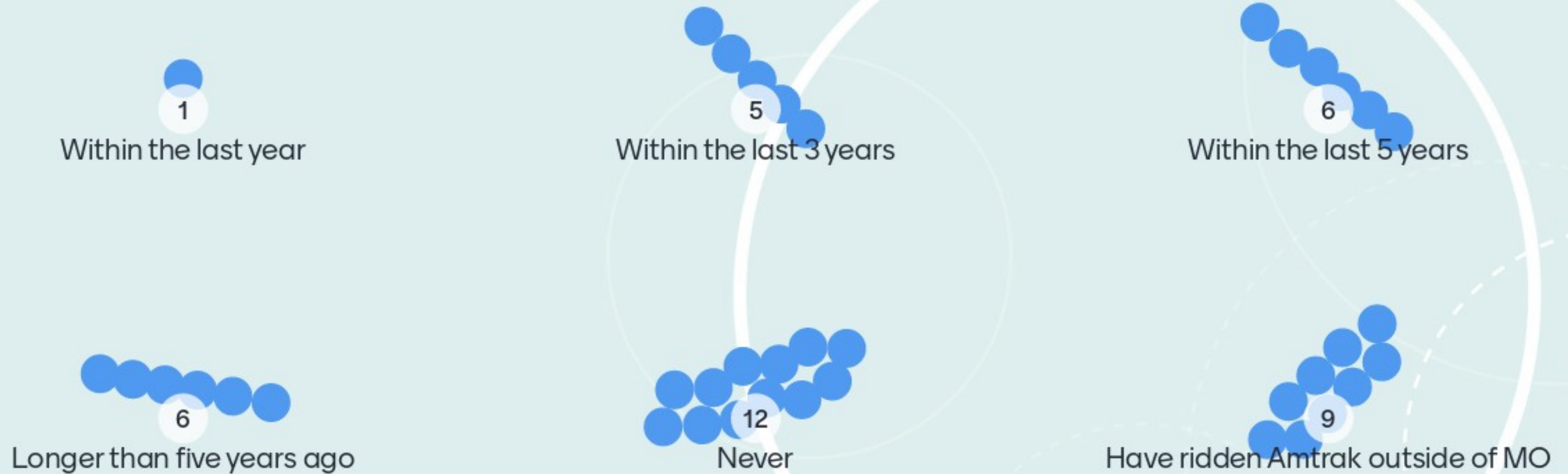
- Conduct an economic assessment of the Missouri River Runner Amtrak passenger train service
- Evaluate total direct, indirect, and induced economic benefits in terms of:
 - » Travel & transportation
 - » Tourism & visitor spending



River Runner Stations & Attractions



Have you or your family ridden Amtrak in MO:



Total Economic Impact Findings

The total direct, indirect, and induced economic benefits of the River Runner support nearly:



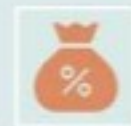
1,700 jobs annually



\$70M in labor income



\$201M in economic activity



\$4.7M in state & local tax revenue

The state of MO
saves

\$19.8 million

in annual roadway
maintenance as a
result of River
Runner ridership

Amtrak Tourism & Visitor Spending Impacts

- River Runner riders spend an estimated \$21.8M in hotels and \$25.3M in food & sightseeing costs each year, which supports nearly:
 - » **870** jobs
 - » **\$29.8M** in labor income
 - » **\$86.3M** in economic activity
 - » **\$2M** in state & local tax revenue



Impact of Amtrak's Direct Spending in Missouri

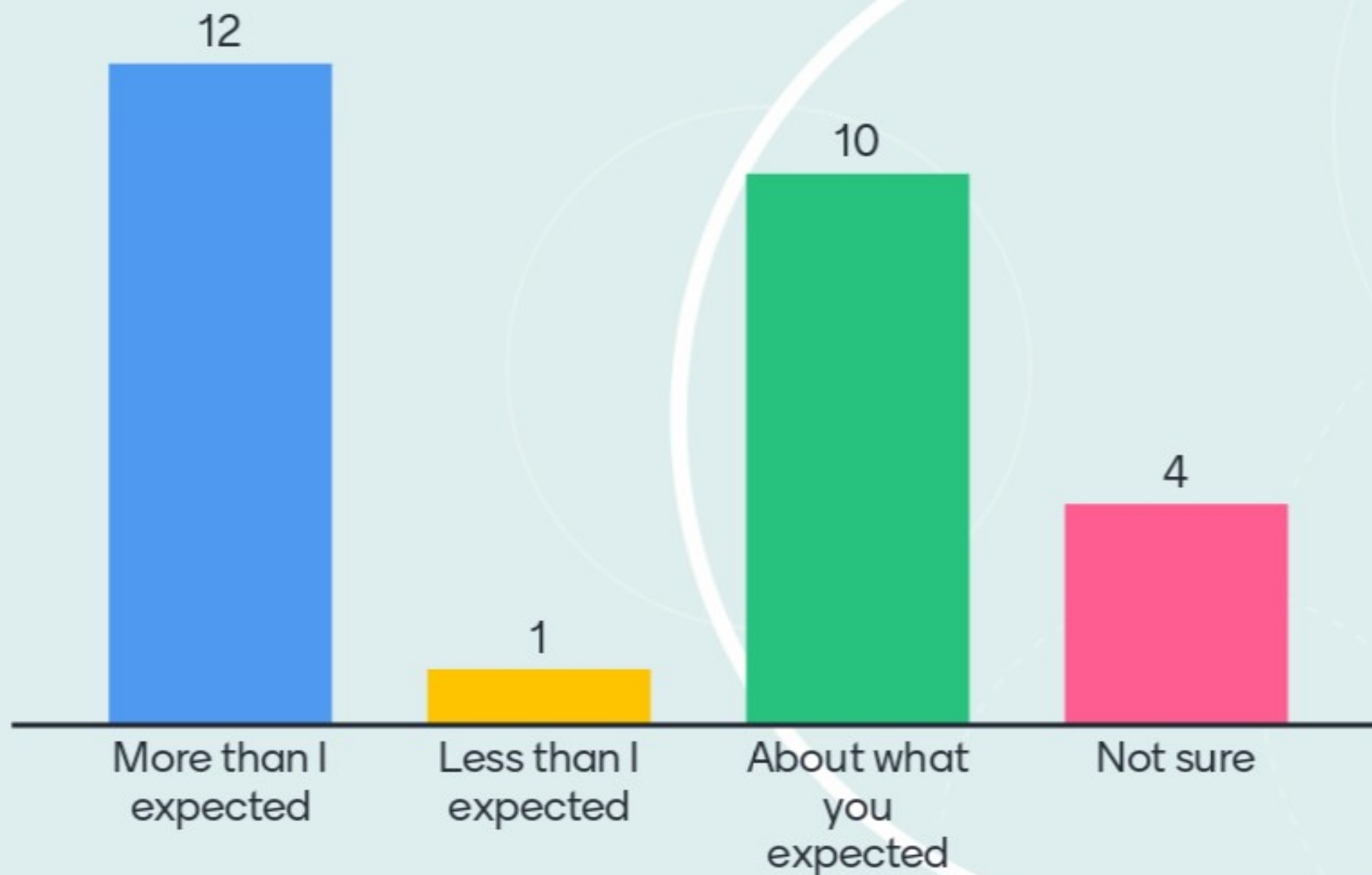


- Amtrak's direct spending in MO supports local vendors and small businesses:
 - » In 2019, Amtrak spent \$28.9M to hire services from MO construction, landscaping, railroad, engineering, and technology businesses.
 - » Amtrak employs 370 people across MO, amounting to about \$11.1 million in labor income.

- Collectively, Amtrak's direct employment and spending in MO supports:
 - » **800** jobs
 - » **\$40.1M** in labor income
 - » **\$114.9M** in economic activity
 - » **\$2.7M** in state & local tax revenue



Are the economic impacts of Amtrak in MO:



River Runner Challenges & Opportunities

Challenges



Connectivity after reaching River Runner station



Stabilized funding



On-time performance

Opportunities



Expand cross-marketing packages between stations
(e.g. Sedalia-Kirkwood and Warrensburg-Washington)



Expand marketing for day, overnight, and business trips



Develop hotels & housing near Amtrak stations



Invest in on-site ticketing kiosks



Adjust schedule to facilitate more convenient day trips

Why Do We Care?

- Many MO residents & visitors depend on the River Runner, but very little state funding is invested in the network.
- Enhanced service can provide important economic development benefits to Missouri communities.
- Missouri has been able to maintain existing River Runner service with modest state appropriations, but there is no dedicated funding source for passenger rail.
- Improving River Runner service has the potential to strengthen MO's cities and population centers.

Next Steps



Next 90 days

- Complete stakeholder interviews
- Missouri Freight Profile
- Finalize River Runner economic impact executive summary materials
- Develop GIS webtool
- Initiate needs assessment

Discussion

Thank you!

