



# MISSOURI State Freight & Rail Plan

STAKEHOLDER OUTREACH SUMMARY  
APPENDIX: MEETING MATERIALS AND DOCUMENTATION



## Appendix: Meeting Materials and Documentation

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# Steering Committee Meeting 1 Presentation



MISSOURI

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# State Freight & Rail Plan

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*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- please go to [www.Menti.com](http://www.Menti.com) and type in code

[www.menti.com](https://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*



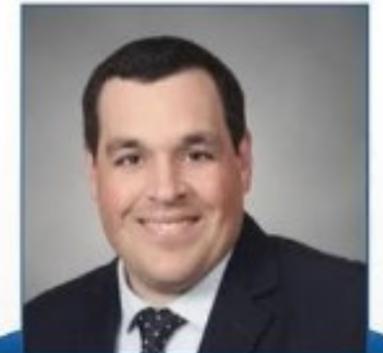
**Mark Berndt**  
*Supply Chains and Logistics*



**Ben Zietlow**  
*Freight Tool Development*



**Steve Wells**  
*L RTP 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?

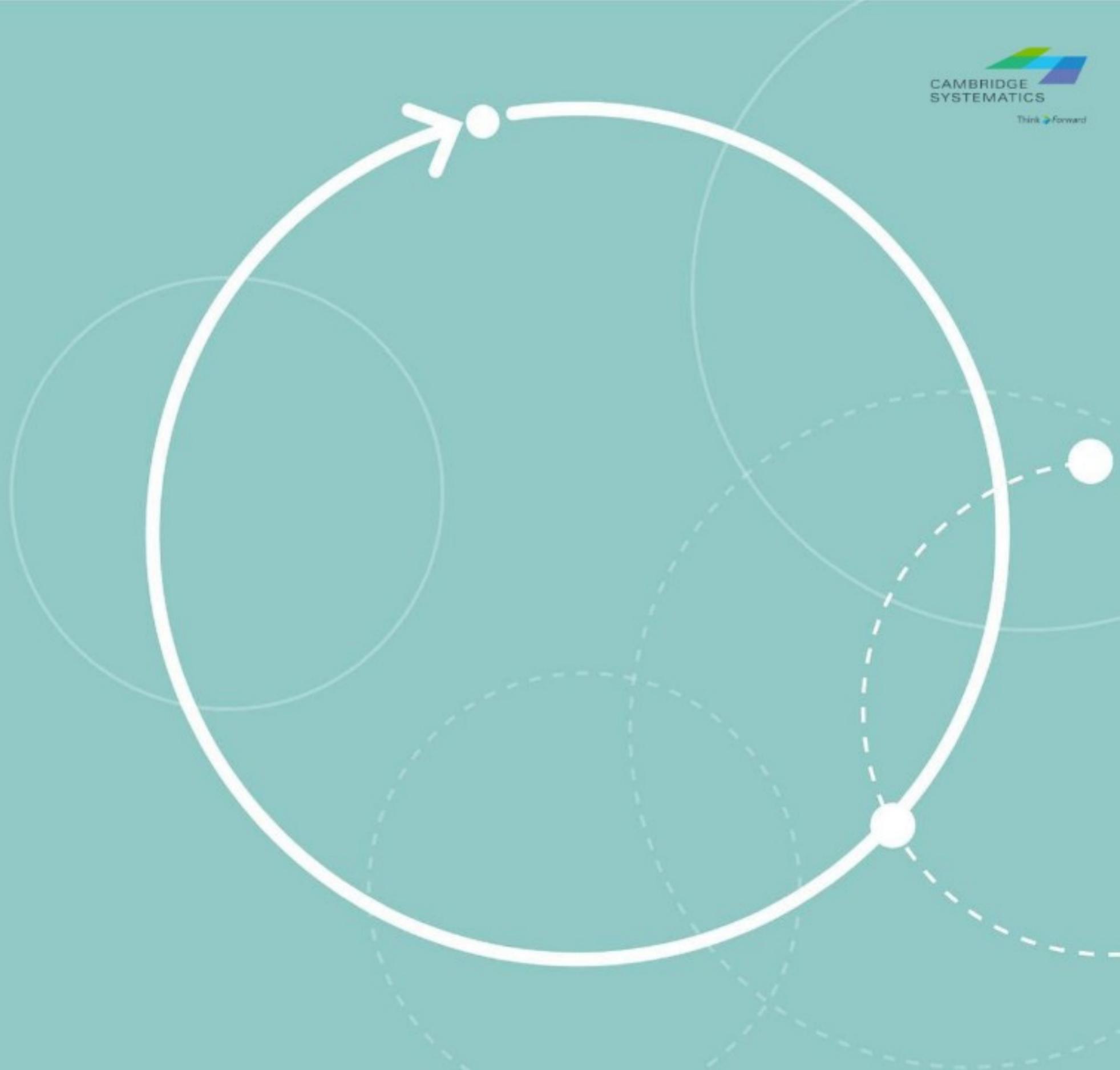
- ›› Confirm goals and objectives
- ›› Offer insight on local and regional freight and rail related issues, trends and needs
- ›› Inform recommendations, solutions and strategies
- ›› Provide input on processes and decisions throughout the projects
- ›› Define and communicate the importance of freight 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?*

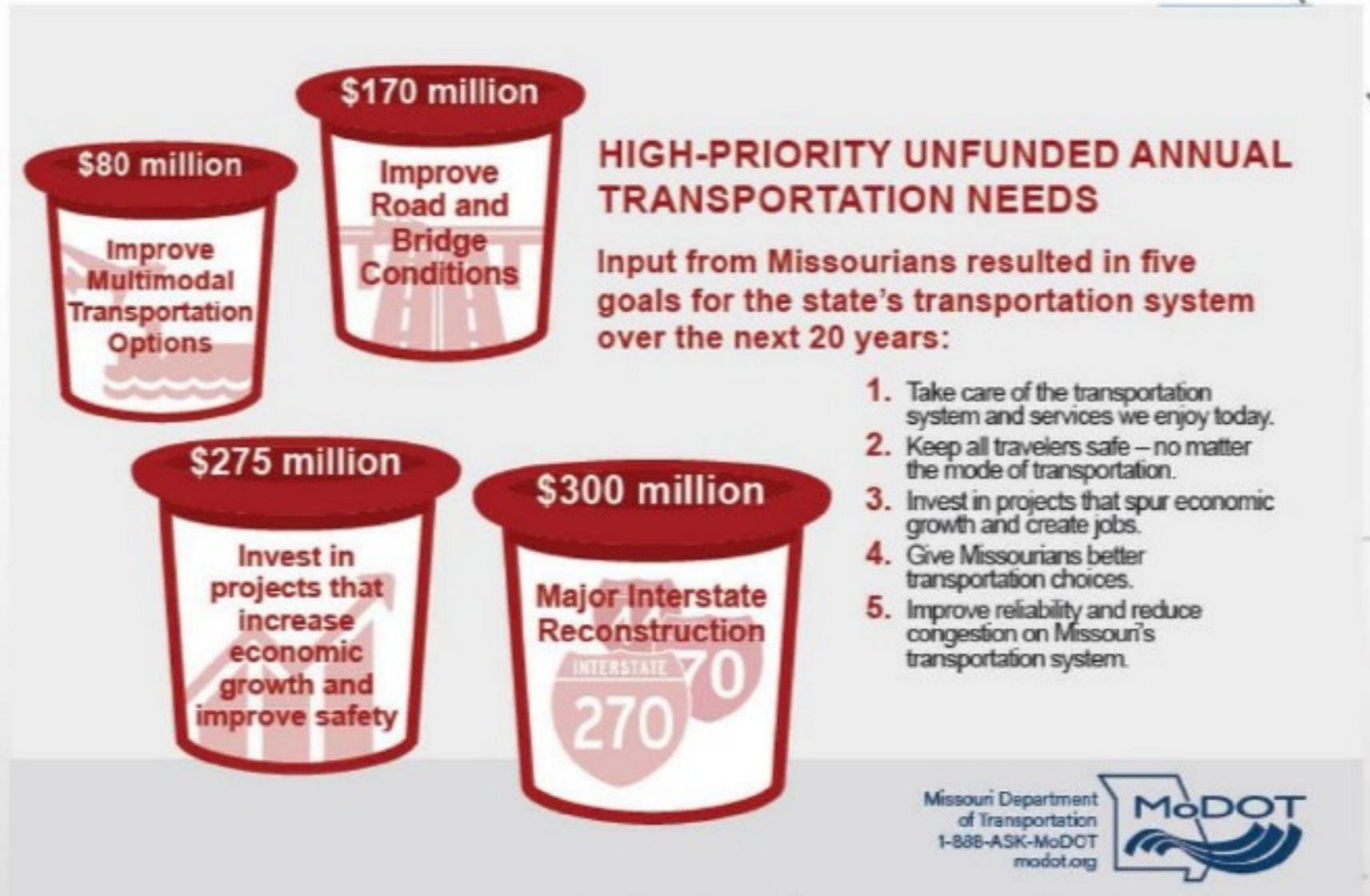
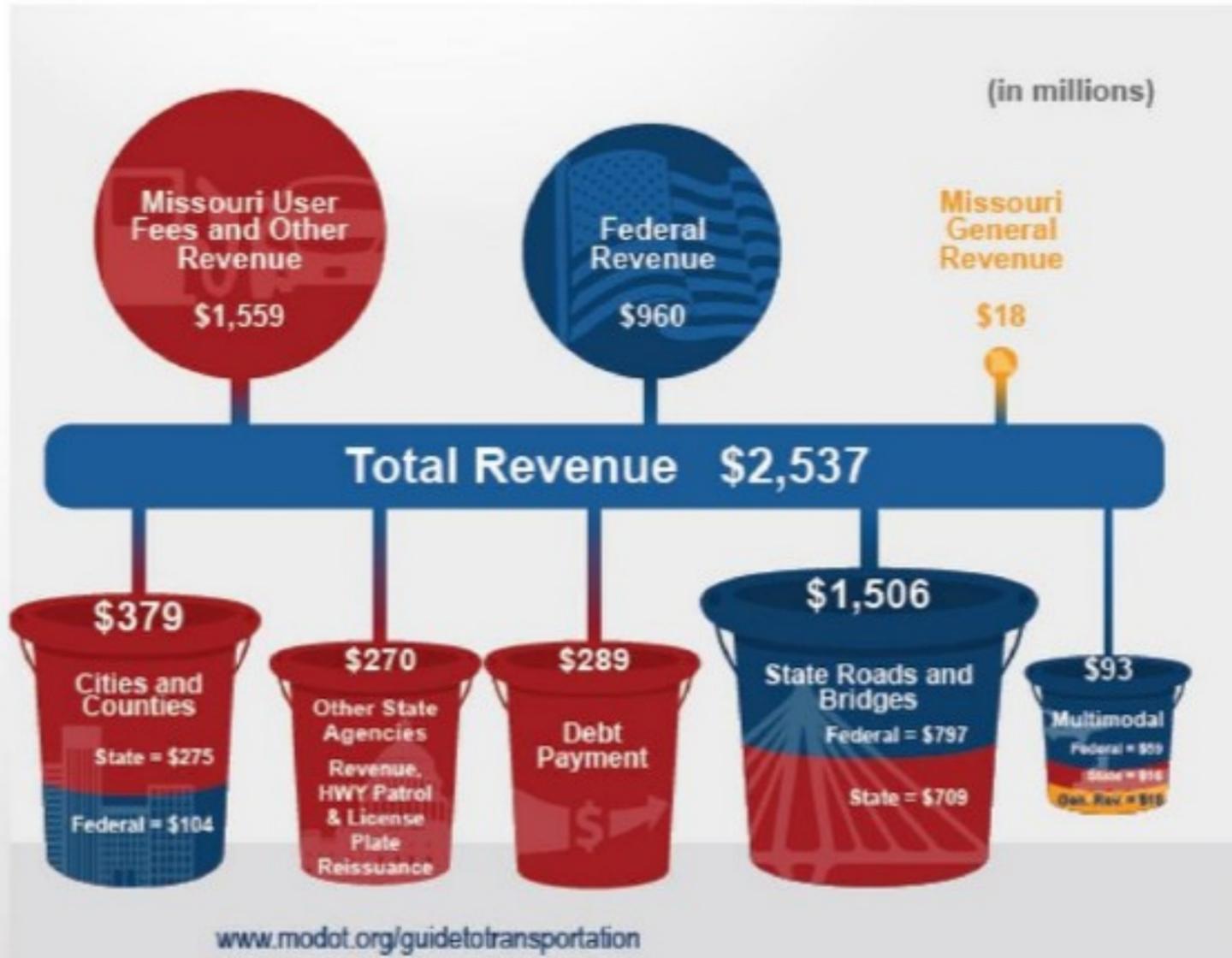
*How do we make the business case for freight investment?*

*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

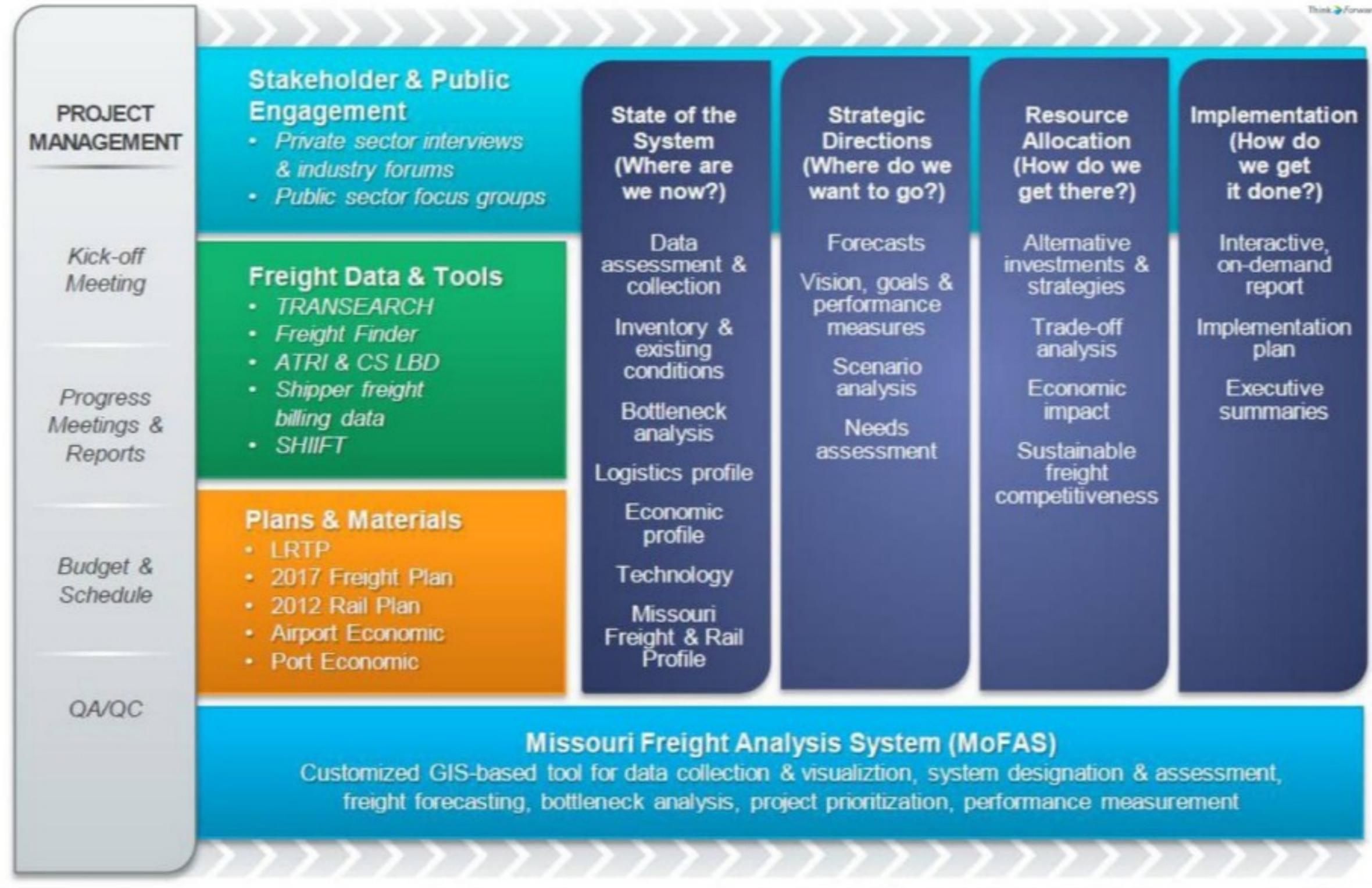


Informs and supports economic growth opportunities



Monitors resiliency and fluidity across the freight network

# Approach Overview



# Stakeholder Engagement



# Schedule and Key Milestones



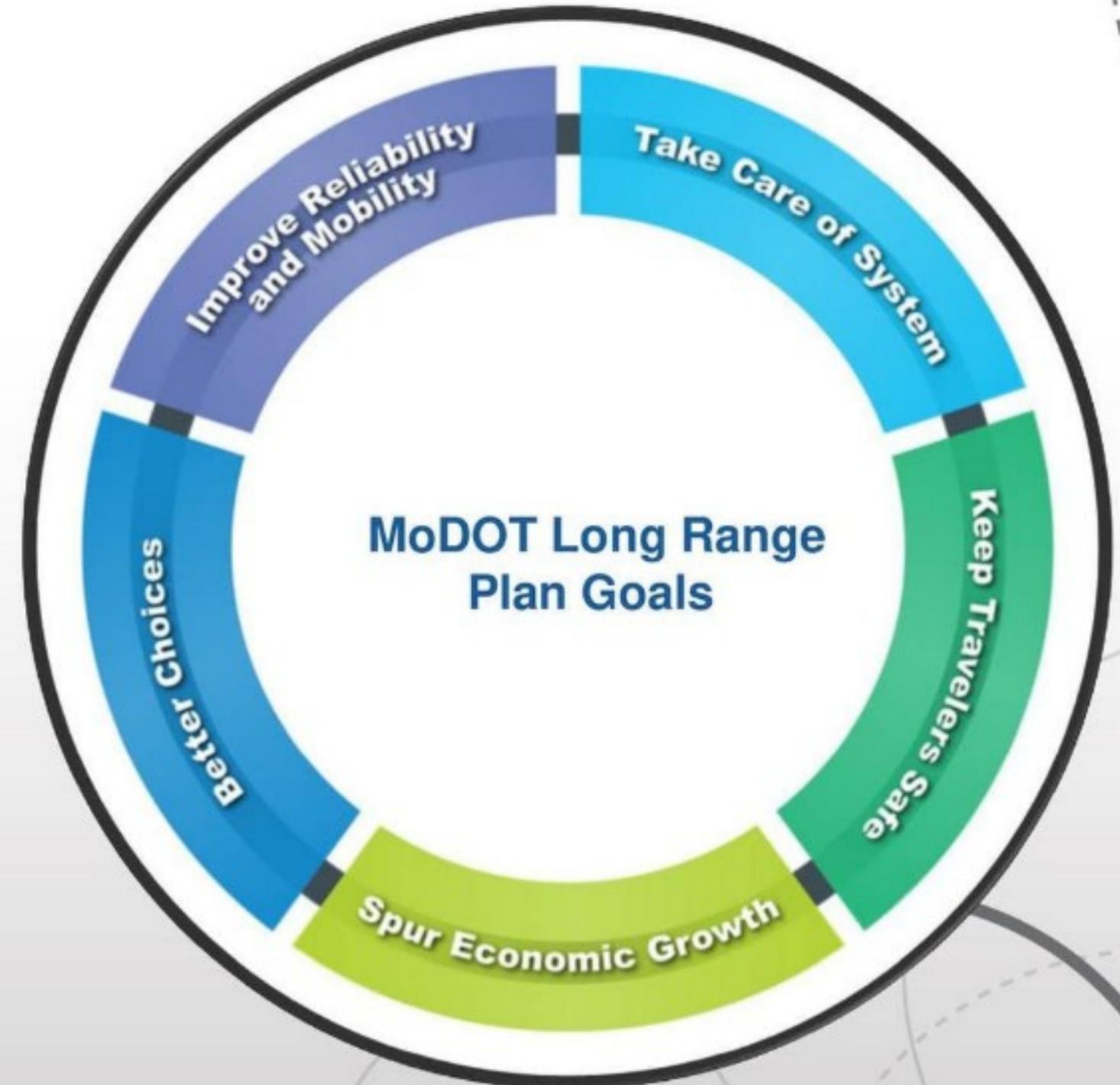
# Goal and Objectives

## ➤ Goal Areas

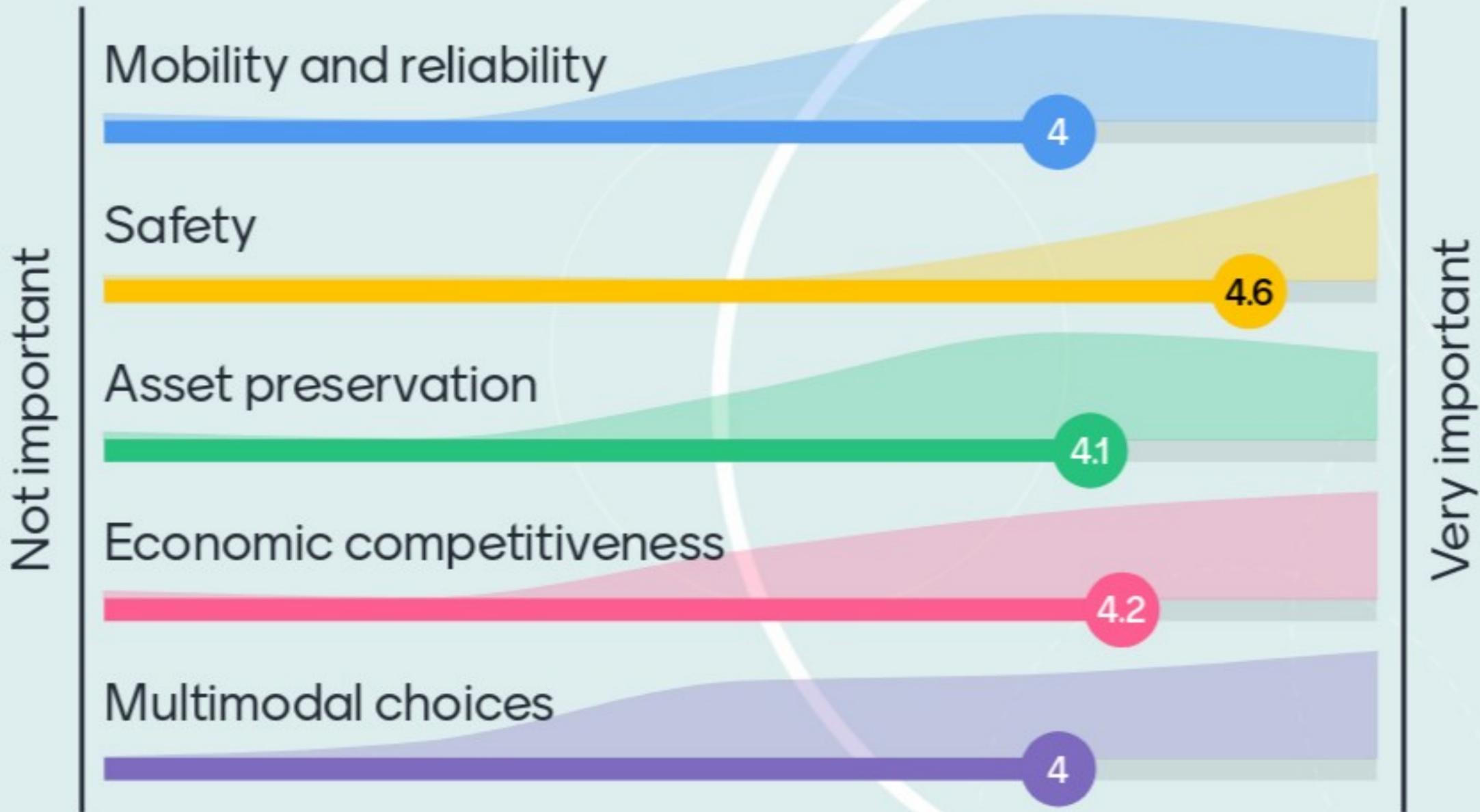
- » Mobility and Reliability
- » Safety
- » Asset preservation
- » Economic competitiveness
- » Multimodal choices
- » Others?

## ➤ 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

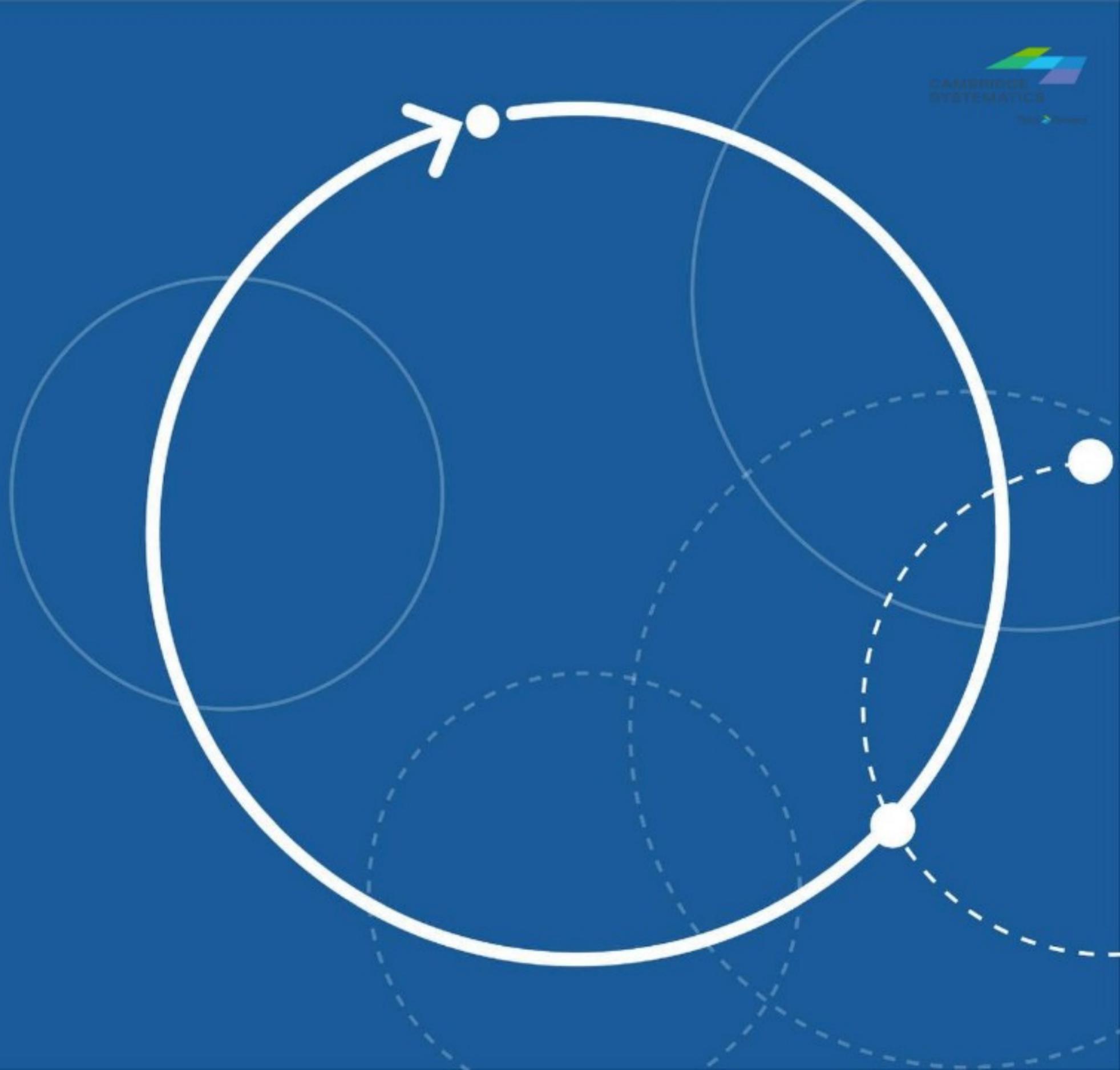
statewide opportunities

Demonstrate how different modes help each other

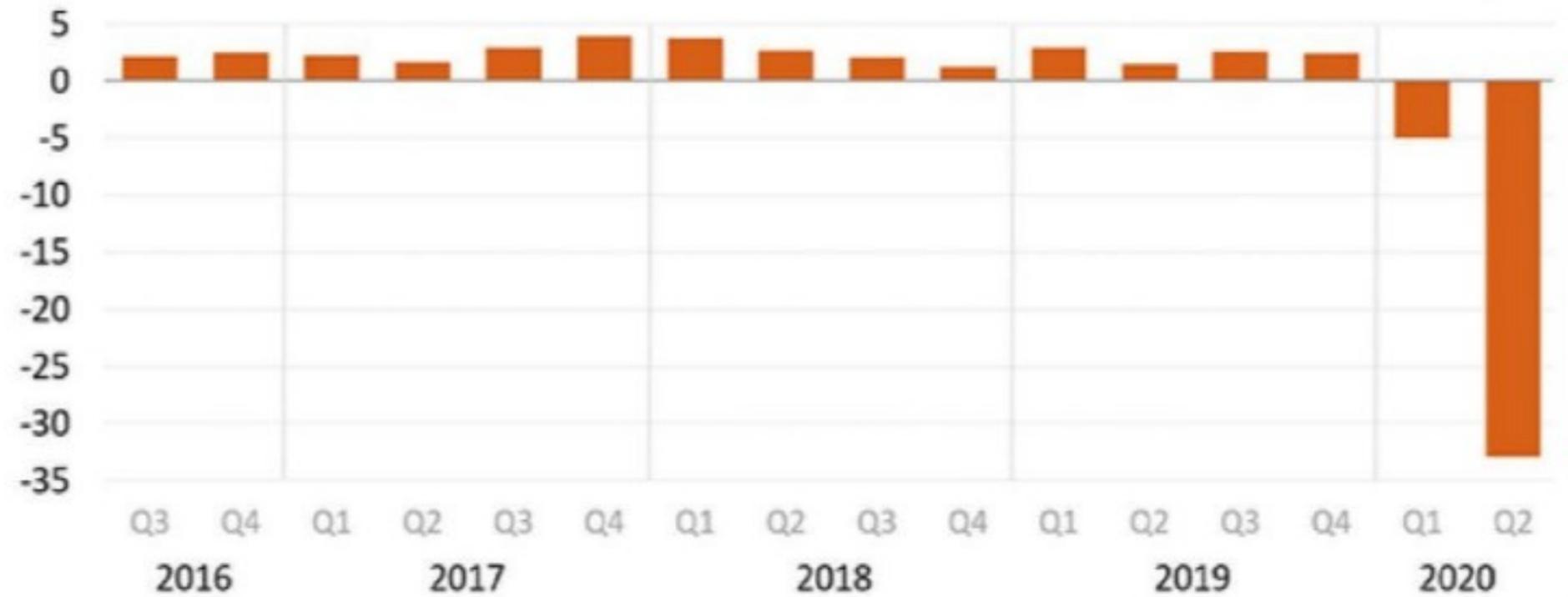
Clear path for priorities and related investment in those priorities. Focus on key stakeholders and roles and responsibilities.

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



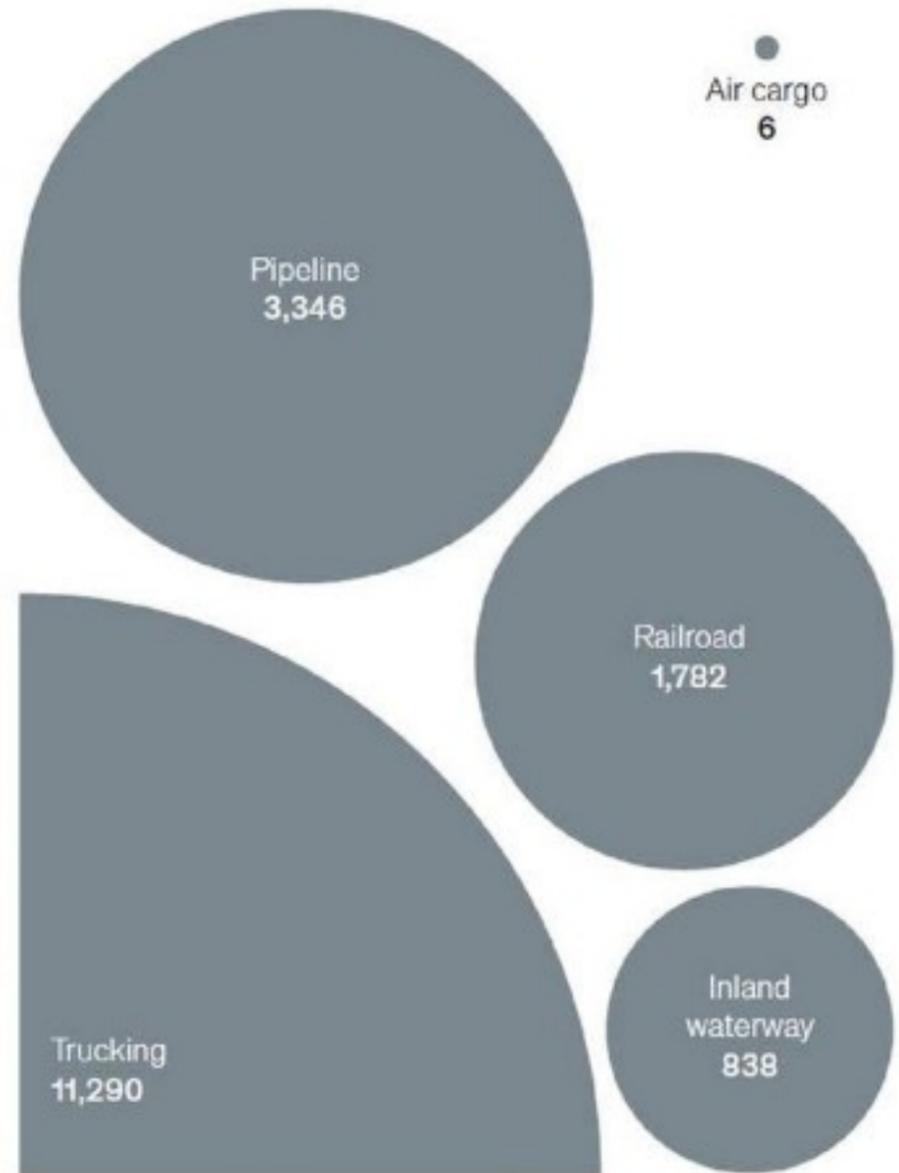
Note: Nonfood basic commodity includes stone, gravel, minerals; manufacturing and construction includes metal articles, machinery, plastics, rubber; other includes waste, scrap, and unknown.

Source: Freight Analysis Framework.

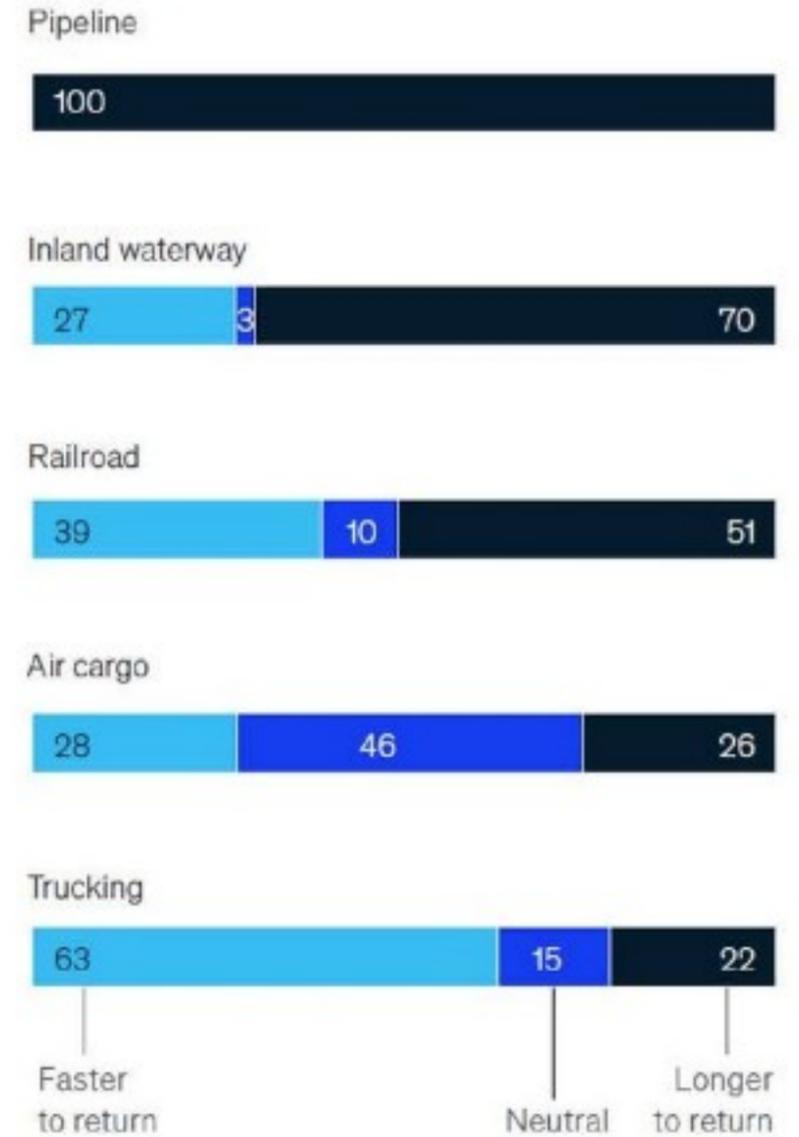
# Anticipated Longer-term Impacts

Recovery in each mode will depend on its commodity mix.

2018 US freight, by mode, million tons



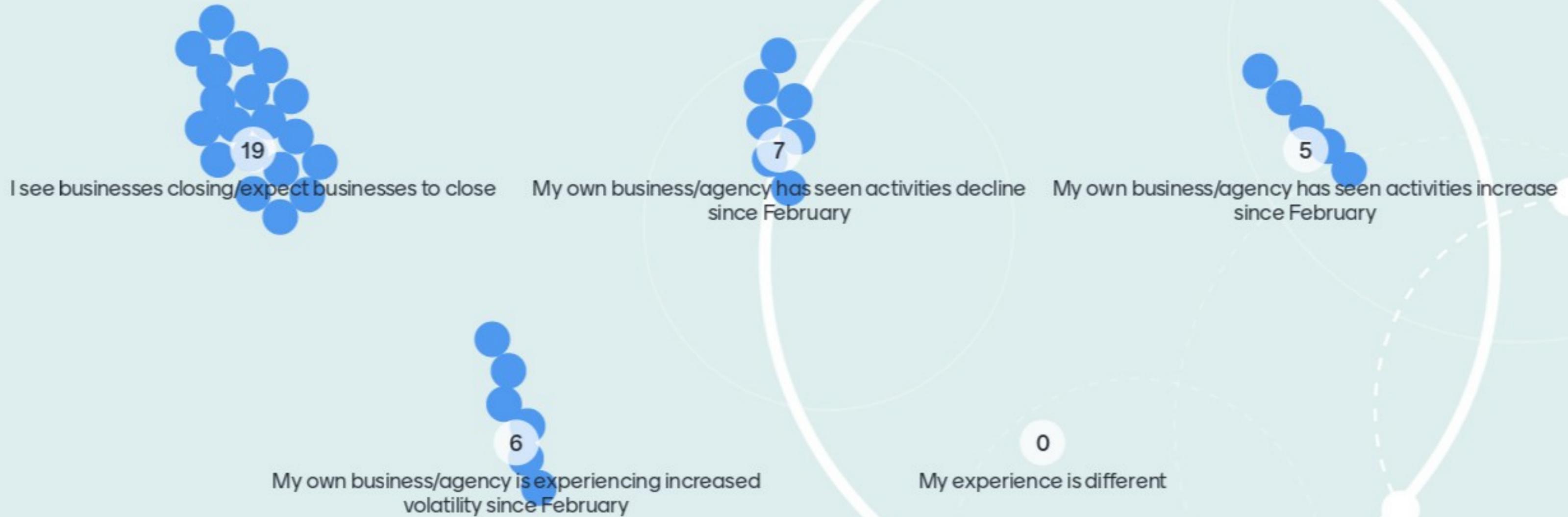
Exposure to commodities by anticipated recovery time, % share



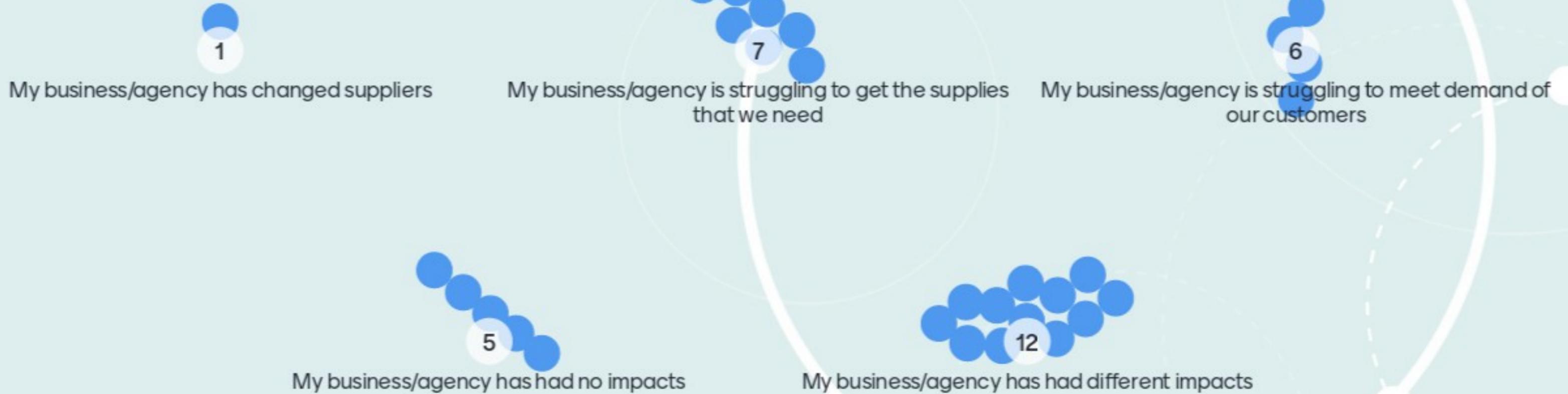
Source: Freight Analysis Framework; excludes multiple-modes and mail, others and unknown

# Recovery in Each Mode

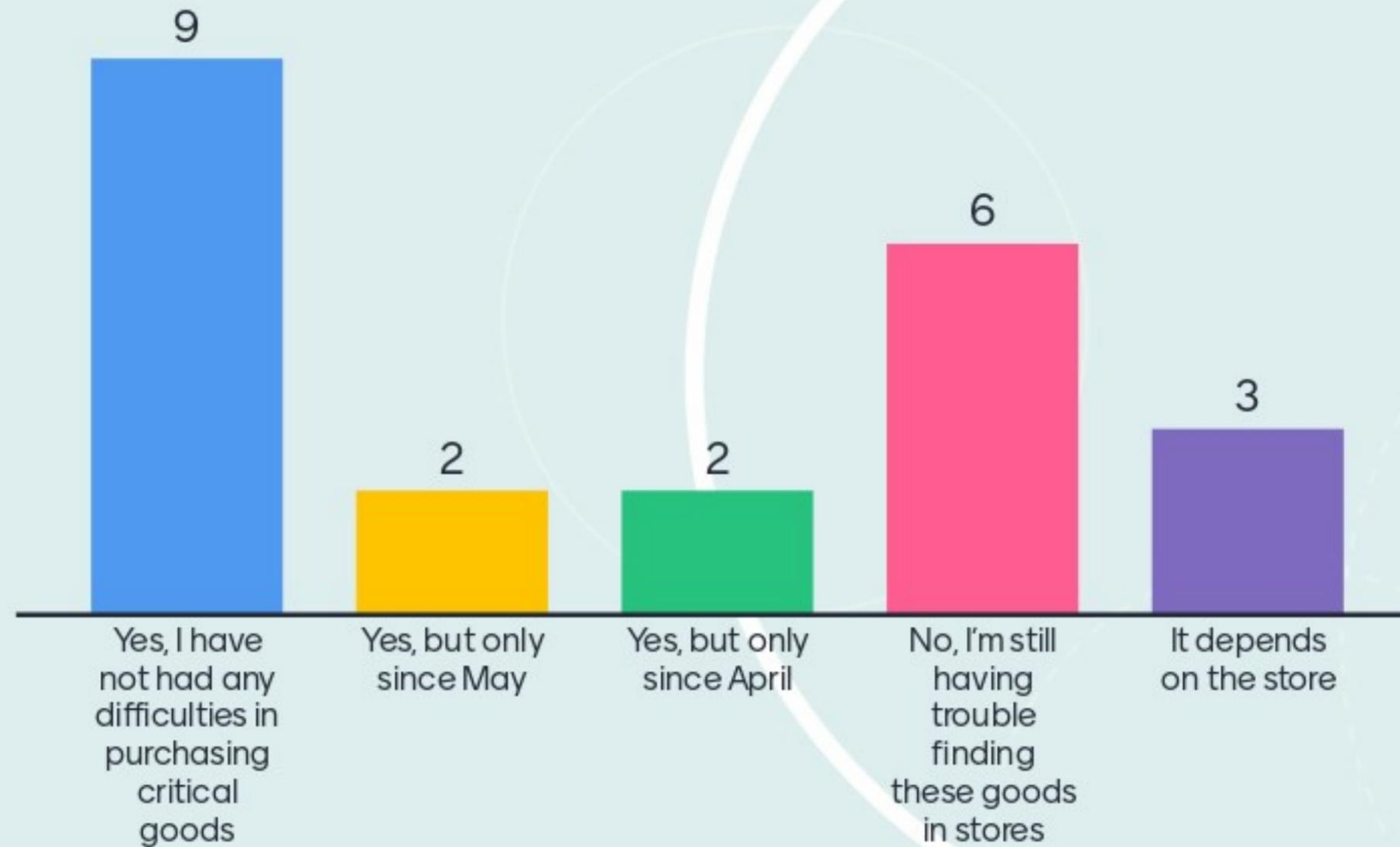
# How is Covid-19 affecting Missouri's freight-related businesses?



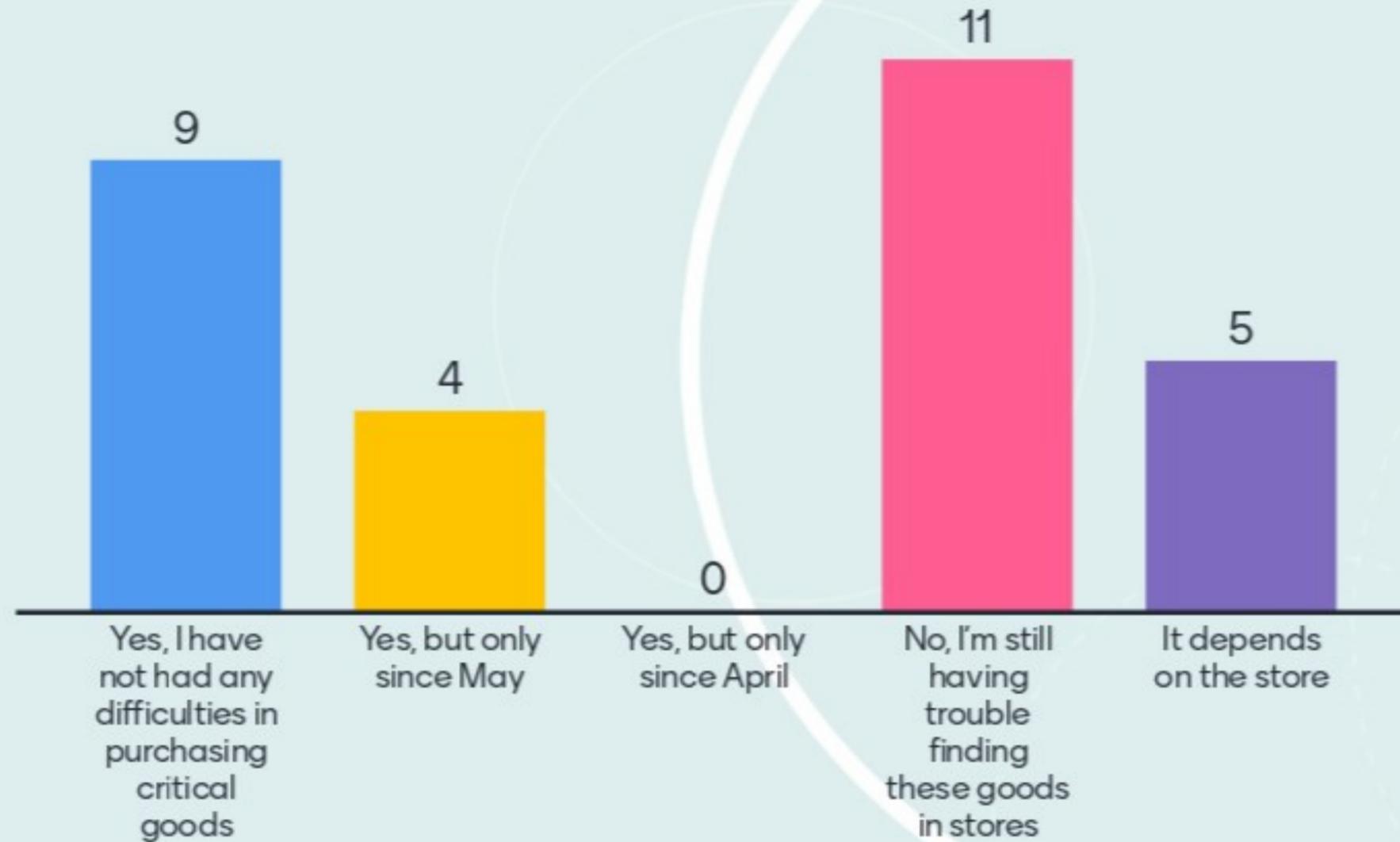
# How has your business/agency been affected by Covid-19?



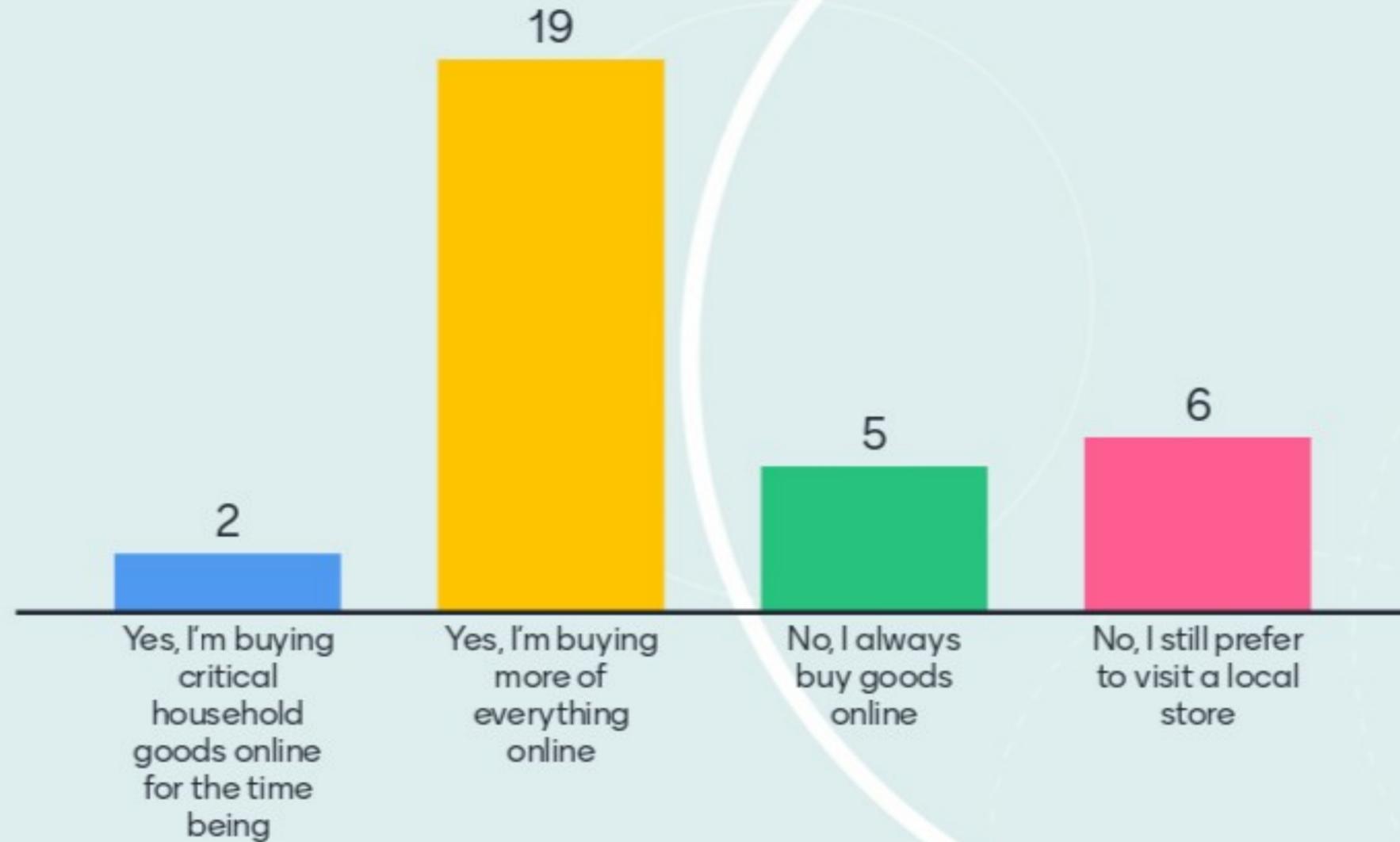
# Is your business/agency able to get critical goods and supplies?



# Are you readily able to purchase necessary personal goods?



# Are you as a consumer buying more goods online?

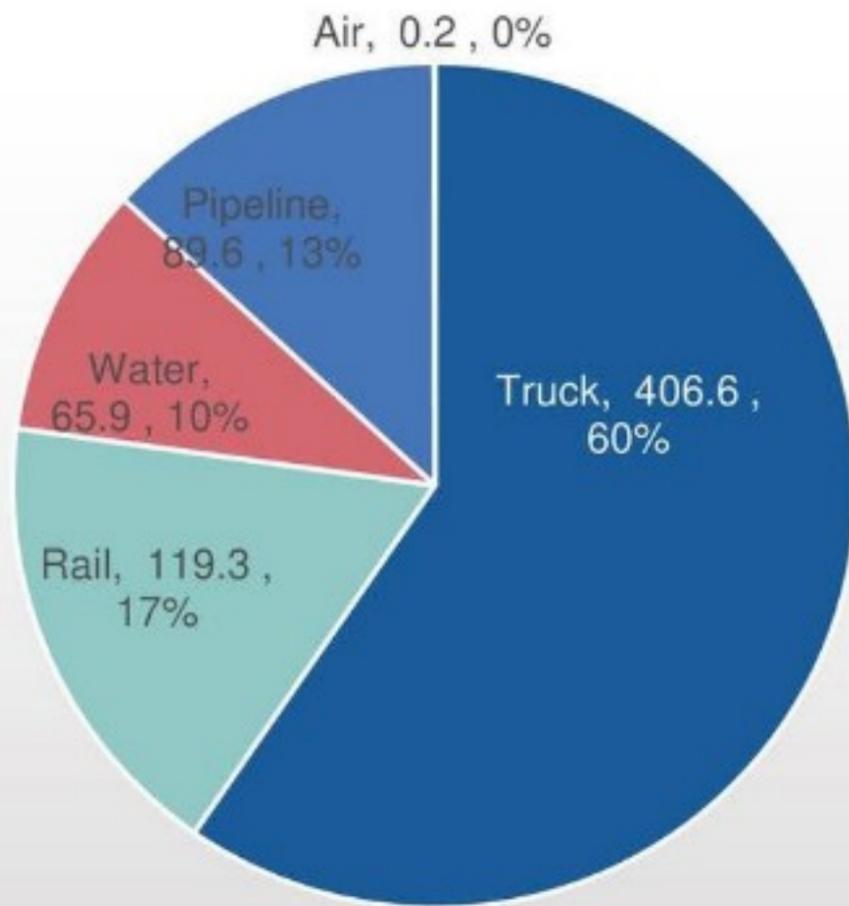


# Missouri Freight Profile

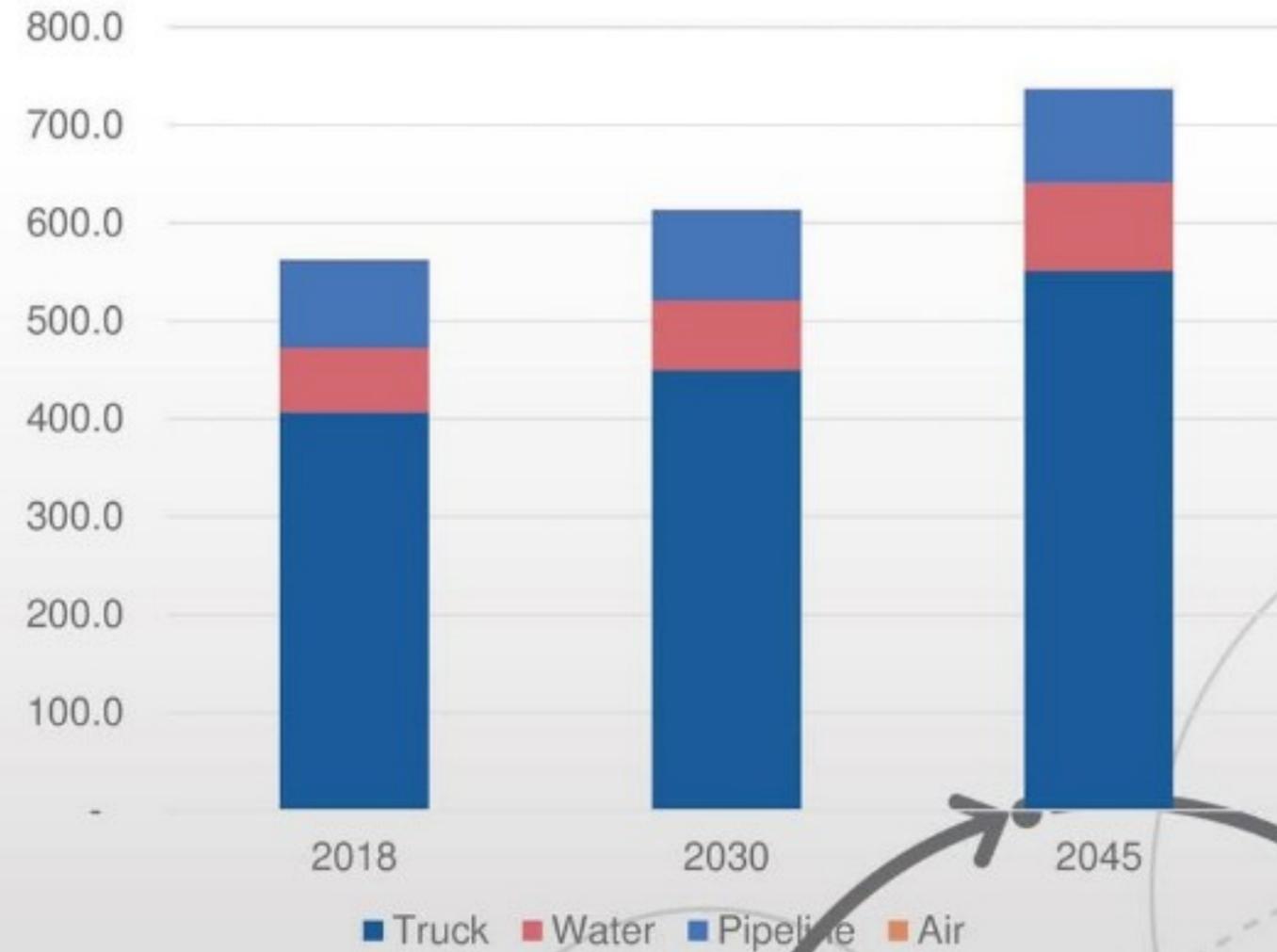


# Commodity Flow Summary – Tonnage

2018 Freight Tons by Mode (Millions of Tons)

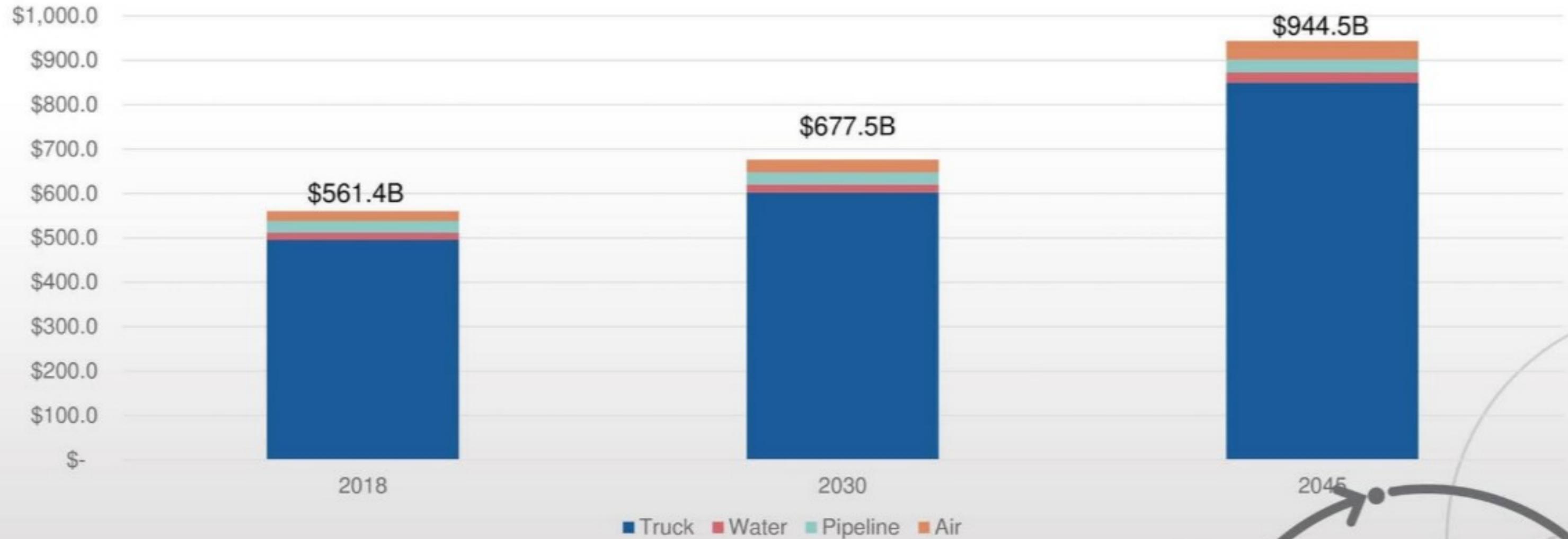


Freight Tonnage Projections by Mode (excl. Rail)



# Commodity Flow Summary – Value

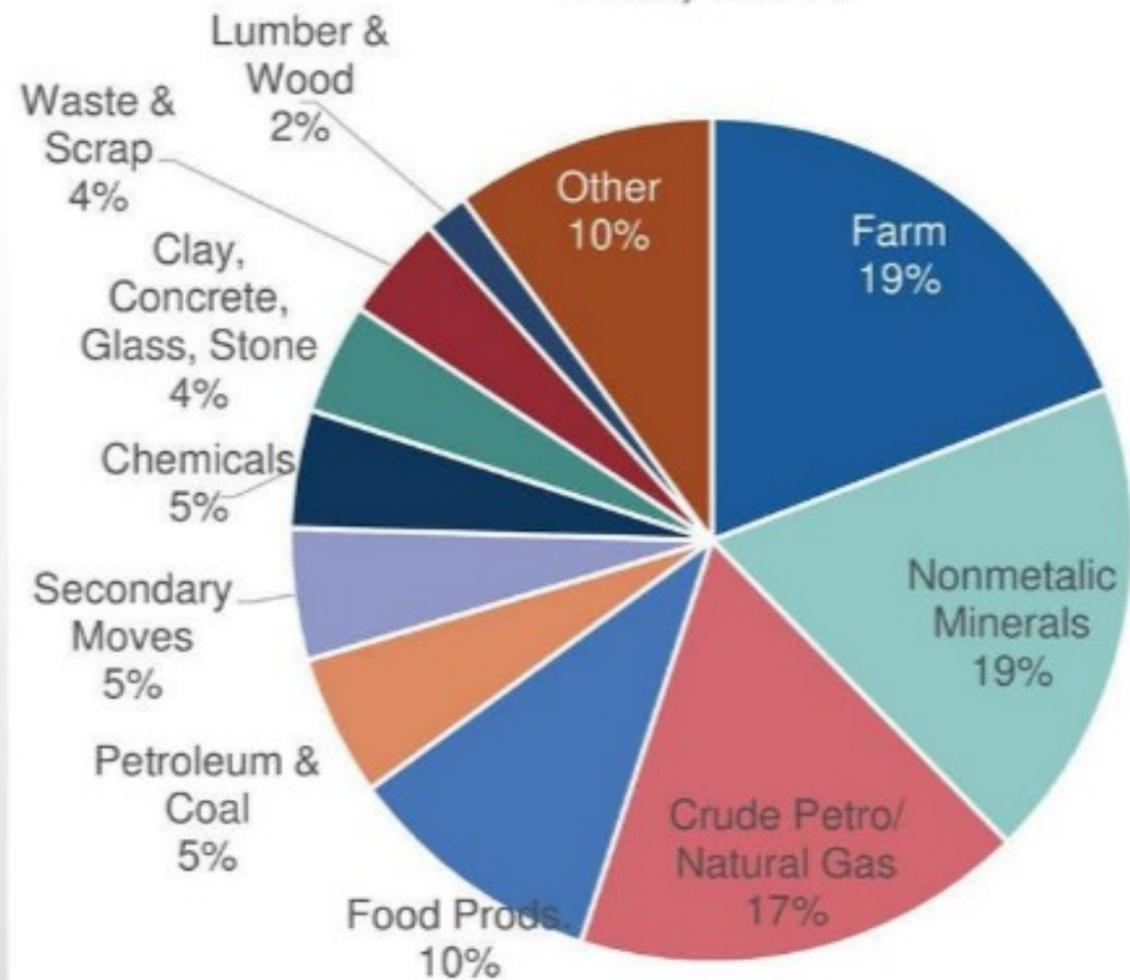
Freight Value Projections by Mode (Excl. Rail)



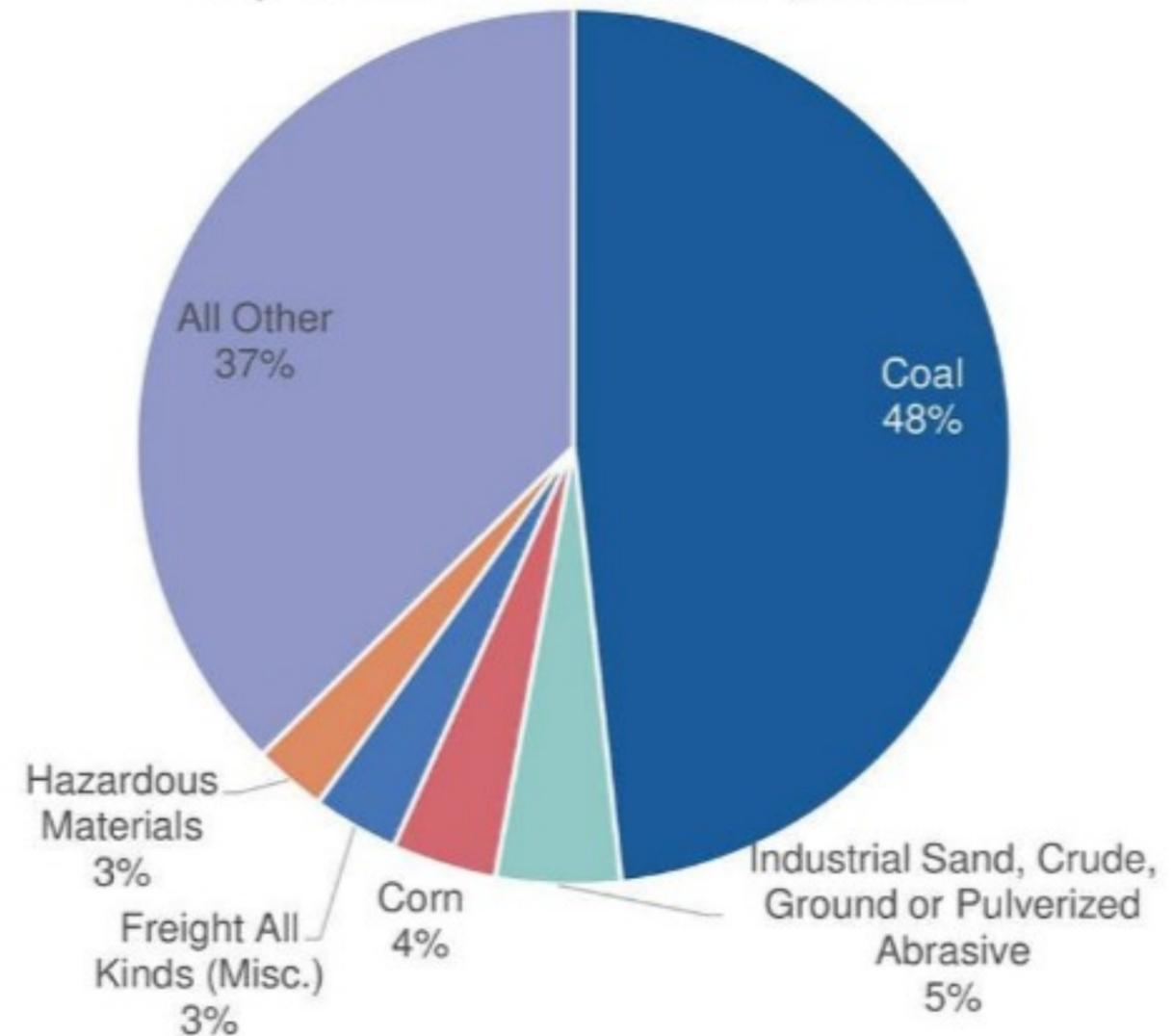
Source(s): IHS Transearch

# Top Commodities by Tonnage

Top Commodities, All Modes Except Rail, 2018



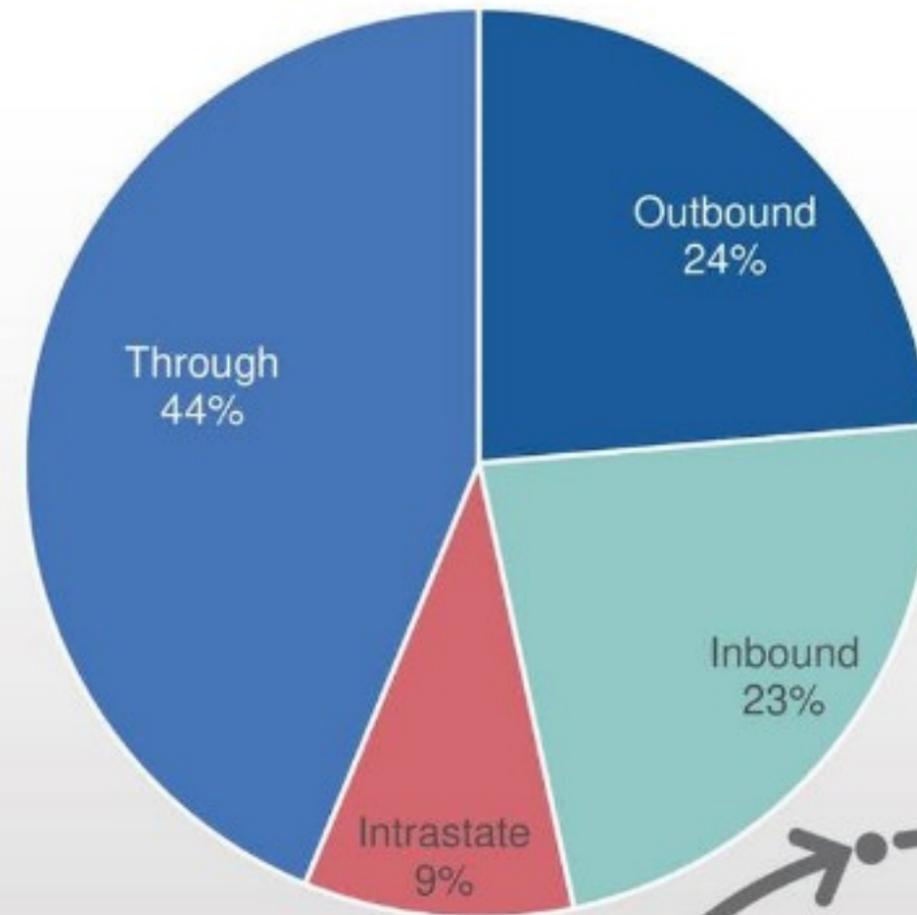
Top Rail Commodities, 2018



# Directional Flow

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

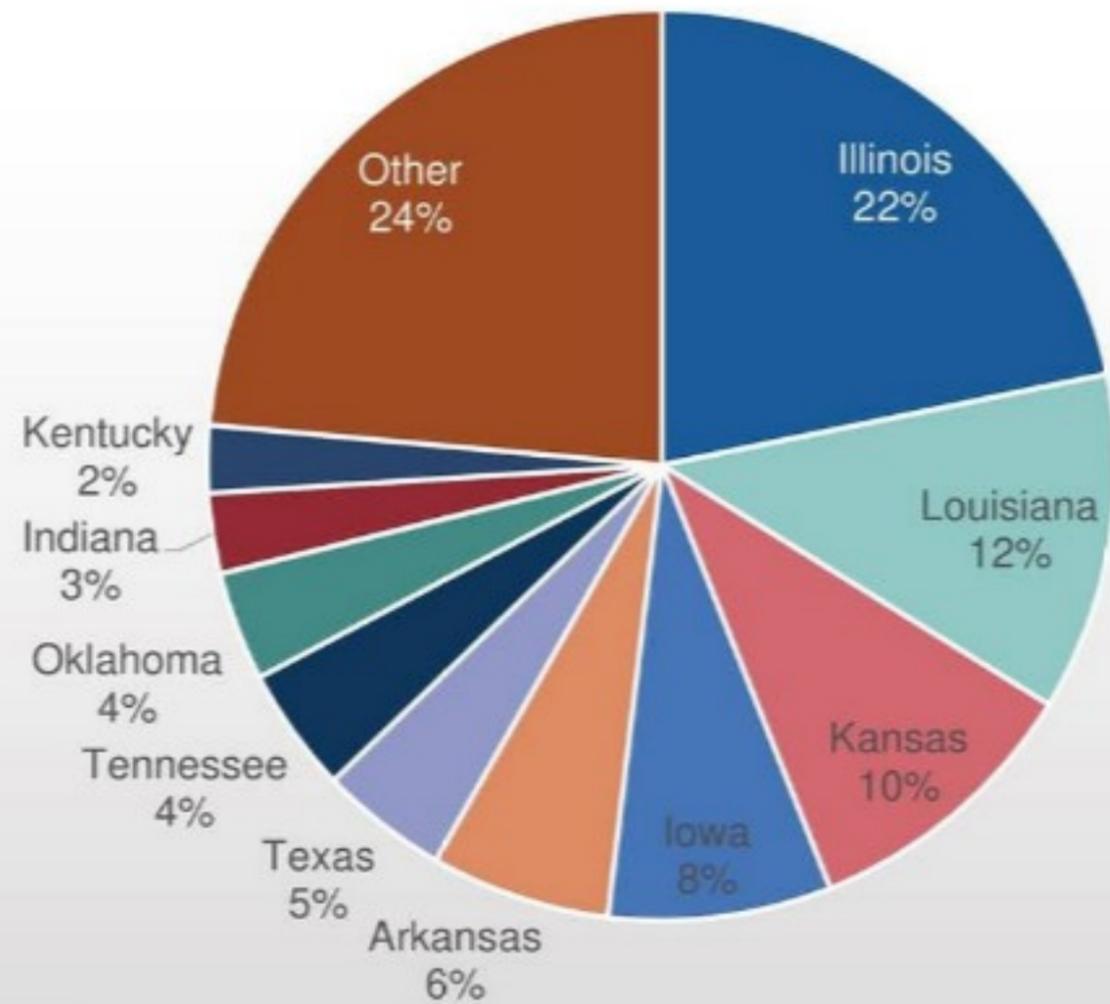
Freight Flows by Direction, All Modes



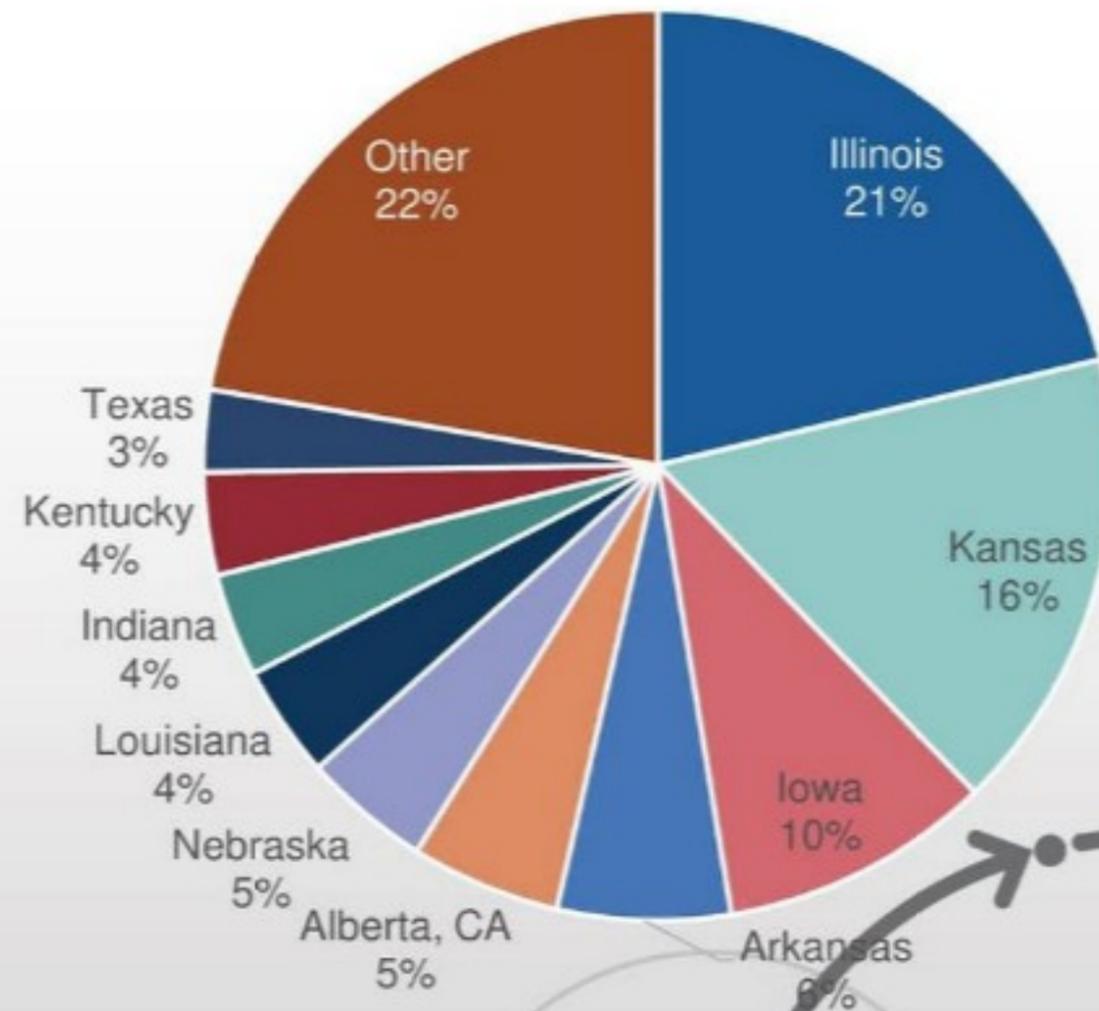
Source(s): IHS Transearch, STB Waybill

# Missouri's Trading Partners

Top Outbound Trading Partners, 2018



Top Inbound Trading Partners, 2018

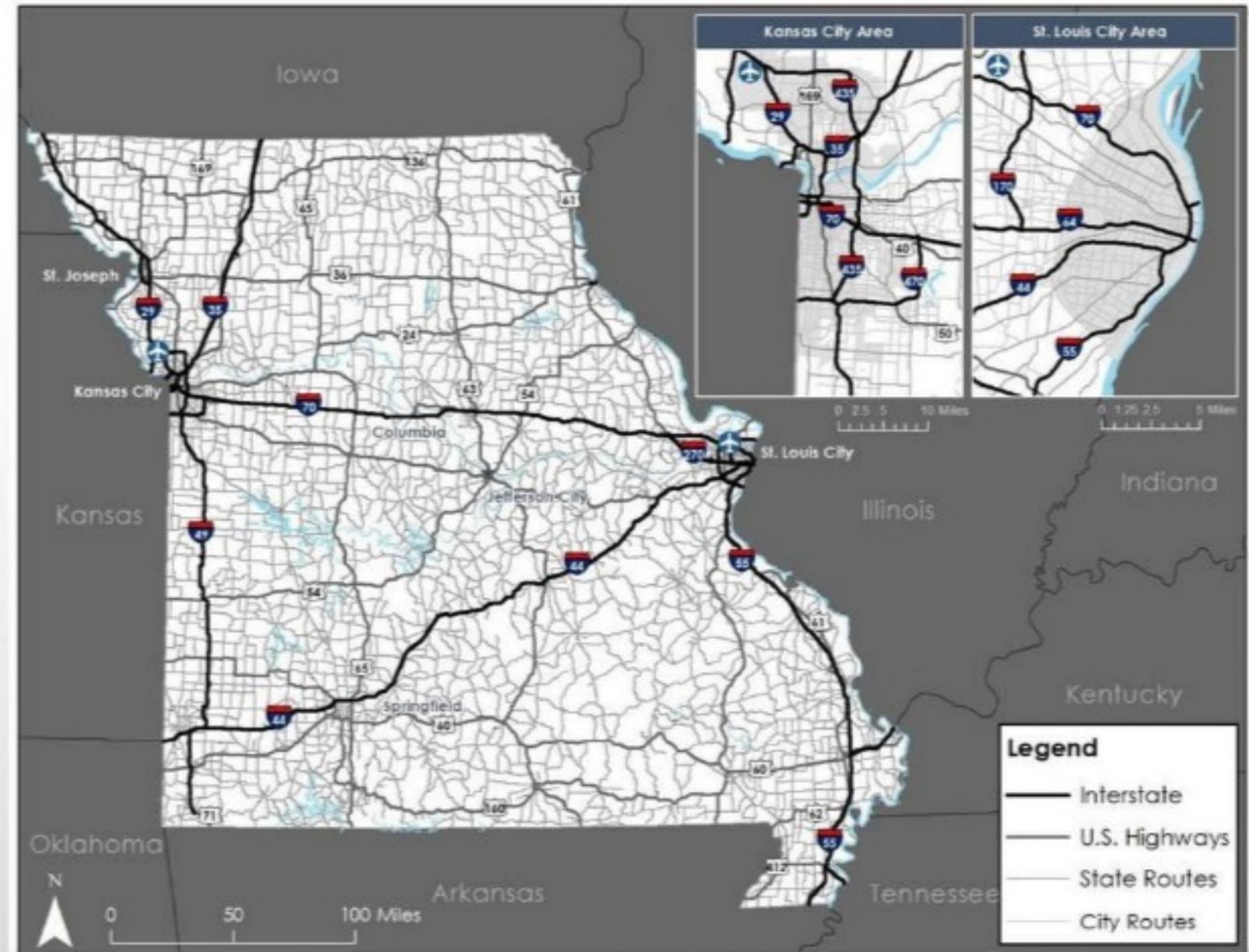


# Missouri's Freight Assets



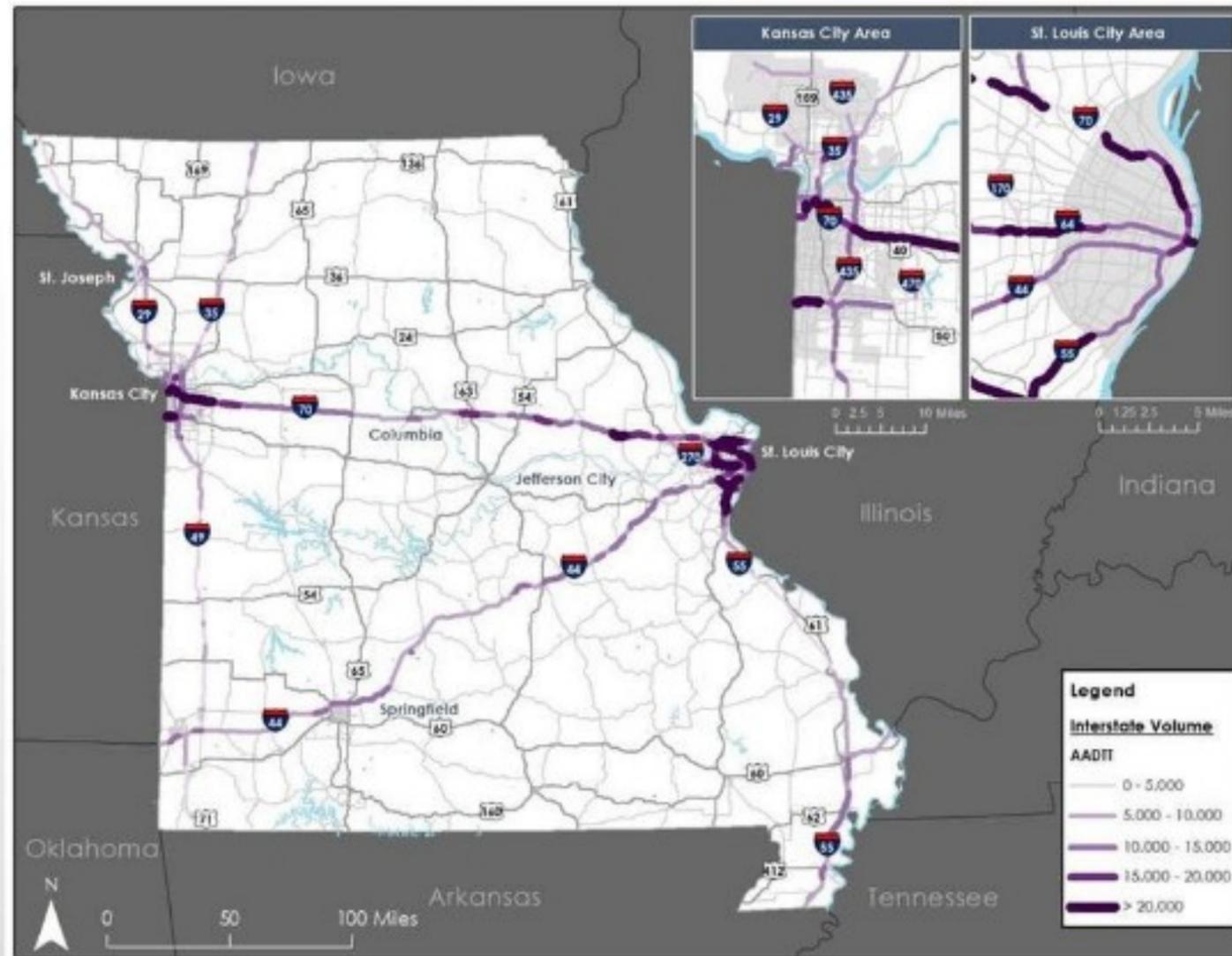
# Highway Inventory

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

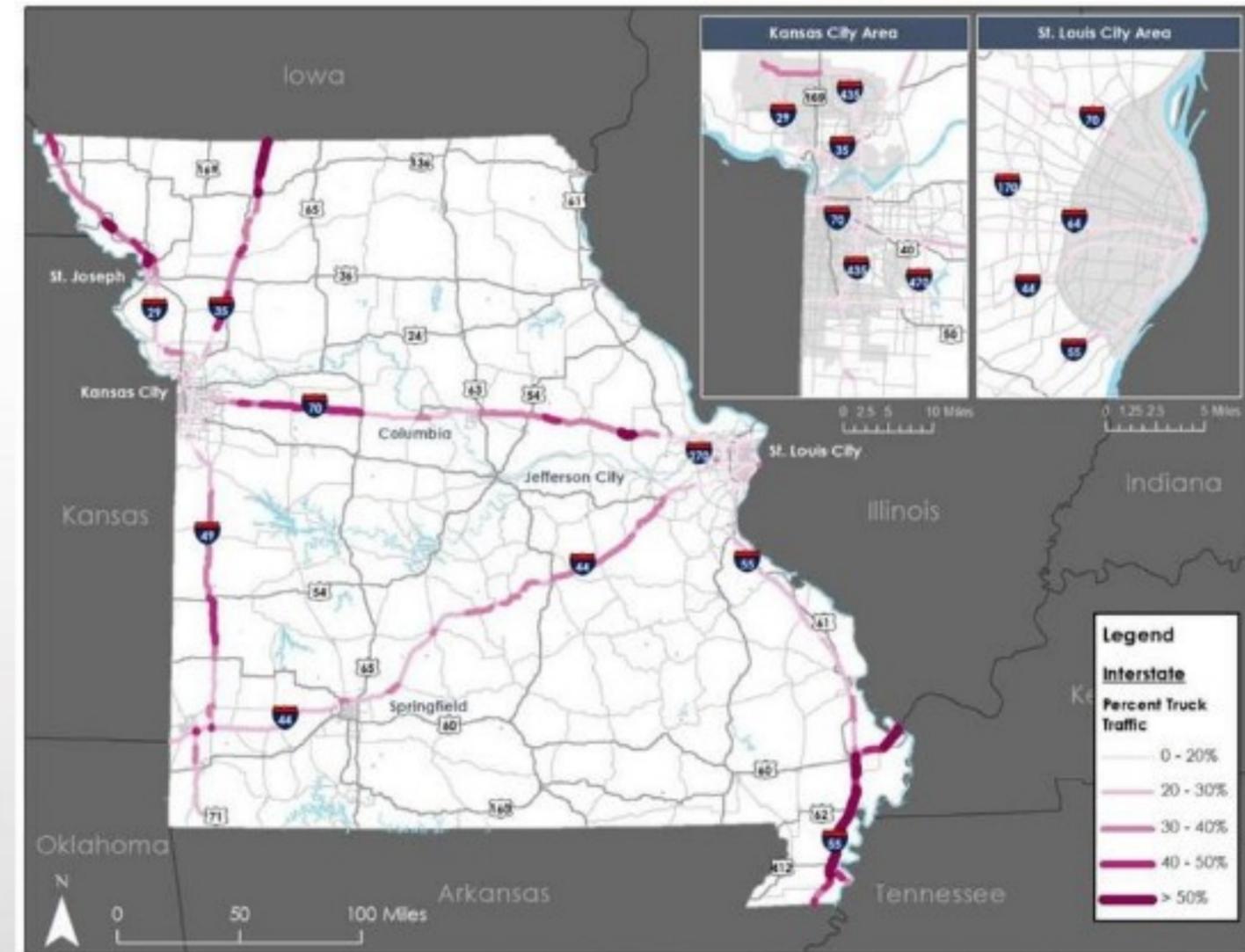


# Highway Traffic

## Interstate Average Annual Daily Truck Traffic

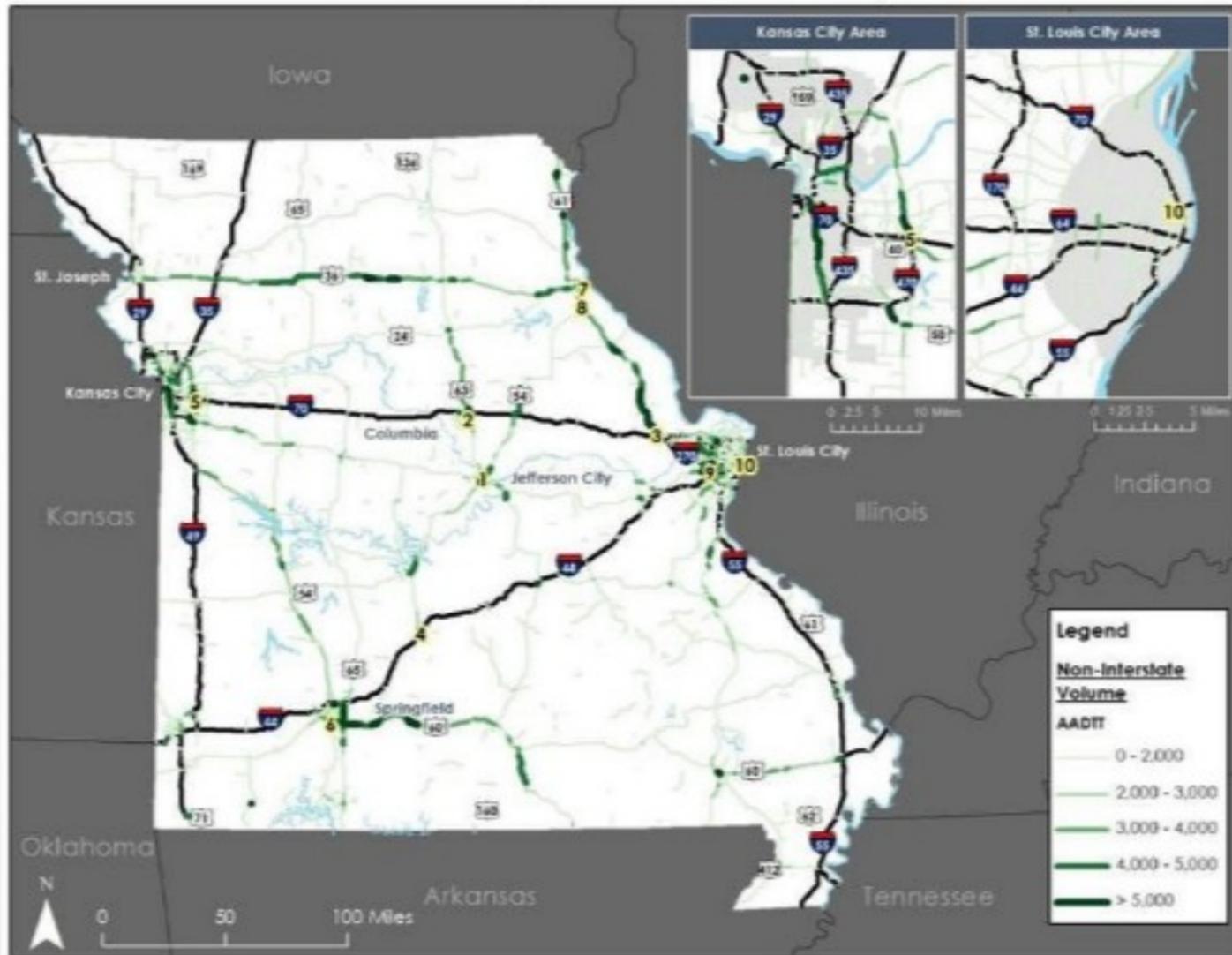


## Interstate Average Annual Daily Truck Traffic as a % of Average Annual Daily Traffic



# Highway Traffic

## Non-Interstate Average Annual Daily Truck Traffic

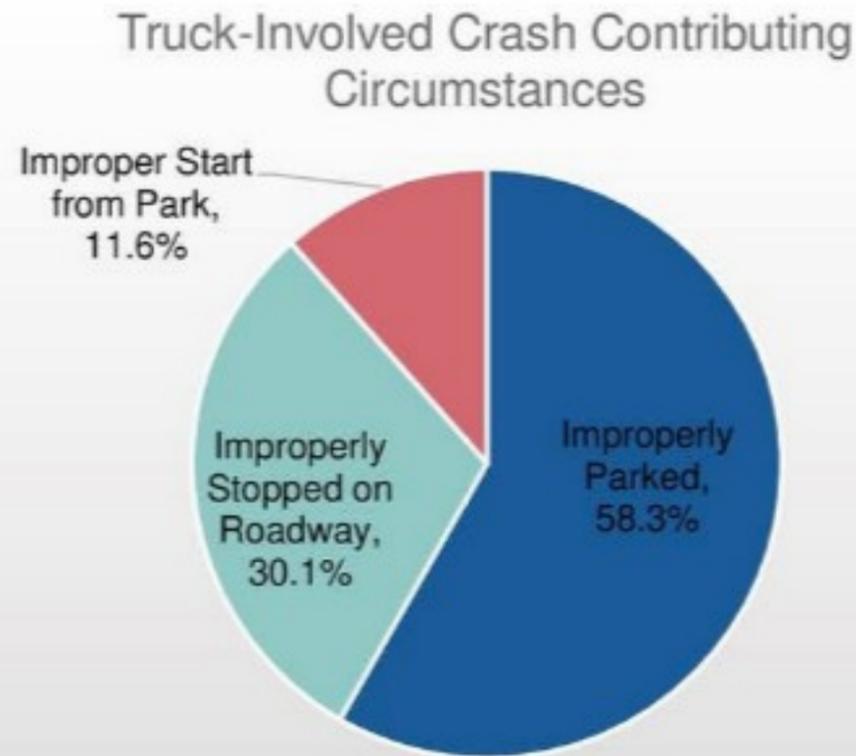


## Non-Interstate Average Annual Daily Truck Traffic as a % of Average Annual Daily Traffic

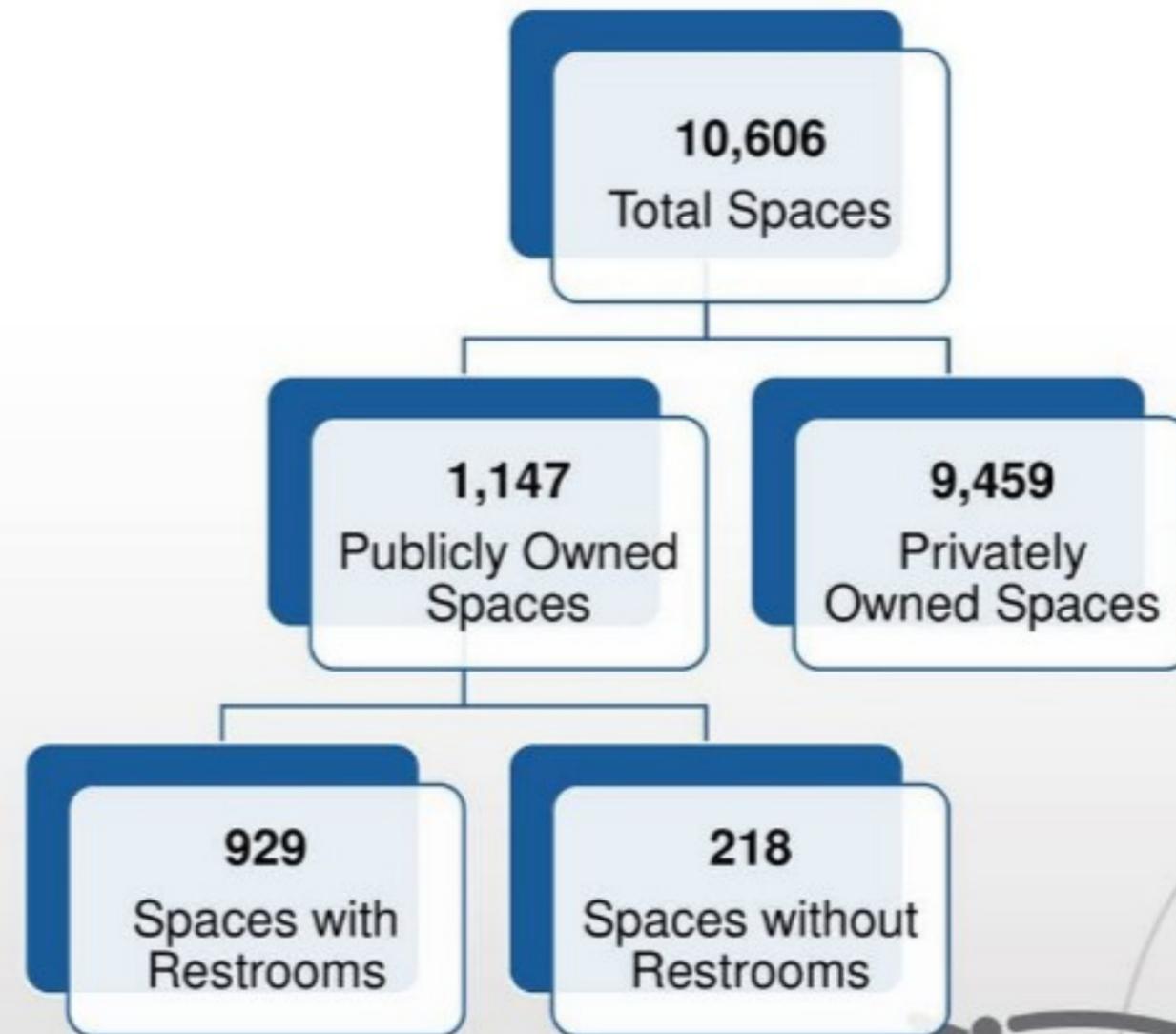


# Truck Parking Inventory

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

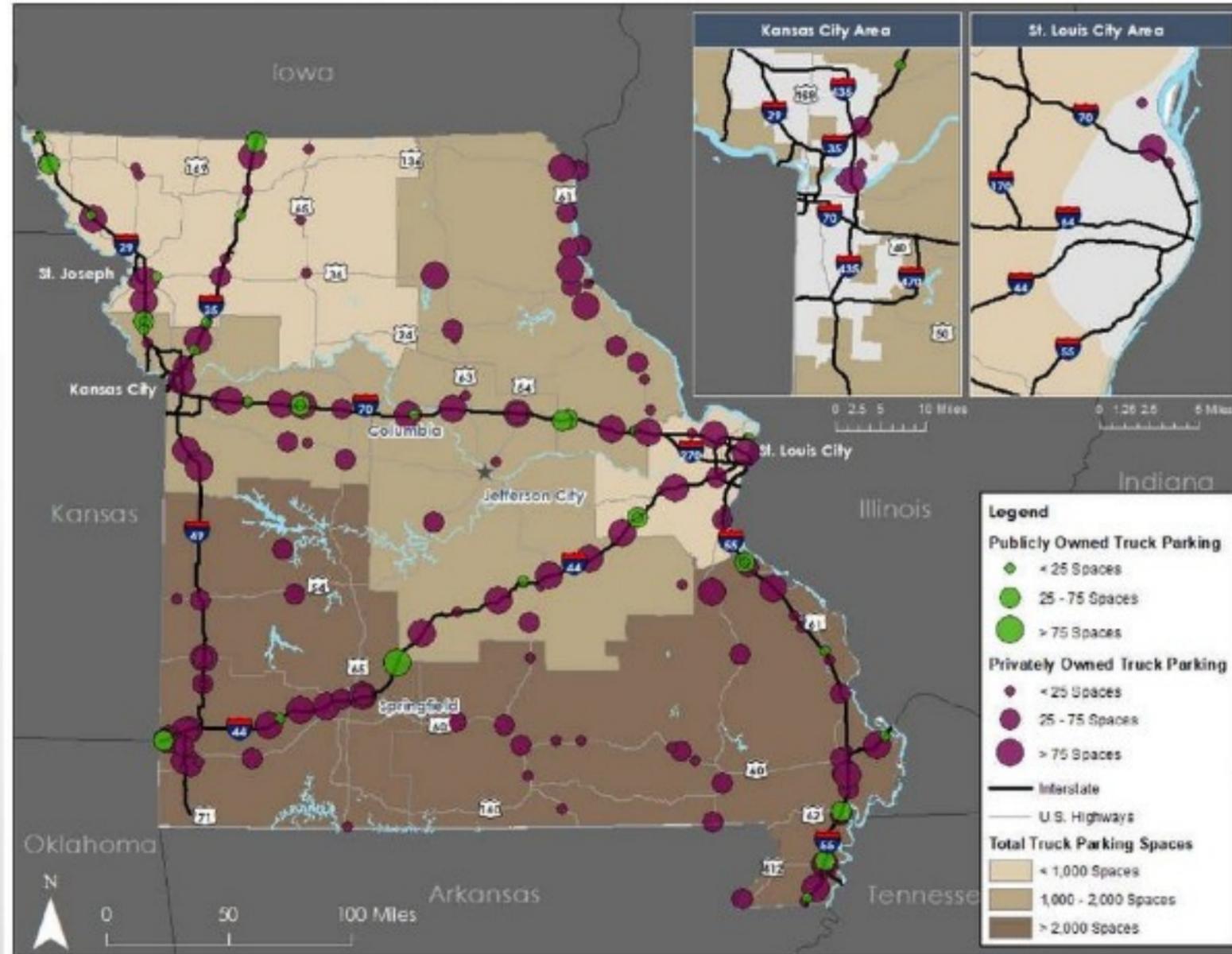


Source: MoDOT, Cambridge Systematics (2020).



Source: MoDOT, Cambridge Systematics (2020).

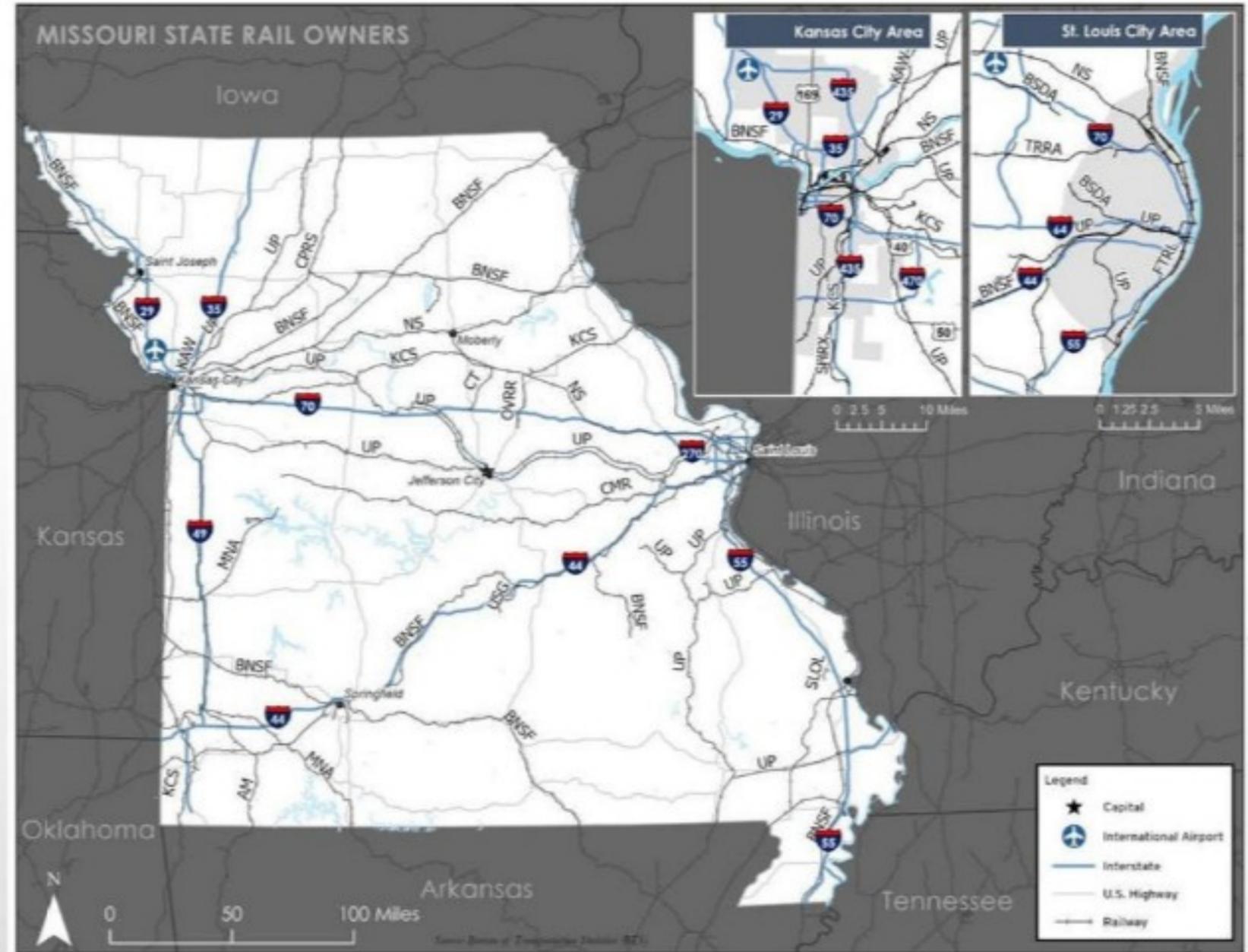
# Truck Parking Inventory



- 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

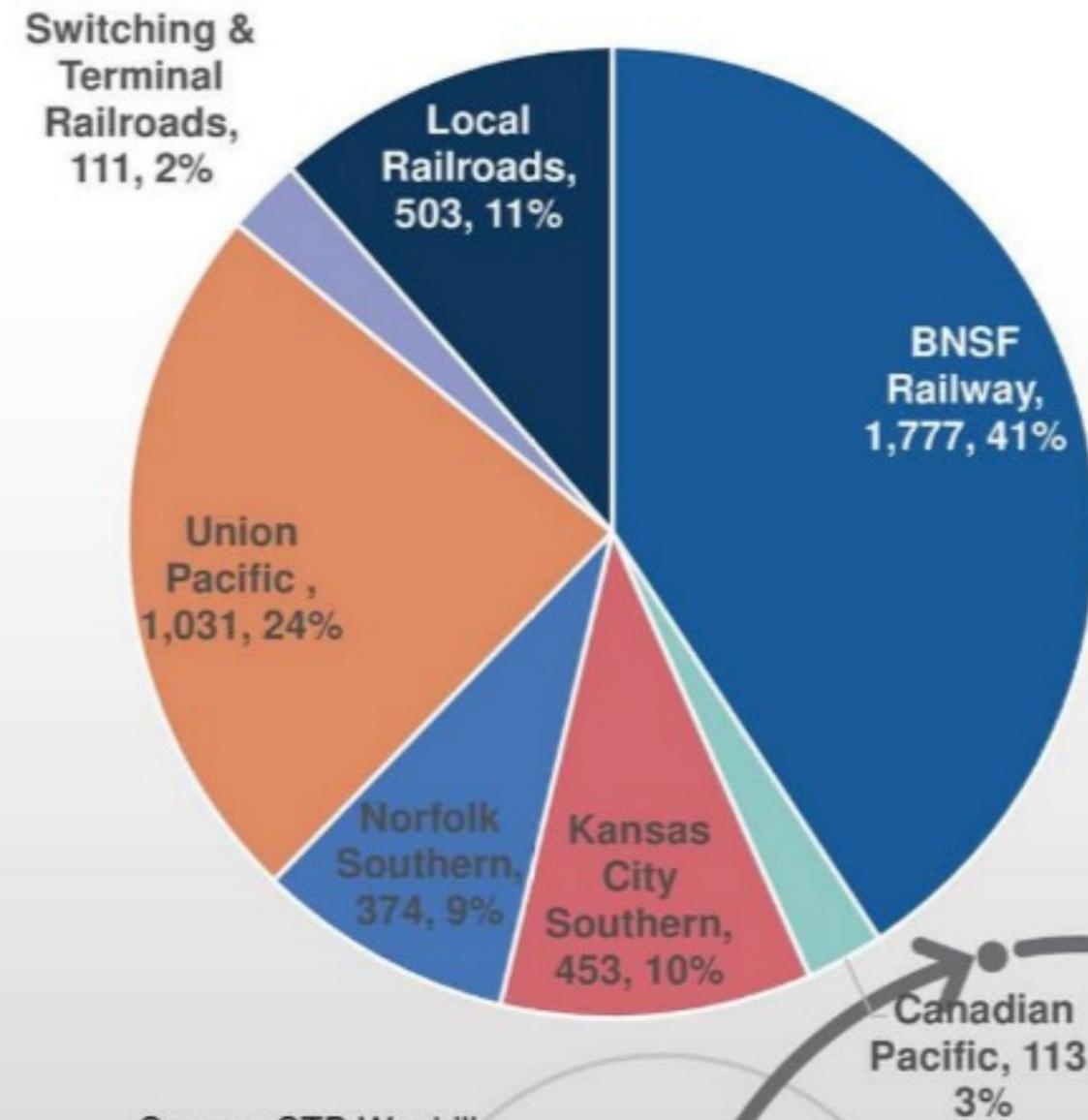
# Rail Inventory

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

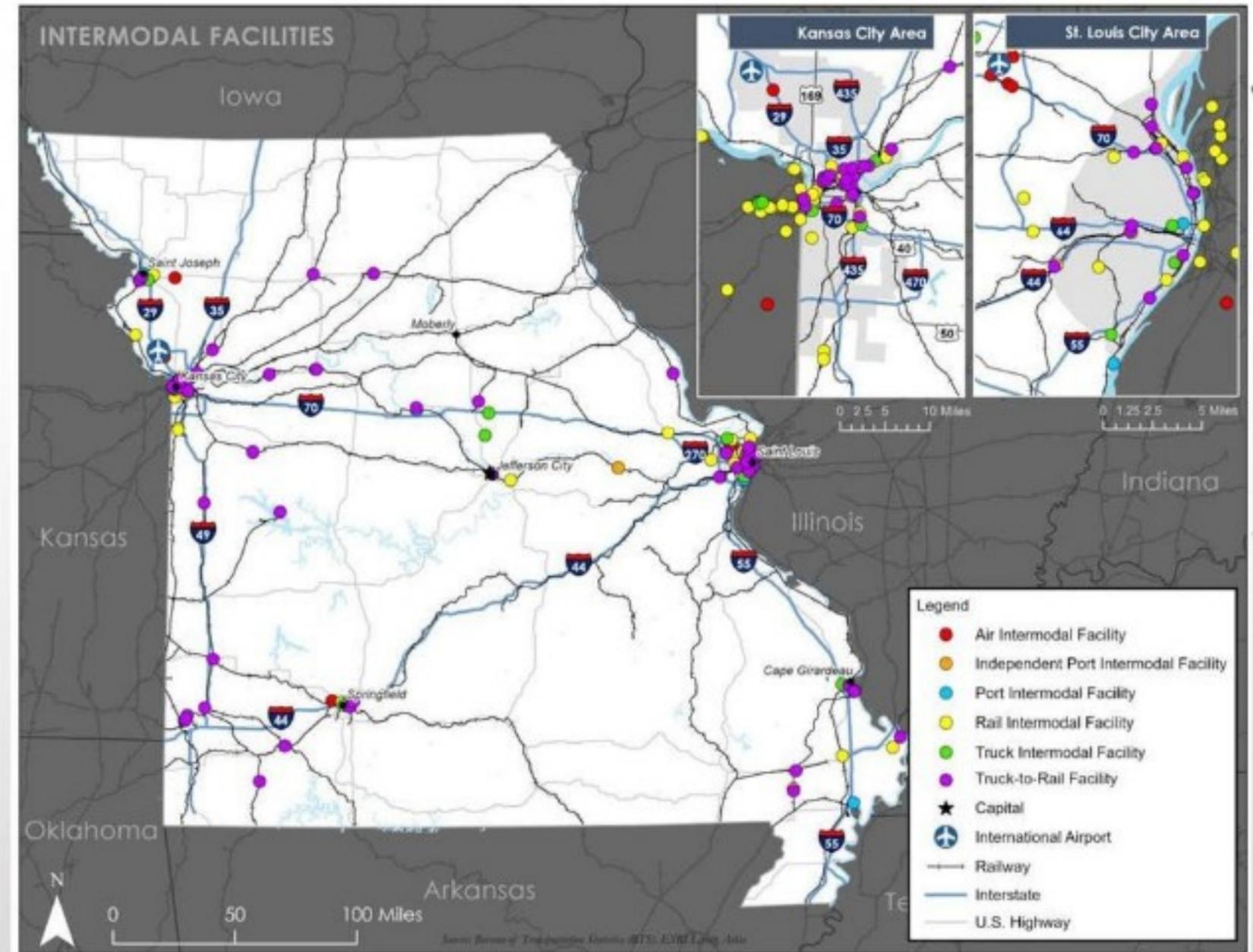


Source: STB Waybill

# 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



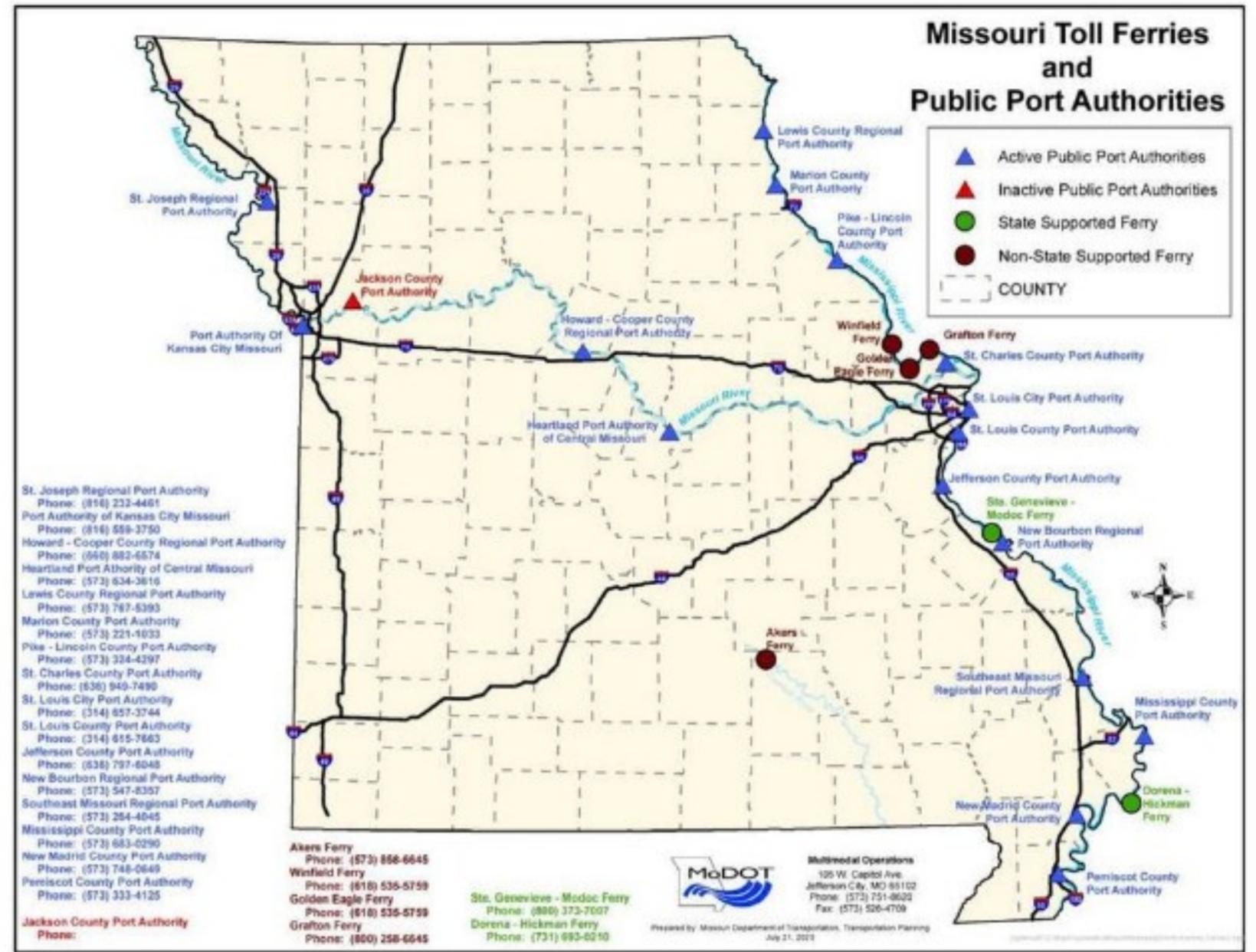
# Ports & Waterways

## ➤ 17 Port Authorities

- » 16 active
- » 1 inactive

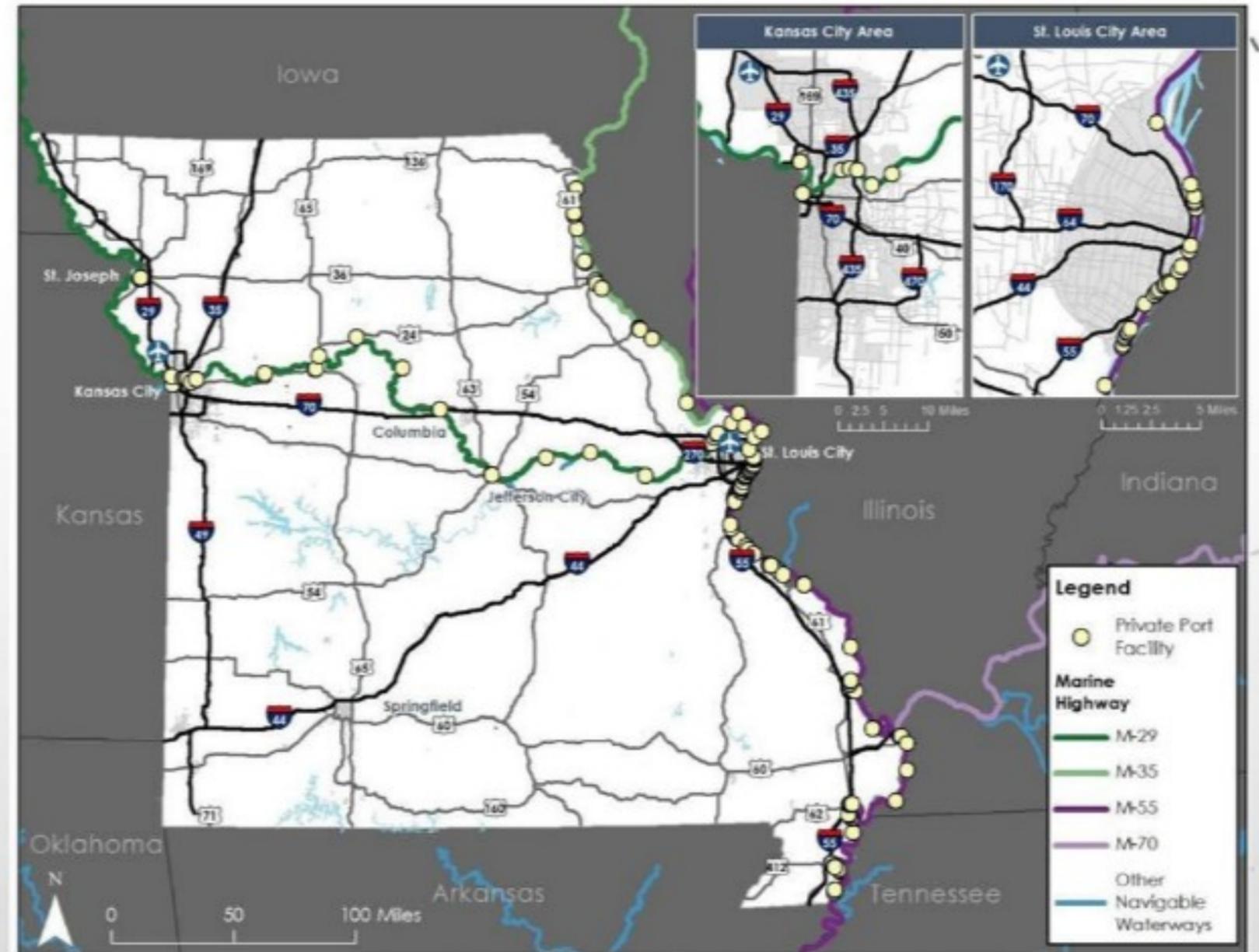
## ➤ 4 Marine Highways

- » 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



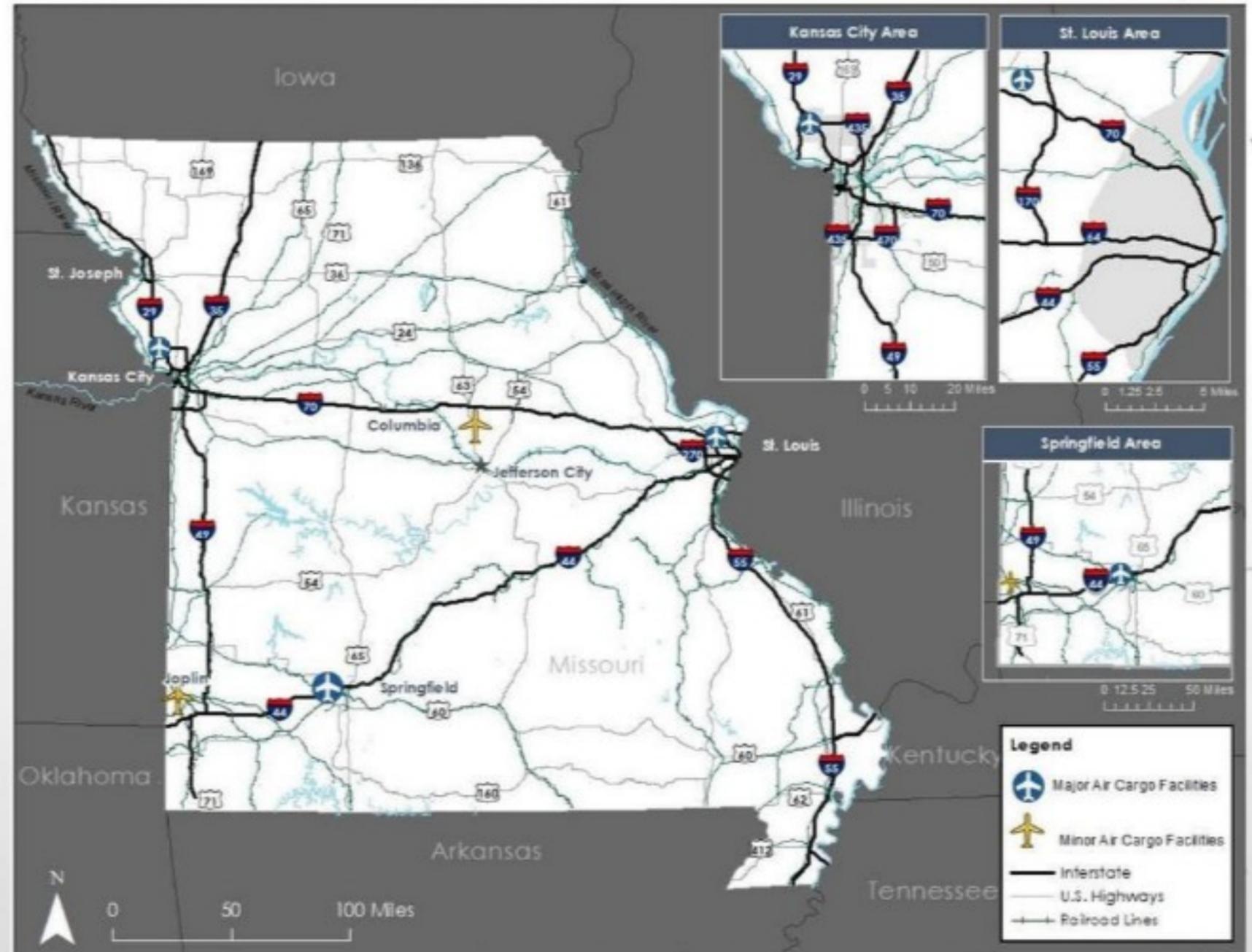
# Ports & Waterways

- 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

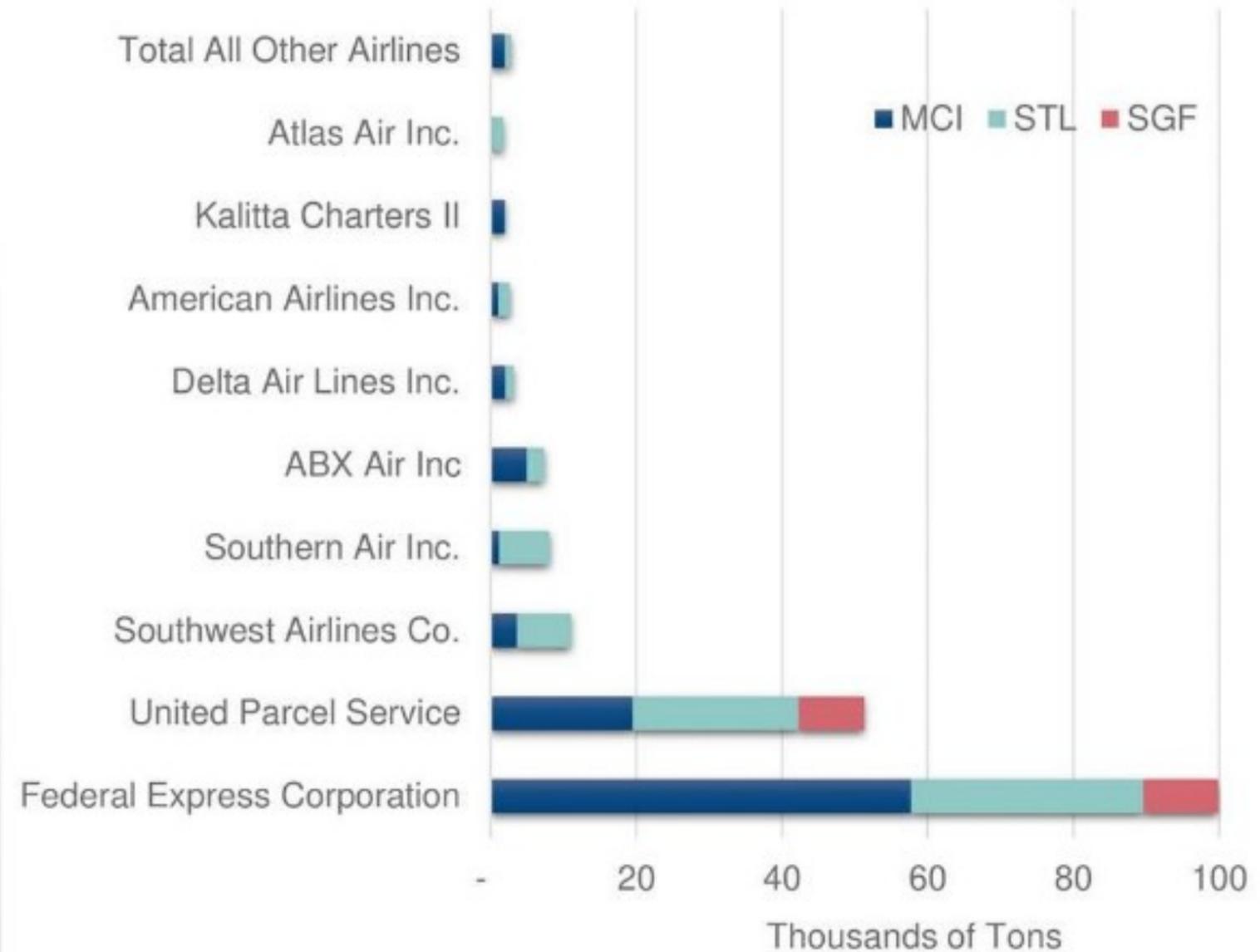
- MO aviation system includes 121 public + 248 private use airports
- 5 airports handle air cargo activity:
  - » Kansas City (MCI) – 50%
  - » St. Louis (STL) – 40%
  - » Springfield (SGF) – 10%
  - » Columbia (COU) – <1%
  - » Joplin (JLN) – <1%



# 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

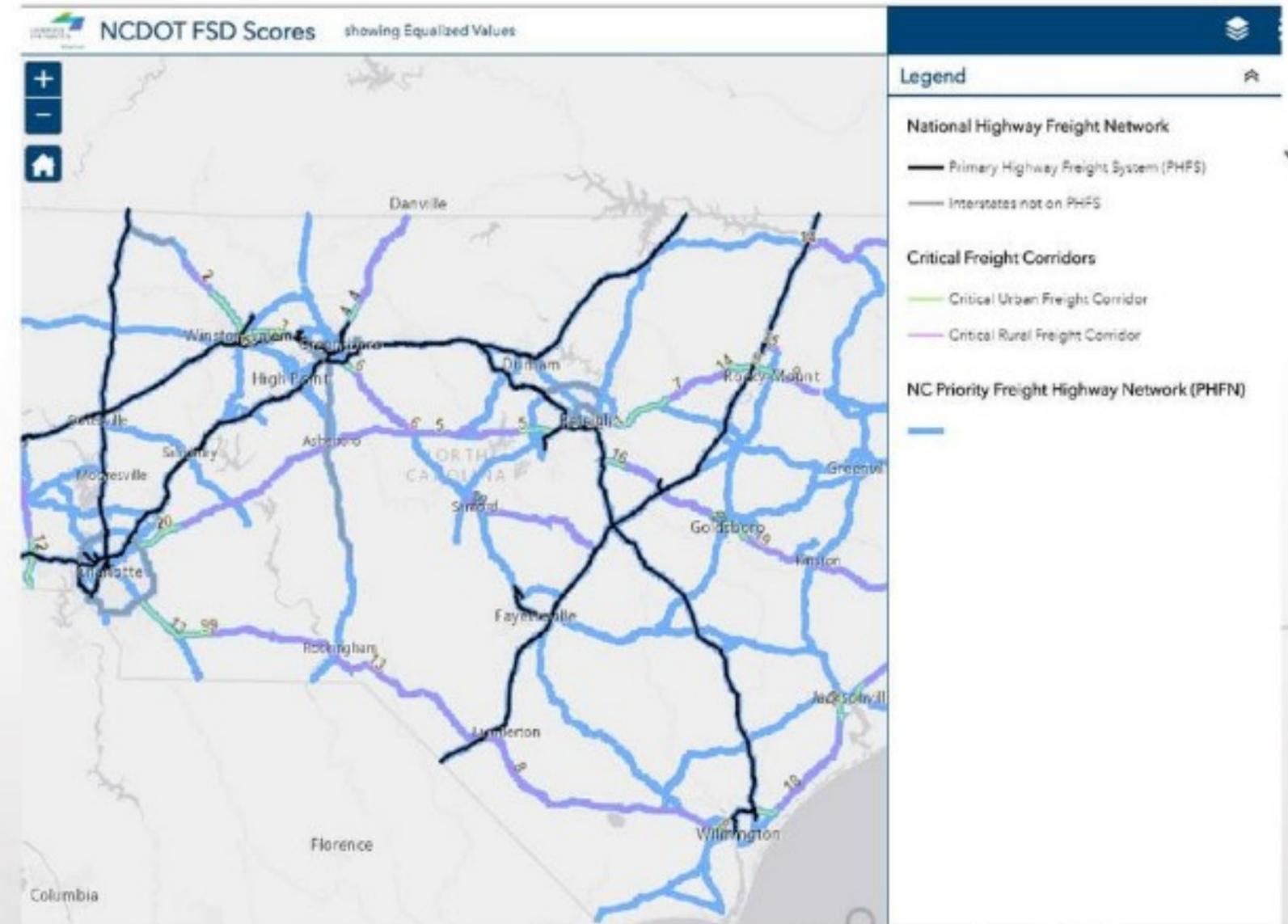
# Federal Requirements

- 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



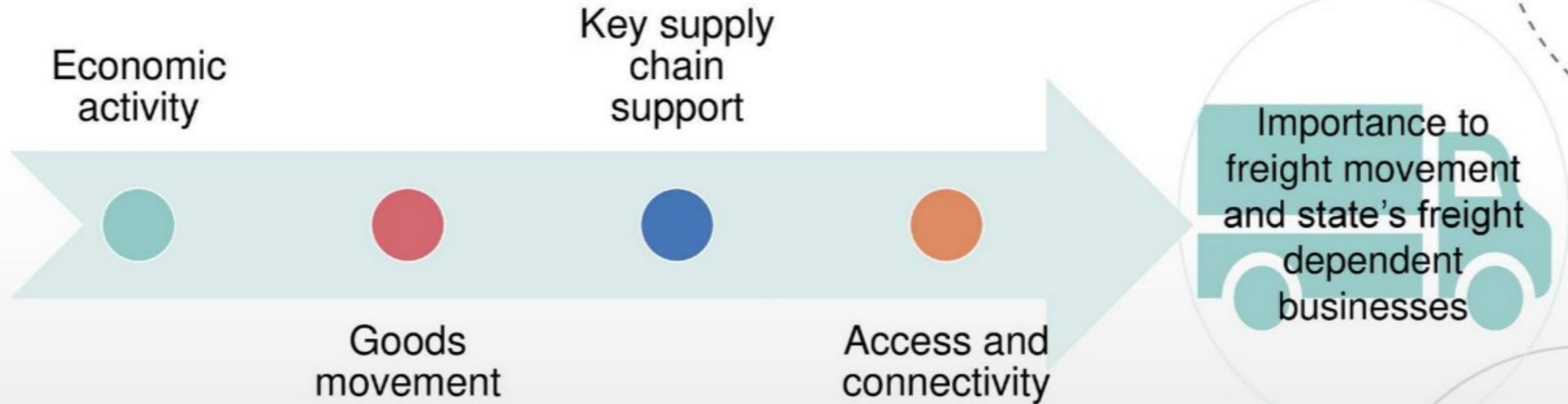
# Highway Designation Process



# 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

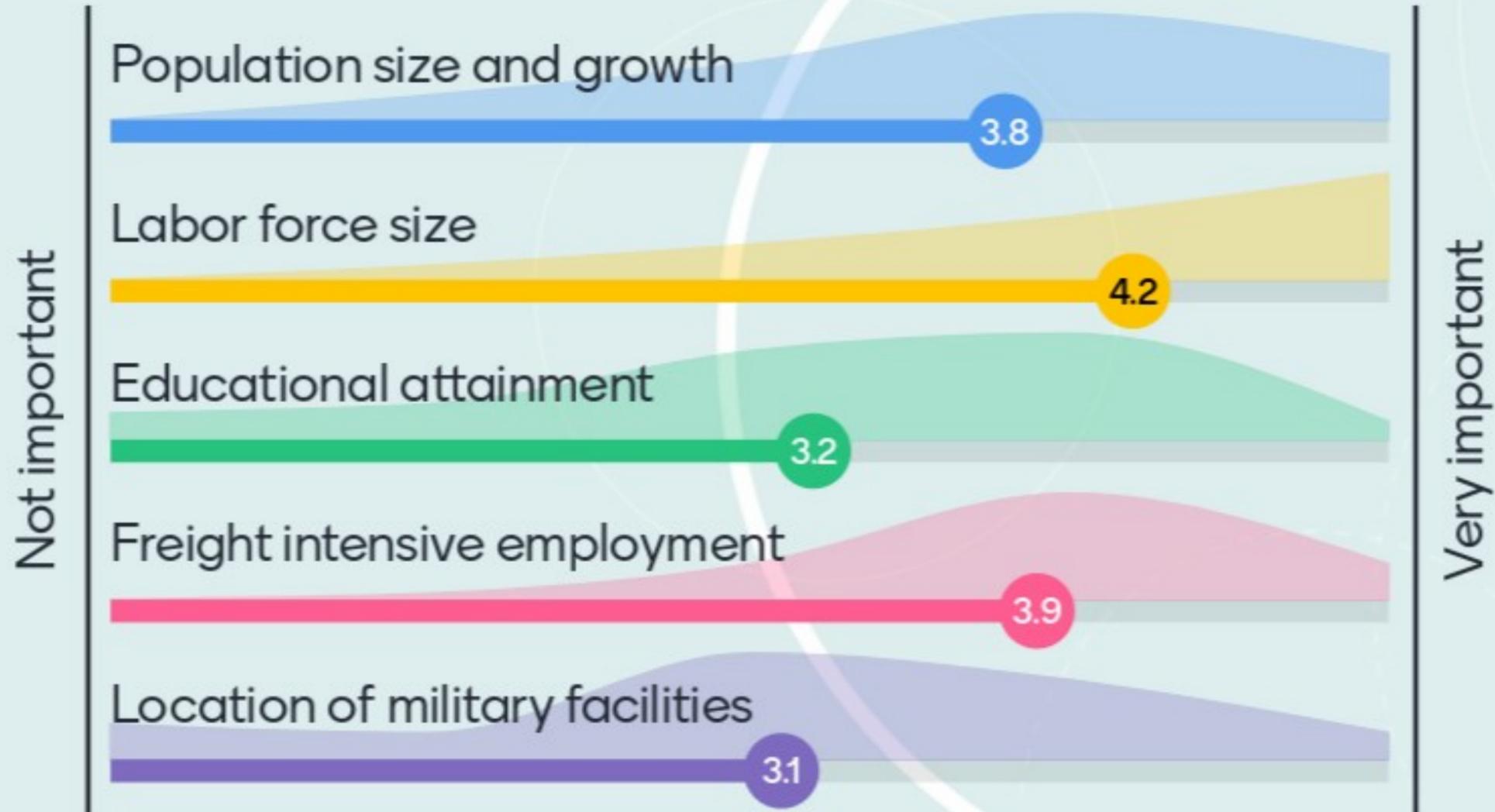
## Demographic Preparedness

- 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?



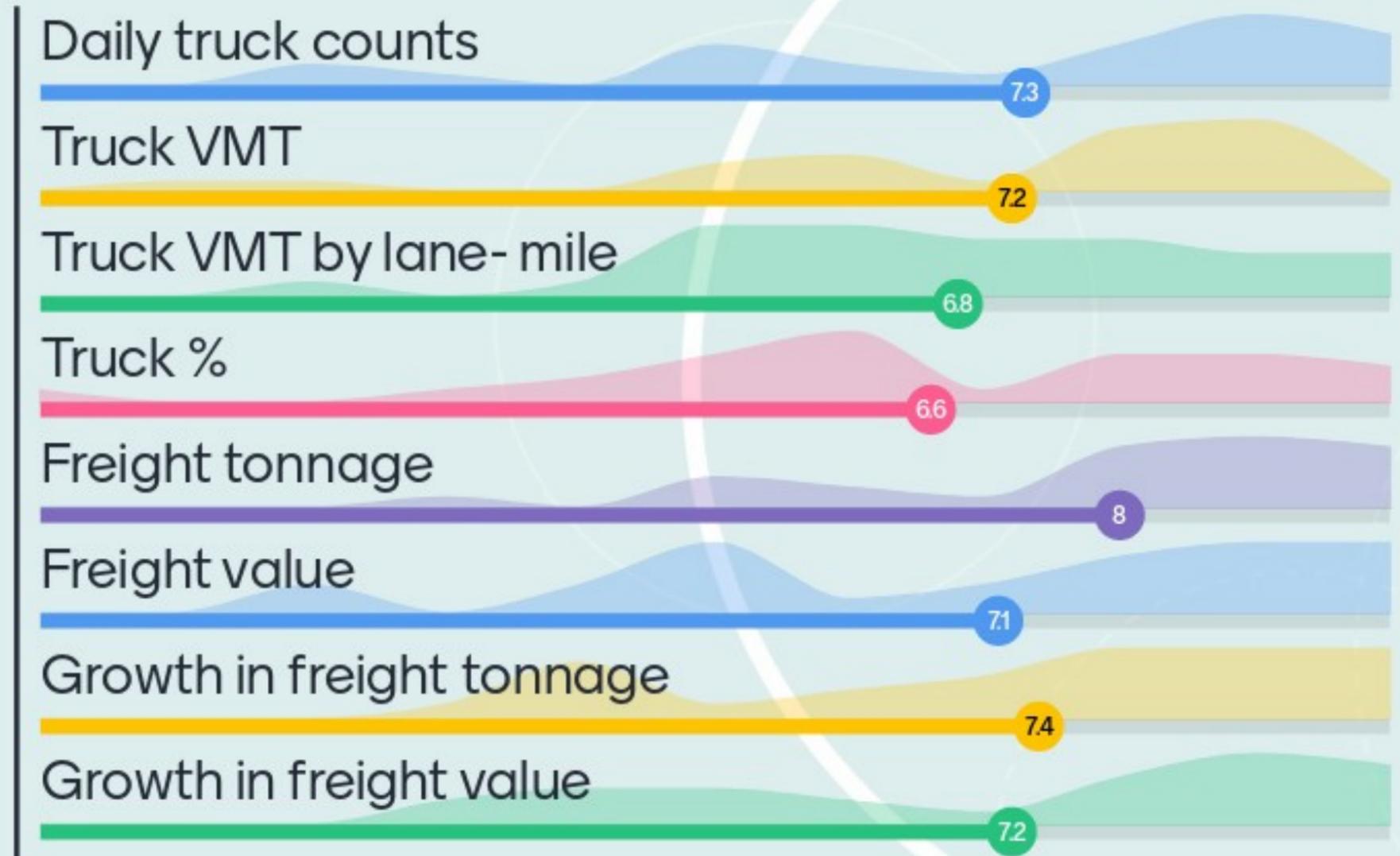
# Goods Movement

- 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?



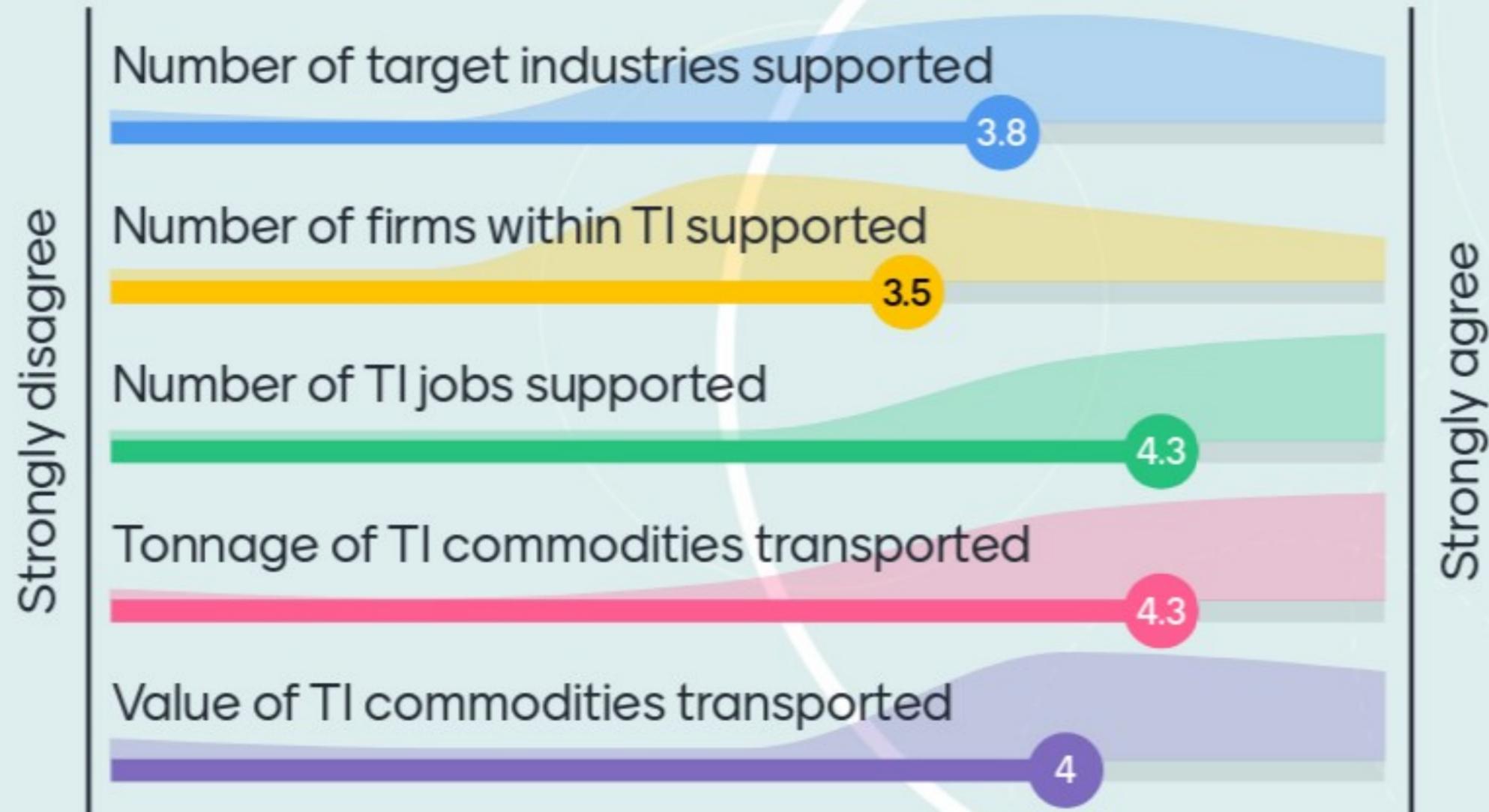
# Strategic Supply Chains

- 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?



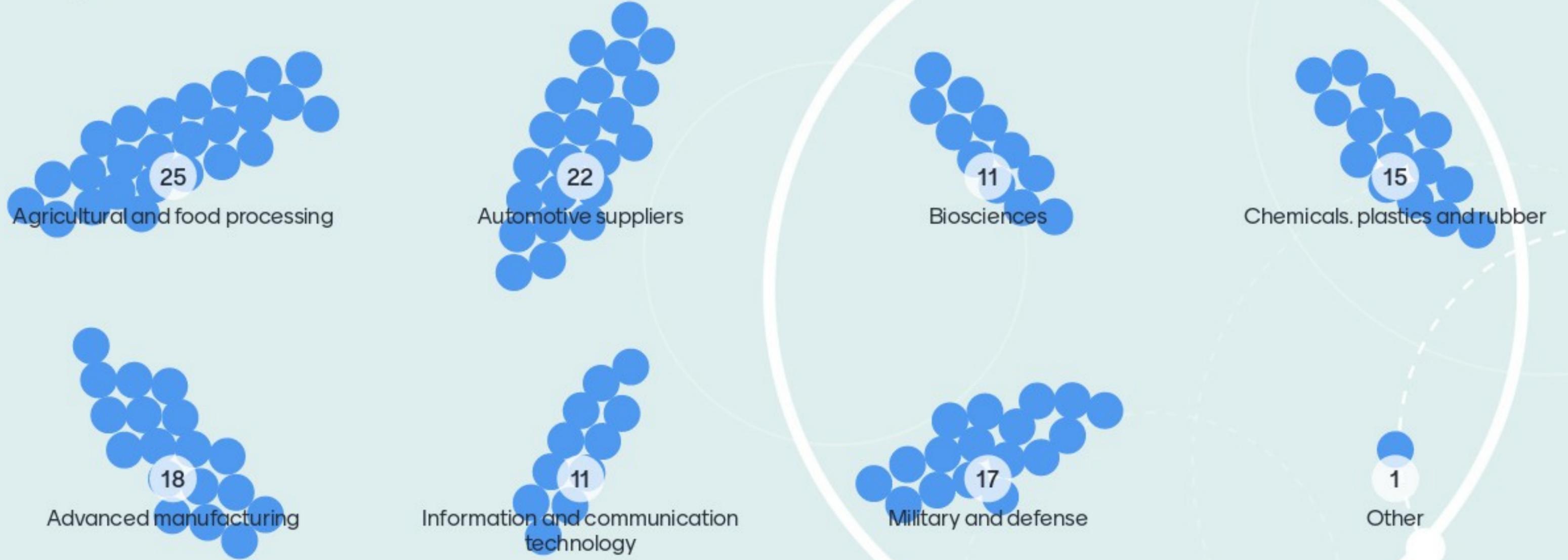
# Strategic Supply Chains

- 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?



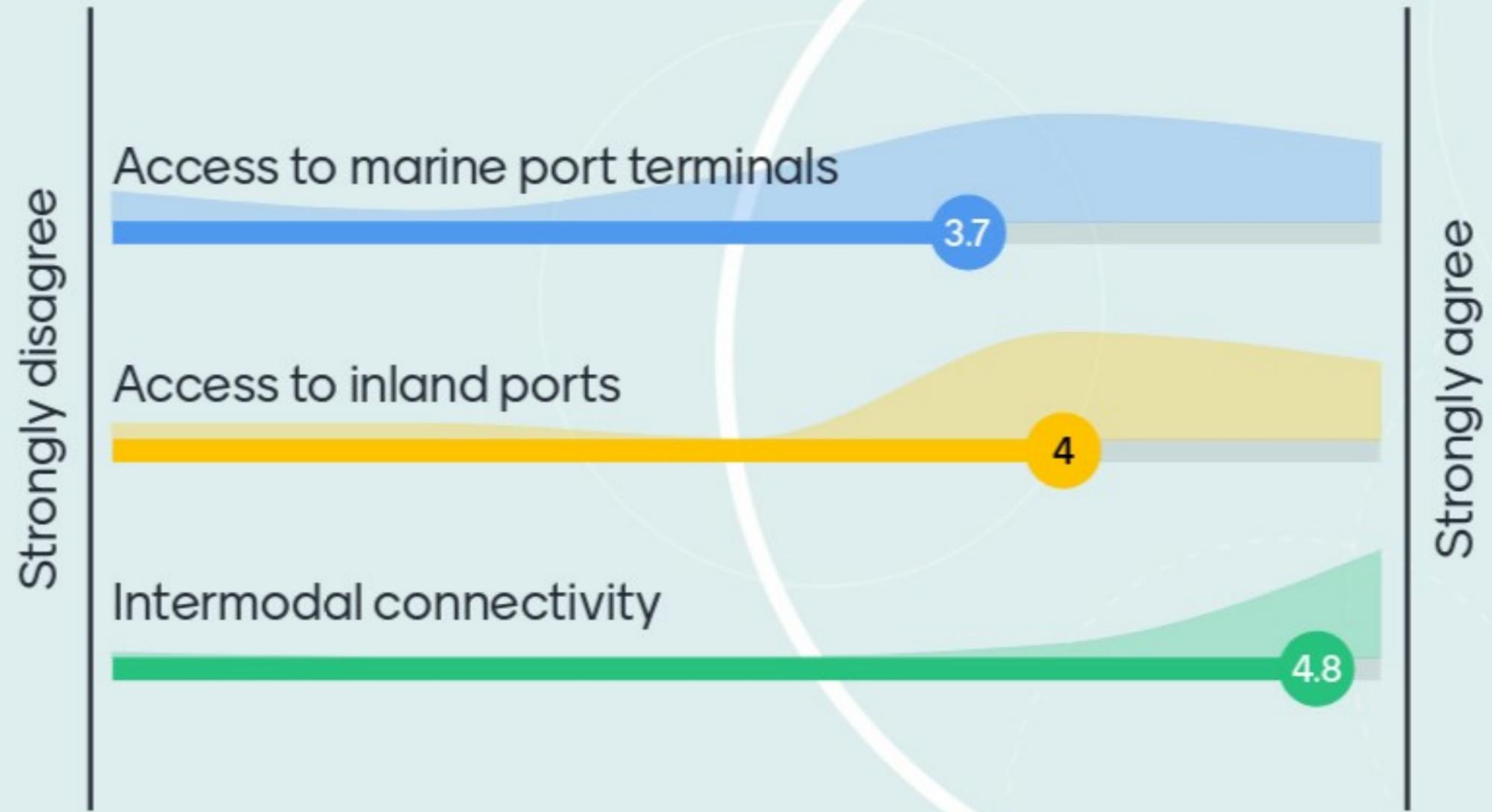
# Market Access and Connectivity

- 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

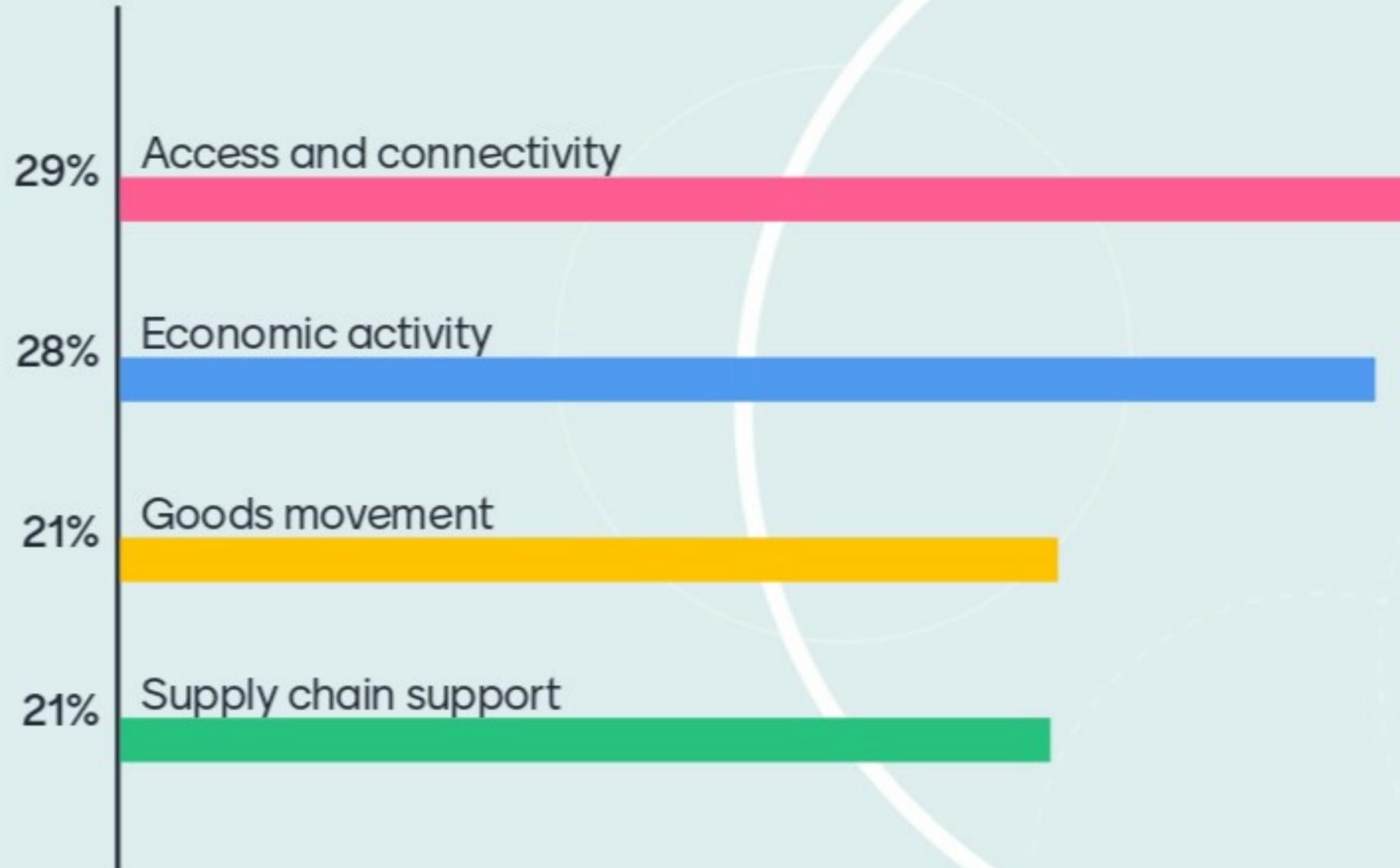
Economic  
Competitiveness  
25%

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

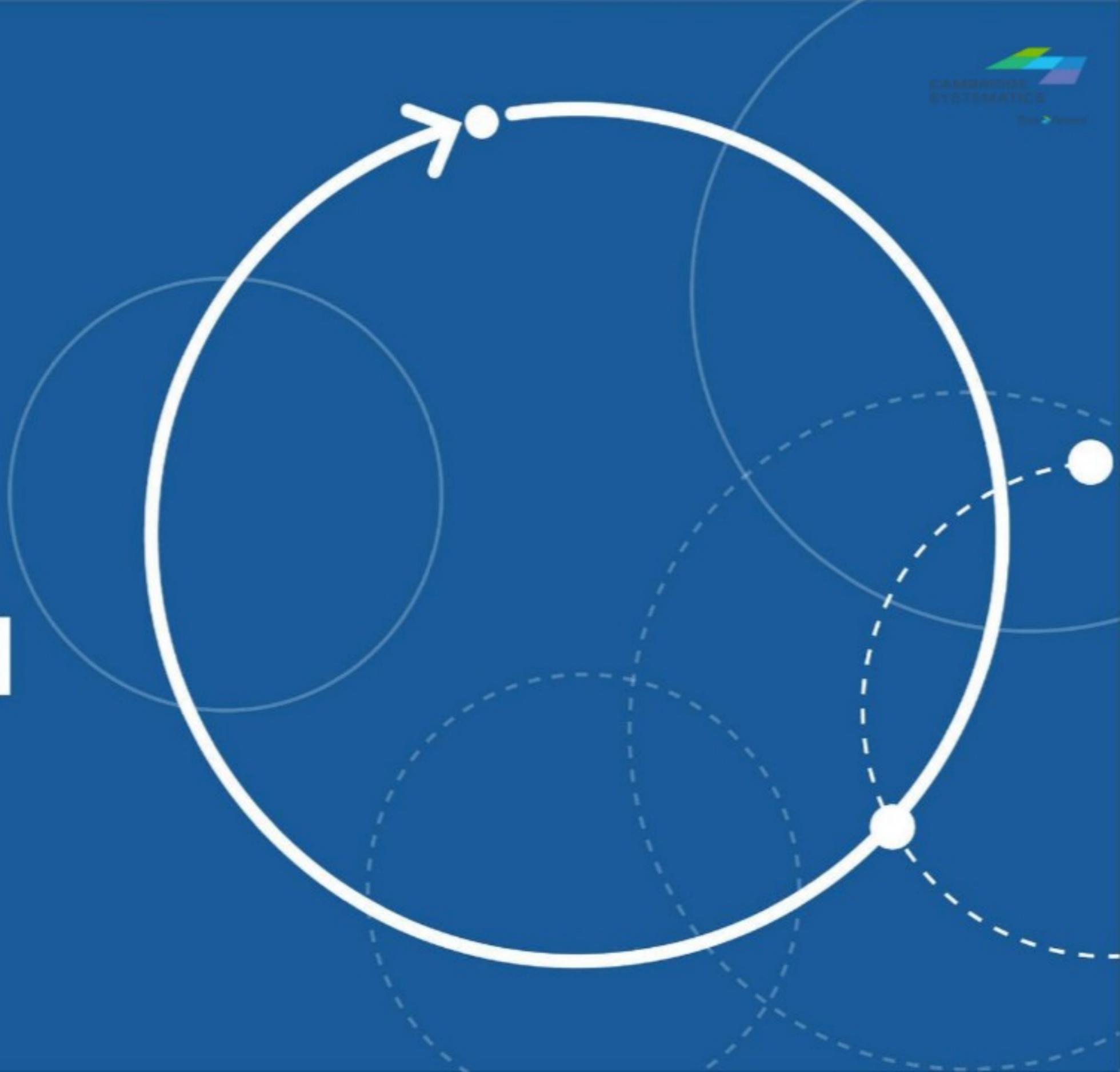


Draft final system for Steering Committee approval



Finalize MO Highway Freight Network

# Economic Impact of the Missouri River Runner Passenger Rail Service

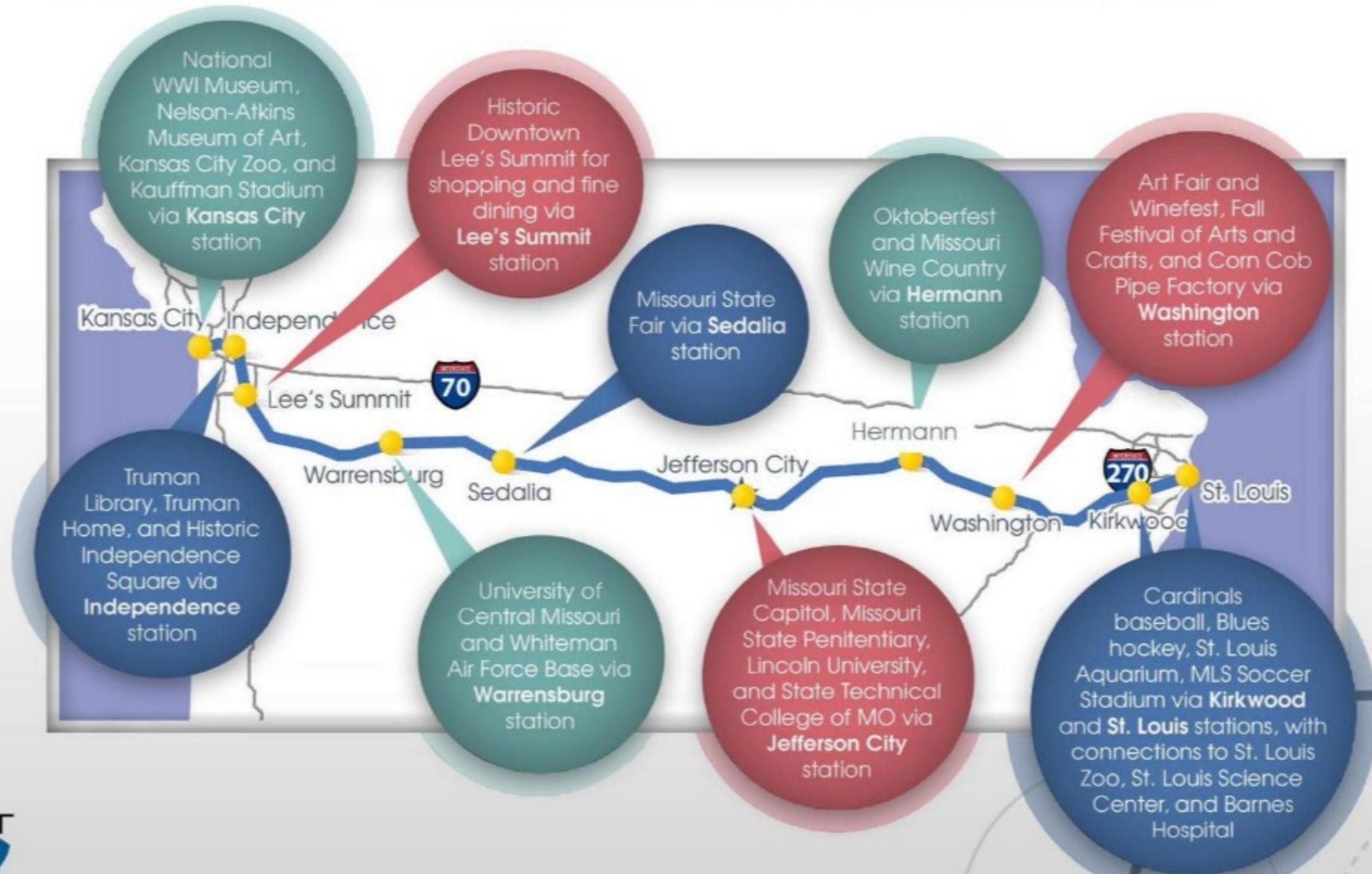


# Study Purpose

- 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:



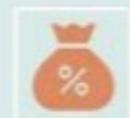
**1,700** jobs annually



**\$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

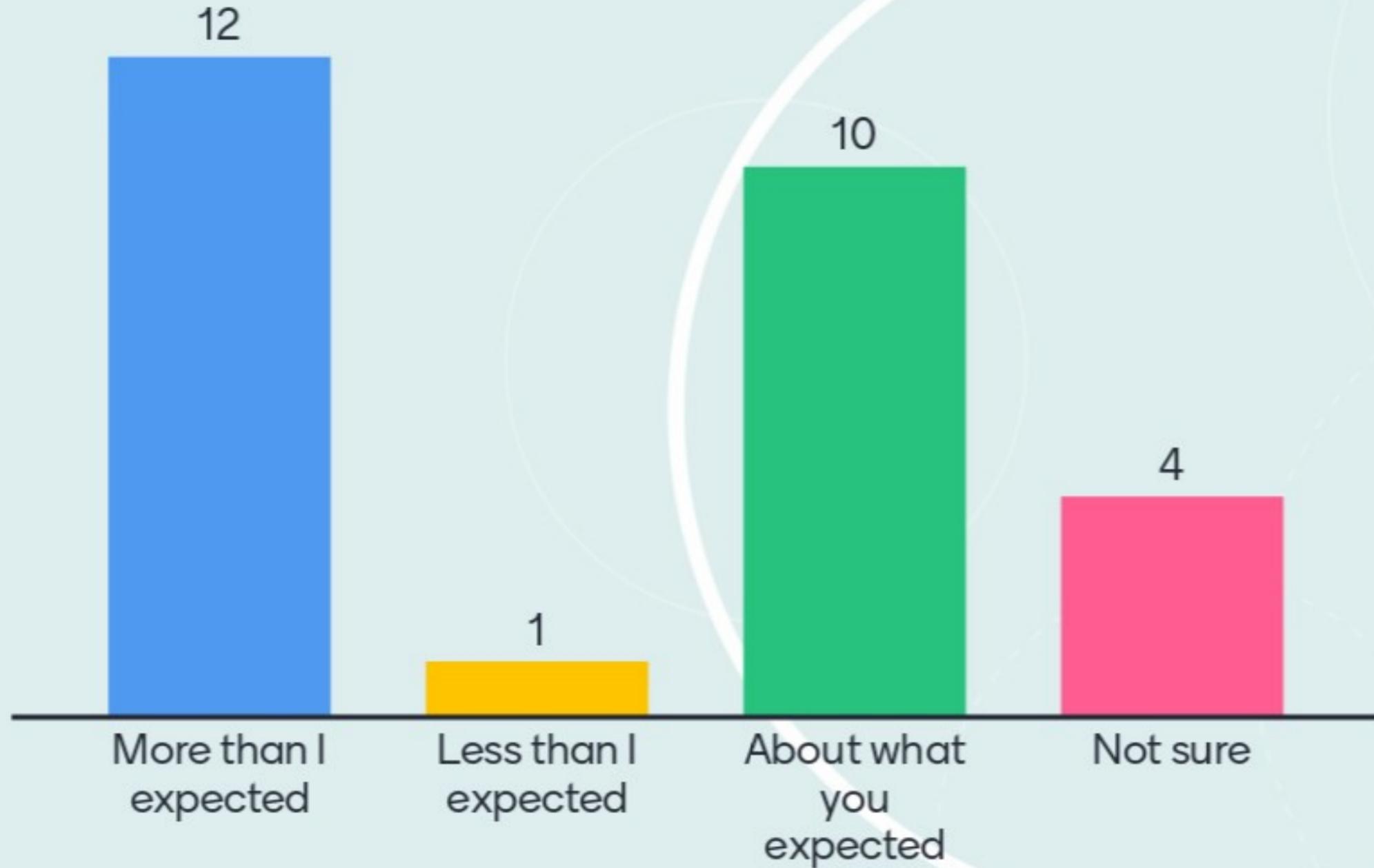


# Impact of Amtrak's Direct Spending in Missouri

- 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!

# Steering Committee Meeting 1 Meeting Minutes

## **MoDOT State Freight & Rail Plan**

### **Steering Committee Meeting 1 - Mon Aug 17<sup>th</sup> 9 am-12 pm CST**

#### **Participants**

MoDOT: Cheryl Ball, Liz Prestwood, DeAnne Rickabaugh, Bob Brendel, Bryan Ross, Troy Hughes, Ben Zietlow

Consultants: Cambridge Systematics - Paula Dowell, Katie Kirk, Lisa Destro, HNTB - Kip Strauss, Robyn Arthur, Aaron Bowe, Hg Consult - Buddy Desai

#### **Steering Committee Meeting 1 Virtual meeting**

**The PowerPoint presentation outlines the materials covered and the Menti input responses. The minutes below provide additional documentation of the meeting information and discussion.**

#### **INTRODUCTIONS**

Paula Dowell and Katie Kirk with Cambridge Systematics welcomed the Steering Committee and provided an overview of the virtual meeting agenda and the project team.

Cheryl Ball, MoDOT Freight and Rail Study Project Manager, welcomed the group and described the purpose of the State Freight and Rail Plan. She also stated the purpose of the meeting was to share information on the status of the project and gather feedback from the Steering Committee members.

Paula Dowell provided an overview of the Steering Committee and their roles as advisors and subject matter experts for the Statewide Freight and Rail Plan. The Steering Committee will be asked to confirm goals and objectives, offer insights into freight and rail trends and needs, inform recommendations, strategies and solutions and provide input into the process throughout the project. There will be six State Freight and Rail Steering Committee meetings held over the next 12 months.

#### **OVERVIEW OF STATE FREIGHT AND RAIL PLAN (slides 8-14)**

Paula Dowell provided an overview of the following:

- Federal requirements for Statewide Freight and Rail Plan
- How transportation is funded in Missouri
- Stakeholder engagement process
- Schedule and key milestones

Paula led the group through an interactive discussion using Menti to gather feedback on the goals and objectives for the study. Goal areas were identified as:

- Mobility and reliability
- Safety
- Asset preservation
- Economic preservation
- Multimodal choices

Based on feedback from the group, there was a suggestion to add sustainability to the goal areas. Safety was the highest rated with economic competitiveness, asset preservation coming in as second and third with mobility and reliability and multimodal choices coming in tied for fourth.

When asked about the important outcomes from the State Freight and Rail Plan comments included:

- Sustainability
- Funding
- Investment guidance
- Strategies to support economic development
- Framework for project prioritization and investment priorities
- Resiliency
- Reliability
- Meets federal requirements
- Integration with plans from adjacent states
- Cooperation throughout the state
- Freight movement fluidity
- Consensus on investment priorities
- Expansion
- Increased usage of Missouri River for freight purposes
- Demonstrate how different modes help each other
- Safety

### **COVID-19 IMPACTS (slides 21-29)**

Paula Dowell reviewed how COVID-19 has been impacting the freight and rail sector. GDP impact have been great in the first two quarters of 2020. There have been local spikes and modal impacts related to shift to PPE, driver shortages, drops in traffic volumes, passenger air travel plunge, but air cargo has increased. It was noted that in St. Louis Southwest airlines has shifted more connections through STL and it is pushing passengers through so there has been increased passenger traffic there. There was discussion about what sectors of the economy would return more quickly. Slide 23-24 identifies that basic commodities, agricultural products, food and grocery would be the quicker to return while oil and coal projects, basic chemicals, paper, furniture and textiles and automotive would be the slowest to return.



Paula used the Menti engagement tool to discuss how businesses are being impacted.

- Majority have seen businesses closing or expect to close, business activity declining, increased volatility, while there were a few who have seen increases.
  - Some comments noted that larger stores will struggle, smaller retail may fare better.
  - Business travel has dramatically dropped, what will businesses do as we move forward?

How has your agency been impacted?

- Agencies most noted different types of impacts. While many are struggling to meet demands of customers and others are struggling to get supplies, there were also a few mentioning no impacts.

Is your agency able to get critical supplies?

- Many mentioned there has been difficulty getting supplies, while others haven't faced that difficulty.

Are you readily able to get personal goods?

- Nearly equal yes and no to this question. The majority of people are buying more online.

#### **Comments related to COVID Implications:**

- As far as COVID implications, less than 3-15% of Missouri population has become exposed to the virus so far.
- COVID implications in the Joplin area have seen a number of small businesses closed, usually service industry.
- Other industries being impacted by COVID include:
  - Service industry, tourism
  - Arts, entertainment, recreation, accommodations, food services, construction and retail have all been impacted more than average in the KC metro.
  - We have seen a boom with cycling and walking, parks are seeing a lot of attention (including state and national parks). Those that travel to remote parks will definitely see some travel dollars.
  - In Central Missouri the local tourism is rebounding. Our outfitters are busy.
  - Leisure travel has migrated from traditional destinations to outdoor recreation.
- Moving to working from home has been a challenge, because our City wasn't set up for it.
- Working from home has been a boon and challenge. Committee meetings, public outreach are being heavily affected.
- Accommodating customers now requires more outdoor space or large indoor space.
- So much of what we do involves convening people, so we had to find different ways of doing that.



- Drive up services have become much more popular.
- I've always been an online shopper but what I buy online is taking longer sometimes to get which is frustrating.
- My family has started using grocery pickup and we love it.

### **MISSOURI FREIGHT PROFILE (Slides 31-36)**

Katie Kirk, CS, provided an overview of the Missouri Freight Profile noting the freight tons by mode and that for the commodity flow the majority of freight moves by truck with 60%.

The information presented showed top commodities by tonnage (not including rail): farm products, non-metallic minerals and crude oil/petroleum/natural gas were the highest. For Rail, it was coal as the highest.

#### **Traffic flow**

Through traffic comprises the largest share of freight going through the state at 44%. With inbound and outbound flows being roughly even. Rail traffic, because of the coal, accounts for 58% of the inbound flow.

#### **Trading Partners**

Illinois is the largest trading partner both outbound and inbound.

### **MISSOURI FREIGHT ASSETS (Slides 36-49)**

Brian Stewart, CS, covered the highway inventory which includes over 33,800 miles. He also reviewed the truck parking inventory in Missouri and identified there were 10,606 spaces available with the highest concentration on I-44.

#### **Questions and comments:**

**Q:** Is the supply of spaces adequate to meet current demand on I-44?

**A:** We are still analyzing that data. Right now, they have just got the what we have; next is what we need.

**Q:** Does the (parking) inventory also include as assessment of condition?

**A:** No, for truck parking we contracted on this project only looking at the need to identify the gap on the interstates. It is location too, as truck delivery has changed and hours of service changed, the need has changed at differing locations.

Aaron Bowe, HNTB, reviewed the Rail inventory. Twenty (20) railroads operate in Missouri with 5,000 miles of track. BNSF and Union Pacific are the largest railroads. There is a strong network of Shortline railroads in the state.



## **Ports and Waterways**

Katie Kirk reviewed the Ports and Waterways. There are 17 Port Authorities in Missouri, 16 are active. There are four designated Marine Highways and approximately 150 private docks operated and owned along the Missouri and Mississippi Rivers. Most port users are chemical manufacturing, crop production, metal manufacturing, and mining industries.

## **Air Cargo**

50% of air cargo travels through Kansas City (MCI), 40% through St Louis and 10% through Springfield.

FedEx and UPS are the largest users of air cargo in the region.

## **FREIGHT SYSTEM DESIGNATION (Slides 49-51)**

Paula reviewed the federal requirements for the National Highway Freight Program to allocate funding across essential freight assets. This includes the National Highway Freight Network.

## **HIGHWAY DESIGNATION PROCESS (Slides 52-66)**

This is a data-driven, systematic process to help support project prioritization, economic competitiveness.

Using the Menti engagement activity tool, Paula asked how important are the following economic activity criteria? The following criteria are ranked in order of importance:

- Labor force size
- Freight intensive employment
- Population size and growth
- Educational attainment
- Location of military facilities

## **Comment:**

- For educational attainment I'd urge you to take into consideration technical skills of the workforce and not just 4-year degree attainment.

When asked about Goods Movement and the importance of those metrics. The order of importance was ranked as the following:

- Freight Tonnage
- Growth in Freight tonnage
- Daily truck counts
- Growth in Freight Value
- Truck VMT
- Freight Value



- Truck VMT by lane mile
- Truck percentage

Supply Chain support criteria was ranked in order of importance as follows:

- Number of targeted industry jobs supported
- Tonnage of target industry commodities transported
- Value of targeted industry commodities transported
- Number of targeted industries supported
- Number of firms within targeted industry supported

Strategic Supply Chains identified include:

- Agricultural and food processing
- Automotive suppliers
- Advanced manufacturing
- Military and defense
- Chemicals, plastics and rubber
- Information and communication technology
- Biosciences

### Questions

**Q:** Does the animal food and pharmacy included food processing?

**A:** Animal food is included in food processing and pharmaceuticals are included in biosciences.

**Q:** Is distance (last mile) considered as part of access?

**A:** We are looking at travel sheds for that last mile connection.

**Q:** Where do consumer goods fall?

**Q:** Solar, wind and other renewable energy?

### Comments

- Will you check for connections to intermodal facilities out of state (e.g. the BNSF intermodal facility in Gardner, KC).

### Market Access and Connectivity

- Intermodal connectivity
- Access to inland ports
- Access to marine port terminal

### Questions and Comments

**Q:** Is distance (last mile) considered as part of access?

**A:** We are looking at travel sheds for that last mile connection.



**Comments:**

- Will you check for connections to intermodal facilities out of state (e.g. the BNSF intermodal facility in Gardner, KC).

**Analysis Criteria**

When asked about analysis criteria and what should be weighted differently. The input received included:

- Access and connectivity (29%)
- Economic activity (28%)
- Goods movement (21%)
- Supply chain support (21%)

**NON-HIGHWAY DESIGNATION PROCESS (Slides 68-72)****Priority Rail Freight Assets****Importance of Shortline railroads****Comments:**

- Shortlines too important to leave out.
- Seems like the shortlines are requesting more government funding for things that Class 1's can pay for on their own - any information to help evaluate these requests would be helpful.
- We have a shortline rail serving Columbia in my region, so I would like to see this data.
- Quantitative analysis is important and should be performed.
- Important to consider shortlines for improved connectivity and access.

**Priority Marine Freight Assets****Comments:**

- All freight ports should be included for data collection

**Priority Air Cargo Freight Assets**

Next steps in this area include developing Missouri Highway freight network, incorporate & compare against initial stakeholder input, rank roadways based on scores, draft final system for steering committee approval, and finalize Mo highway freight network



## **ECONOMIC IMPACT OF THE MISSOURI RIVER RUNNER PASSENGER RAIL SERVICE (SLIDES 74-83)**

Katie reviewed the economic assessment results to understand the economic benefits (direct, indirect and induced) of the passenger rail service on travel, transportation, tourism and visitor spending.

- 10 stations from KC to SLT.
- When asked if people have ridden Amtrak or the River Runner, most never have, but many have used Amtrak outside of MO.
- The River Runner supports: 1,700 jobs annually, \$70M in labor income, \$201M in economic activity and \$4.7M in state and local tax revenue.
- When asked about the economic impacts of Amtrak in MO:
  - Most people responded with “more than I expected” highest, followed by “about what I expected”
- Challenges and opportunities facing the River Runner:
  - Connectivity, stabilized funding, on-time performance
  - Expand cross-marketing packages, expand marketing, develop hotels and housing, invest in on-site ticketing kiosks, adjust schedule to facilitate more convenient day trips

### **Comments on River runner experience or use or suggestions for improvement:**

- Rural Missouri, driving 2 to 3 hours to get to major airport or rail access.
- Per person seems to be fine, but for family the price is expensive.
- We have taken it several times to Herman and KC and it is a nice ride.
- Price can be an issue when comparing travel arrangements.
- Not convenient to Springfield.
- The car is my primary mode of seeing the state.
- I'm from Jeff City and I've always intended to ride it to Hermann or St. Louis, but just never have. Just easier and cheaper to take the car.
- Inconvenient schedule.
- Easier to drive direct. Want to ride the River Runner, just for the experience, in the future.
- Unreliable service makes it difficult to use for both work and personal. E-Bike rentals available at train stations would increase ridership.

### **Questions:**

**Q:** Are these the kinds of stats presented to the legislature to support funding for Amtrak in MO?

**A:** They will be. We haven't had this level of data in the past.

**Q:** Was the Impacts of Amtrak slide for all Amtrak Operations or just the River Runner?

**A:** Just the River Runner

**Q:** Are there opportunities to connect Springfield to either KC or STL via rail?

**A:** When they looked at in 2012, it was an exhorbinent cost to do so

**Q:** What about higher speed rails or high speed rail?



**Q:** On what basis do they make appropriations to Amtrak?

**A:** For the River Runner, MoDOT makes the request based Amtrak's forecast on ridership and costs. Missouri is responsible for the operating costs less the fares. The funding is general revenue.

## **NEXT STEPS (Slides 84-86)**

Next 90 Days

- Complete stakeholder interviews
- MO Freight Profile
- Finalize River Runner economic impact executive summary
- Develop GIS tool
- Initiate needs assessment
- Next meeting in November

## **Discussion and questions that came through in the chat feature:**

**Q:** A big part of the hyperloop project is moving freight in Missouri. It needs to be added to this discussion and in the plan

**A:** We won't be discussing the hyperloop today, but it will be included in the strategic initiatives section of the plan.

**Q:** Emerging technology is not included as a goal, is it woven in?

**A:** It is woven in. Each goal has an emerging technology component.

**Q:** Who have you interviewed thus far?

**A:** We are just about to begin the interviews for the freight & rail plan. We have distributed surveys to MO River Runner station directors as part of the Economic Impact Assessment.

**Q:** Do STRAHNET routes have to be on the primary freight network?

## **Comments:**

- MARC is leading a study of freight technology needs with a coalition of 5 states and 6 large metros that will be completed this fall. When your team is ready, we would like to share its results and recommendations to help inform this effort. See: <https://www.marc.org/Transportation/Plans-Studies/Transportation-Plans-and-Studies/Heartland-Freight-Technology-Plan>
- Safety should be considered in the designation for the freight highway network
- Innovation quotient will also become important as a measure of economic competitiveness to come.



- In thinking about multimodal aspects of freight, please also consider the needs to provide access to freight jobs. This has been a significant labor force issue for freight projects in the KC region. Specifically, transit access to suburban warehouse, logistics and manufacturing jobs.



# Steering Committee Meeting 2 Presentation



MISSOURI

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# State Freight & Rail Plan

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*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. Edit your name to also include your organization.

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- please go to [www.Menti.com](https://www.Menti.com) and type in code

74 76 29 4

# Today's Agenda

- Welcome
- Recap of Last Meeting and Overview of this Meeting
- Freight Profile Overview
  - » Commodity Flow Analysis, Economic Impacts and Freight Generators
  - » Highway and Trucking
  - » Truck Parking
  - » Rail
  - » Air
  - » Waterways
  - » Pipeline
- Freight Network Designation
- Next Steps & Discussion

# Introductions



**Cheryl Ball**  
*MoDOT Project Manager*



**Liz Prestwood**  
*MoDOT Deputy Project Manager*



**Paula Dowell**  
*Project Director*



**Lisa Destro**  
*Deputy Project Manager*



**Aaron Bowe**  
*Rail Plan*



**Mark Berndt**  
*Supply Chains and Logistics*



**Kip Strauss**  
*Deputy Project Manager*



**Dan Forbush**  
*Freight Profile Lead*



**Brian Stewart**  
*Truck Parking Lead*



**Steve Wells**  
*L RTP Liaison/  
Stakeholder Outreach*



**Buddy Desai**  
*Safety*



**Robyn Arthur**  
*Stakeholder Outreach*



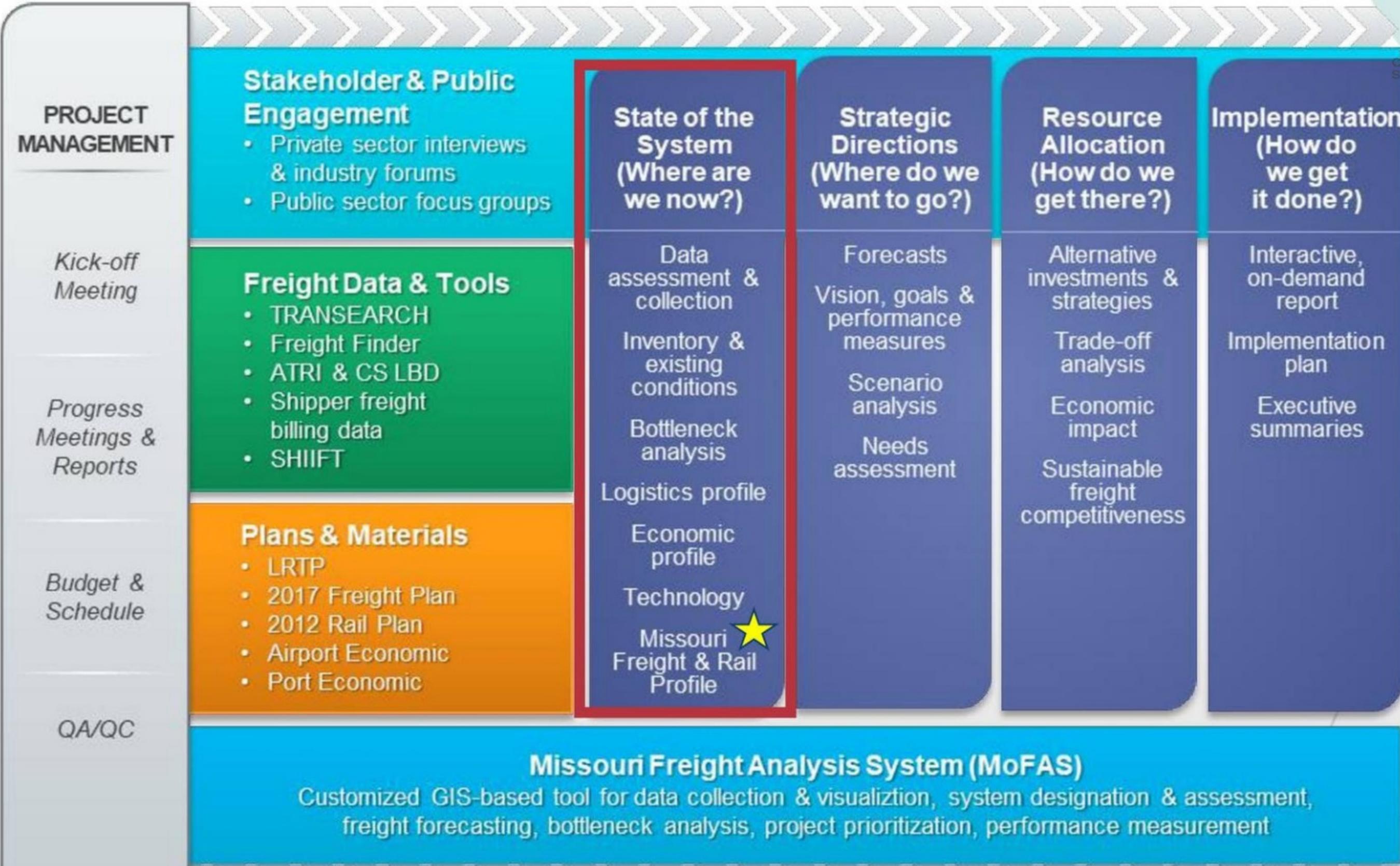
**Katie Kirk**  
*Technical Project Manager*

# Recap of Last Meeting and Overview of this Meeting



# Last Meeting Overview

- Overview of Steering Committee
- Overview of State Freight & Rail Plan
- Goals & objectives input
- Input on outcome of the Plan
- COVID-19 impacts and input
- Commodity flow summary
- Missouri Freight and Rail Profile inventory
- Designating the MO Multimodal Freight Network, process, designation criteria, weighting of criteria
- Economic Impact of Passenger Rail



# Stakeholder Engagement



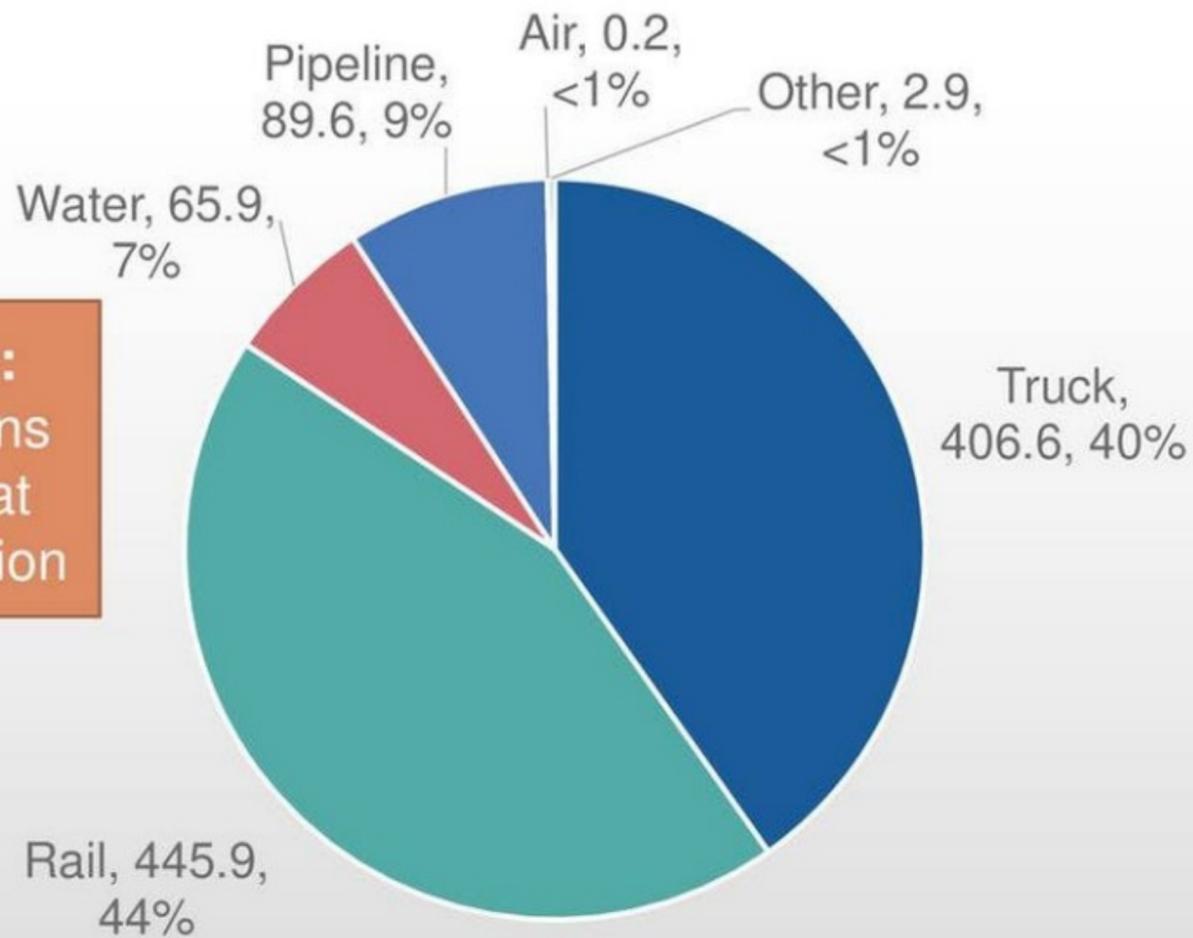
# Missouri Freight Profile Overview



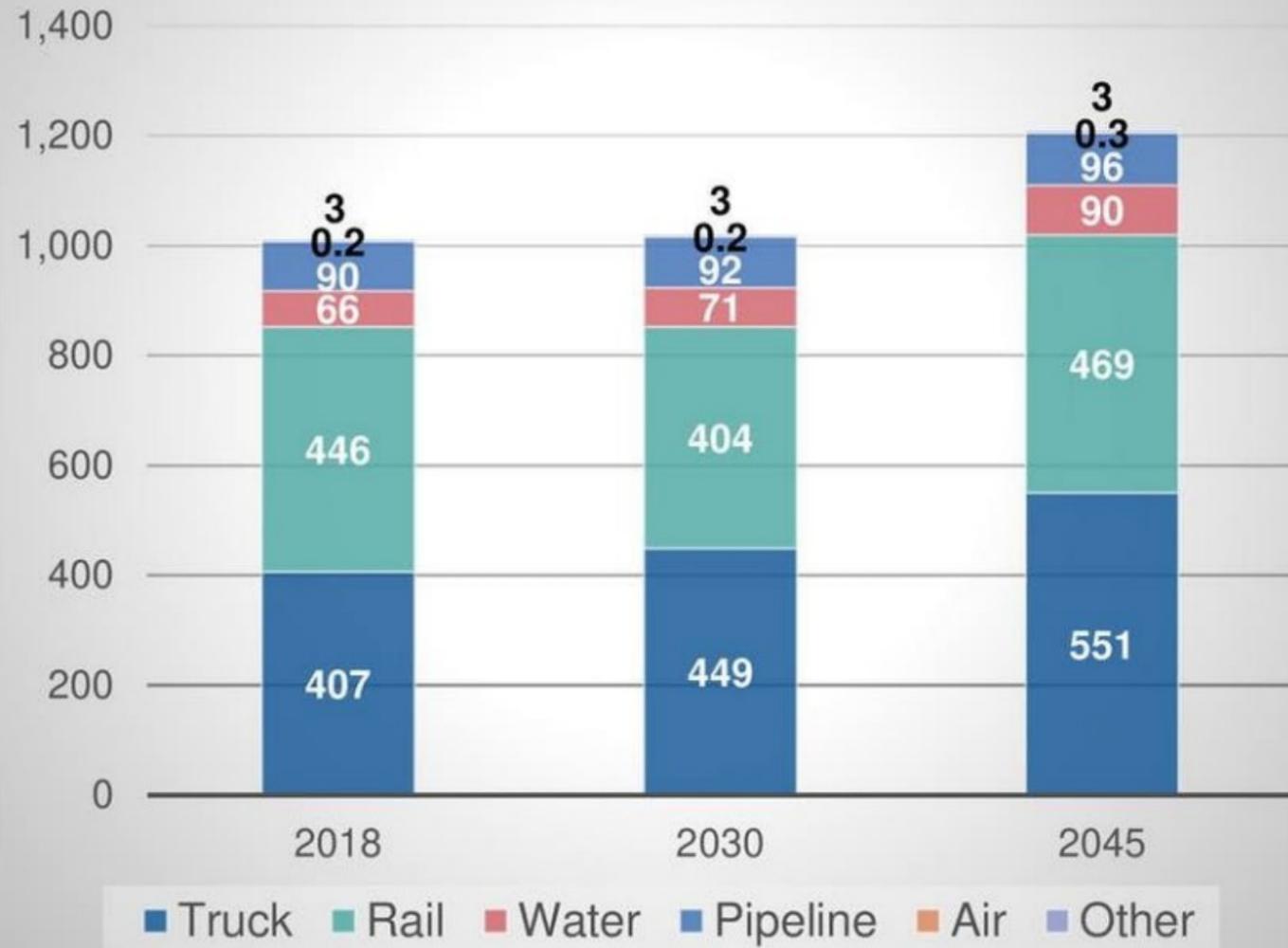
# Commodity Flow Summary – Tonnage

## 2018 Freight Tons by Mode (Millions of Tons)

**TOTAL:**  
1.01B tons  
valued at  
\$1.15 trillion

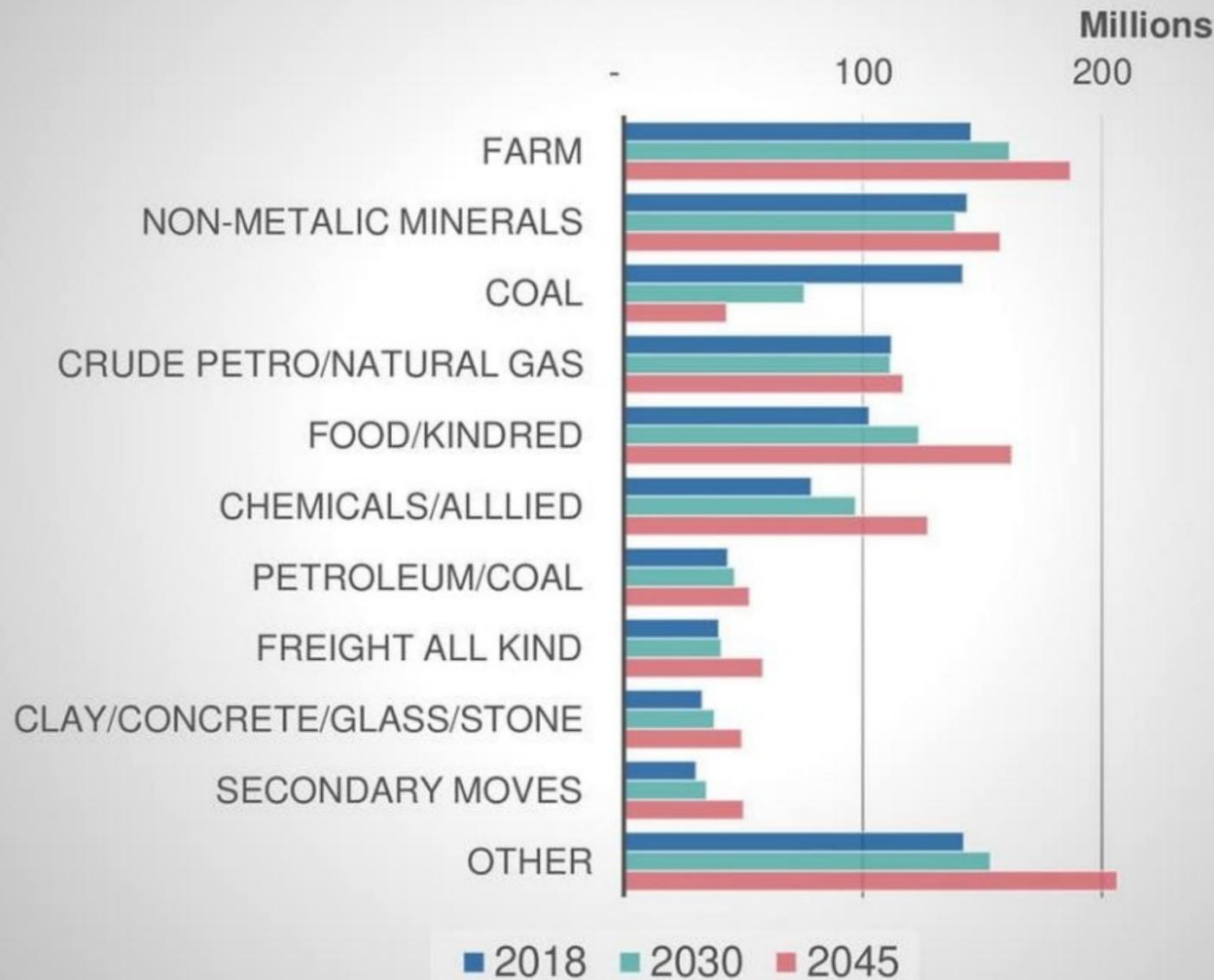


## Freight Tonnage Projections by Mode (Millions of Tons)

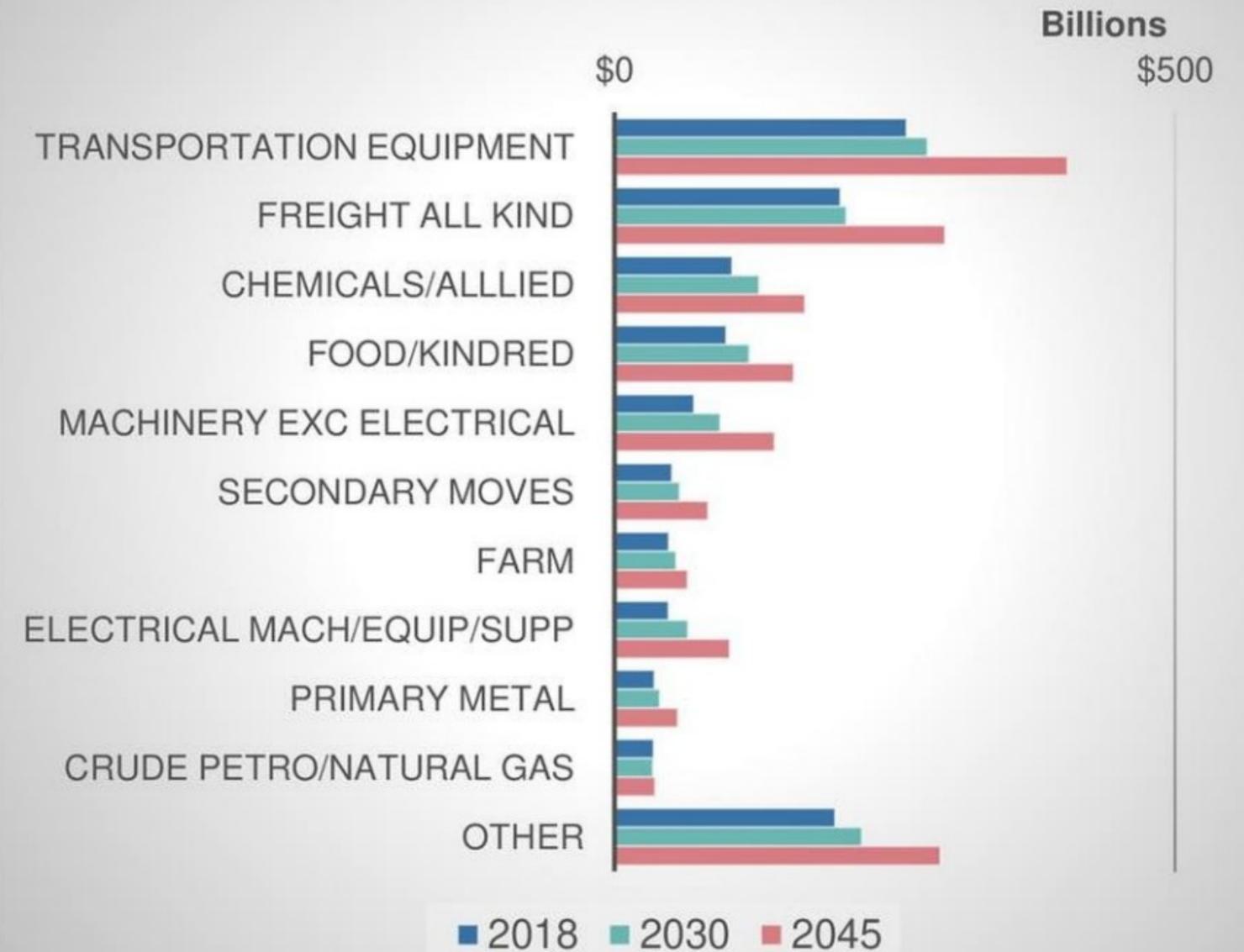


# Top Commodities

## Top Tonnage Commodities 2018-2045



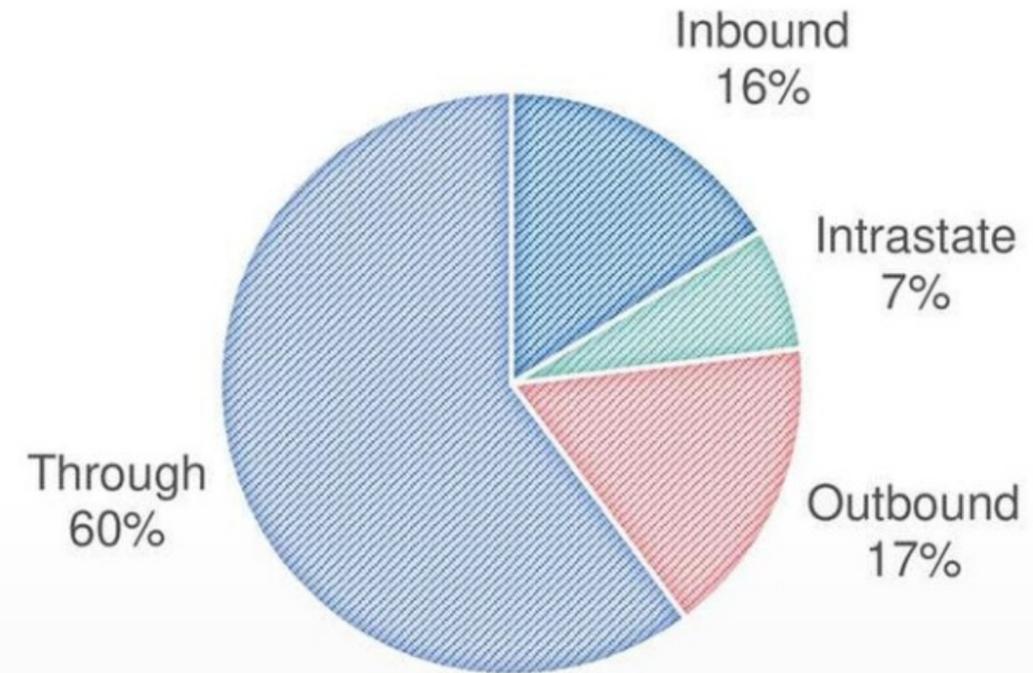
## Top Value Commodities 2018-2045



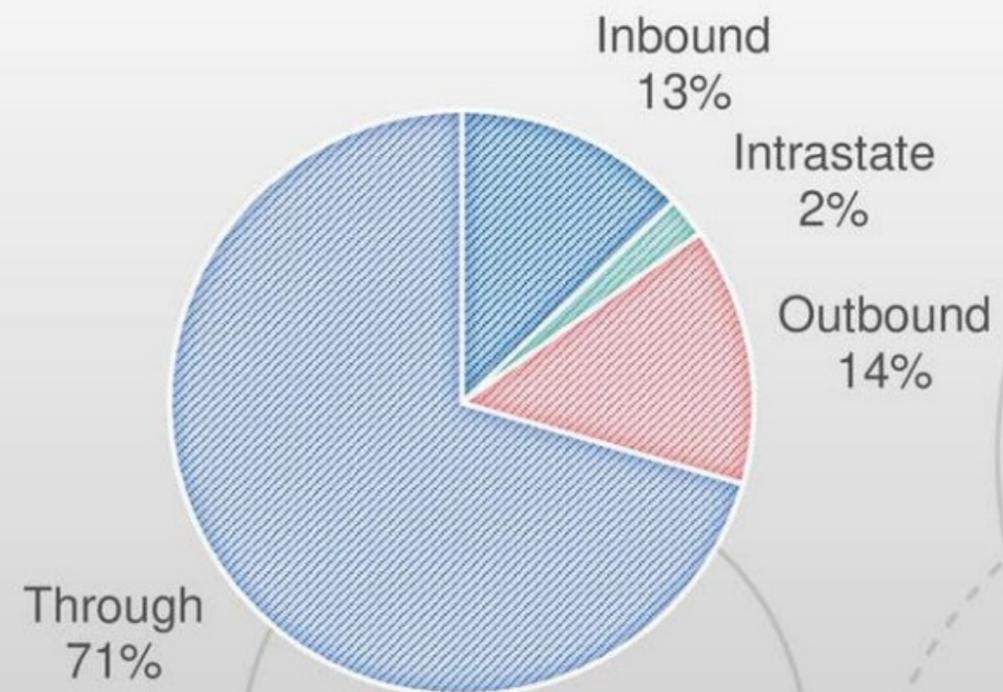
# Directional Flow

- In 2018, through traffic comprises the largest share by weight and value
- Inbound & outbound flows roughly even

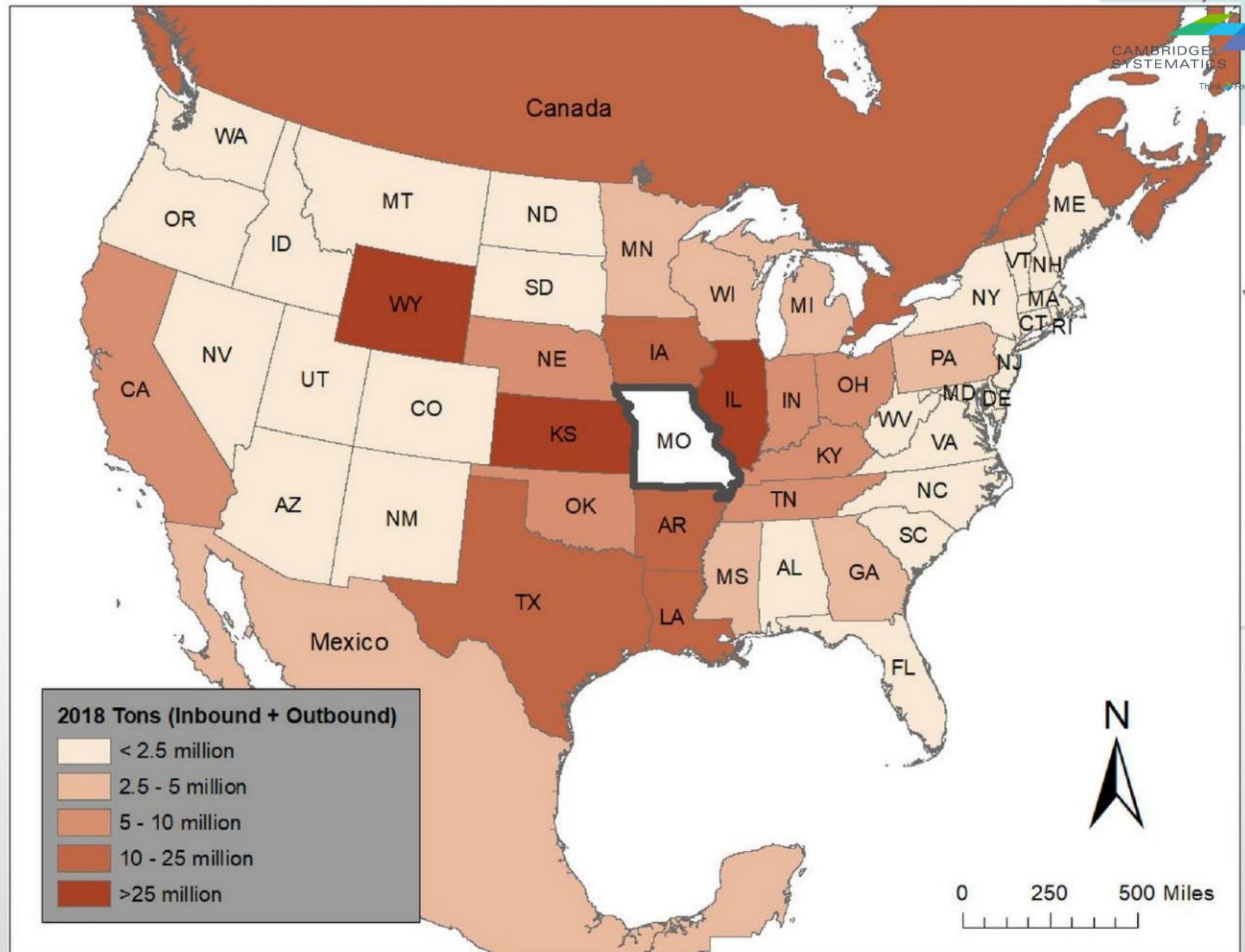
## TONNAGE BY DIRECTION, ALL MODES



## VALUE BY DIRECTION, ALL MODES

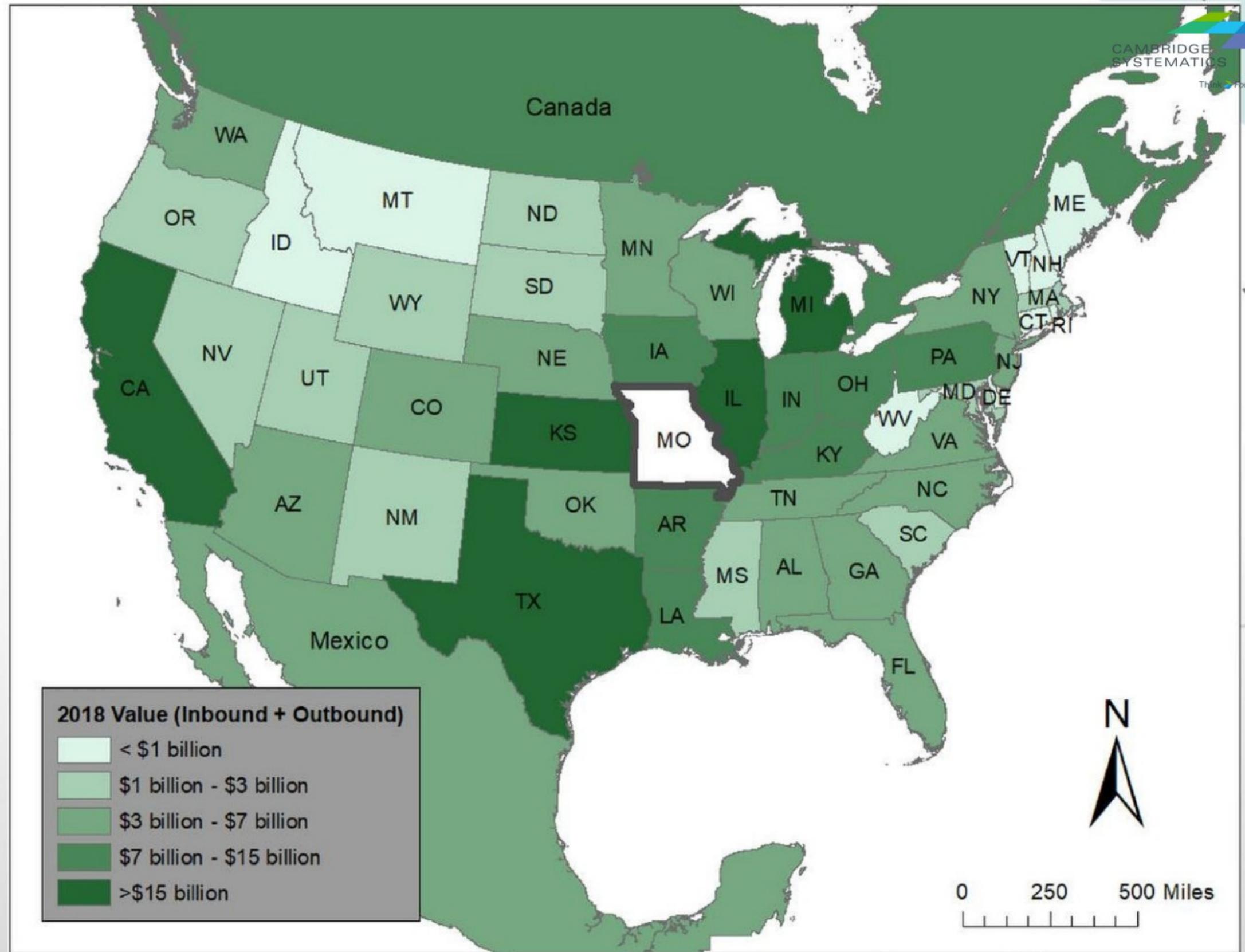


# Missouri's Domestic Trading Partners by Weight



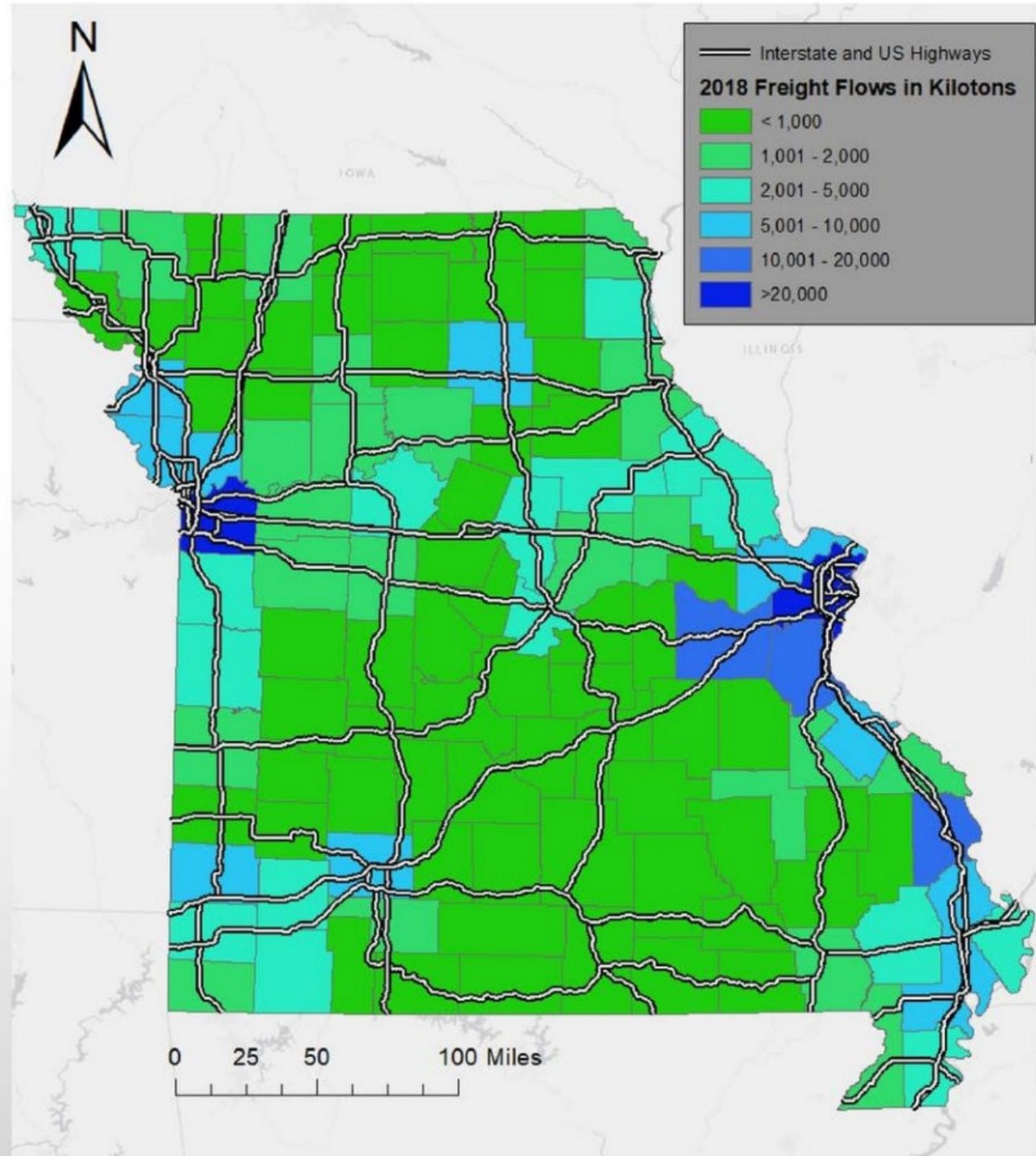
Sources: IHS Transearch and STB Waybill

# Missouri's Domestic Trading Partners by Value

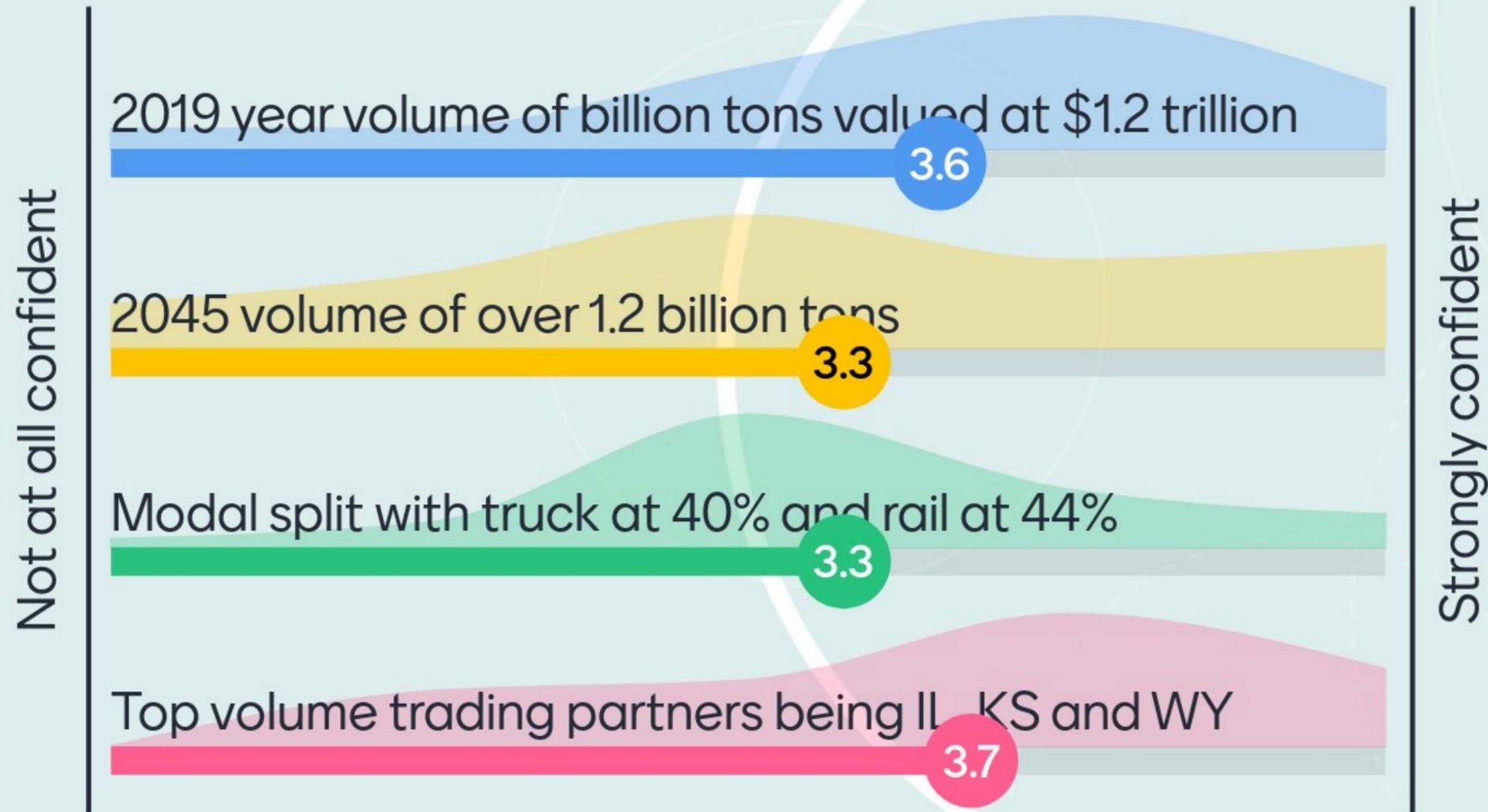


Sources: IHS Transearch and STB Waybill

# Freight Generation by Missouri County



# How confident are you in the reported commodity flow findings:



# Economic Role of Freight

Sector	Employment	Establishments
Air Transportation <i>(Suppressed)</i>	0	7
Rail Transportation	1,413	55
Water Transportation <i>(Partially Suppressed)</i>	779	44
Truck Transportation	37,579	3,164
Pipeline Transportation	346	45
Support Activities to Transportation and Warehousing	5,667	417
U.S. Postal Service	14,911	880
Couriers and Messengers	12,318	381
Warehousing and Storage	16,979	418
<b>Total</b>	<b>89,992</b>	<b>5,411</b>
<b>Statewide (All Establishments)</b>	<b>2,812,888</b>	<b>208,913</b>

**65.8 tons**  
per Missourian  
in 2018



**1,927.6 tons**  
per business  
establishment



# Approach to Quantifying Total Economic Impact

Step 1. Analyze Direct Impacts – Direct employment and freight activity

Step 2. Estimate Enterprise Impacts

Step 3. Estimate Amount (Tonnage and Value) of Freight Moved

Step 4. Estimate Importance of Freight Intensive Industries

Step 5. Model Total Economic Impacts

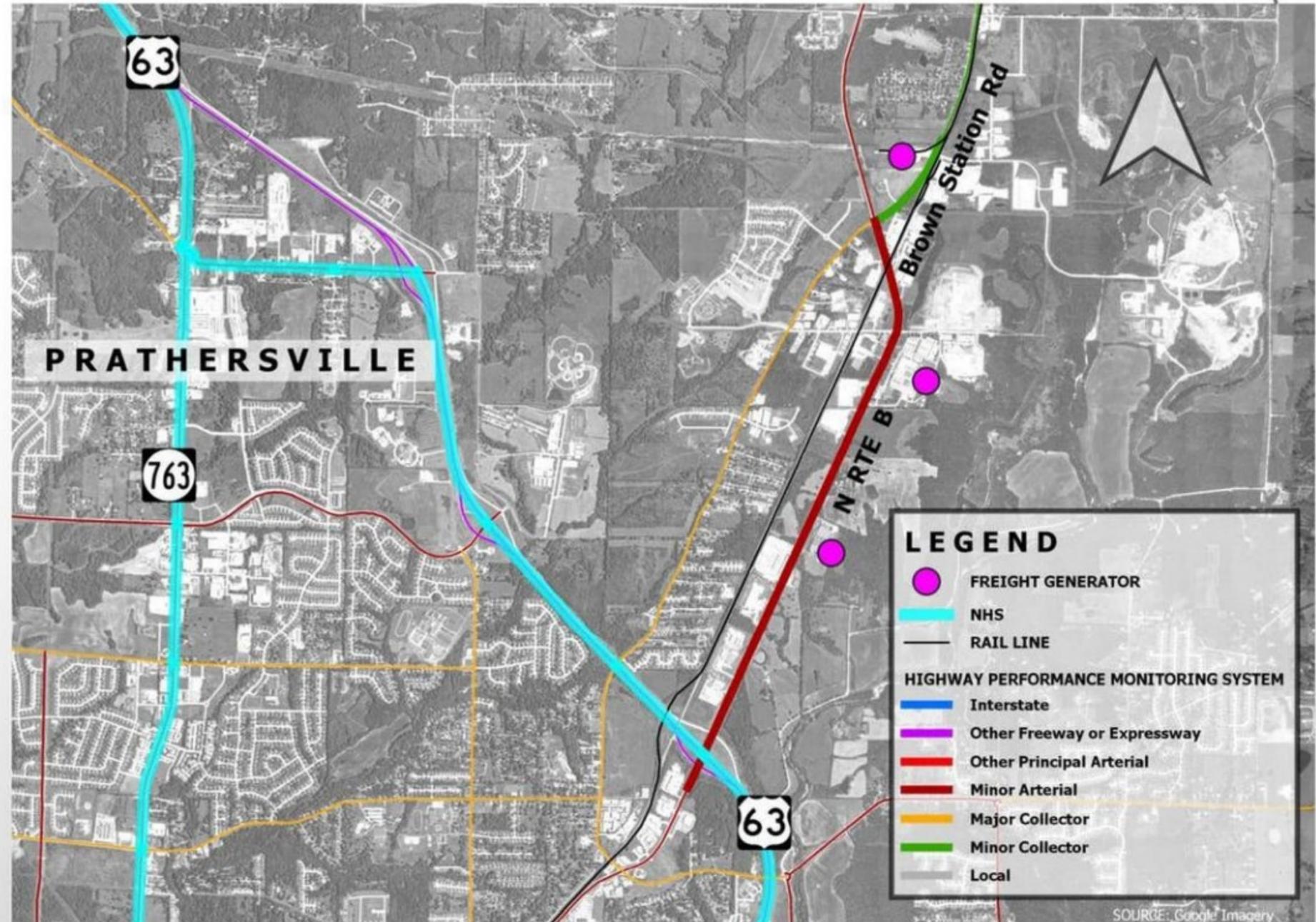
# Freight Generators - First/Last Mile Inventory

## ➤ 250 Freight Generators

- » IHS Freight Finder
  - Tons > 200,000
  - Employment > 400
  - Sales > \$300 million
- » SFP Inventory
  - Intermodal Ramps
  - Truck-to-Rail Transloads
  - Warehouses

## ➤ Highway Performance Monitoring System (HPMS)

- » Segments not on NHS



# Identifying Top Freight Generators

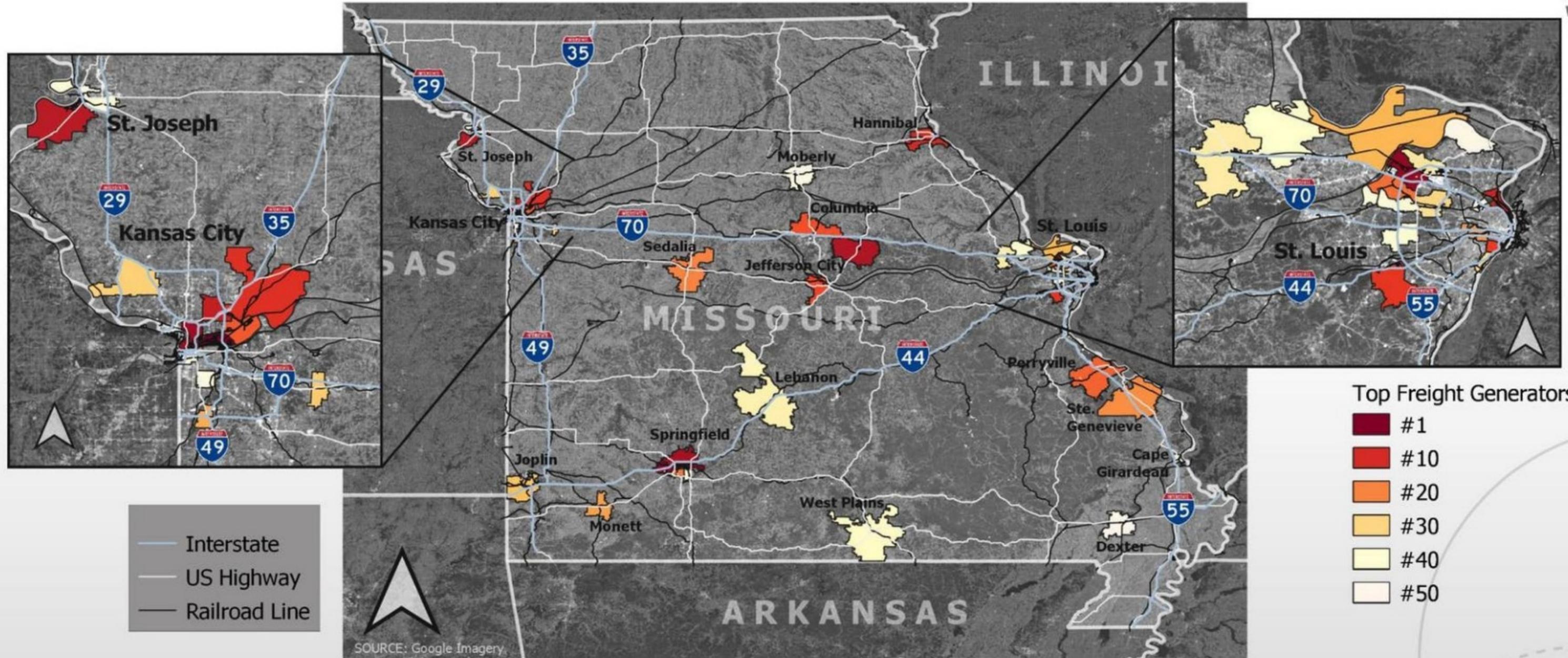
## ➤ IHS Freight Finder

- » Business location based
- » NAICS information
- » In and outbound tonnages
- » Aggregated to 5-digit zip code
- » Sample

## ➤ Bill of Lading (BOL)

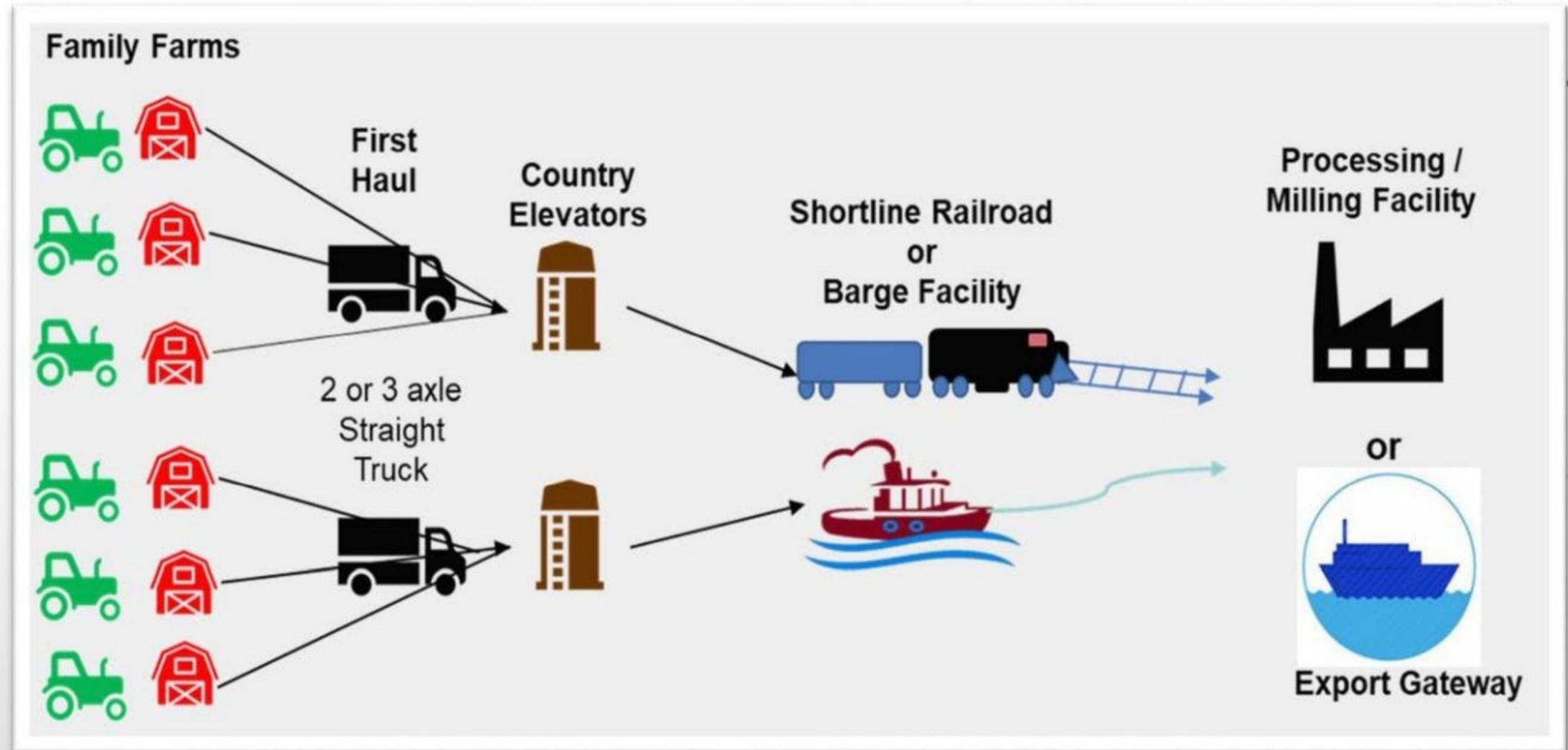
- » Origin-Destination based
- » NAICS information
- » Shipment weight in pounds
- » Aggregated to 5-digit zip code
- » Sample

# Top 50 Zip Codes



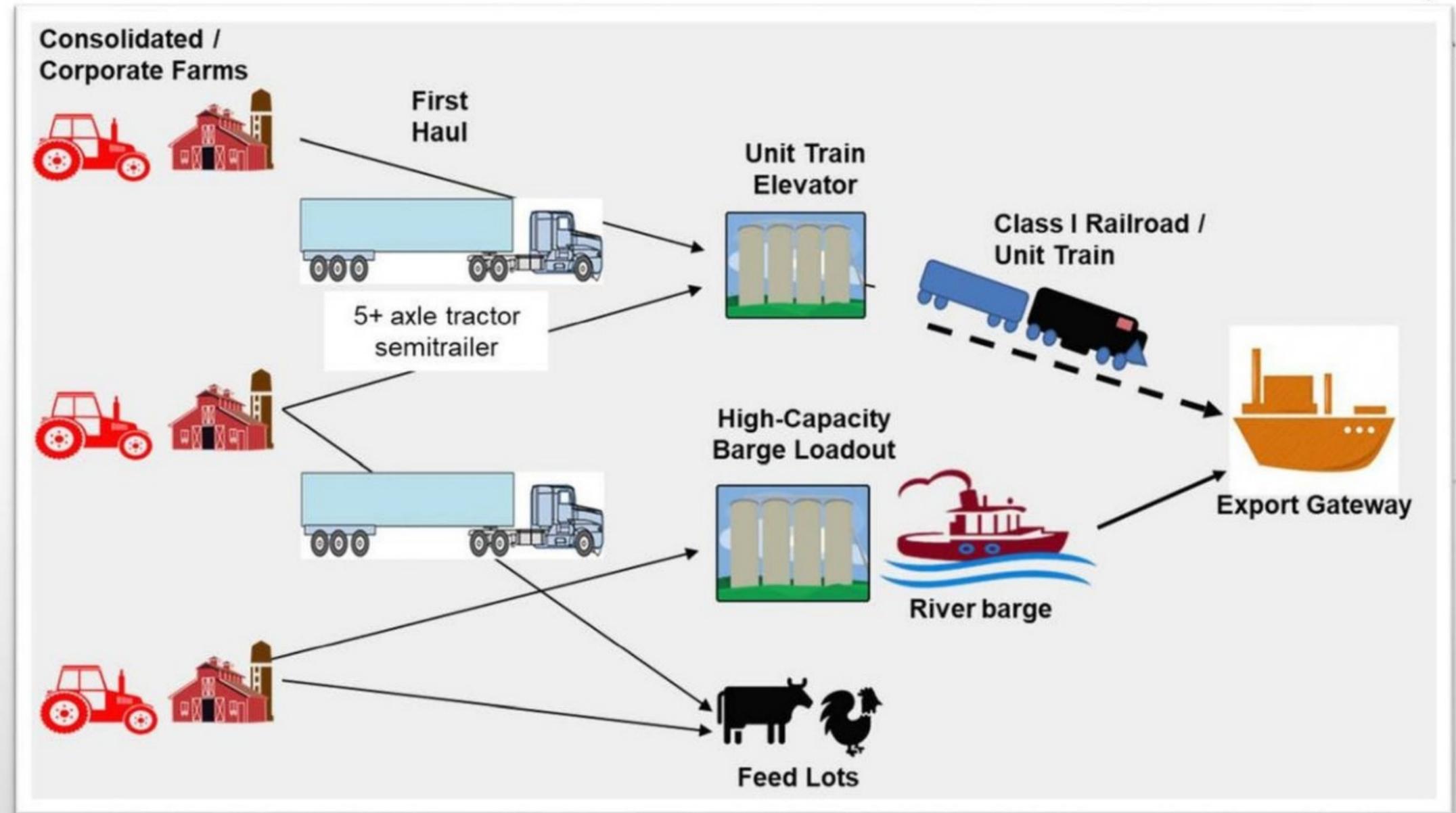
# Freight Facilities: Grain Elevators

Pre-Staggers Act,  
(1980) Grain Supply  
Chain

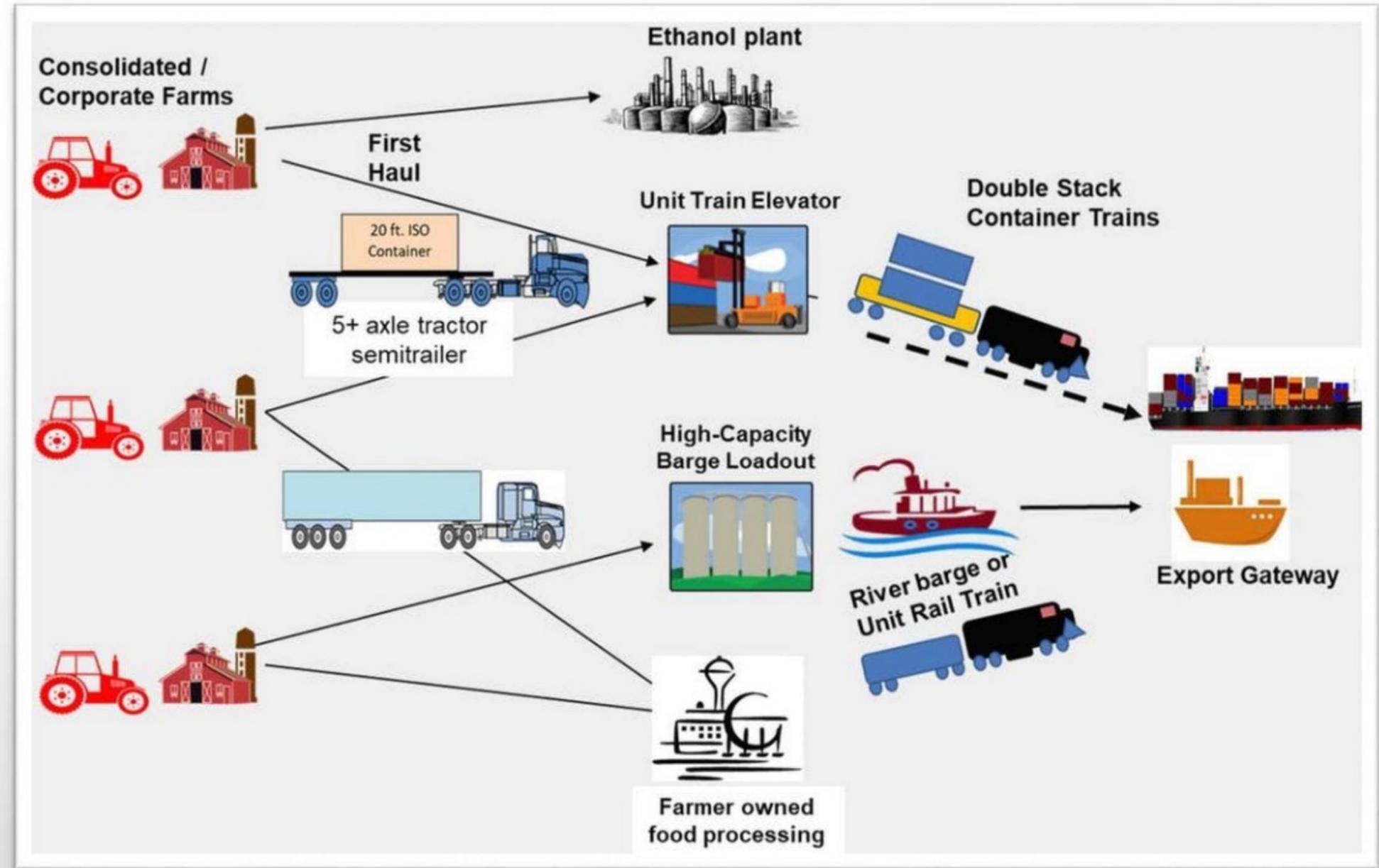


# Freight Facilities: Grain Elevators

Post-Staggers Act,  
Grain Supply  
Chain



# Freight Facilities: Grain Elevators



Emerging Grain Supply Chain

# What freight generating supply chains are important to include in the analysis?

Inbound Plant foods /fertilizer to the state is high volume business.

Ecommerce, auto manufacturing, agriculture, energy, retail, high-value items, pharm

Timber Industry

Agriculture w/soybean oil manufacturing, food manufacturing, expanding the STL region's aviation/automotive manufacturing, live animal shipments for air cargo.

energy

Minerals and rock - high weight impacts highway system and must be accounted for when buying transload equipment

Boats in SW Missouri

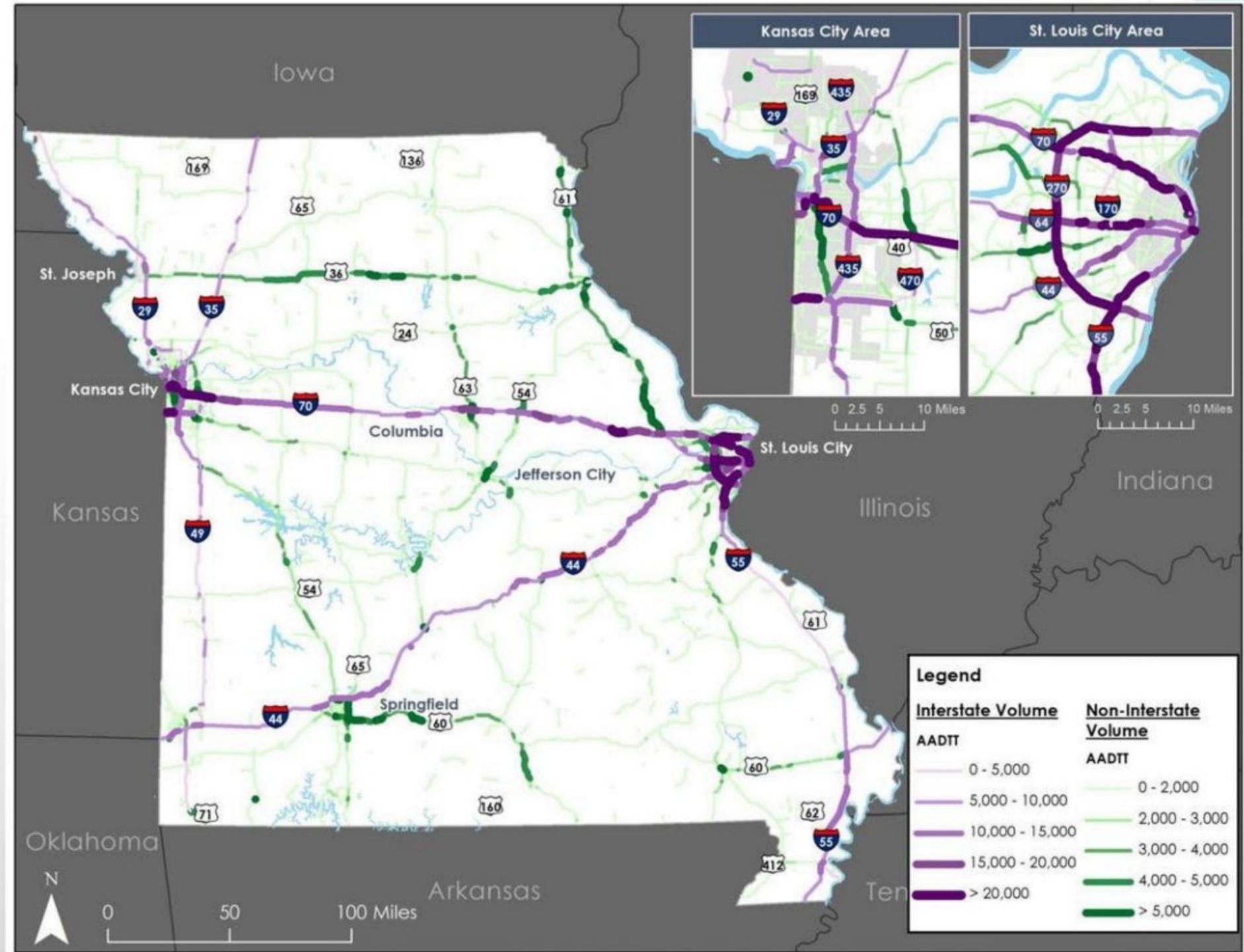
# Highway and Trucking



# Truck Traffic



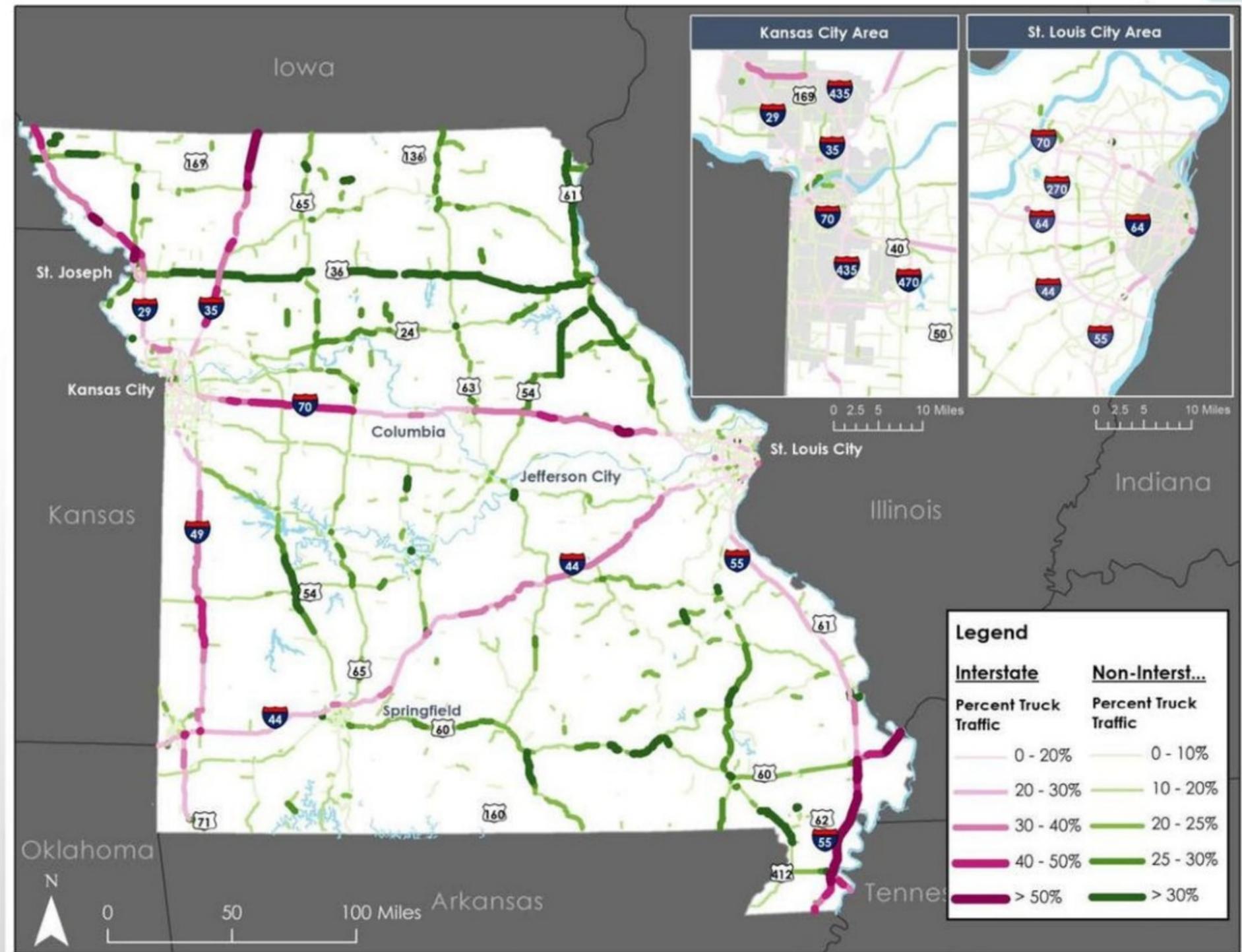
## Average Annual Daily Truck Traffic



Source: Highway Performance Monitoring System, 2018

# Truck Traffic As a Percent of Average Annual Daily Traffic

## Truck Traffic



# Highway Commodities

## Summary of Freight on Missouri Highways in 2018

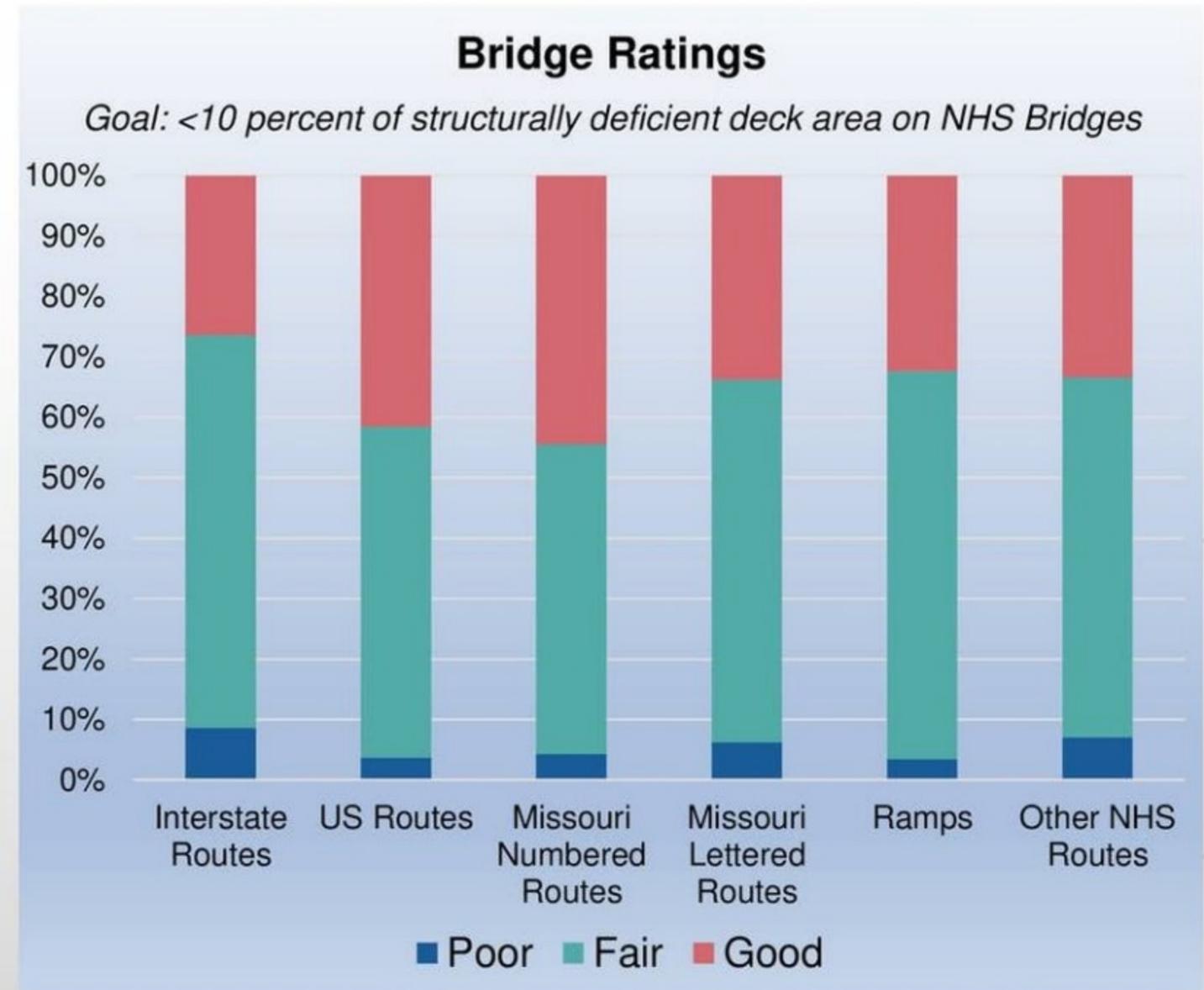
Direction	Tonnage (millions)	% of Total Tons	Value (billions (\$))	% of Total Value	Trucks (millions)	% of Total Trucks
Inbound	82.7	20%	81.1	16%	8.3	26%
Intrastate	62.4	15%	23.3	5%	6.9	21%
Outbound	113.0	28%	101.8	21%	8.9	27%
Through	148.5	37%	289.4	58%	8.4	26%
<b>Total</b>	<b>406.6</b>	<b>100%</b>	<b>495.6</b>	<b>100%</b>	<b>32.5</b>	<b>100%</b>

Source: IHS Transearch, 2018

- Top 10 Commodities (by Tonnage):
1. Broken Stone or Riprap
  2. Grain
  3. Warehouse & Distribution Center
  4. Oil Kernels, Nuts, or Seeds
  5. Gravel or Sand
  6. Misc. Waste or Scrap
  7. Petroleum Refining Products
  8. Misc. Field Crops
  9. Asphalt Paving Blocks or Mix
  10. Dairy Farm Products

# Highway – Condition

- In 2019, Missouri met the goals for pavement and bridge condition set in the 2017 Freight Plan



# Highway – Performance

➤ In 2018, Missouri's Truck Travel Time Reliability (TTTR) Index was **1.27**

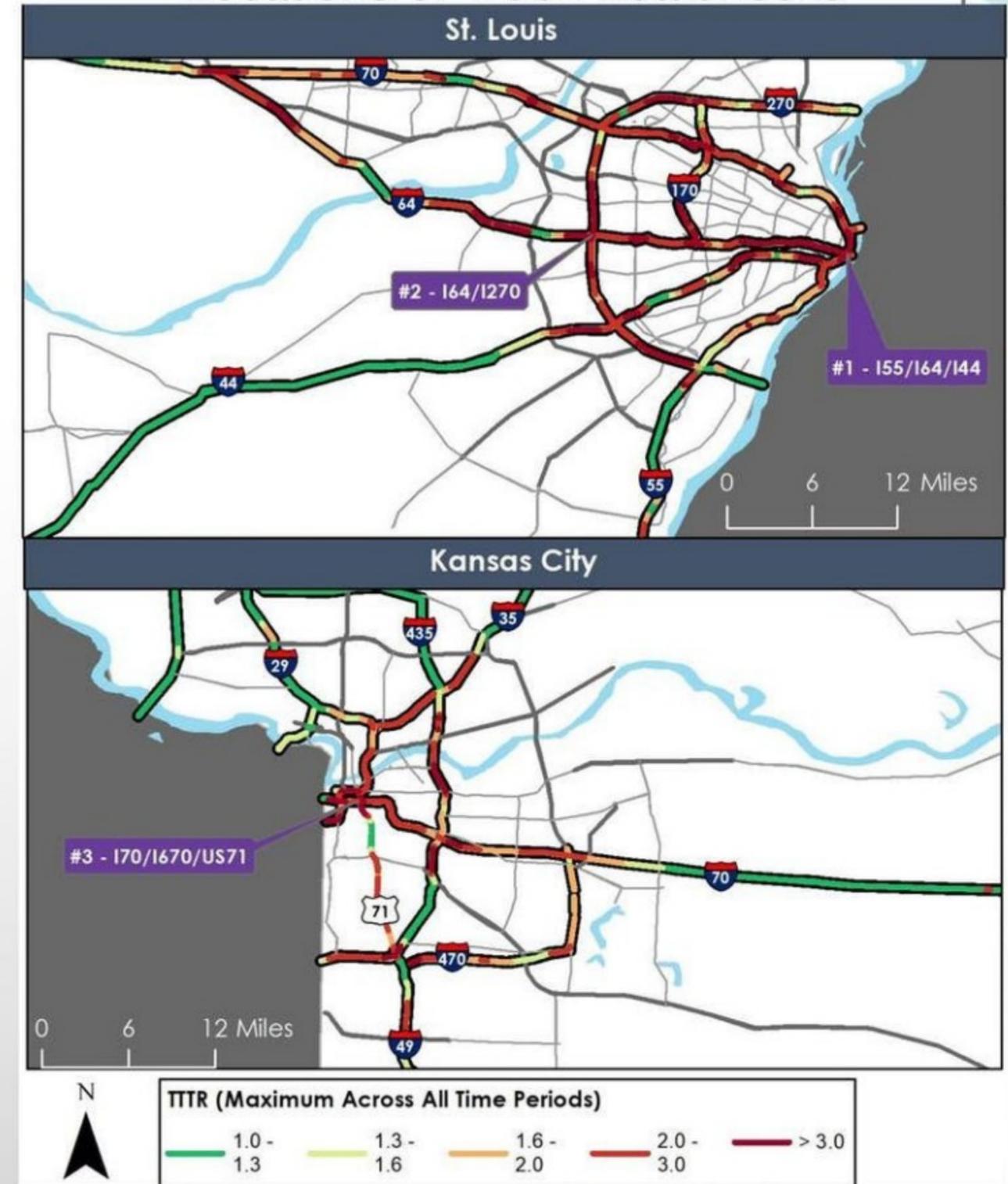
- » Achieved the goal of less than 1.3
- » Higher than 1.25 in 2017

Interstate Miles in Missouri Urban Areas > 1.3 TTTR



Source: National Performance Management Research Dataset, 2019

## Locations of Truck Bottlenecks



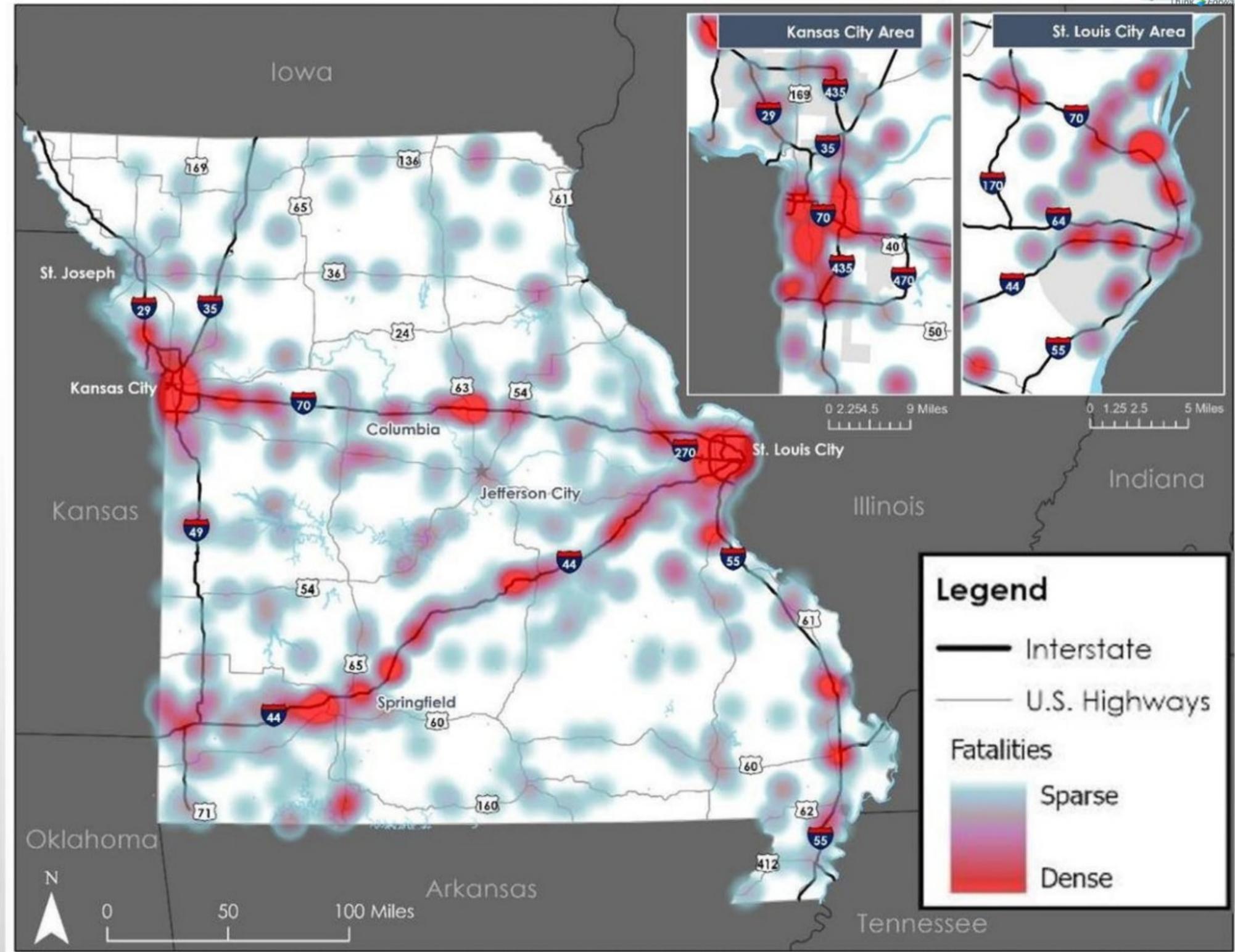
# Safety

- Between 2015 and 2019, there were 72,014 truck-involved crashes
- Trucks comprised 10.8% of all vehicle involved in crashes

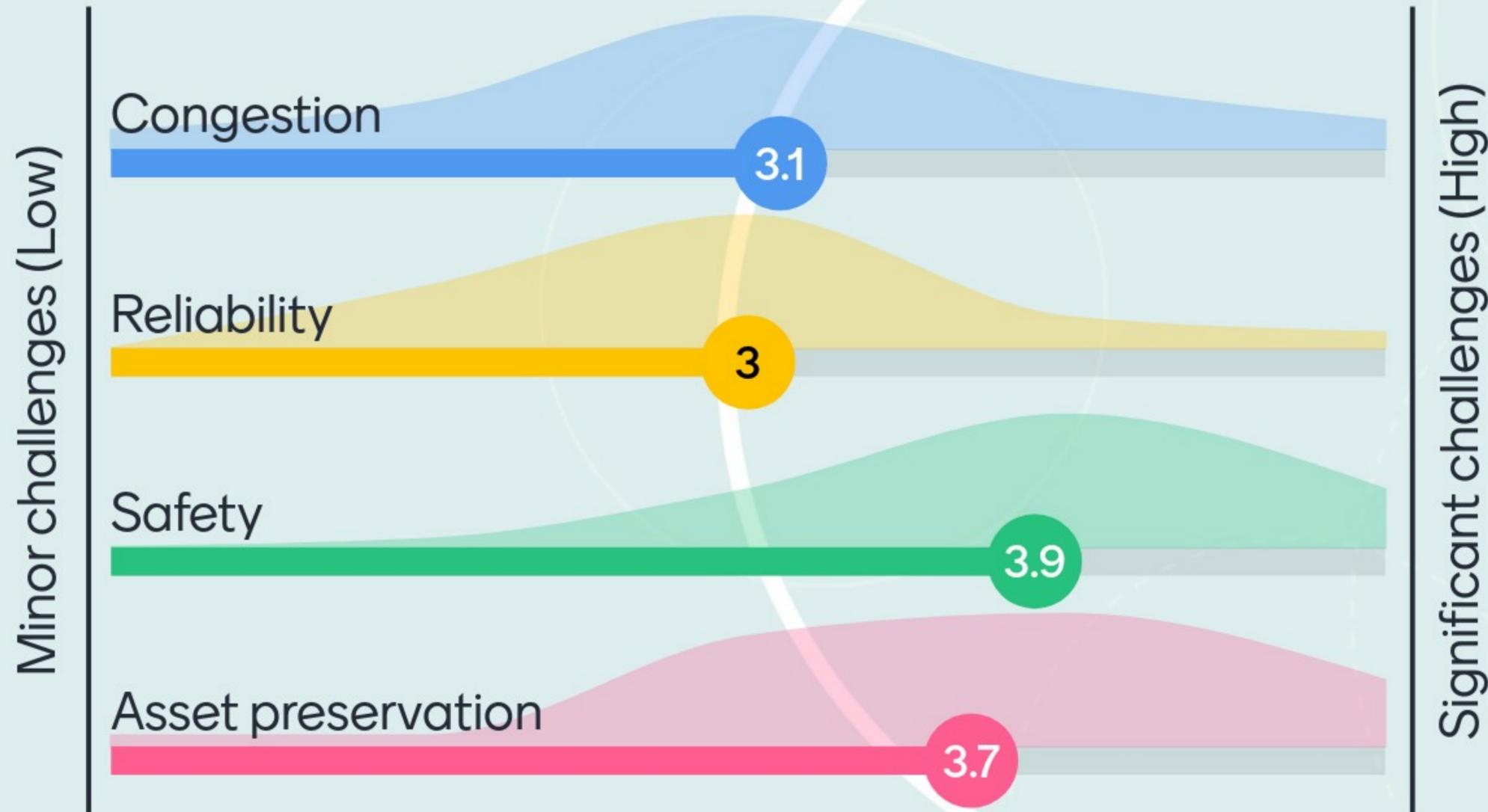


Source: MoDOT

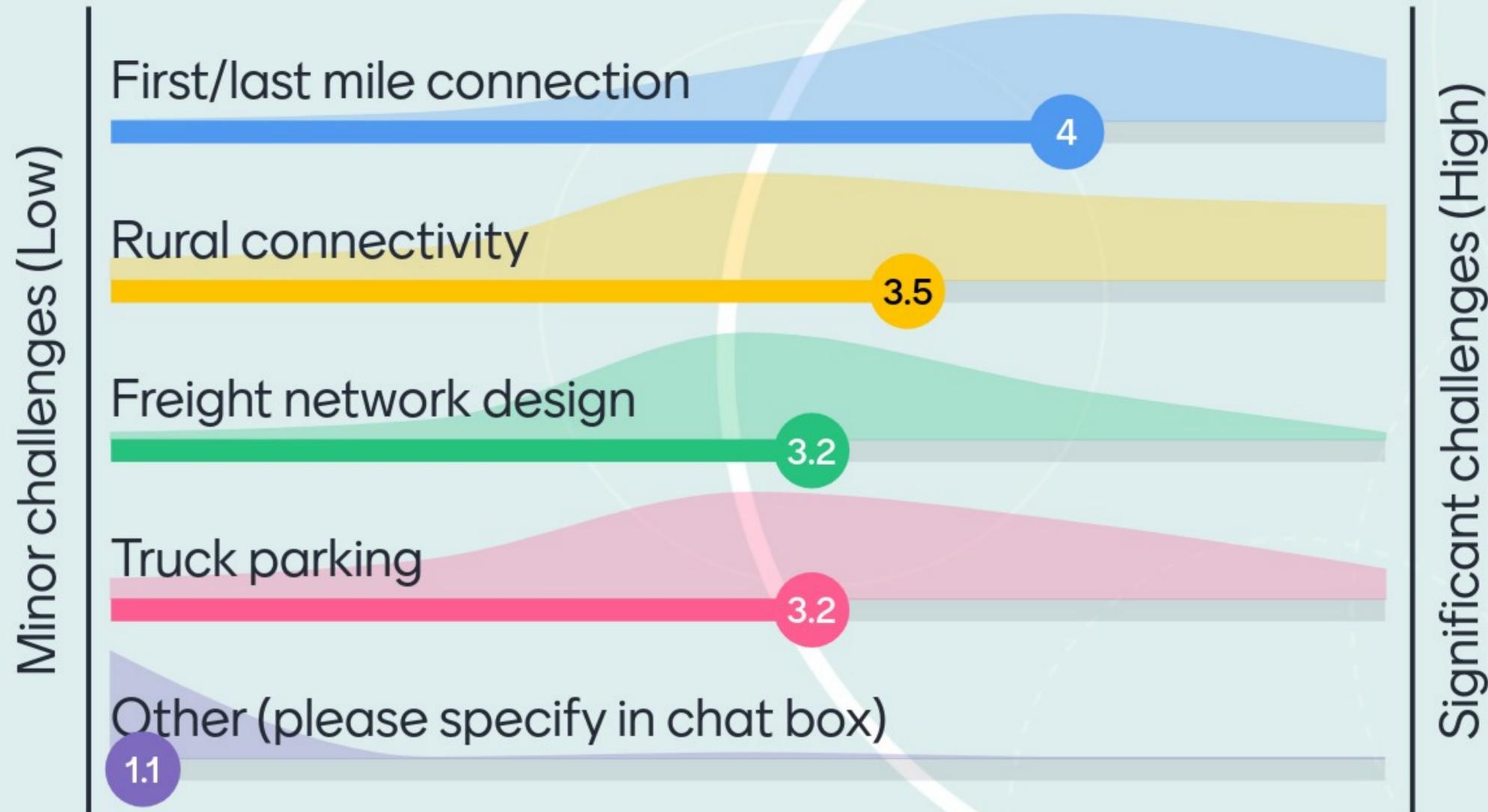
## Statewide Truck Fatal Crash Heatmap



# Please rate the extent if the following freight highway challenges:

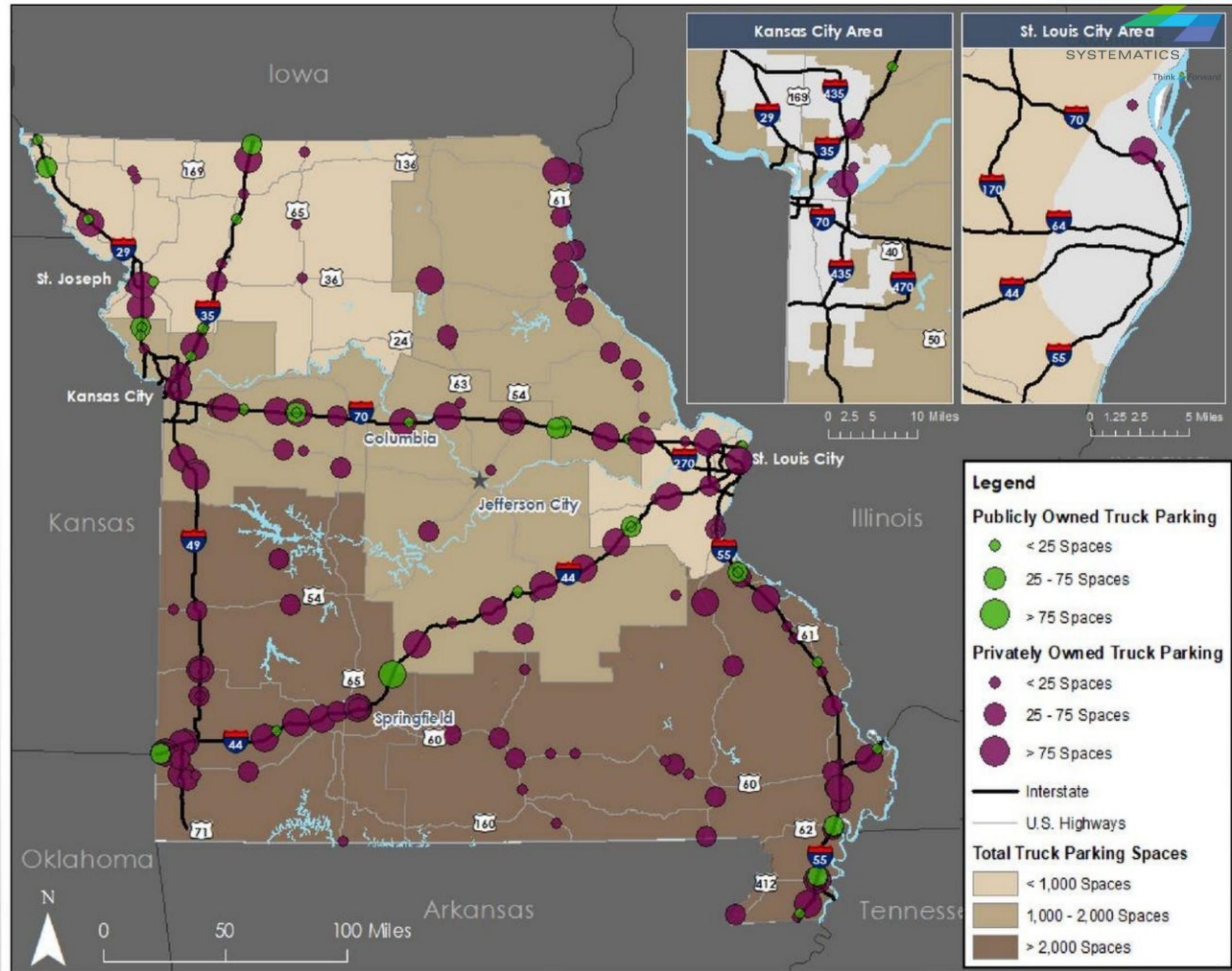


# Please rate the extent if the following freight highway challenges:



# Truck Parking

# Truck Parking Inventory



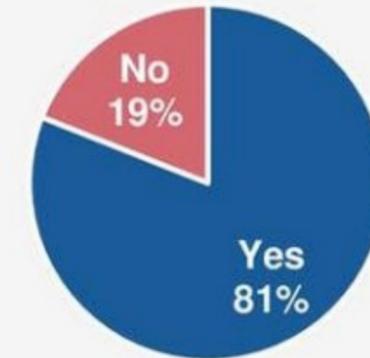
# Truck Parking Inventory

- There are 47 publicly owned locations with 1,147 spaces (11%)

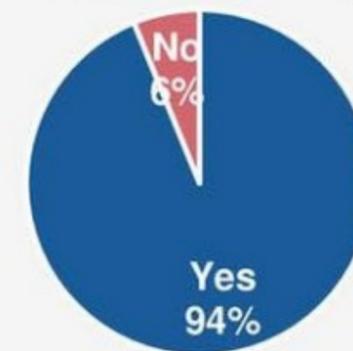
District	Number of Truck Parking Facilities	Number of Truck Parking Spaces	Percent Truck Parking Inventory
Central	22	1,333	12.6%
Kansas City	28	1,690	15.9%
Northeast	22	1,159	10.9%
Northwest	32	944	8.9%
Southeast	48	2,227	21.0%
Southwest	36	2,436	23.0%
St. Louis	19	817	7.7%
<b>Grand Total</b>	<b>207</b>	<b>10,606</b>	<b>100.0%</b>

## Public Amenities

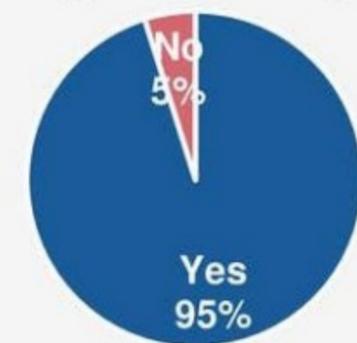
Restrooms



Striped Parking

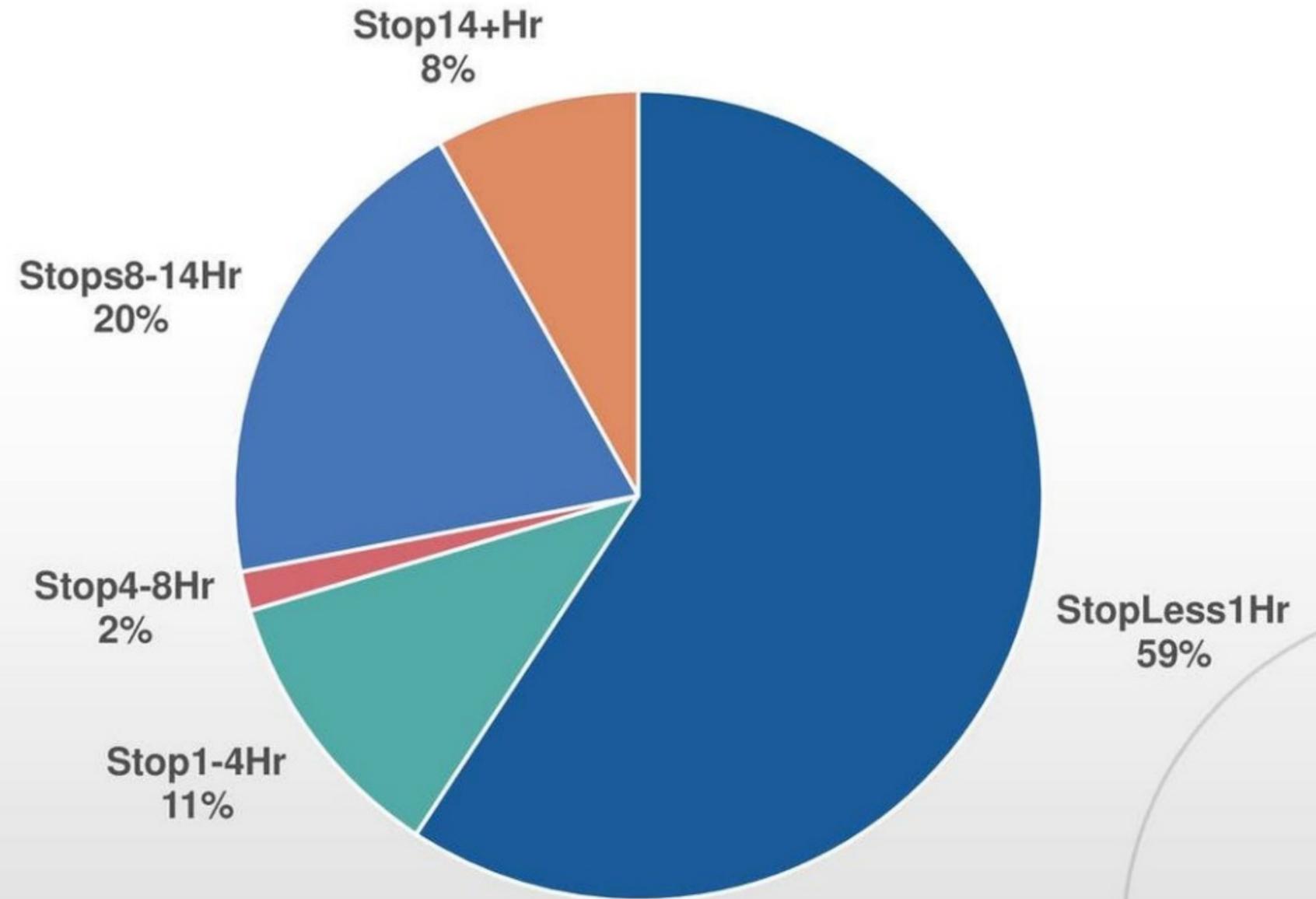


Angled Parking



# Truck Parking Demand - Preliminary

- Types of Truck parking
  - » Overnight or Long stops
  - » Staging
  - » 30-minute regulated break
  - » Emergency
  - » Off-duty time
  - » Misc.



# Truck Parking Demand - Preliminary

- Highest total demand at designated sites is from 12-1 AM. The most common peak hour is between 2-3 AM
  - » Approximate gap of 1,560 spaces at peak hour
  - » 26/46 public locations at/over capacity at peak hour
  - » 61/97 private locations at/over capacity at peak hour



# Truck Parking Demand- Preliminary

- Wright City (I-70) and Doolittle (I-44) have largest deficit of spaces (public)
- Mineola (I-70) and Marston (I-55) have largest surplus (public)
- Parking on Interstate Right of Way
  - » I-70 in Callaway County – Highest number of stops on ROW (~60/day)
  - » I-44 in Franklin and I-44 in Laclede are next highest (~55/day)
  - » Majority of stops (64%) are less than an hour



# What and where are truck parking challenges?

Real-time information on parking space availability

Parking on shoulders at interchange ramps=> Maintenance and Safety. Also, confusion of drivers using GPS and getting on low volume outer roads

Overnight parking along I-70 seems to be overflowing. I would assume this is the same along I-44.

Min and Max usage volume (i.e. Holiday Parking)

poor utilization because parking location is not near the parking need

Passenger service to SW Missouri

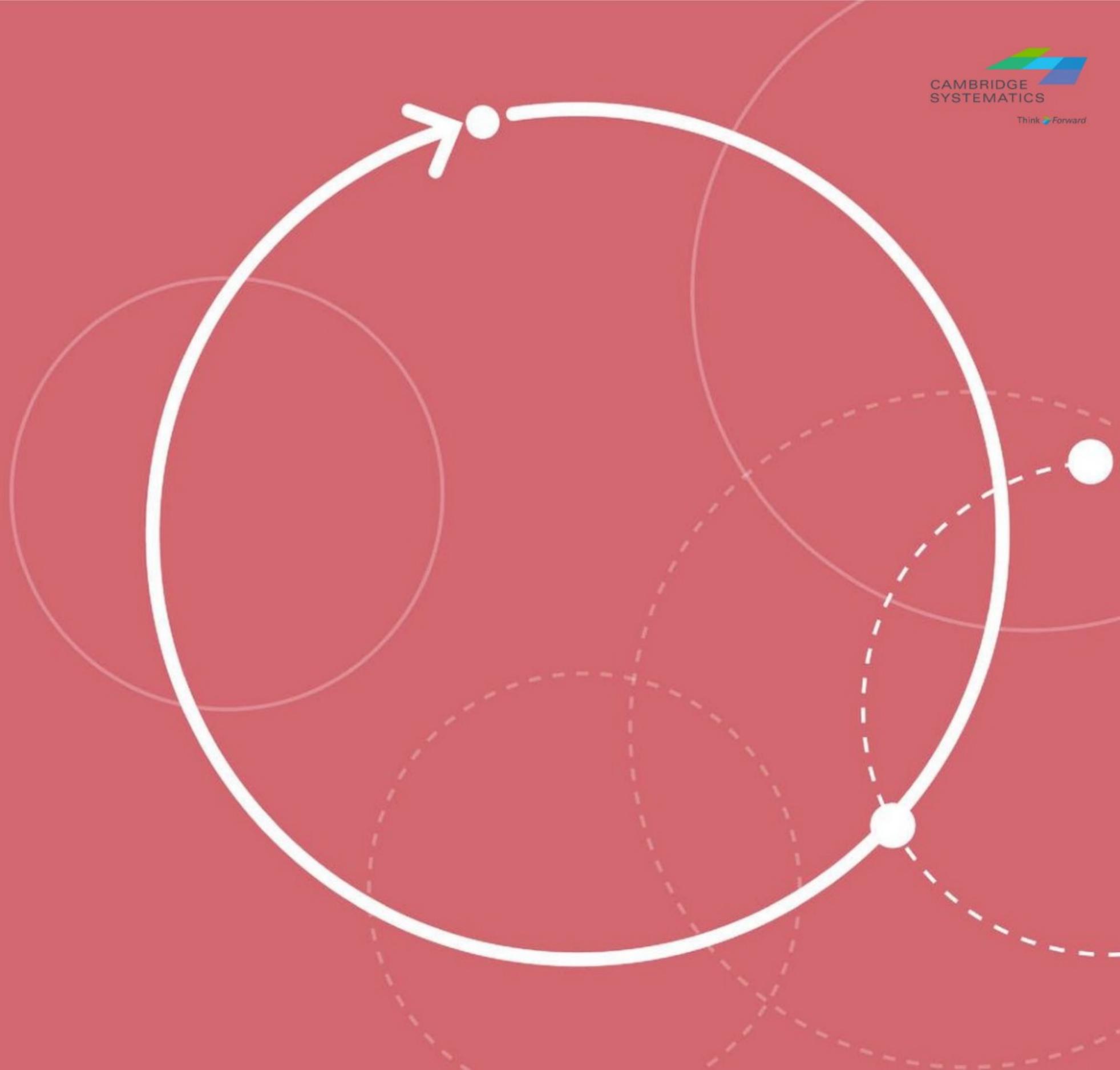
North St. Louis and Hazelwood along the I-70 corridor.

Quantity and location - are there enough spots within an hour or two of high volume locations?

# Truck Parking Gap Analysis – Next Steps

- Compare locations with deficit to areas with parking on ROW
- Conduct analysis of crashes involving stopped/parked trucks
- Administer stakeholder survey and conduct trucking roundtables
- Develop technical report

# Rail



# Freight Rail: Overview

- Six Class I Railroads
- Six Local Railroads
- Ten Switching & Terminal Railroads
- Three Excursion Railroads
- Over 400 million tons of freight in 2018 (to, from, within and through)
  - » Coal: 32.7%
  - » FAK\* Shipments: 9.5%
- \$100 billion value of freight in Missouri (2018)
  - » FAK\* Shipments: 36.4%
  - » Motor Vehicles: 21.1%

## Missouri Freight Rankings compared to rest of the United States (2017)

AAR Metric	US Rank
Rail Carloads Carried	3 <sup>rd</sup>
Rail Tons Carried	5 <sup>th</sup>
Freight Rail Employment	5 <sup>th</sup>
Freight Rail Wages	5 <sup>th</sup>
Total Rail Miles	9 <sup>th</sup>
Terminated Rail Tons	10 <sup>th</sup>
Terminated Rail Carloads	11 <sup>th</sup>



\* FAK: Freight of all Kinds

# Freight Rail Movements (2018)

## ➤ Tonnage by Rail

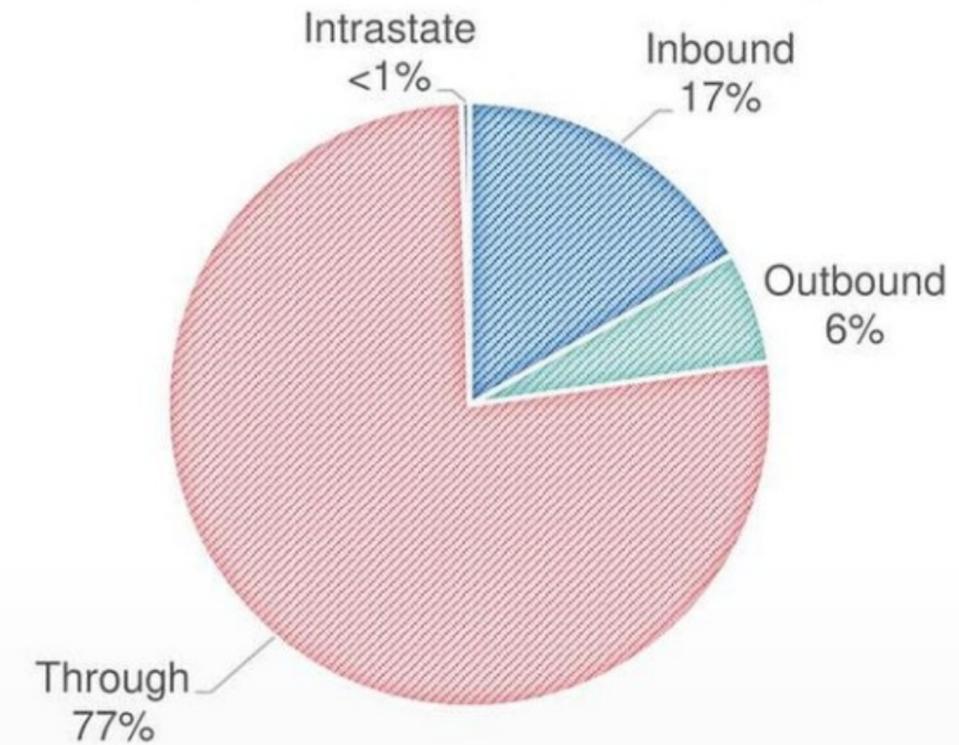
- » Total: 414 million tons
- » 318.11 million tons (through)
- » Coal:
  - 46.94 million tons (inbound)
  - 88.50 million tons (through)

## ➤ Value by Rail

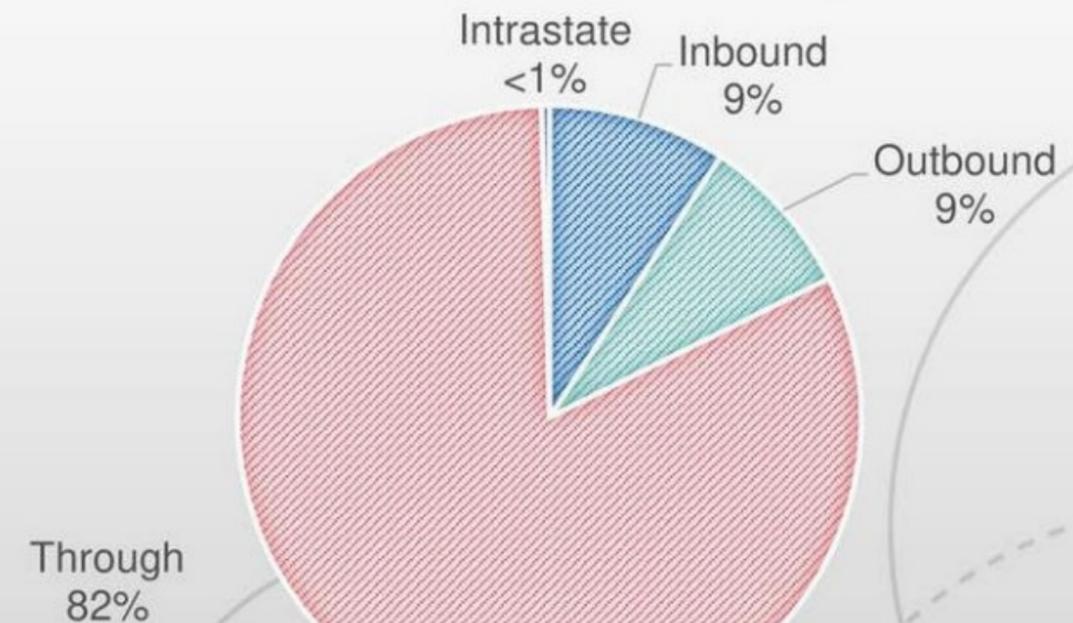
- » Total: \$552.32 billion
- » \$452.48 billion (through)
- » Motor Vehicles:
  - \$14.06 billion (inbound)
  - \$22.89 billion (outbound)



## TONNAGE BY DIRECTION, RAIL



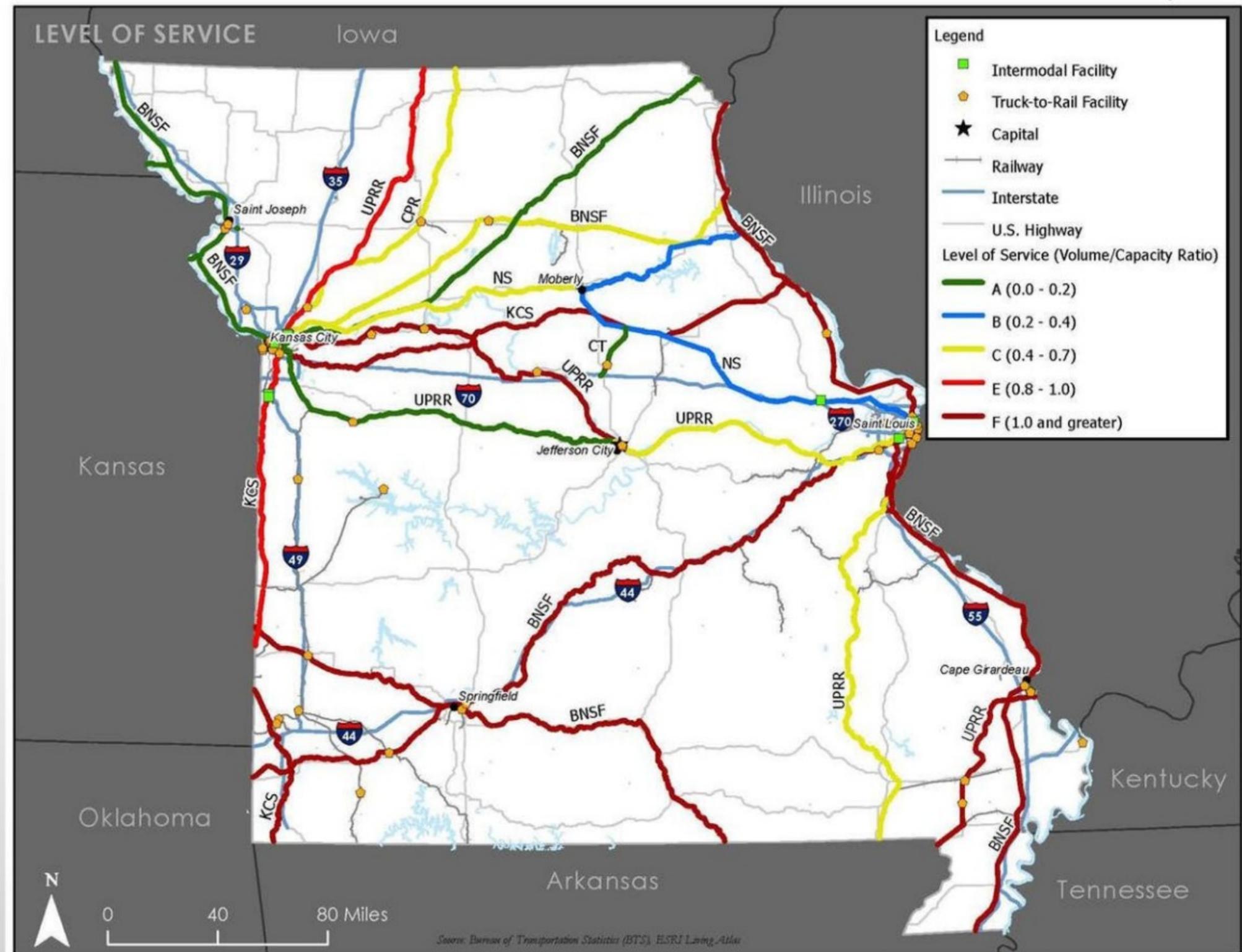
## VALUE BY DIRECTION, RAIL



# Freight Rail: Service, Constraints and Bottlenecks

## Stakeholder and Analysis Findings:

- » Capacity constraints on Tulsa-Springfield-Memphis route
- » Coal volumes down 33% since 2012
- » PSR operation changes have been on-going



# Passenger Rail

- 62% of Missourians live within 25 mi. of an Amtrak station, 79% live within 50 mi. (2019)
- 2018 Boardings & Alightings (*Southwest Chief*, *Texas Eagle*, and *Missouri River Runner*)
  - » Total: 724,488
  - » Highest: St. Louis, 362,172
  - » Lowest: Arcadia Valley, 1,018
- FY 2018 On-time Performance:
  - » *River Runner*: 82.4%
  - » *Southwest Chief*: 47.0%
  - » *Texas Eagle*: 39.7%

# Rail Safety: Train Incidents and Fatalities

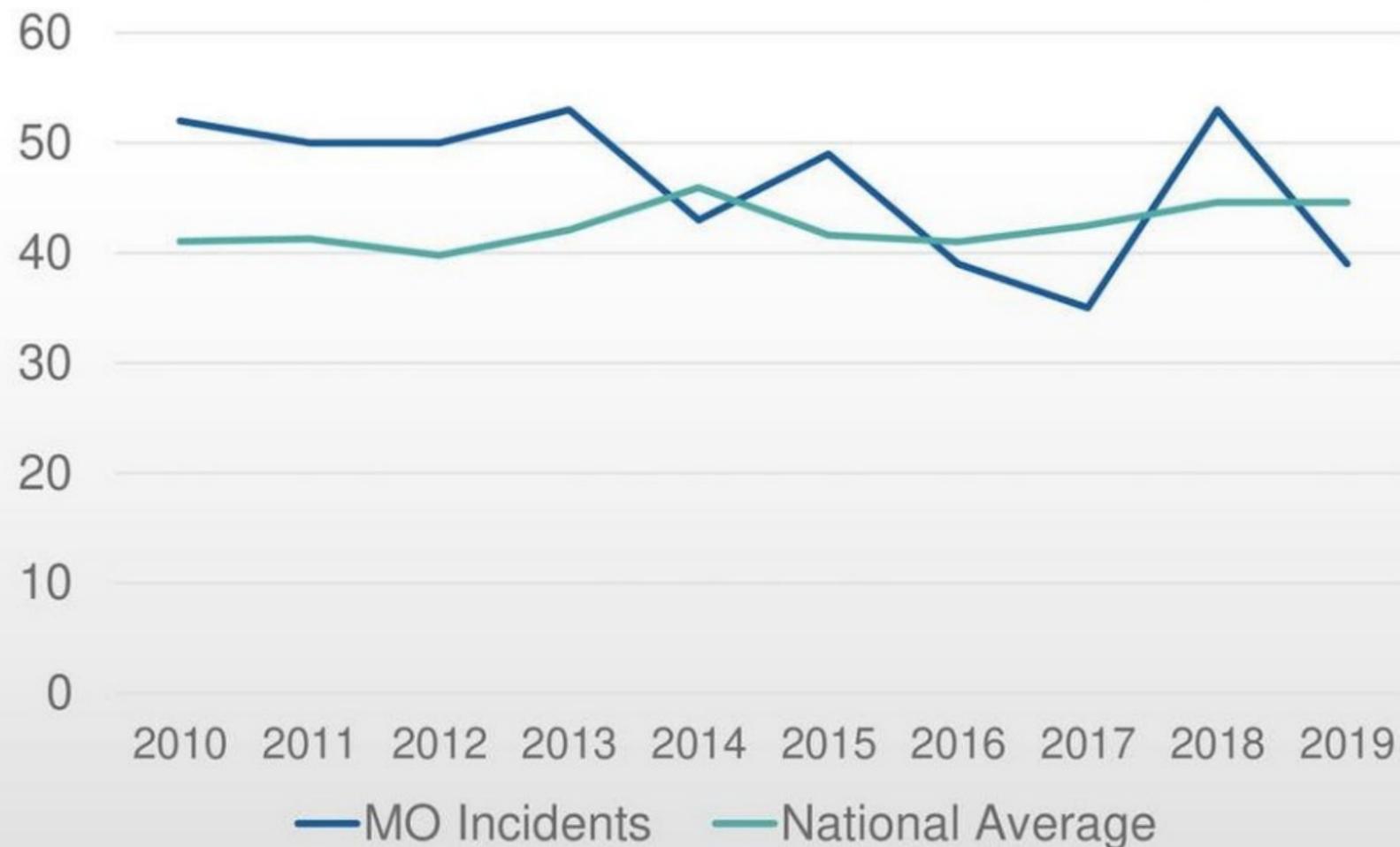
## MISSOURI: ALL TRAIN INCIDENTS & FATALITIES (2010-2019)



- Total incidents (2010-2019): **2,054**
- Total fatalities (2010-2019): **144**
- Rate of fatalities per total train incidents (2010-2018): **6.4%**
- Rate of fatalities per total train incidents (2019): **8.0%**

# Rail Safety: At-Grade Crossings

Roadway-Rail Crossing Incidents, MO v. National State Average (2010-2019)



- Total incidents (2010-2019): **463**
- Total fatalities (2010-2019): **70**
- Rate of fatalities per at-grade train crossing incidents (2010-2018): **15.3%**
- Rate of fatalities per at-grade train crossing incidents (2019): **12.8%**

# Rail: Key Findings

## ➤ Freight

- » Missouri is a key national freight network component
  - MO primarily a “through” freight state
  - 74% of total volume originates and terminates outside of MO
- » Coal volume decline as energy generation is switching over to natural gas
- » Low concern with LOS from each Class I’s interviewed

## ➤ Passenger

- » Wide distribution of stations/services with 79% living within 50 mi of a station
- » River Runner Intercity service OTP > 80%

## ➤ Safety

- » Consistent with national averages
- » Identify strategies to further increase safety of rail and crossings

# What are freight rail challenges and needs?

Slow interchange flooding causing diversion

Support existing and new Missouri businesses to build rail infrastructure to connect to shortline railroads.

rail siding program, rail project funding program for urban and rural areas

Funding for abandoned rail spur/lead tracks that support manufacturing growth. At grade crossing safety and at grade crossing truck delays negatively impacting freight costs.

Supporting existing and new Missouri businesses to build rail infrastructure to connect to Class 1 railroads. This will make Missouri more than a "through" state.

Grain Shuttle loading facilities are somewhat dependent upon on grain grown with good weather.

# What are passenger rail challenges and needs?

Reliability and frequency of trains

Ease of use Facilities (Rental car & transit)

Lack of passenger rail service to Southwest Missouri

More interconnection with local public transit

Coordination with FRA Midwest Passenger Rail Plan?

Extension of service to include Springfield

on time %

Covid impacting all travel

# Air



# Top Air Commodities in Missouri, (Exported)

Commodity by Tonnage	Tons (Thousands)	Percent of all Commodities
Small Packaged Freight Shipments	43.40	43%
Electrical Equipment	9.82	10%
Printed Matter	7.25	7%
Transportation Equipment	5.97	6%
Instrum, Phot Equipment, Optical EQ	4.60	5%
Commodity by Value	Value (Millions)	Percent of all Commodities
Misc. Manufacturing Products	\$3,555	32%
Electrical Equipment	\$2,277	21%
Transport Equipment	\$1,814	17%
Instrum, Phot Equipment, Optical EQ	\$1,006	9%
Drugs	\$669	6%

# Top Air Commodities in Missouri, (Imported)

Commodity by Tonnage	Tons (Thousands)	Percent of all Commodities
Small Packaged Freight Shipments	37.70	38%
Transportation Equipment	10.11	10%
Meat or Poultry, Fresh or Chilled	6.07	6%
Machinery	5.75	6%
Instrum, Photo Equipment, Optical EQ	5.71	6%
Commodity by Value	Value (Millions)	Percent of all Commodities
Transportation Equipment	\$3,071	29%
Misc. Manufacturing Products	\$2,526	24%
Instrum, Photo Equipment, Optical EQ	\$1,249	12%
Electrical Equipment	\$1,220	11%
Machinery	\$731	7%

# Statewide Cargo Origins & Destinations

**TABLE 3.7 STATEWIDE TOP 10 FREIGHT + MAIL DESTINATION AIRPORTS IN 2019**

Destination	Freight	Mail	Total (Tons)
Memphis, TN	33,183	-	33,183
Louisville, KY	18,706	-	18,706
Indianapolis, IN	9,381	-	9,381
Rockford, IL	7,500	-	7,500
Dallas/Fort Worth, TX	2,482	83	2,564
Cincinnati, OH	2,081	-	2,081
Cedar Rapids/Iowa City, IA	1,738	-	1,738
Charlotte, NC	1,127	355	1,482
Ontario, CA	1,458	-	1,458
Omaha, NE	1,411	-	1,411

Source: BTS T-100 Market, 2019

**TABLE 3.8 STATEWIDE TOP 10 FREIGHT + MAIL ORIGIN AIRPORTS IN 2019**

Origin	Freight	Mail	Total (Tons)
Memphis, TN	31,459	-	31,459
Louisville, KY	20,780	40	20,820
Indianapolis, IN	8,087	-	8,087
Rockford, IL	6,300	-	6,300
Cincinnati, OH	3,876	-	3,876
Dallas/Fort Worth, TX	2,638	197	2,835
Cedar Rapids/Iowa City, IA	1,954	-	1,954
Los Angeles, CA	906	536	1,442
Houston, TX	1,210	31	1,241
Boston, MA	1,204	-	1,204

Source: BTS T-100 Market, 2019

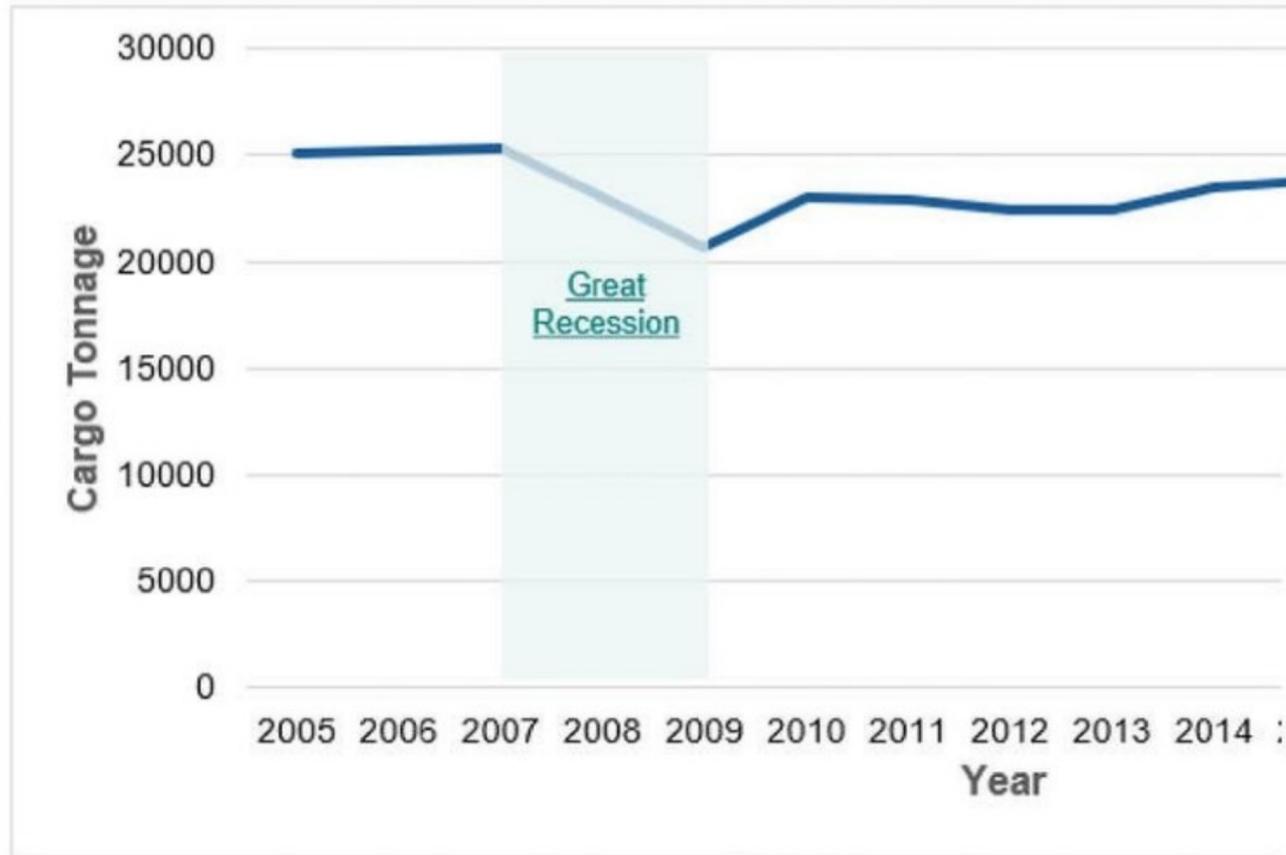
# Missouri Air Cargo Trends and 2045 Outlook

	2018	2030	2045	Projected Annual Growth 2018 - 2030	Projected Annual Growth 2030 - 2045
<b>Import</b>					
Tons (Thousands)	98.02	124.56	179.35	2.3%	2.9%
Value (Millions)	\$10,726	\$13,929	\$20,043	2.5%	2.9%
<b>Export</b>					
Tons (Thousands)	101.87	120.76	161.46	1.5%	2.2%
Value (Millions)	\$10,992	\$14,270	\$21,253	2.5%	3.3%
<b>Intra</b>					
Tons (Thousands)	1.90	2.67	3.82	3.4%	2.8%
Value (Millions)	\$210	\$292	\$426	3.3%	3.1%
<b>Overall</b>					
Tons (Thousands)	201.79	248.00	344.63	2.9%	2.6%
Value (Millions)	\$21,927	\$28,492	\$41,722	2.5%	3.1%



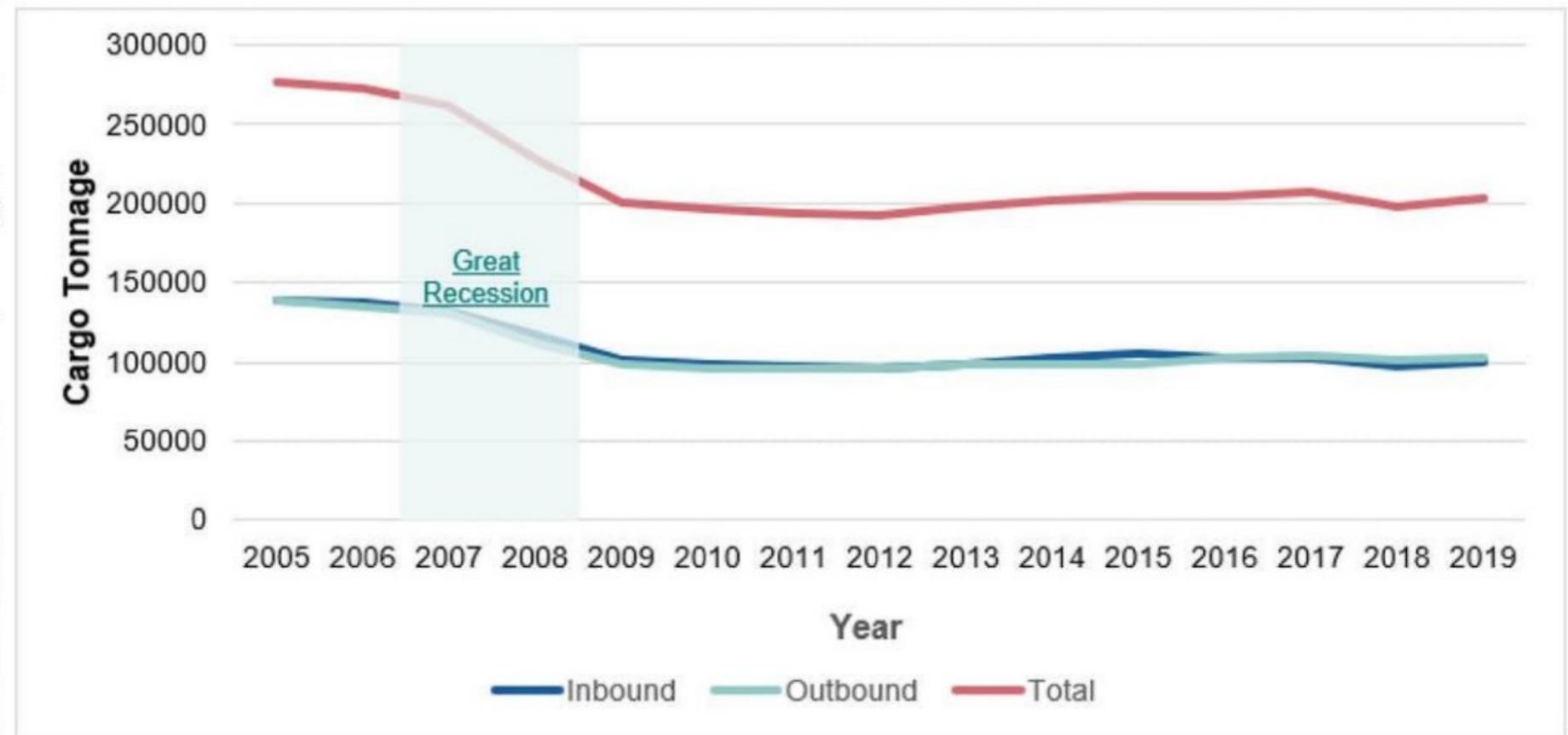
# Trends affecting Missouri Air Cargo

FIGURE 3.11 US CARGO REVENUE TONS ENPLANED, IN THOUSAND (2005 - 2019)



Source: BTS T-100 Market

FIGURE 3.10 MISSOURI INBOUND AND OUTBOUND CARGO, IN TONS (2005 - 2019)



Source: BTS T-100 Market

# Initial Stakeholder Feedback

## ➤ Kansas City

- » Supplying electrical power
- » Direct access to I-435

## ➤ St. Louis

- » 2021 cargo development agreement
- » Airport rail access
- » I-70 corridor study

## ➤ Springfield

- » MoDOT freight enhancement program for improvements for truck travel
- » Specialized loading conditions

# What are air cargo challenges and needs?

Value of STL vs ORD

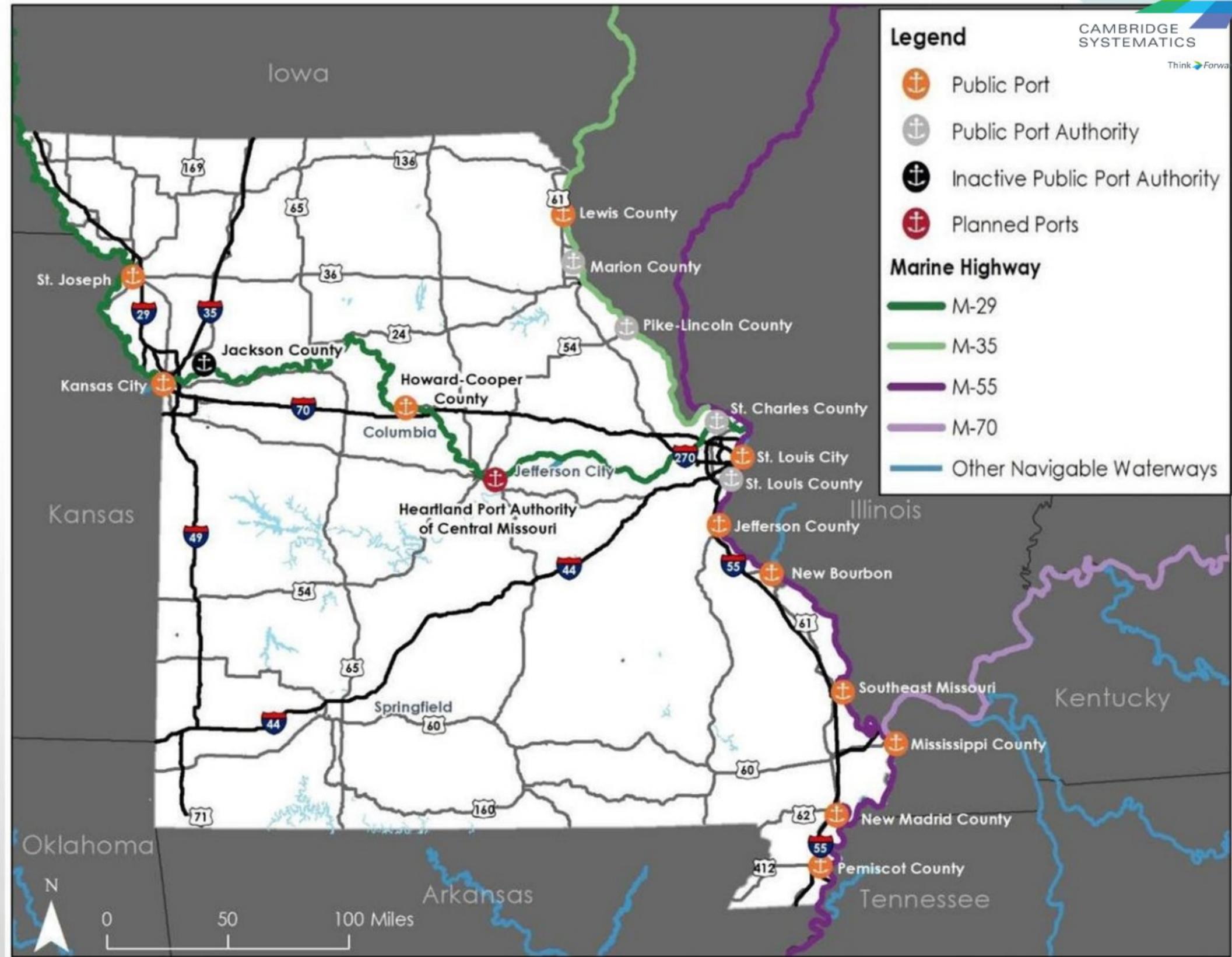
more cargo with additional direct flights

More assistance to airports for specialized air cargo equipment

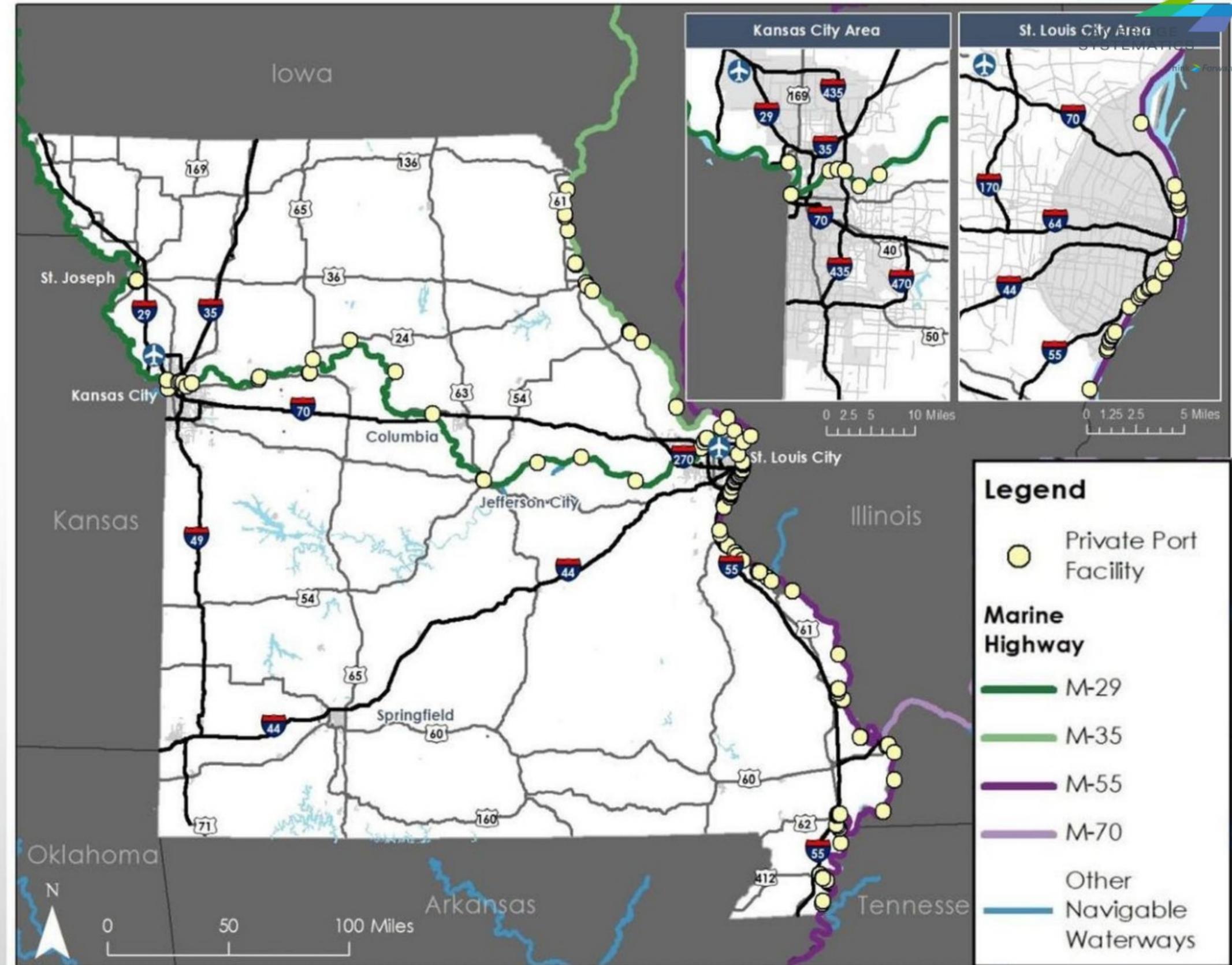
# Waterways



# Ports & Waterways Inventory – Missouri Public Ports



# Ports & Waterways Inventory – Private Port Facilities



Source: MoDOT



# Ports & Waterways – Volumes & Users

Port Support Activity	2018 Volumes <i>(Tons, All Directions)</i>	2018 Top 5 Commodities
Metropolitan St. Louis	37,426,710	Corn, Soybeans, Cement & Concrete, Coal & Lignite, Crude Petroleum
Kansas City	1,374,284	Sand & Gravel, Cement & Concrete, Asphalt, Tar & Pitch, Soybeans, Other Fertilizer
Southeast MO (SEMO)	1,054,128	Sand & Gravel, Wood Chips, Soybeans, Corn, Wheat
New Madrid County	2,259,548	Nitrogenous Fertilizer, Soybeans, Corn, Rice, Aluminum Ore
Pemiscot County	519,956	Soybeans, Distillate Fuel Oil, Nitrogenous Fertilizer, Corn, Potassic Fertilizer

- Port-Dependent Industries:
  - » Chemical Manufacturing
  - » Fabricated metal product manufacturing
  - » Crop production
  - » Mining (except oil & gas)
  - » Nonmetallic mineral product manufacturing
  - » Transportation equipment manufacturing
  - » Primary metal manufacturing
  
- Top Port-Benefitting Businesses:
  - » Construction of Buildings
  - » Heavy and Civil Engineering Construction
  - » Plastics and Rubber Products Manufacturing
  - » Machinery Manufacturing
  - » Computer and Electronic Product Manufacturing

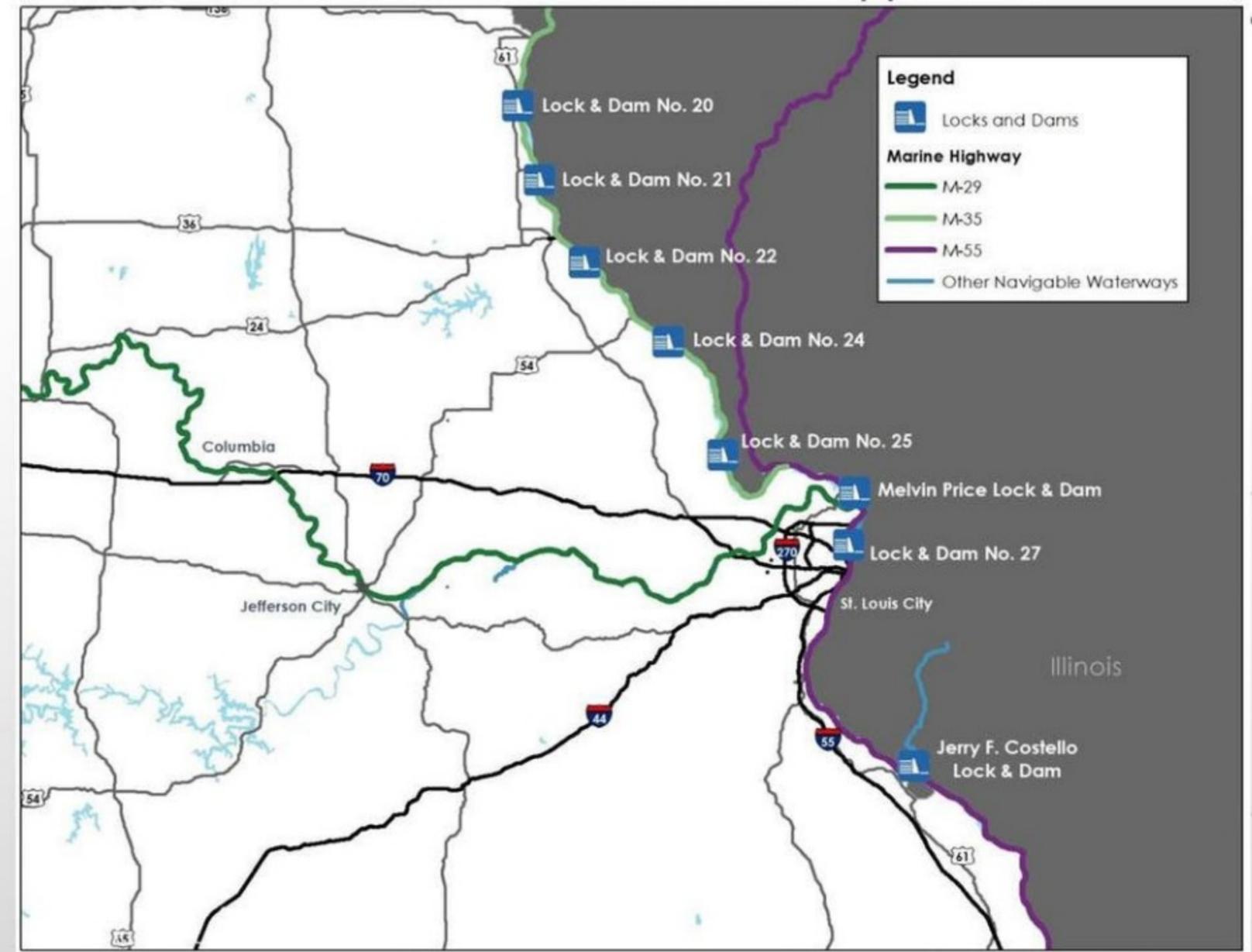
Source: U.S. Army Corps of Engineers; 2018 Economic Impact Study for Public Ports



# Ports & Waterways – Condition

- Longstanding issue: size and age of lock and dam infrastructure
  - » Smaller locks mean tows need to be broken up
  - » Older locks mean more repairs
- Issues magnified by flooding in 2019. In Missouri, this affected 95 counties, closed 470 state highways, and suspended rail and Amtrak service

Locks & Dams on the Mississippi River



# What are ports and waterways challenges and needs?

New sources of customers

Funding

Infrastructure funding

On the Missouri River getting the navigation structures repaired so that there is a dependable 9' river channel, so barges are not required to be short loaded.

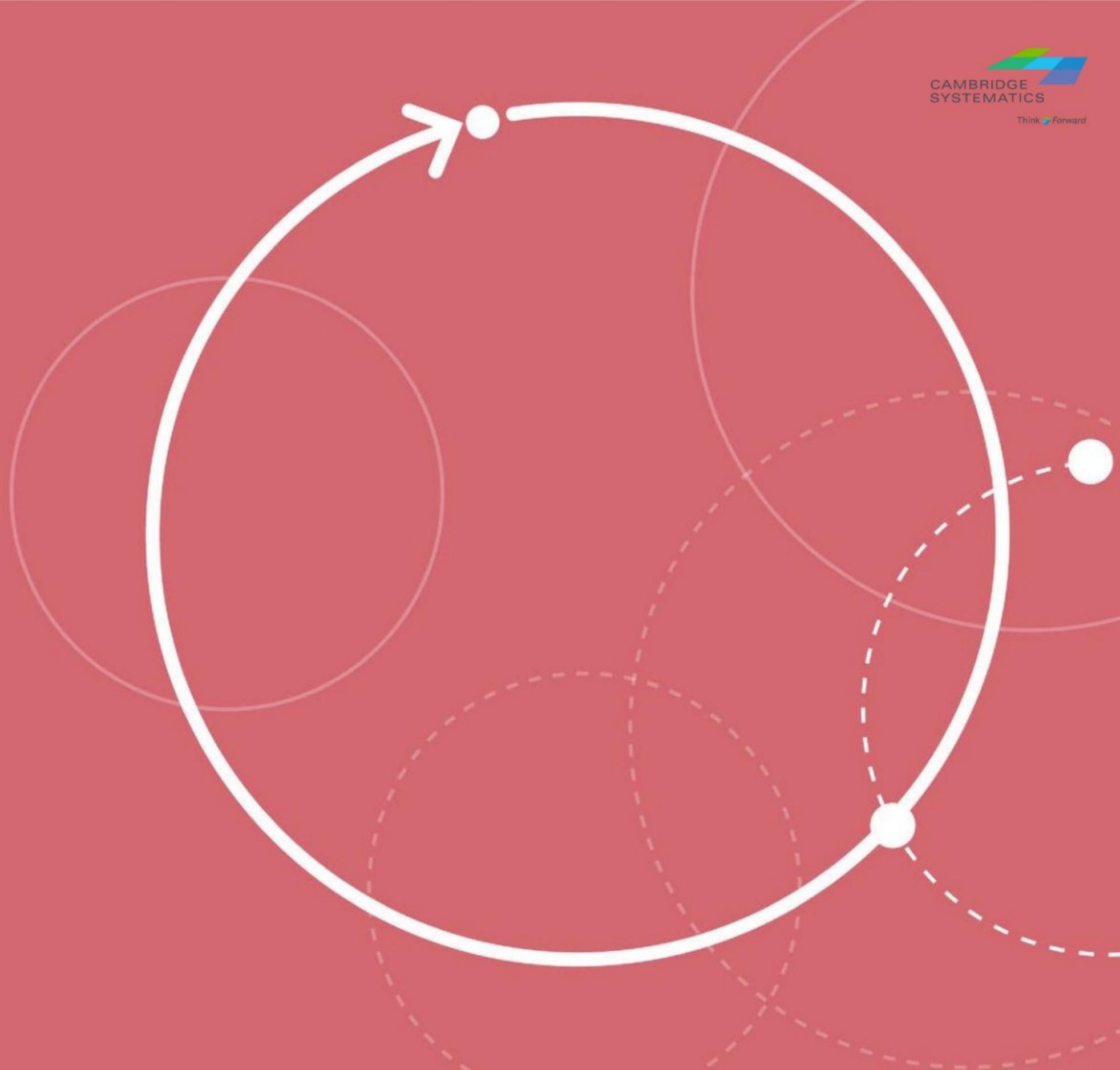
the clearance on bridges - require special types of freight containers

container on barge, MO river channel dredging

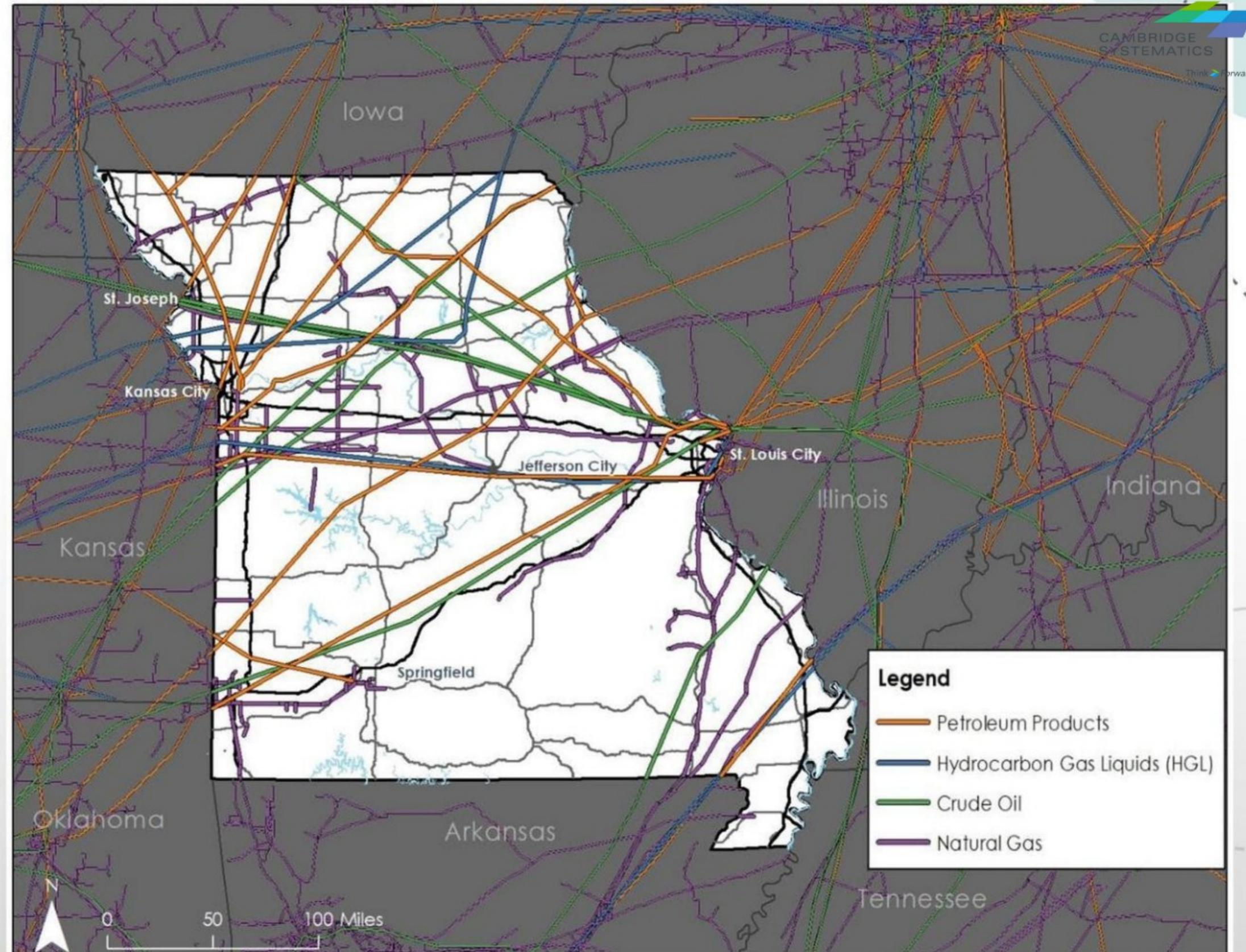
Climate resilience and flood control



# Pipeline

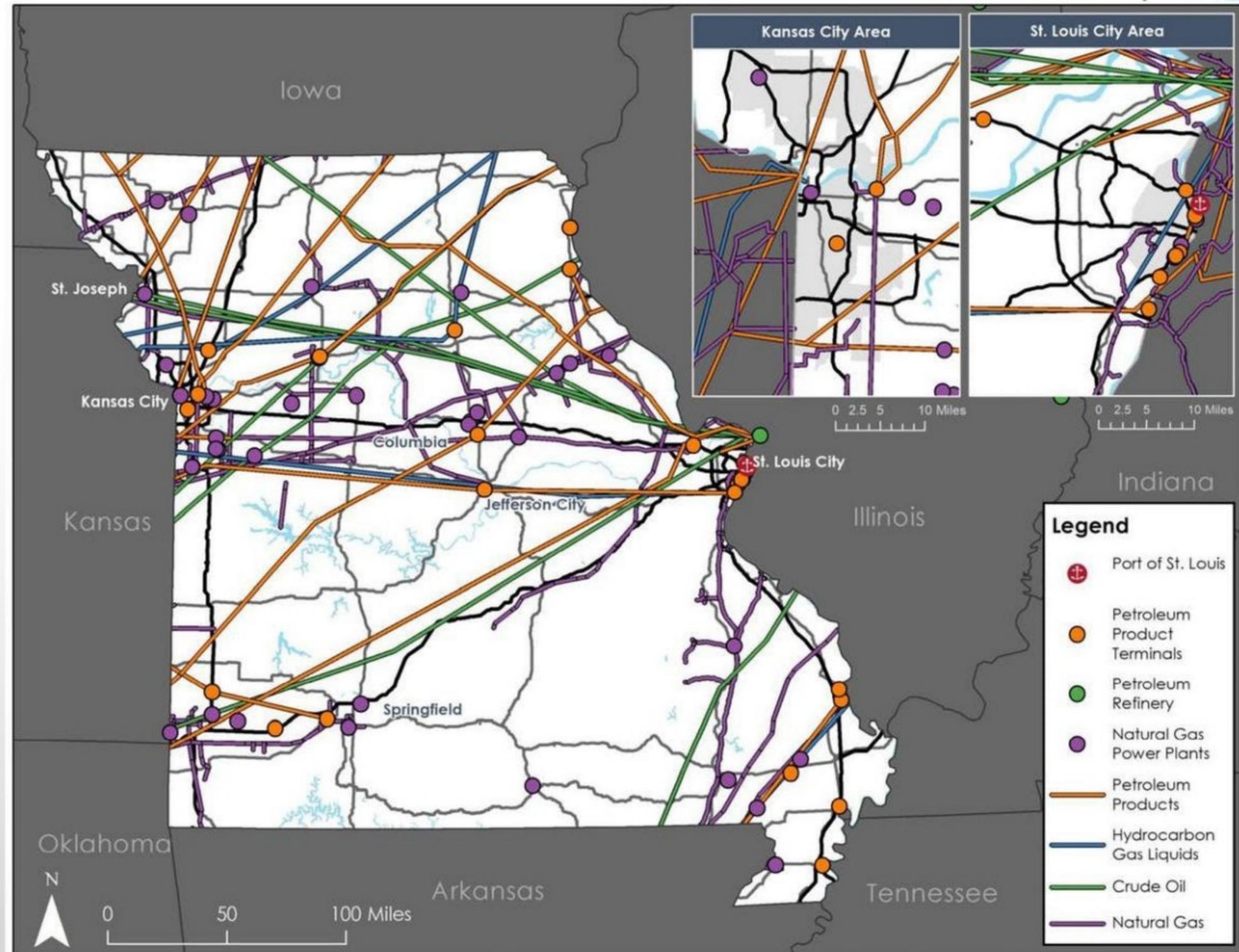


# Pipelines Infrastructure - Missouri sits in the middle of a vast pipeline network

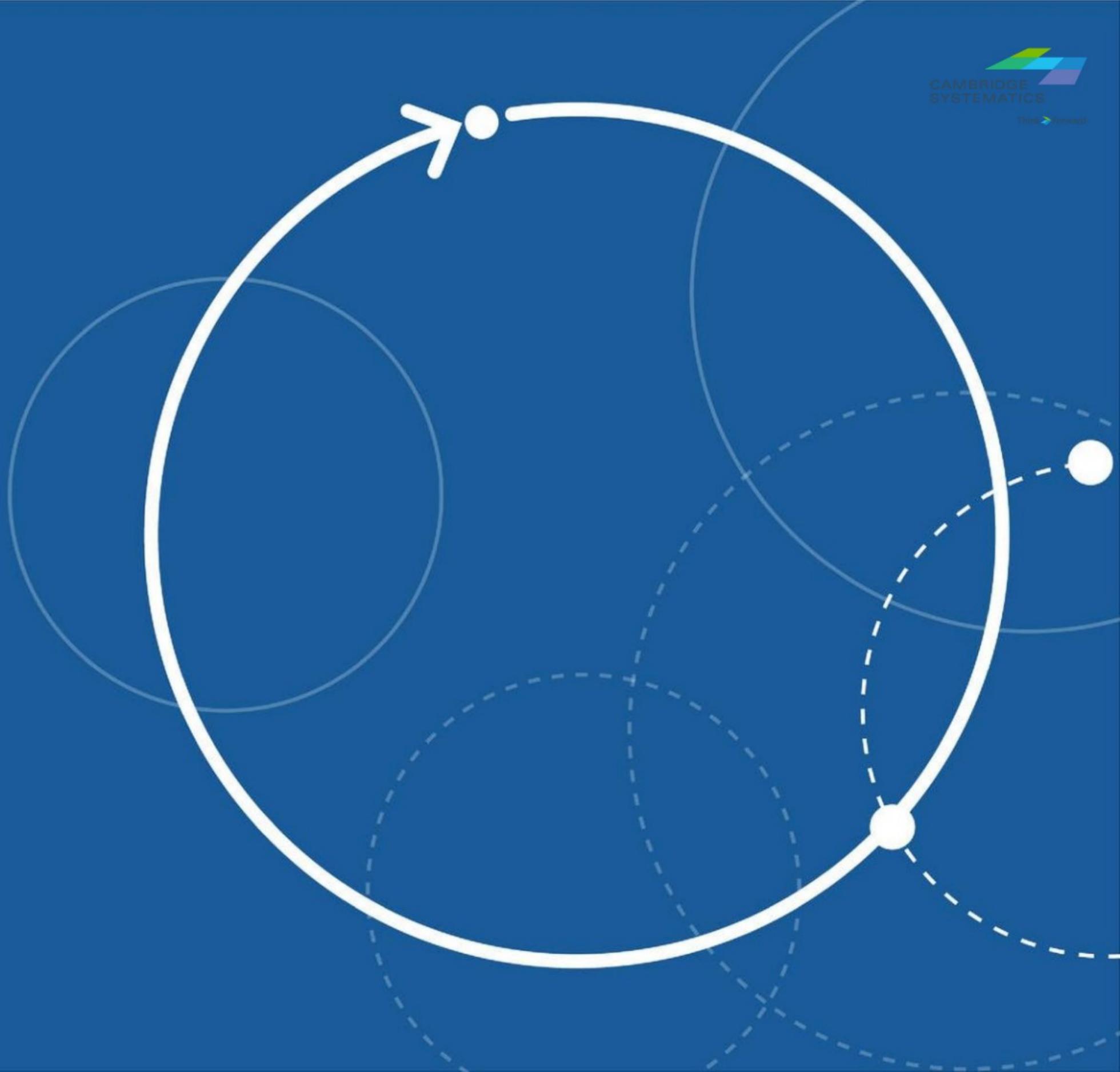


# Pipelines – Terminals

- Pipeline terminals are where liquids are loaded or unloaded
- Major terminals include:
  - » Petroleum product terminals – store > 50,000 barrels
  - » Petroleum refineries
  - » Natural Gas Power Plants



# MO Freight Network Designation



# MO Highway Freight Network Designation Process



# Freight System Designation Criteria



## Economic Factors

Examines demographic preparedness, freight intensity, and supporting industries.

- *Population Growth*
- *Workforce Size*
- *Educational Attainment*
- *Freight Employment Intensity*
- *Key Military Facilities*



## Strategic Supply Chain Factors

Provides understanding of how businesses move goods between suppliers, producers, distributors, and final consumers.

- *Support of Targeted Industries*
- *Support for Targeted Industries businesses*
- *Employment Size for Targeted Industries businesses*
- *Support for Commodities Associated with Targeted Industries (Tonnage)*
- *Support for Commodities Associated with Targeted Industries (Value)*

# Freight System Designation Criteria



## Goods Movement Factors

Metrics covering tonnage, value, and volume of goods moving across the state.

- *Daily Truck Volumes*
- *Absolute Vehicle Miles Traveled (VMT)*
- *VMT by Lane Mile*
- *Percent Truck*
- *Total Tonnage*
- *Total Value*
- *Tonnage Growth*
- *Value Growth*



## Market Access & Connectivity Factors

Evaluates intermodal connectivity, connectivity (connections to rail, pipeline, airport, etc.) to trading partners and international gateways.

- *Intermodal Connectivity*
- *High-Diversity Market Gateway Access*
- *Market Gateway Access*

# Freight System Designation Criteria: Final Weighting



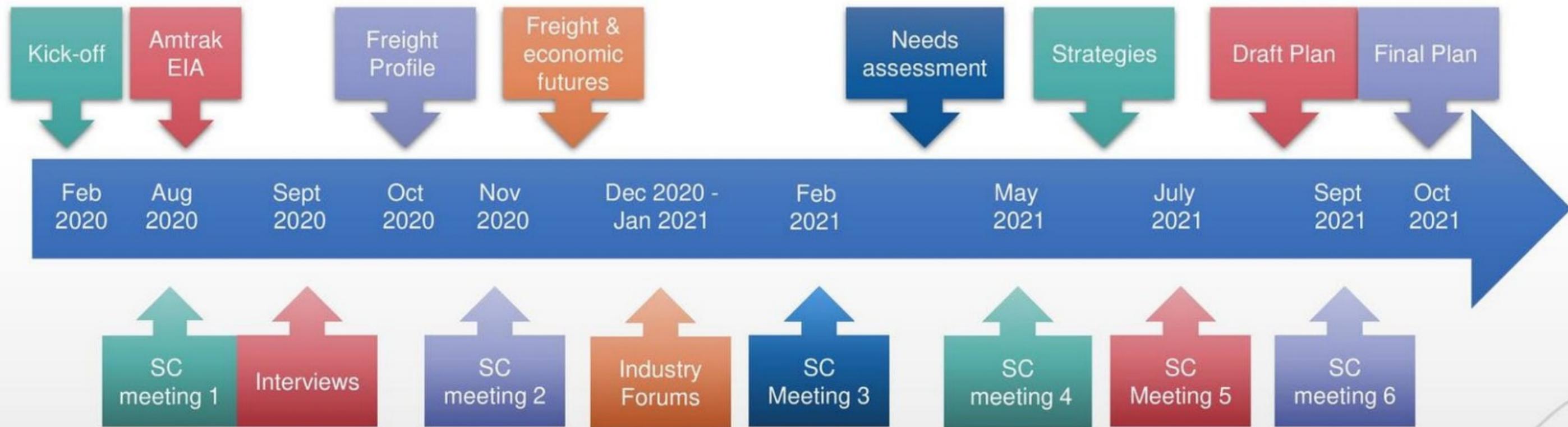
# Next Steps

- Develop draft network based on quantitative analysis
- Distribute to Steering Committee for input (week of November 30)
  - » Web-based map that will allow for comments to be added directly
  - » Electronic file of map and comment form to scan and submit

# Next Steps



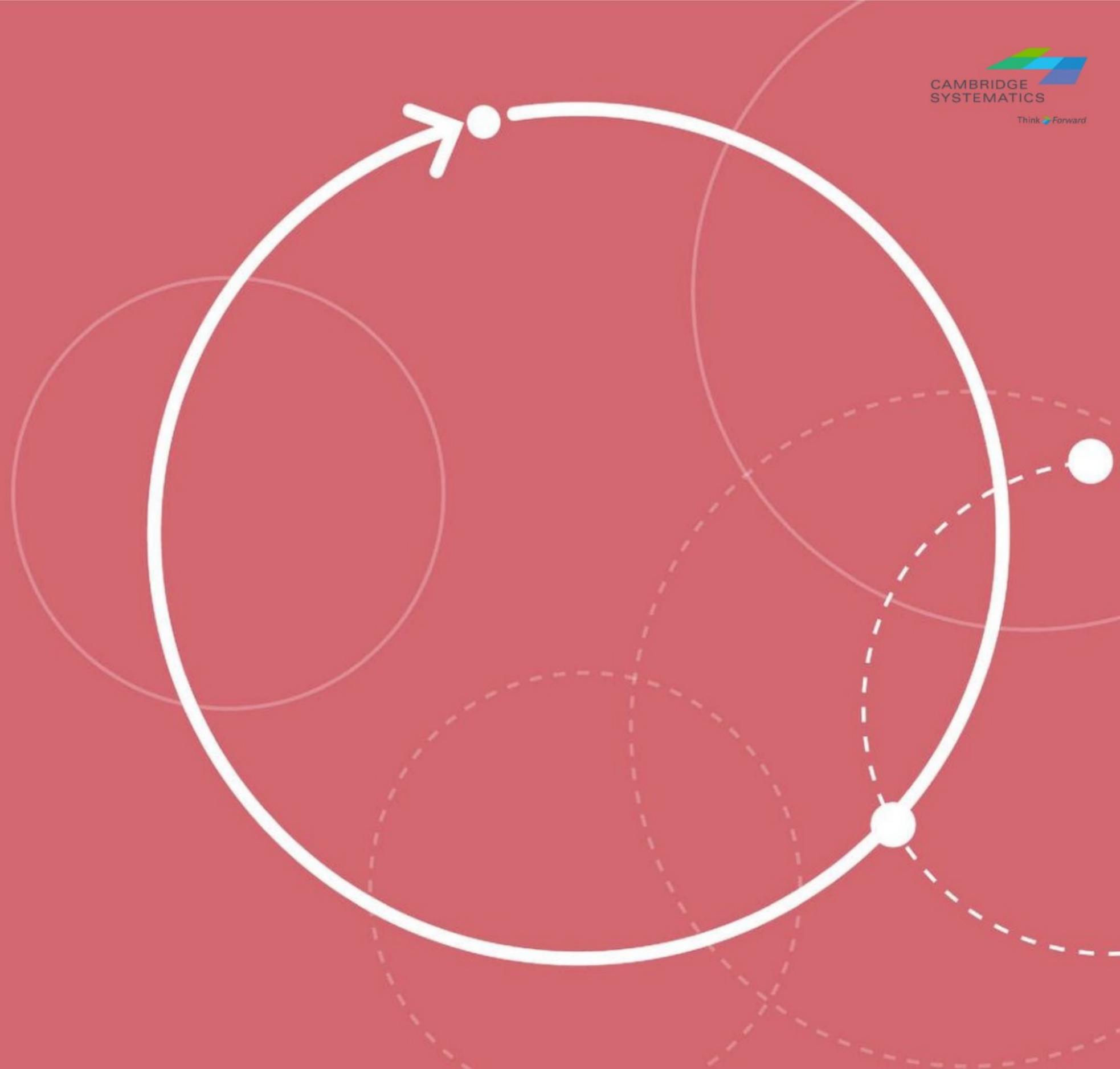
# Schedule and Key Milestones



# Next 90 days

- Finalize Missouri Freight Profile
- Finalize designation of Missouri Priority Freight Network
- Develop MoFAS tool
- Complete economic assessments
- Draft needs assessment
- Stakeholder survey, forums and 3<sup>rd</sup> Steering Committee Meeting

# Discussion



# Thank you!



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# Steering Committee Meeting 2 Meeting Minutes

## MoDOT State Freight & Rail Plan

### Steering Committee Meeting 2 - Tues Nov 17<sup>th</sup> 1 pm-3 pm CST

#### Steering Committee Meeting 2 Virtual meeting

The PowerPoint presentation outlines the materials covered and the Menti input responses. The minutes below provide additional documentation of the meeting information and discussion.

#### INTRODUCTIONS

Paula Dowell and Katie Kirk with Cambridge Systematics welcomed the Steering Committee and provided an overview of the virtual meeting agenda.

Paula Dowell provided a review of the meeting minutes and discussion topics from the last steering committee meeting held on Monday August 17<sup>th</sup> from 9am-12pm CST. An overview of the Steering Committee was given as well as an overview of the current state of the State Freight and Rail Plan. Other items discussed at the previous meetings were input on goals and objectives, input on the outcome of the plan, COVID-19 impacts and input, commodity flow summary, Missouri freight and rail profile inventory, and designating the Missouri multimodal freight network.

This was the second meeting of six State Freight and Rail Steering Committee meetings that will be held over the next 12 months.

#### OVERVIEW OF MISSOURI FREIGHT PROFILE (slides 9-25)

Paula Dowell provided an overview of the following:

- Commodity Flow Summary – Tonnage in 2018, 2030, and 2045
  - Rail was the largest mode (44%), followed by truck (40%)
- Top Tonnage Commodities 2018-2045
  - The top three commodities by tonnage are farm, non-metallic minerals, and coal
- Top Value Commodities 2018-2045
  - The top three commodities by value are transportation equipment, freight of all kind, and chemicals/allied
- Directional flow
  - In 2018, through traffic comprises the largest share by weight and value
  - Inbound and outbound flows roughly even
- Missouri's Domestic Trading Partners by Weight
  - States of IL, KS, and WY surpass 25 Million tons in trade with Missouri
- Missouri's Domestic Trading Partners by Value

- IL, KS, CA, and TX surpass \$15B in value traded with Missouri
- Freight Generation by Missouri County
  - St. Louis and Kansas City areas generate over 20,000 kilotons of freight flow

Paula led the group through an interactive discussion using Menti to gather feedback on how confident the group is in the reported commodity flow findings with a scale of 1-5 with 5 being high confidence:

- 2019 year volume of billion tons valued at \$1.2 trillion
  - Received a 3.6
- 2045 volume of over 1.2 billion tons
  - Received a 3.3
- Modal split with truck at 40% and rail at 44%
  - Received a 3.3
- Top volume trading partners being IL, KS and WY
  - Received a 3.7

Based on feedback from the group, the group was confident in most of the metrics. There was some skepticism in the 2045 volume of over 1.2 billion tons and modal split with trucking at 40% and rail at 44%. The group discussed some concern that air and water ways would not increase as much.

The economic role of freight slide (slide 17) showed that there were 65.8 tons per Missourian in 2018 and 1,927.6 tons per business establishment. The approach to quantifying total economic impact (slide 18) was discussed via a five-step process. Freight generators – first/last mile inventory (slide 19) found 250 freight generators in the state and investigated using the HIS Freight Finder or the Bill of Lading (BOL) (slide 20). The top 50 freight generating zip codes in the state of Missouri were shown. The discussion centered around identifying clusters of zip codes that together show an industrial area. There was then discussion about the time pre-Staggers Act (1980) regarding grain elevators and the grain supply chain and post-Staggers Act (slide 22-23). The emerging grain supply chain was then discussed.

A Menti question was presented to the group to gain input about the importance of freight generating supply chains to include in the analysis. Answers to the posed question were:

- Inbound plant foods/fertilizer to the state in high volume business
- Ecommerce, auto manufacturing, agriculture, energy, retail, high-value items, pharm
- Timber industry
- Agriculture with soybean oil manufacturing, food manufacturing, expanding the STL region's aviation/automotive manufacturing, live animal shipments for air cargo



- Energy
- Minerals and rock – high weight impacts highway system and must be accounted for when buying transload equipment
- Boats in southwest Missouri

### **HIGHWAY AND TRUCKING (slides 26-34)**

The average annual daily truck traffic across the state of Missouri was discussed. Most of the truck traffic is in the Kansas City Metropolitan Area as well as around and in St. Louis. Truck traffic is also along the interstates within the state. Truck traffic as a percent of average annual daily traffic was also analyzed. Many stretches of the interstate system comprise greater than 50% trucks.

A summary of freight on Missouri highways in 2018 with the top ten commodities by tonnage was shown (slide 29). Broken stone/rip rap, grain, and warehouse & distribution center were the top three commodities.

In 2019, Missouri met the goals for pavement and bridge condition set in the 2017 Freight Plan. In 2018, Missouri's Truck Travel Time Reliability (TRRR) Index was 1.27. The goal of having the index below 1.3 was achieved (slide 31). Between 2015 and 2019, there were 72,014 truck-involved crashes. Trucks comprised 10.8% of all vehicle involved crashes (slide 32).

Paula used the Menti engagement tool to ask the group to rate the extent of the following freight highway challenges on a scale of 1 to 5 with 5 being the highest:

- Congestion
  - Received a 3.1
- Reliability
  - Received a 3.0
- Safety
  - Received a 3.9
- Asset preservation
  - Received a 3.7

These challenges were being noted for freight.

Another question via Menti was posed to the group asking to rate the extent of the following freight highway challenges on a scale of 1 to 5 with 5 being the highest:

- First/last mile connections



- Received a 4
- Rural connectivity
  - Received a 3.5
- Freight network design
  - Received a 3.2
- Truck parking
  - Received a 3.2
- Other
  - Received a 1.1

### **TRUCK PARKING OVERVIEW (slide 35- 42)**

A map for Truck Parking Inventory across the state was shown and discussed.

This map can be found on slide 36 and shows the publicly owned truck parking spaces, privately owned truck parking spaces, and the total truck parking spaces across the state. There are 47 publicly owned locations for truck parking with 1,147 spaces. This makes up roughly 11% of all truck parking spaces in Missouri (slide 37). Types of truck parking include overnight or long stops, staging, 30-minute regulated break, emergency, off-duty time, and miscellaneous. The highest total demand at designated truck parking sites occurs between 12-1AM while the most common peak hour is between 2-3AM (slide 39). Four public truck parking locations were looked at as case study examples of congestion at truck parking sites. These sites include Wright City (I-70), Doolittle (I-44), Mineola (I-70), and Marston (I-55).

A Menti question was asked to the group about what and where are truck parking challenges. This was an open-ended question and the following were answers provided by the group:

- Real-time information on parking space availability
- Parking on shoulders at interchange ramps. Maintenance and safety. Also, confusion of drivers using GPS and getting low volume outer roads
- Overnight parking along I-70 seems to be overflowing. I would assume this is the same along I-44.
- Minimum and maximum usage volume (i.e. Holiday Parking)
- Poor utilization because parking location is not near the parking need
- Passenger service to SW Missouri
- North St. Louis and Hazelwood along I-70 corridor.



- Quantity and location – are there enough spots within an hour or two of high-volume locations?

The next step for the Truck Parking Gap analysis are to compare locations with deficit areas with parking in the right of way. Then an analysis will be conducted of crashes involving stopped/parked trucks. Then a stakeholder survey will be administered, and trucking roundtables will be conducted. This will then all help develop the technical report.

### **RAIL OVERVIEW (slides 43-52)**

Missouri’s rail system is comprised of six class I railroads, six local railroads, ten switching and terminal railroads, and three excursion railroads. In 2018, over 400 million tons of freight were moved via rail from, within, and through the state valued \$100 billion (slide 44). In 2018, 77% of the tonnage by direction went through the state of Missouri while 82% of the value of those goods by direction went through the state of Missouri (slide 45).

When analyzing passenger rail, it was found that 62% of Missourians live within 25 miles of an Amtrak station and 79% live within 50 miles of an Amtrak as of 2019 (slide 47). On time performances of Amtrak rail lines was discussed related to the three Amtrak lines that service the state. On-time performance was 82.4 percent for the River Runner, 47.0 percent for the Southwest Chief, and 39.7% for the Texas Eagle.

Rail safety, train incidents, and fatalities were compared between 2010-2019 (slide 48). Accidents at at-grade crossings were below the national average (slide 49). Strategies are being looked at to further increase safety of rail and rail crossings (slide 50).

An open-ended Menti question was asked about freight rail challenges and needs in Missouri. The responses were as follows:

- Slow interchange flooding causing diversion
- Support existing and new Missouri businesses to build rail infrastructure to connect to short line railroads
- Rail siding program, rail project funding program for urban and rural areas
- Funding for abandoned rail spur/lead tracks that support manufacturing growth. At grade crossing safety and at grade crossing truck delays negatively impacting freight costs
- Supporting existing and new Missouri businesses to build rail infrastructure to connect to Class I railroads. This will make Missouri more than a “through” state.
- Grain shuttle loading facilities are somewhat dependent upon grain grown with good weather.



Another open-ended Menti question was asked about passenger rail challenges and needs. The responses were:

- Reliability and frequency of trains
- Ease of use facilities (rental car & transit)
- Lack of passenger rail service to Southwest Missouri
- More interconnection with local public transit
- Coordination with FRA Midwest Passenger Rail Plan?
- Extension of service to include Springfield
- On time percentage
- COVID-19 impacting all travel

#### **AIR OVERVIEW (slides 53-60)**

In Missouri, the top exported air commodities by tonnage are small packaged freight shipments (43%) and electrical equipment (10%) while the top air commodities by value are miscellaneous manufacturing products (32%) and electrical equipment (21%) (slide 54). The top imported air commodities by tonnage are small packaged freight shipments (38%) and transportation equipment (10%) while the top imported air commodities by value are transportation equipment (29%) and misc. manufacturing products (24%) (slide 55).

The top two origins and destinations for air commodities are Memphis, TN and Louisville, KY. When analyzing trends affecting Missouri air cargo, it was found that the recession between 2007 and 2009 affected inbound and outbound cargo levels in Missouri. Inbound and outbound cargo in the state is still bouncing back from the recession (slide 58). Stakeholder interviews with Kansas City, St. Louis, and Springfield have been conducted to gain more information about the three major airports in Missouri.

The air cargo analysis relied on Trans Search data and used a base year to understand all the data. More recent data shows significant growth in air commodities in Missouri.

An open-ended Menti question was asked to the group about air cargo challenges and needs. The responses were:

- Value of STL vs ORD
- More cargo with additional direct flights
- More assistance to airports for specialized air cargo equipment
- KCI discussing activity with new terminal



## **WATERWAYS OVERVIEW (slides 61-66)**

Private and public port facilities were mapped out within the state of Missouri. The top port-dependent industries include chemical manufacturing, fabricated metal product manufacturing and crop production. The top port-benefitting businesses are construction of buildings, heavy and civil engineering construction, and plastics and rubber products manufacturing (slide 64). A longstanding issue of the ports has been the size and age of the lock and dam infrastructure. These issues were magnified in the floods of 2019.

The open-ended Menti question posed to the group was: What are ports and waterways challenges and needs? Responses were:

- New sources of customers
- On the Missouri River getting the navigation structures repaired so that there is a dependable river channel, so barges are not required to be short loaded
- Climate resilience and flood control
- Funding
- The clearance on bridges require special types of freight containers
- Infrastructure funding
- Container on barge, Missouri River channel dredging

## **PIPELINE OVERVIEW (slides 67-69)**

Maps were shown to illustrate where pipelines are located that run across the state of Missouri (slide 68-69). Pipeline terminals are located all over the state and terminals are where liquids are loaded or unloaded.

## **MISSOURI FRIEGHT NETWORK DESIGNATION (slides 70-75)**

Freight system designation criteria was discussed as well as economic factors and strategic supply chain factors, good movement factors, and market access and connectivity factors (slides 72-73). Slide 74 lays out the final weighting of the factors listed above. The percentages of the factors are almost even.

## **NEXT STEPS (slides 76-79)**

The next steps are to develop a draft network based on the quantitative analysis and distribute it to the steering committee for input by the week of November 30<sup>th</sup>. Industry forums will be scheduled in January to provide information and gather additional feedback from industry representatives. The steering committee will be brought back together in January 2021.



# Agriculture Industry Forum Meeting Invite



## You're invited to the Agriculture Industry Forum!

You are invited to attend an industry forum designed to gain insight from agriculture stakeholders on important transportation infrastructure, access and mobility conditions in Missouri. With your help, MoDOT can better understand the challenges, needs and opportunities you face as you move freight throughout the state.



- **Date:** Tuesday, February 23, 2021 \*
- **Time:** 9-11 a.m.
- **Webinar link:** To be provided after registering via: <http://s.alchemer.com/s3/93719b1e271b>

\*Can't attend this date? Register for one of the other 3 Industry Forums that MoDOT is hosting!

Please join us – we need you!



[Click here to register!](#)

# Carrier Industry Forum Meeting Invite



## You're invited to the Freight Carrier Industry Forum!

You are invited to attend an industry forum designed to gain insight from freight carriers on important transportation infrastructure, access and mobility conditions in Missouri. With your help, MoDOT can better understand the challenges, needs and opportunities you face as you move freight throughout the state.



Please join us – we need you!



- **Date:** *Wednesday, February 24, 2021* \*
- **Time:** *9-11 a.m.*
- **Webinar link:** *To be provided after registering via:*  
<http://s.alchemer.com/s3/0bbb8f0aad2d>

\*Can't attend this date? Register for one of the other 3 Industry Forums that MoDOT is hosting!

[Click here to register!](#)

# Shipper Industry Forum Meeting Invite



## You're invited to the Shipper & Manufacturer Industry Forum!

You are invited to attend an industry forum designed to gain insight from freight shippers and manufacturers on important transportation infrastructure, access and mobility conditions in Missouri. With your help, MoDOT can better understand the challenges, needs and opportunities you face as you move freight throughout the state.



- **Date:** Tuesday, March 2, 2021 \*
- **Time:** 9-11 a.m.
- **Webinar link:** To be provided after registering via:  
<http://s.alchemer.com/s3/761c6156266c>

\*Can't attend this date? Register for one of the other 3 Industry Forums that MoDOT is hosting!

Please join us – we need you!



[Click here to register!](#)

Missouri State Freight and Rail Plan

# Warehouse and Distribution Industry Forum Meeting Invite



## You're invited to the Warehousing & Distribution Industry Forum!

You are invited to attend an industry forum designed to gain insight from warehousing & distribution businesses on important transportation infrastructure, access and mobility conditions in Missouri. With your help, MoDOT can better understand the challenges, needs and opportunities you face as you move freight throughout the state.



Please join us – we need you!



- **Date:** Thursday, February 25, 2021 \*
- **Time:** 9-11 a.m.
- **Webinar link:** To be provided after registering via: <http://s.alchemer.com/s3/24b5ac89e896>

\*Can't attend this date? Register for one of the other 3 Industry Forums that MoDOT is hosting!

[Click here to register!](#)

# Industry Forum Meetings Presentation



MISSOURI

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# State Freight & Rail Plan

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Stakeholder  
Industry  
Forums

*presented to  
Industry Forum Attendees*

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



February –  
March 2021



# Guidelines for Virtual Meetings

01

Plan to log in a few minutes early to avoid any technology issues. Edit your name to also include your organization.

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- please go to [www.Menti.com](http://www.Menti.com) and type in code 95 68 24



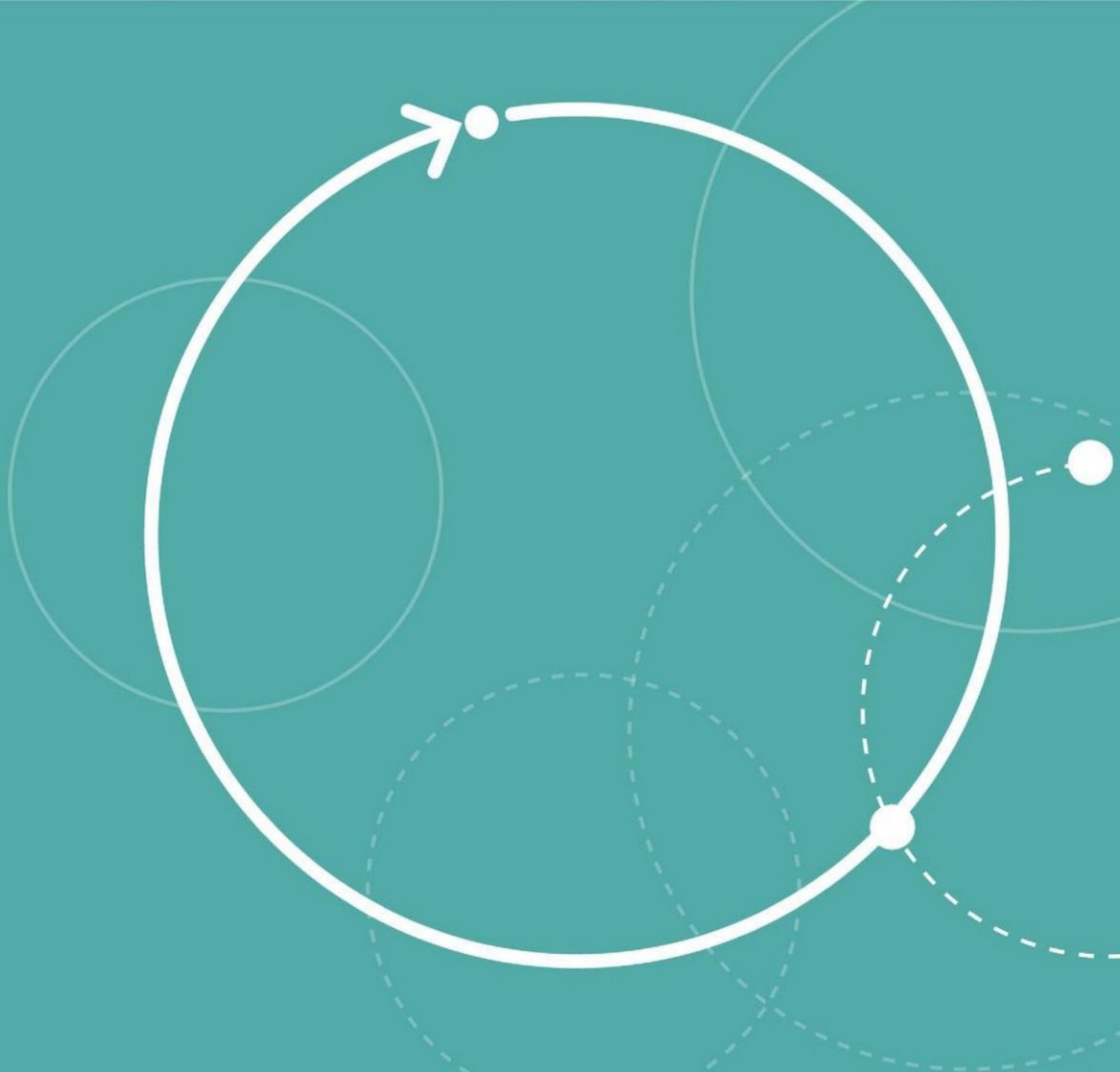
# Meeting Purpose

Gather insight, input & feedback directly from the users of the system on freight network infrastructure operations, challenges & needs.

## Agenda

- Overview
- Freight System Designation
- Freight System Needs
- Breakout Room Discussion
- Other Needs & Challenges
- Schedule and Next Steps

# Overview



# 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?*

# 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*

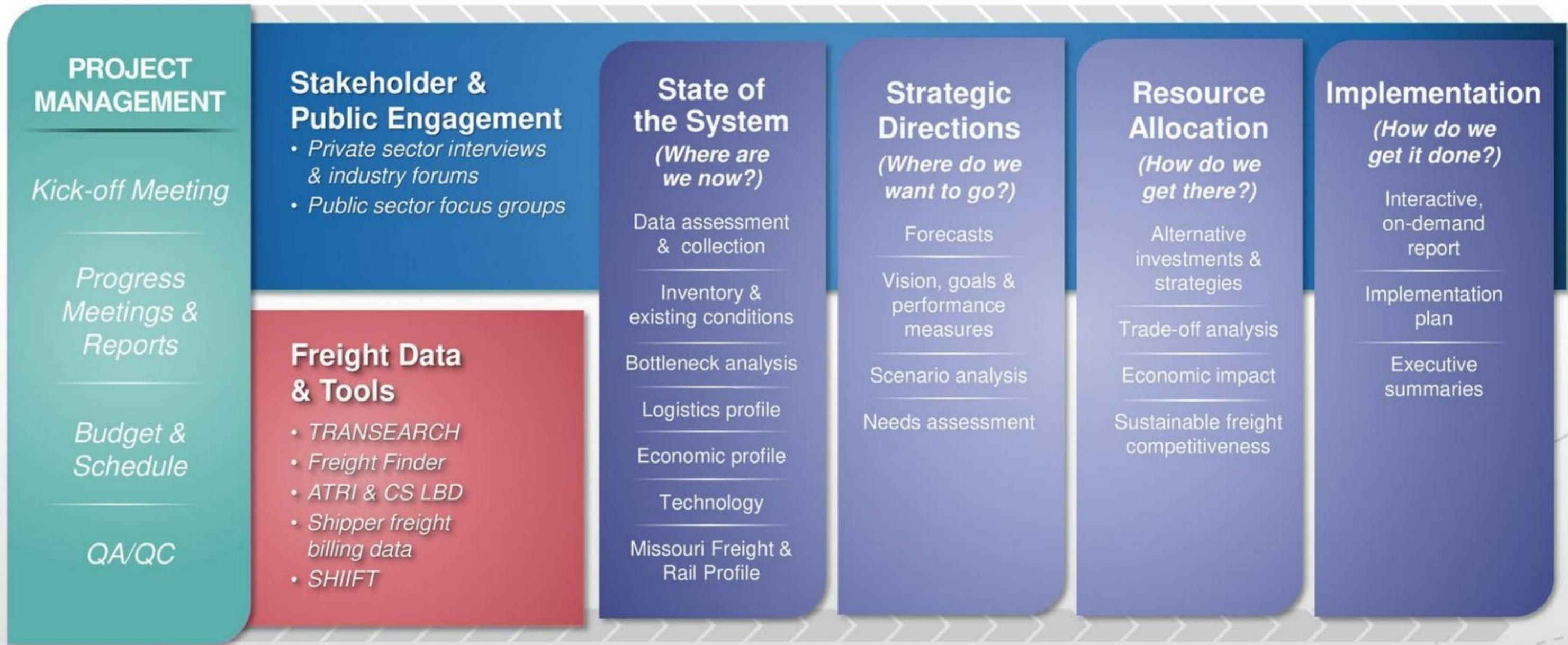


*Informs and supports economic growth opportunities*



*Monitors resiliency and fluidity across the freight network*

# Approach Overview



# Stakeholder Engagement Approach

*Initial interviews with key stakeholders*

*SFRP Steering Committee*

*Interviews and surveys*

*Industry forums and stakeholder meetings*



# Series of 4 Industry Forums

*Agriculture/  
Agribusiness*



*Warehousing  
& Distribution*



*Freight  
Carriers*



*Shippers &  
Manufacturers*



# How Will Input Be Used

## *Today's Meeting*

### **FREIGHT SYSTEM DESIGNATION**

Identify freight assets to be included on network

Finalize Missouri Priority Freight Network

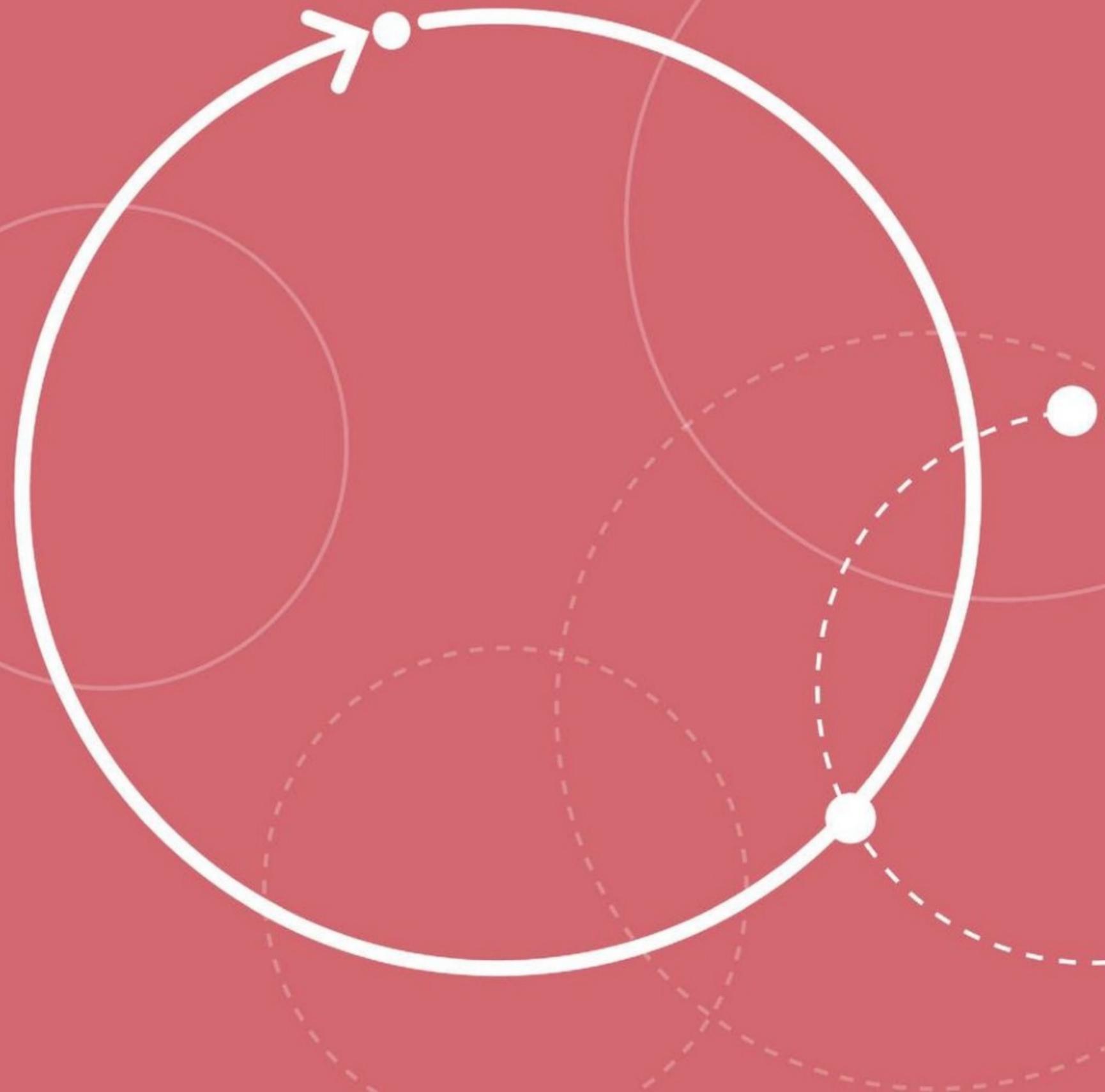
### **NEEDS ASSESSMENT**

Input on mobility, safety, truck parking and other needs

Refine freight transportation needs assessment

### **LAY GROUNDWORK FOR RECOMMENDATIONS**

# Freight System Designation



# What is Freight System Designation? Why is it important?



Meets **Federal requirements** for funding eligibility



Allows MoDOT to **target limited resources** toward assets that move freight



Becomes basis for **needs assessment, project prioritization, recommendation and implementation**



Freight investment as an **economic development strategy**

# Freight System Designation

## Quantitative Evaluation



### ECONOMIC FACTORS

Examines demographic preparedness, freight intensity, and supporting industries.

#### Example Metrics:

- Population Growth
- Freight Employment Intensity



### GOODS MOVEMENT FACTORS

Metrics covering tonnage, value, and volume of goods moving across the state.

#### Example Metrics:

- Daily Truck Volumes
- Total Tonnage & Value



### STRATEGIC SUPPLY CHAIN FACTORS

Provides understanding of how businesses move goods between suppliers, producers, distributors, and final consumers.

#### Example Metrics:

- Support of Targeted Industries
- Support for Commodities Associated with Targeted Industries



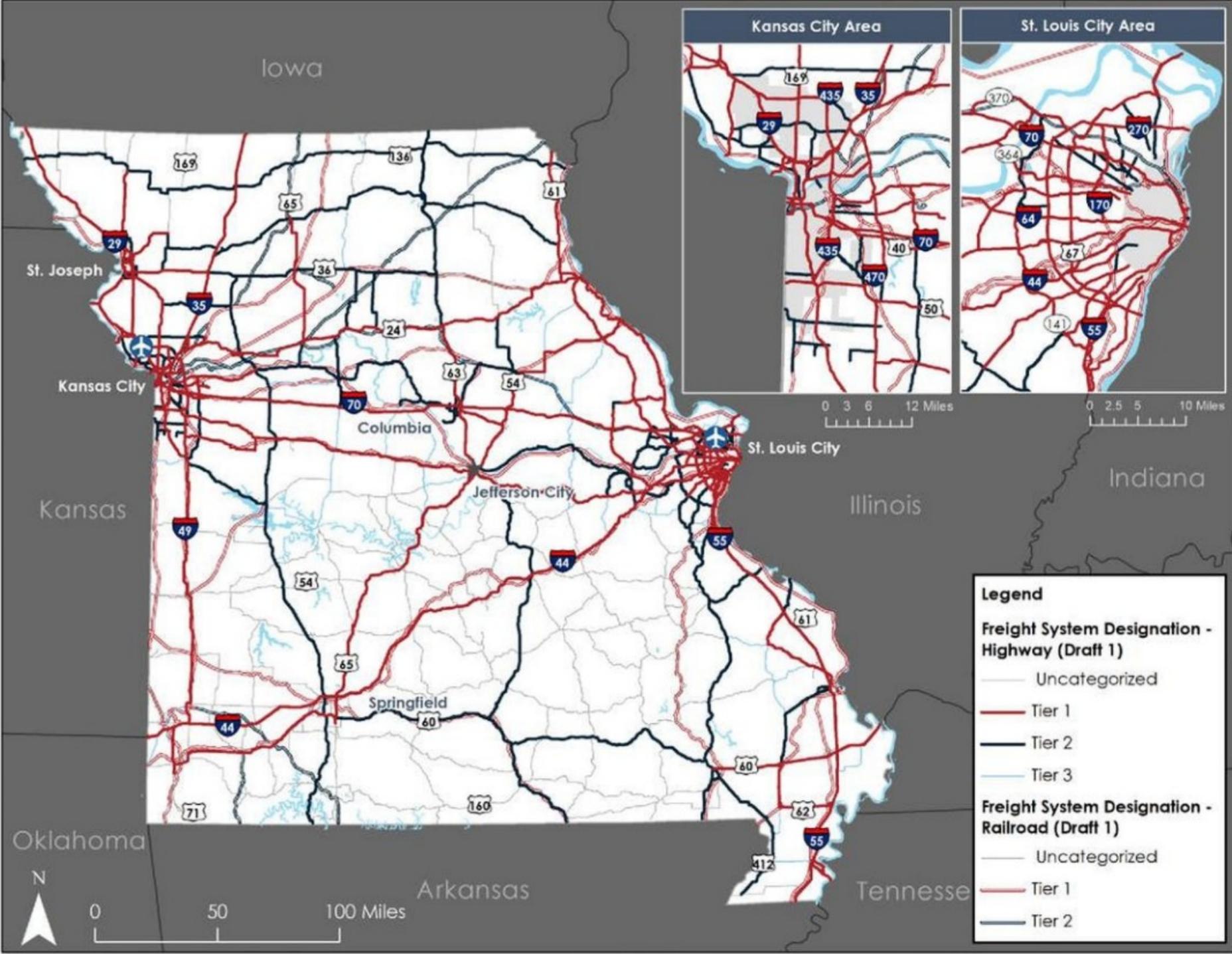
### MARKET ACCESS & CONNECTIVITY FACTORS

Evaluates intermodal connectivity, connectivity (connections to rail, pipeline, airport, etc.) to trading partners and international gateways.

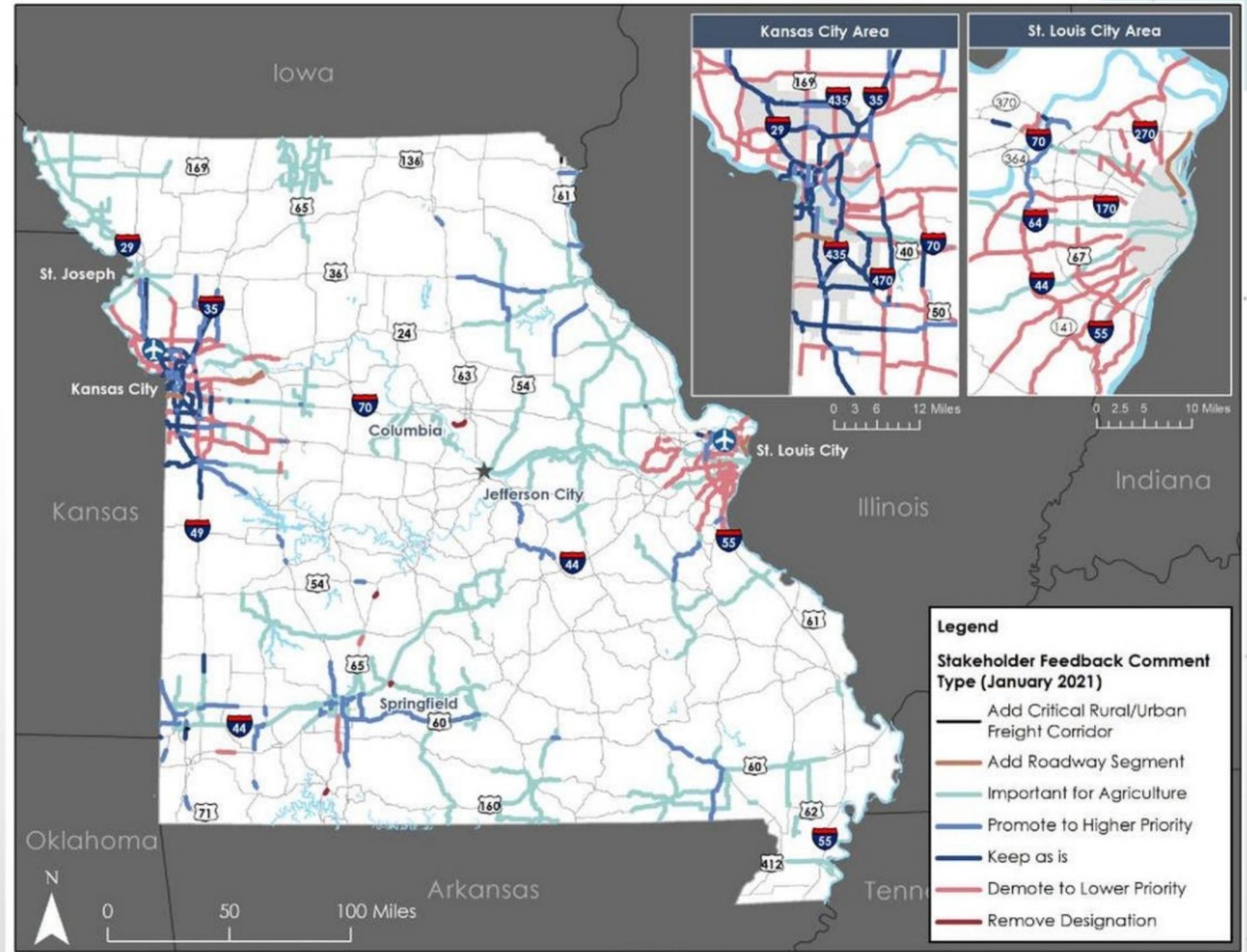
#### Example Metrics:

- Intermodal Connectivity
- Market Gateway Access

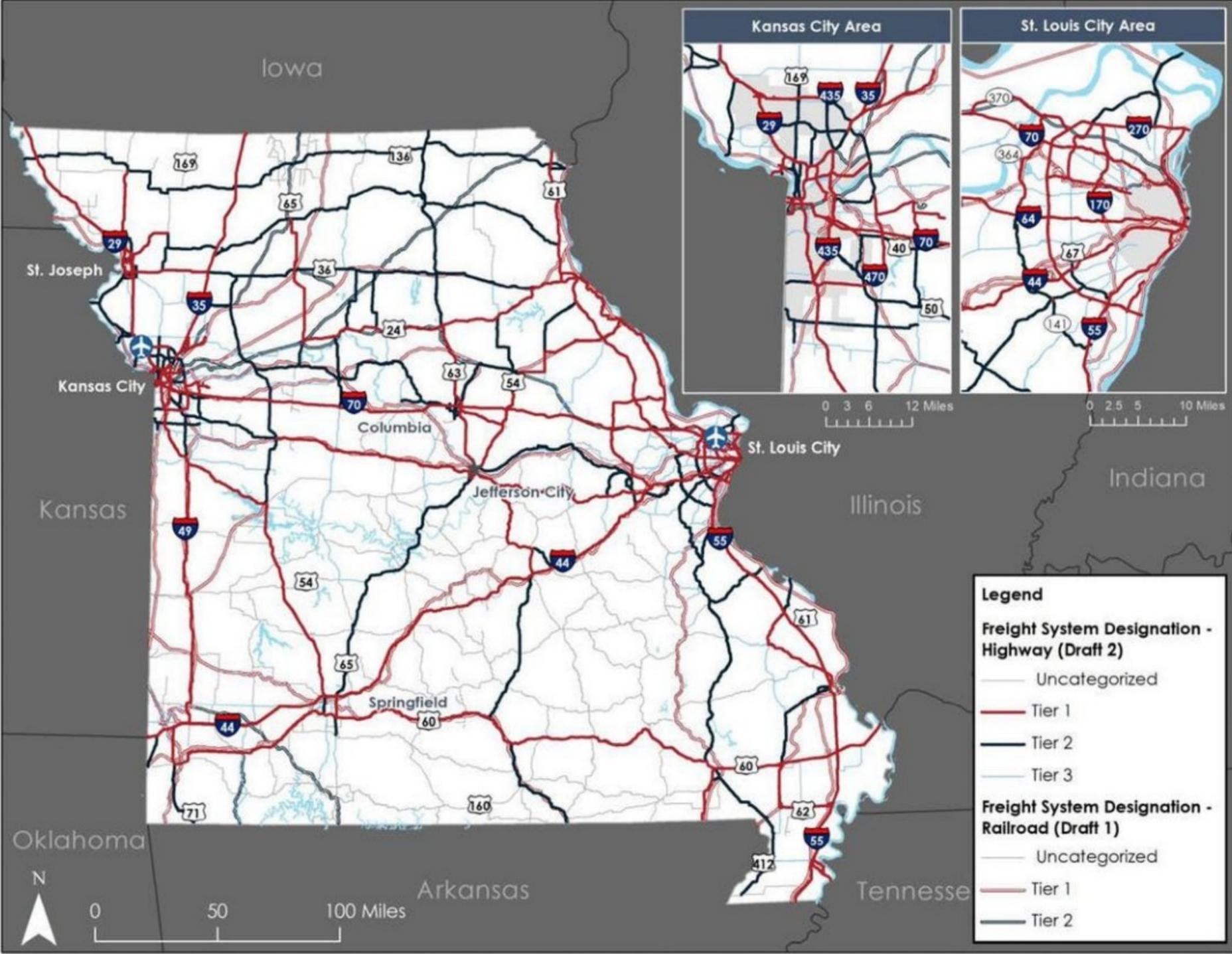
# Initial Network



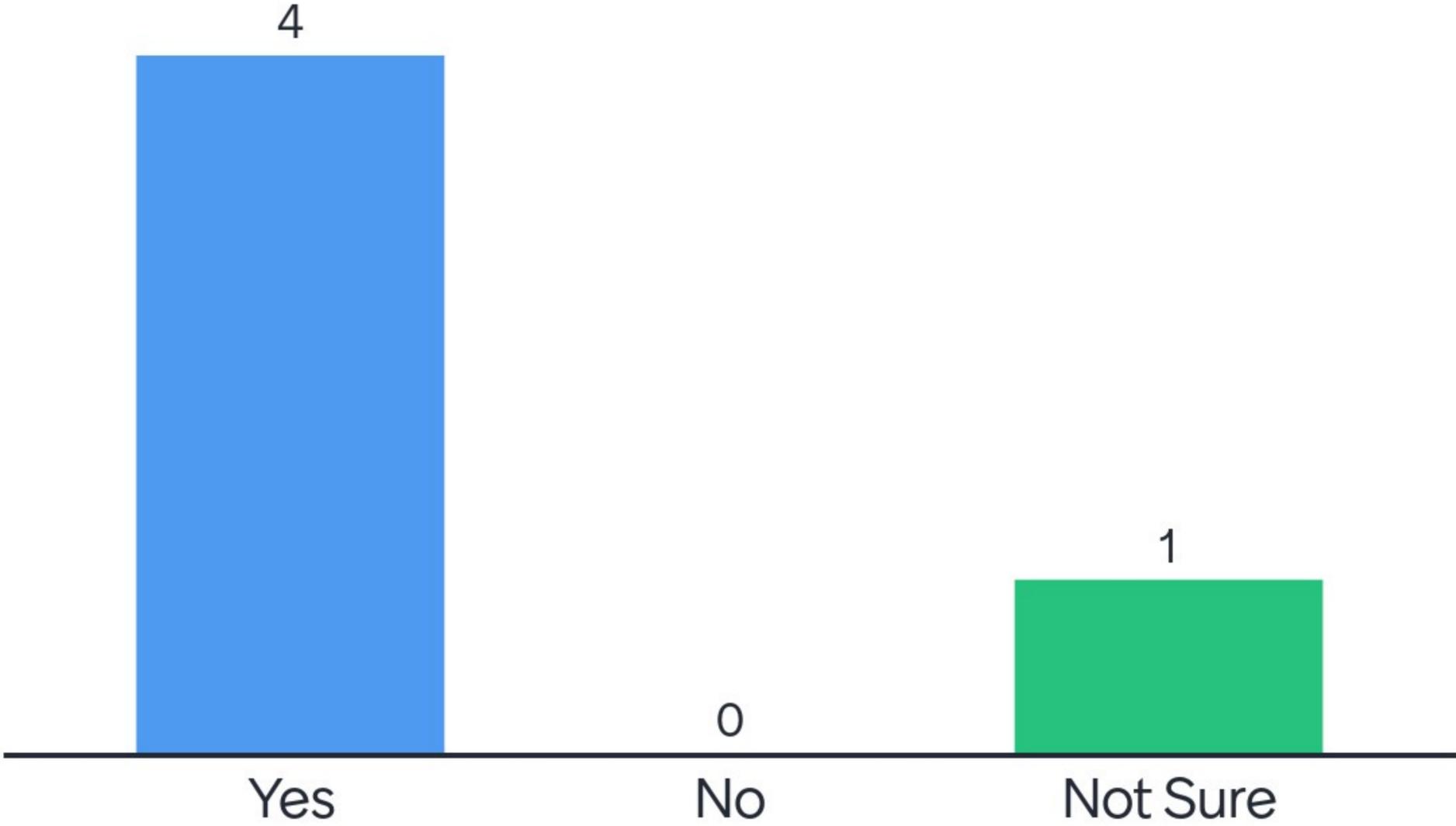
# 1<sup>st</sup> Round of Stakeholder Feedback



# Draft Network



# Does the Draft Freight Network adequately rank the state's most critical highway and rail corridors?



# Freight System Needs



# Freight System Needs



***Safety***



***Truck  
Parking***



***Technology***



***Mobility &  
Reliability***



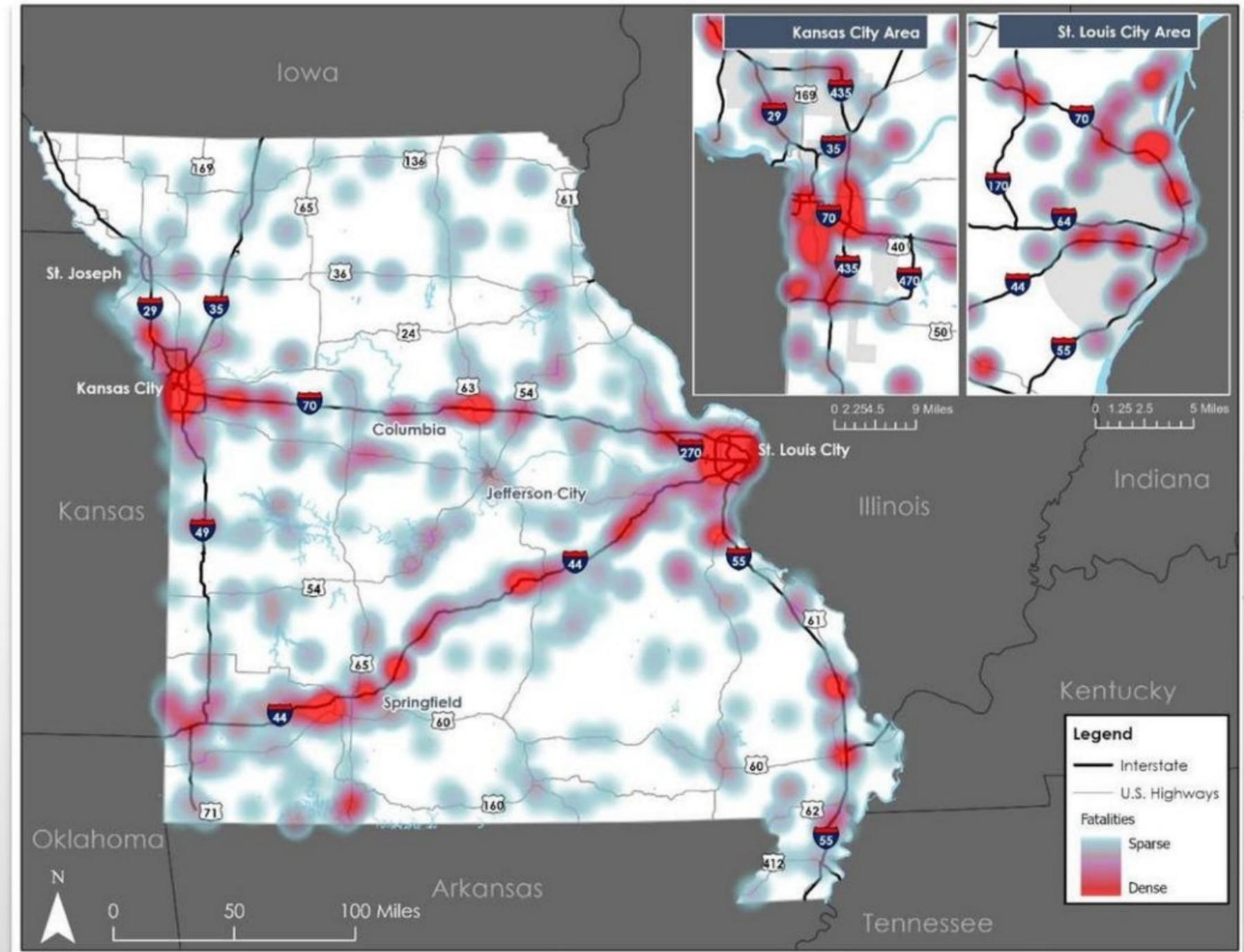
***Asset  
preservation***



***Rural  
highways***

## Statewide Truck Fatal Crash Heatmap

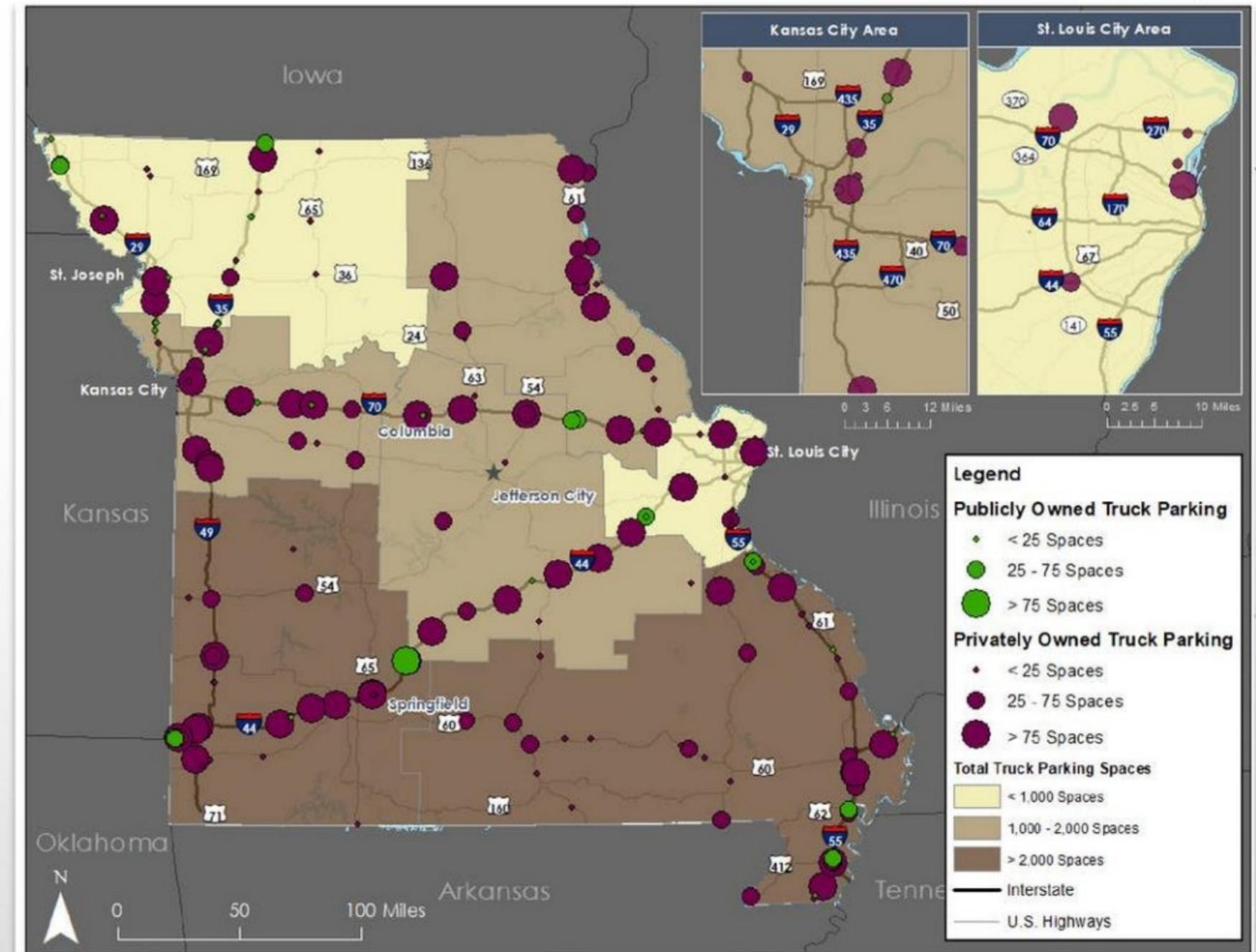
- Between 2015 and 2019, there were **72,014 TRUCK-INVOLVED CRASHES**
- Trucks comprised **10.8% OF ALL VEHICLE INVOLVED IN CRASHES**



## Missouri Total Truck Parking Inventory

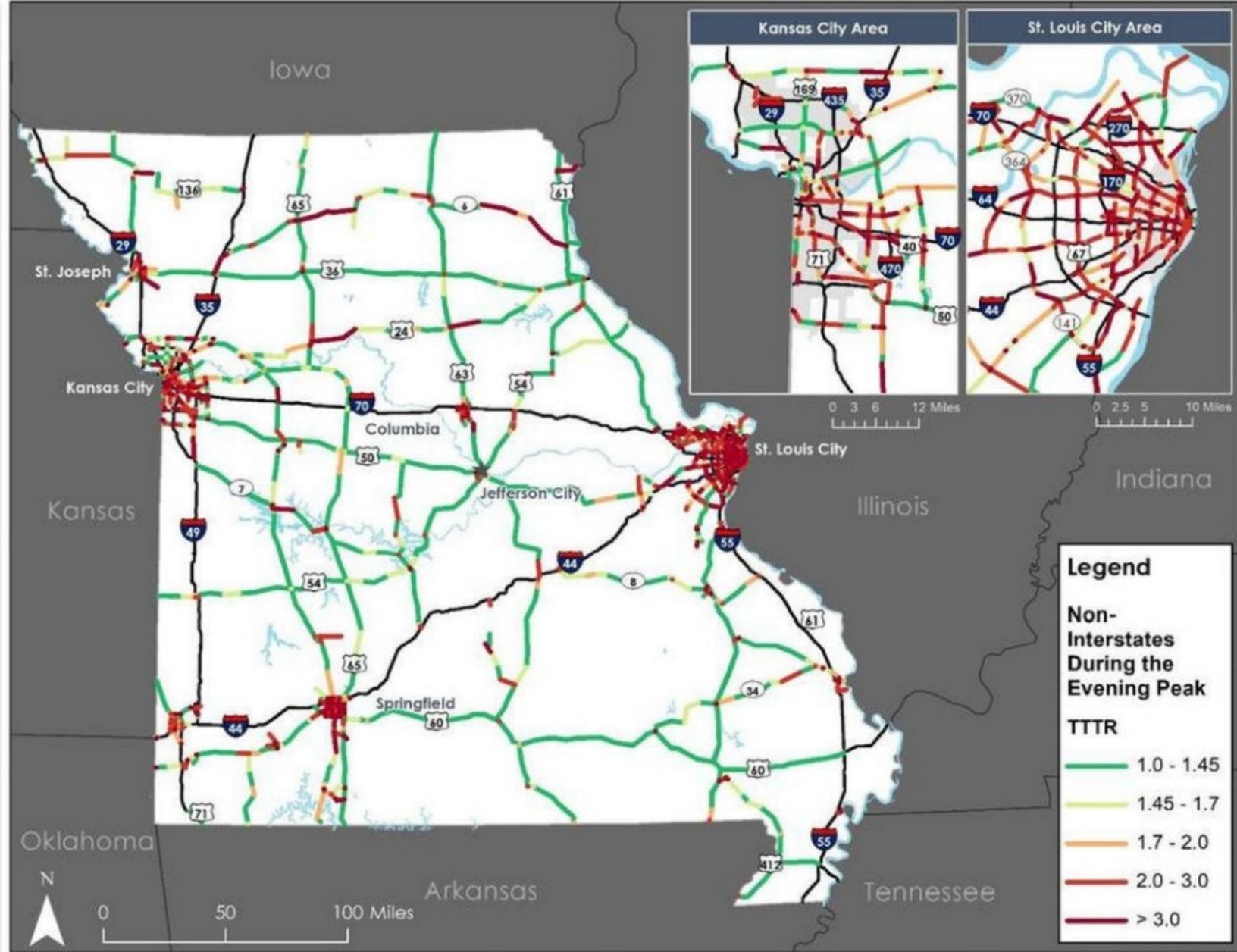
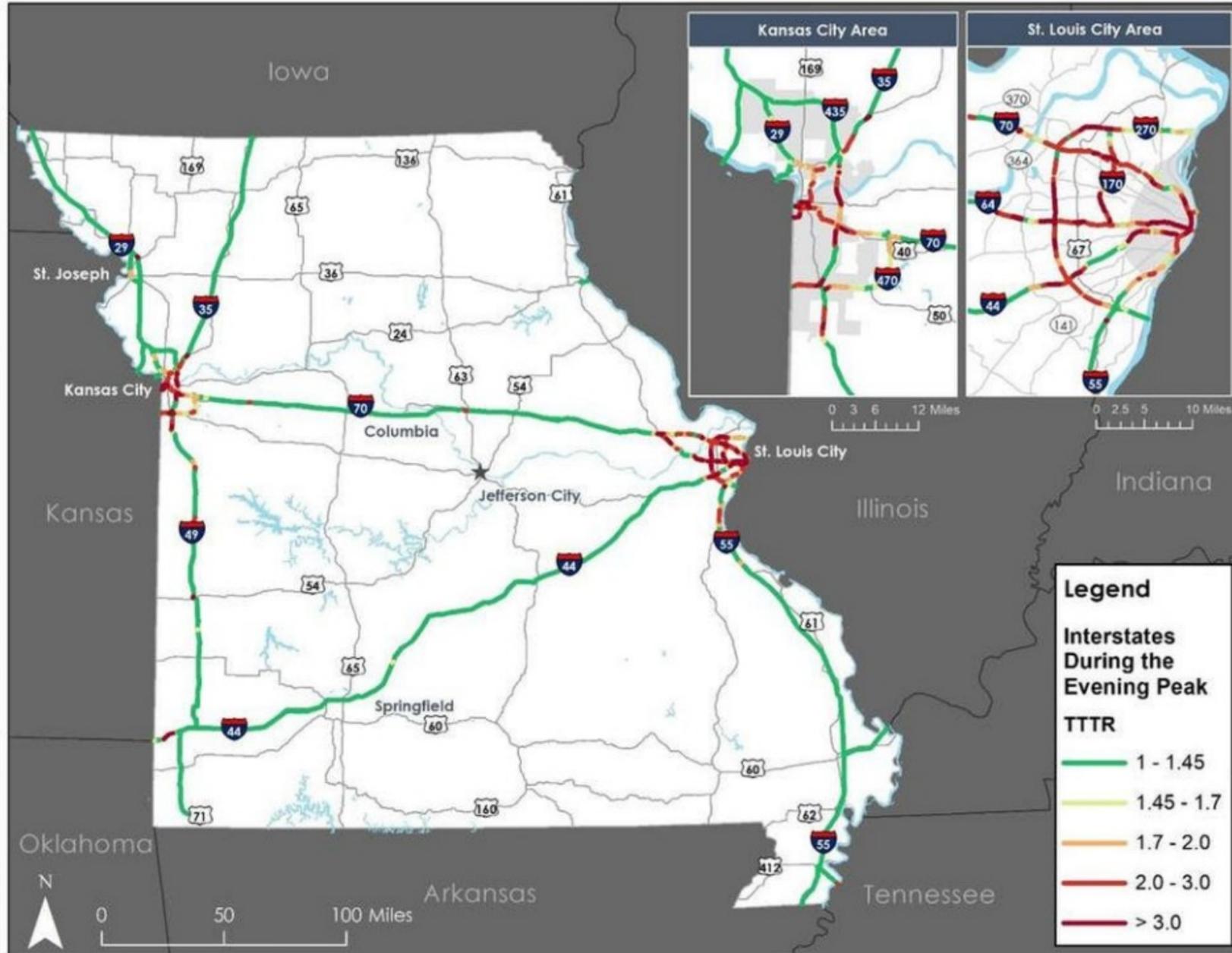
Of the **141 sites** near an interstate in Missouri:

- **87** are at or **above 100% utilization** at the peak hour (2-3 AM)
- **23** are **between 80% and 100% utilization** at the peak hour (2-3 AM)
- Average utilization for the **45 PUBLICLY OWNED** sites is **118%** versus **120%** at the **96 PRIVATELY OWNED SITES**



## Evening Peak Truck Travel Time Reliability on Interstate Highways

## Evening Peak Truck Travel Time Reliability on Non-Interstate Highways



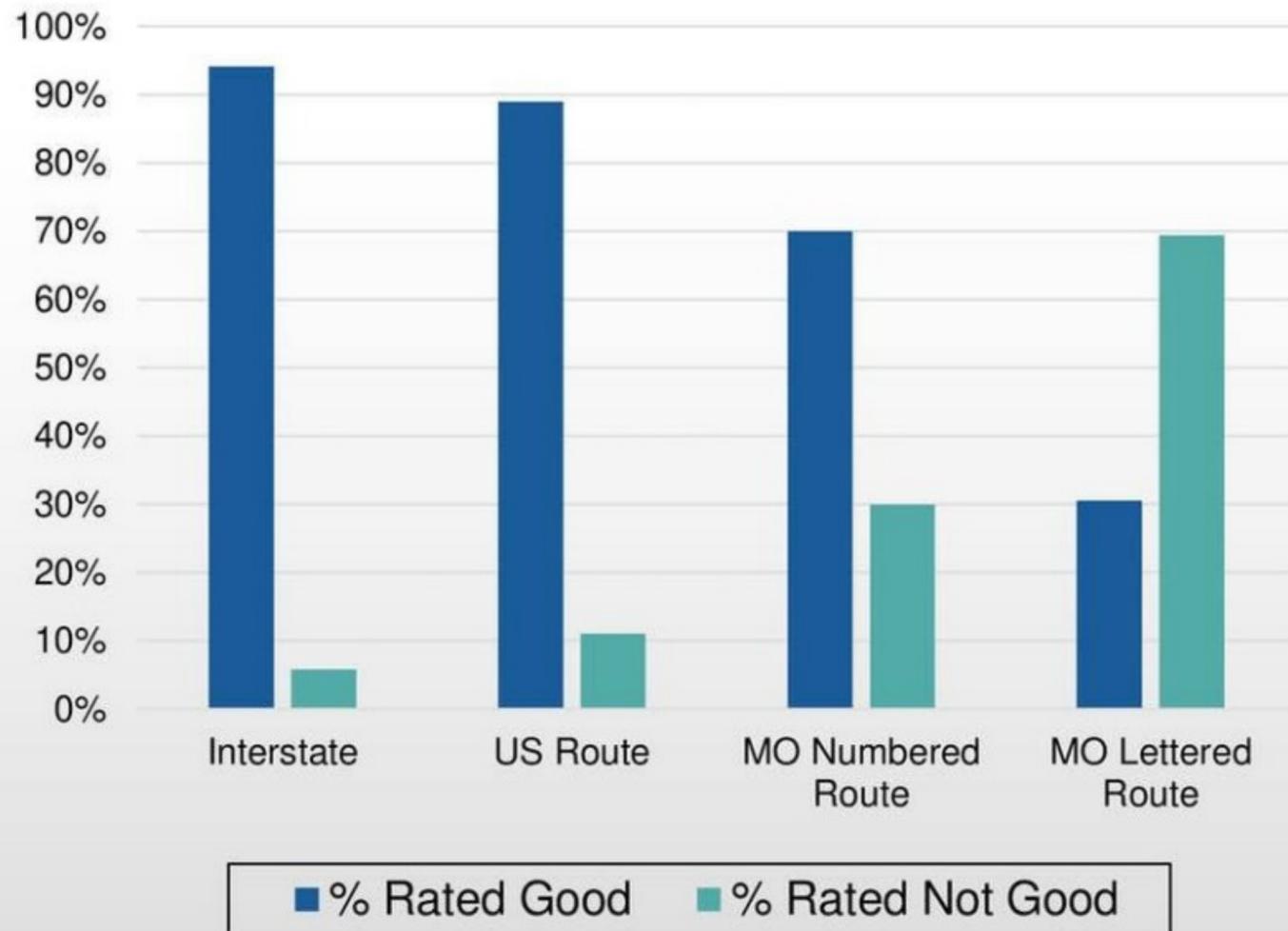
Source: National Performance Management Research Data Set, 2019.



*In 2019, Missouri met the goals for pavement and bridge condition set in the 2017 Freight Plan.*

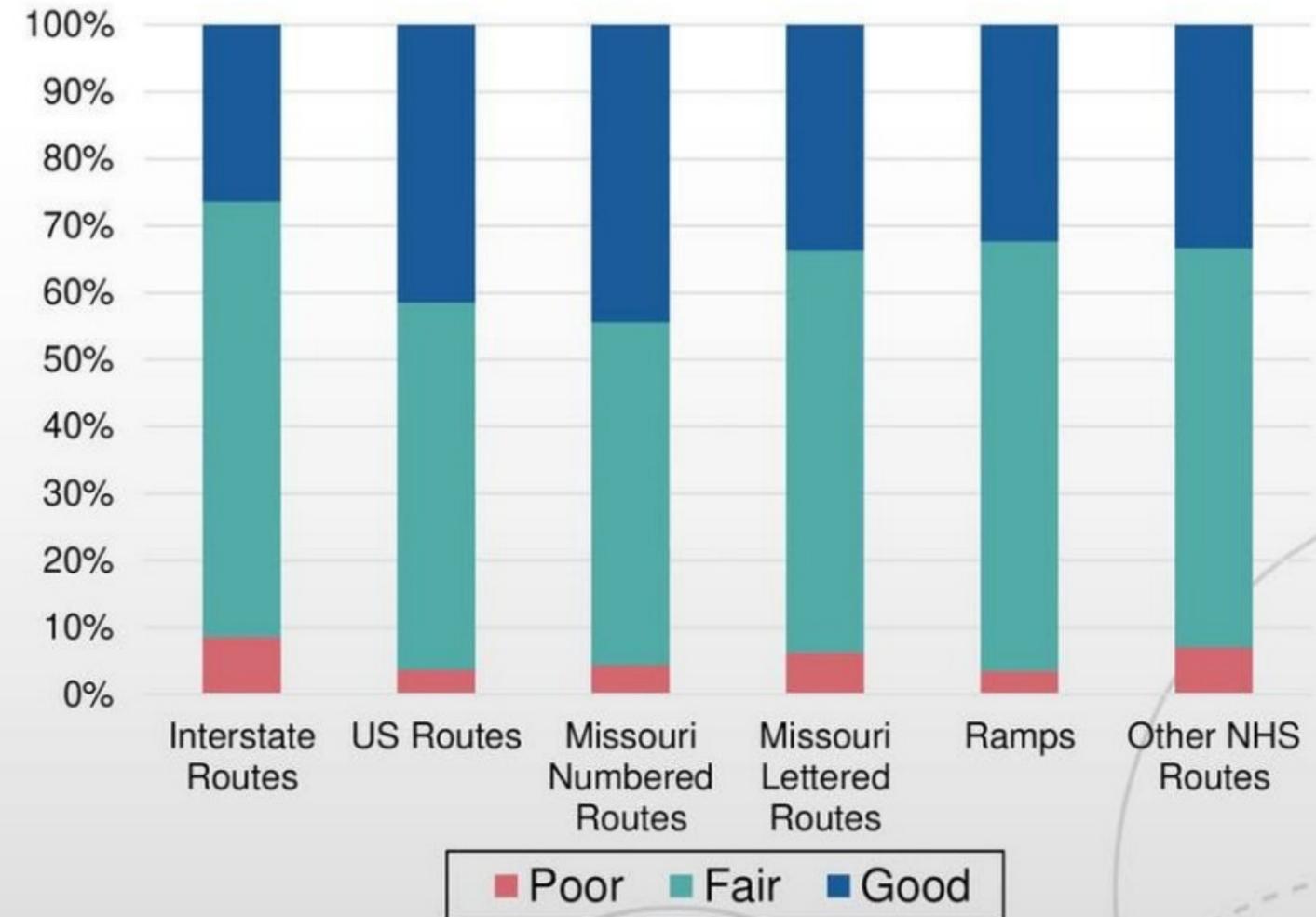
## Pavement Condition

Goal: >85 percent of major highways in good condition



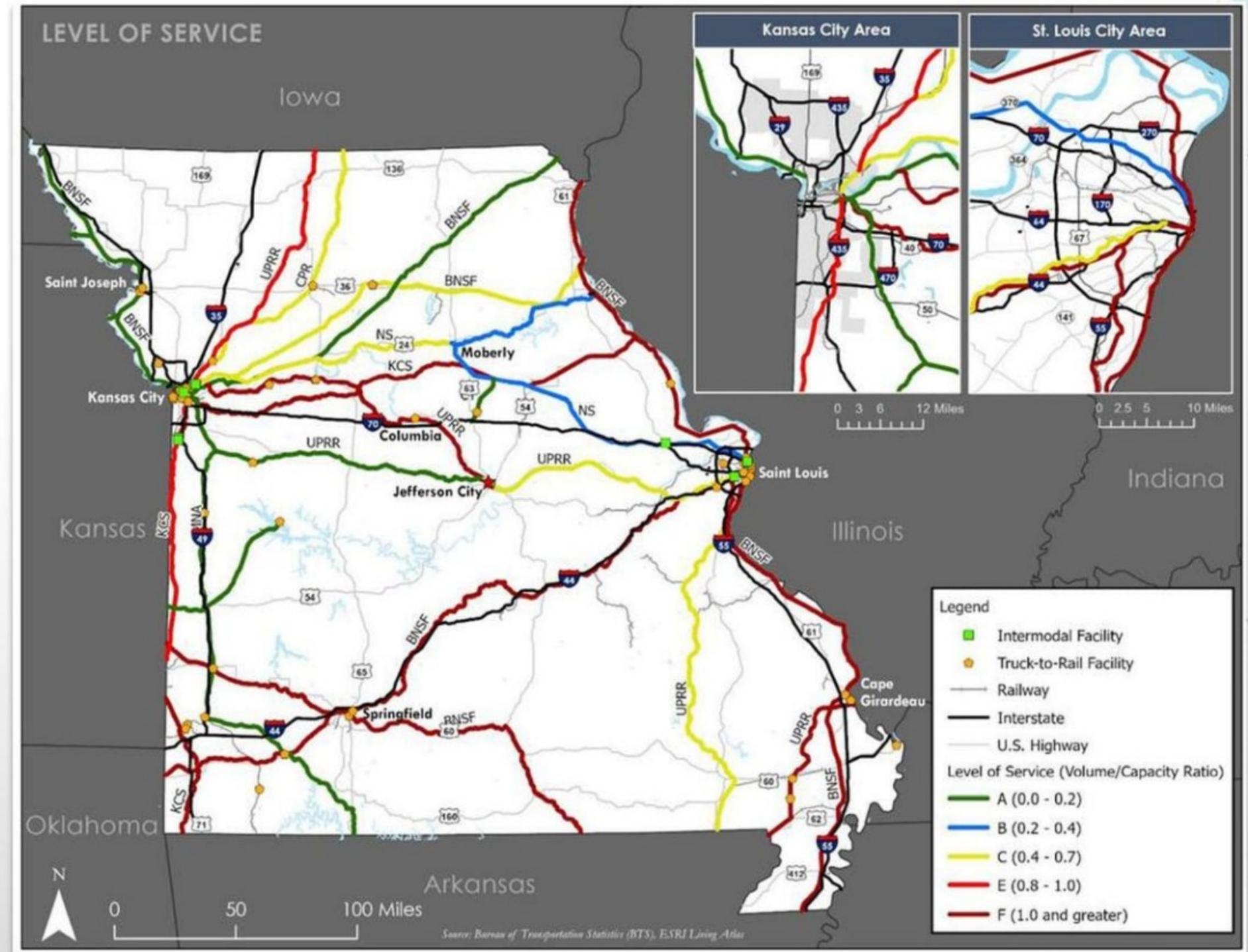
## Bridge Ratings

Goal: <10 percent of structurally deficient deck area on NHS Bridges

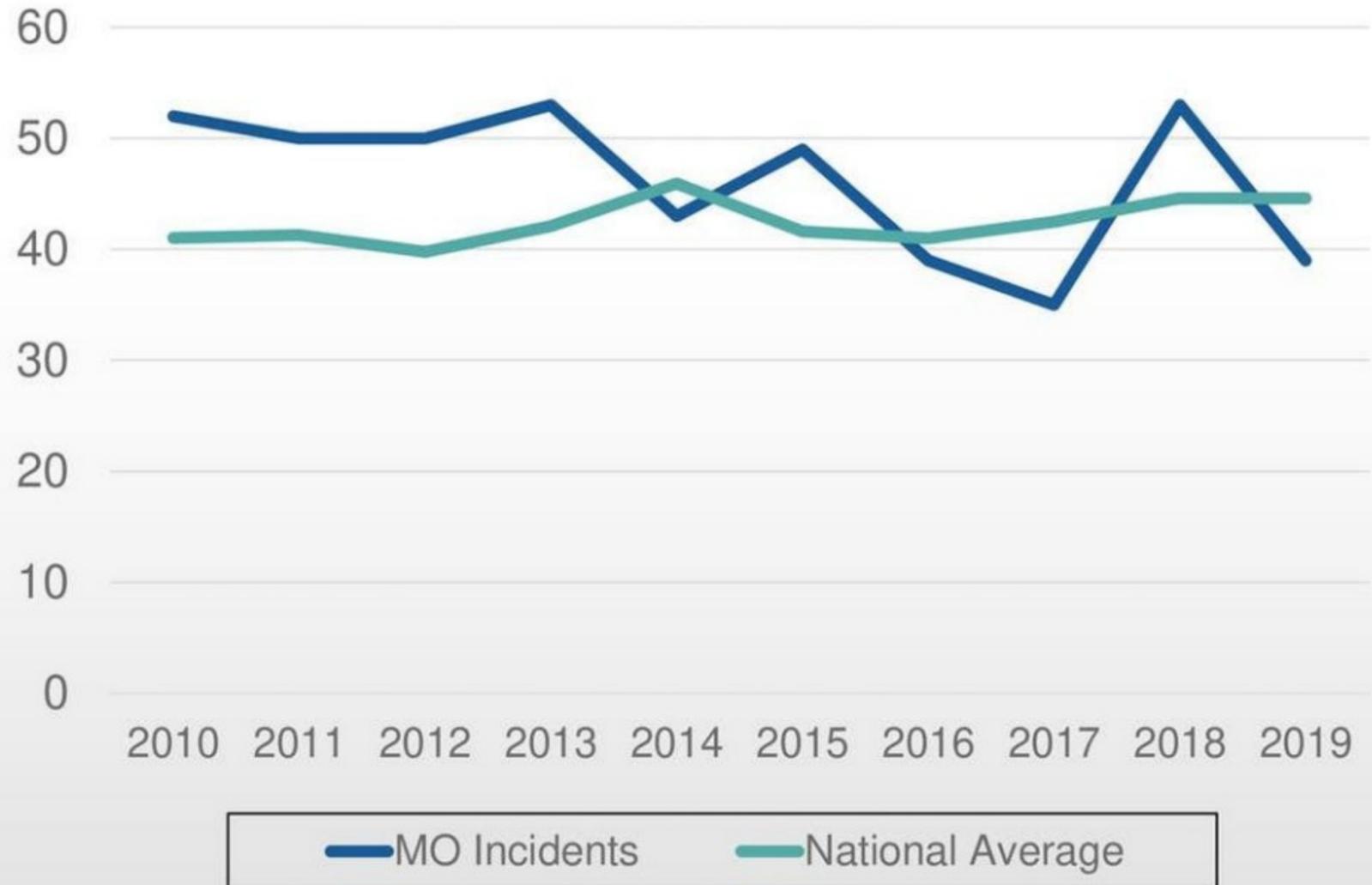


## Stakeholder and Analysis Findings:

- Capacity constraints on Tulsa-Springfield-Memphis route
- Coal volumes down 33% since 2012
- PSR operation changes have been on-going



## Roadway-Rail Crossing Incidents, MO v. National State Average (2010-2019)

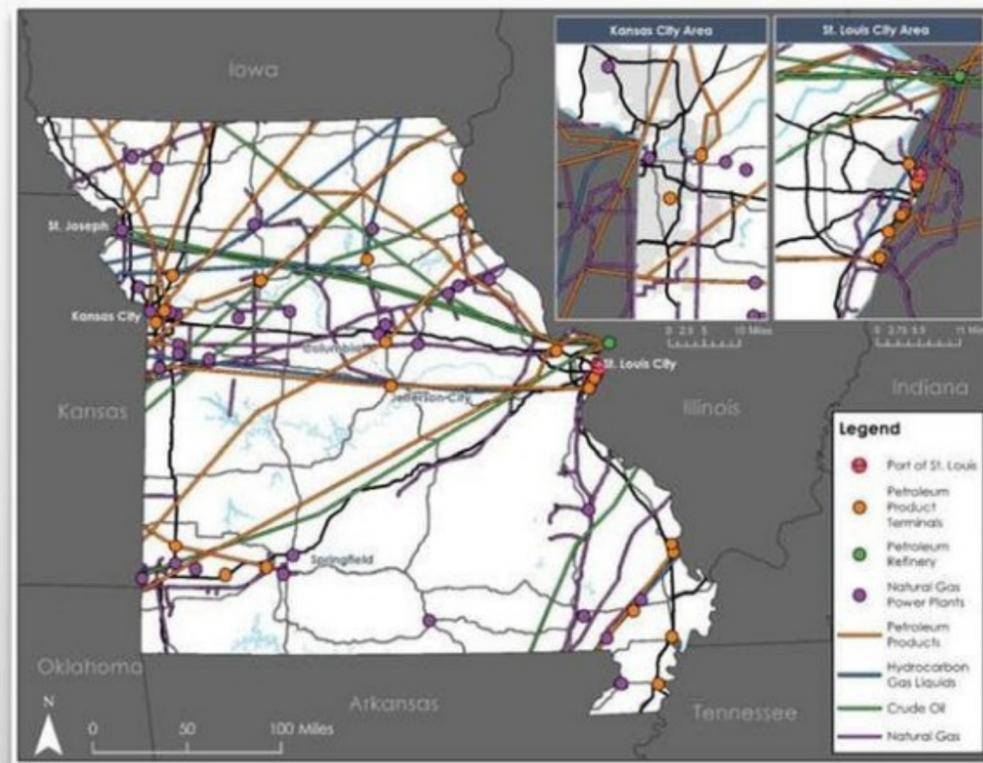
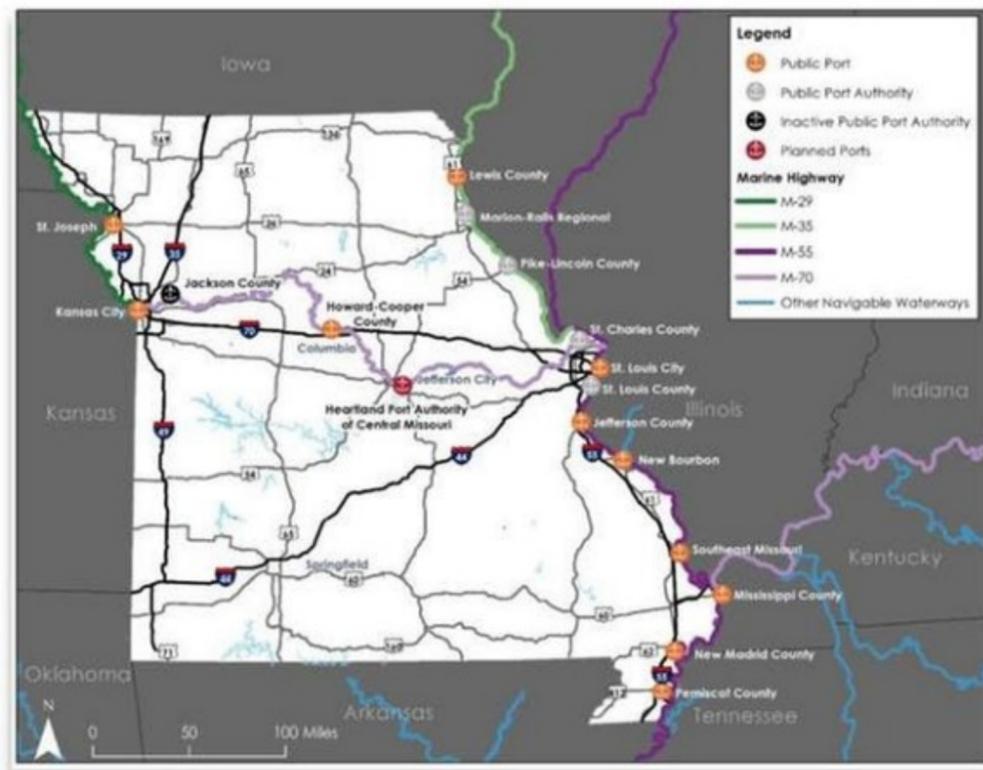
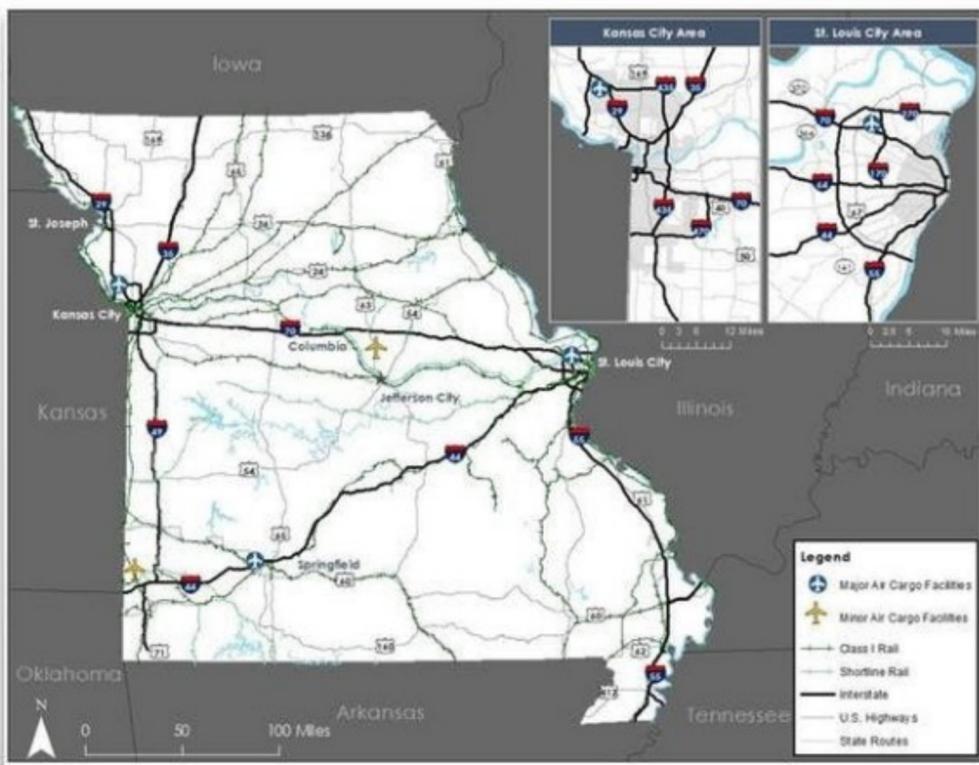


- Total incidents (2010-2019): **463**
- Total fatalities (2010-2019): **70**
- Rate of fatalities per at-grade train crossing incidents (2010-2018): **15.3%**
- Rate of fatalities per at-grade train crossing incidents (2019): **12.8%**

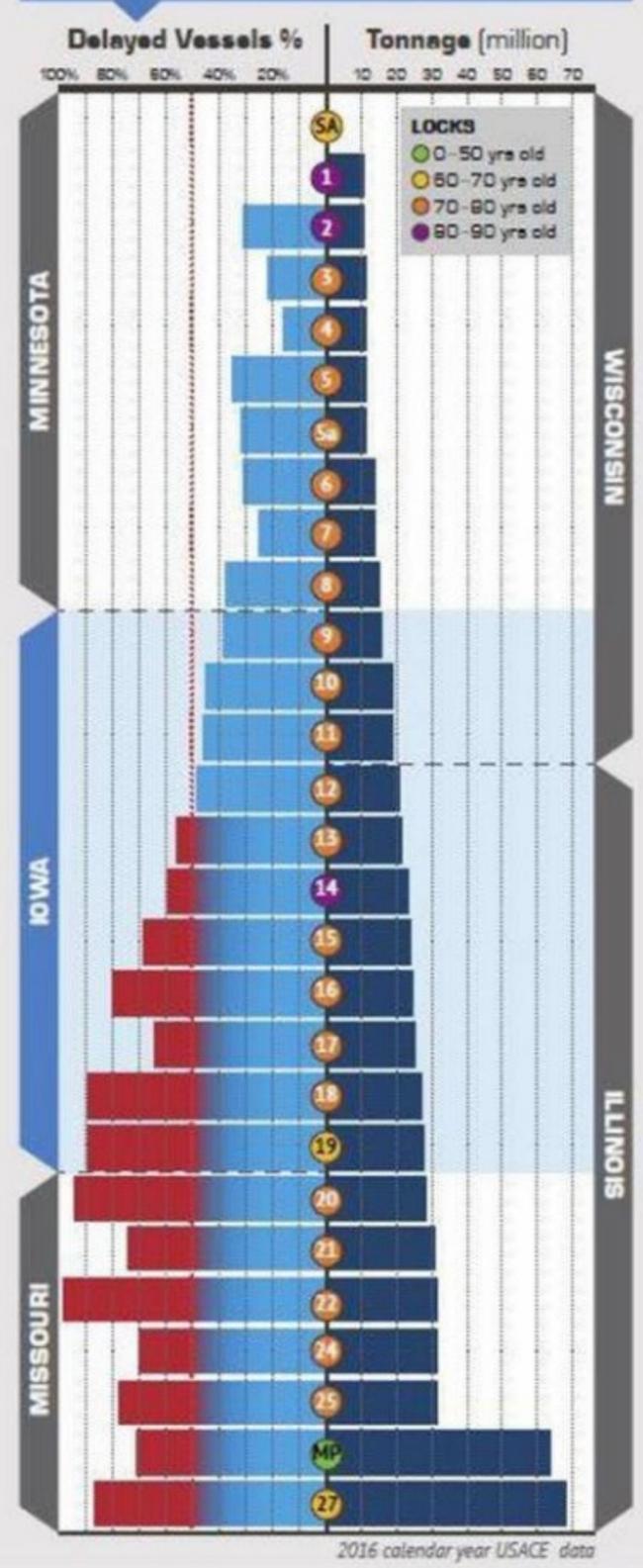
Source: FRA Office of Safety Analysis.



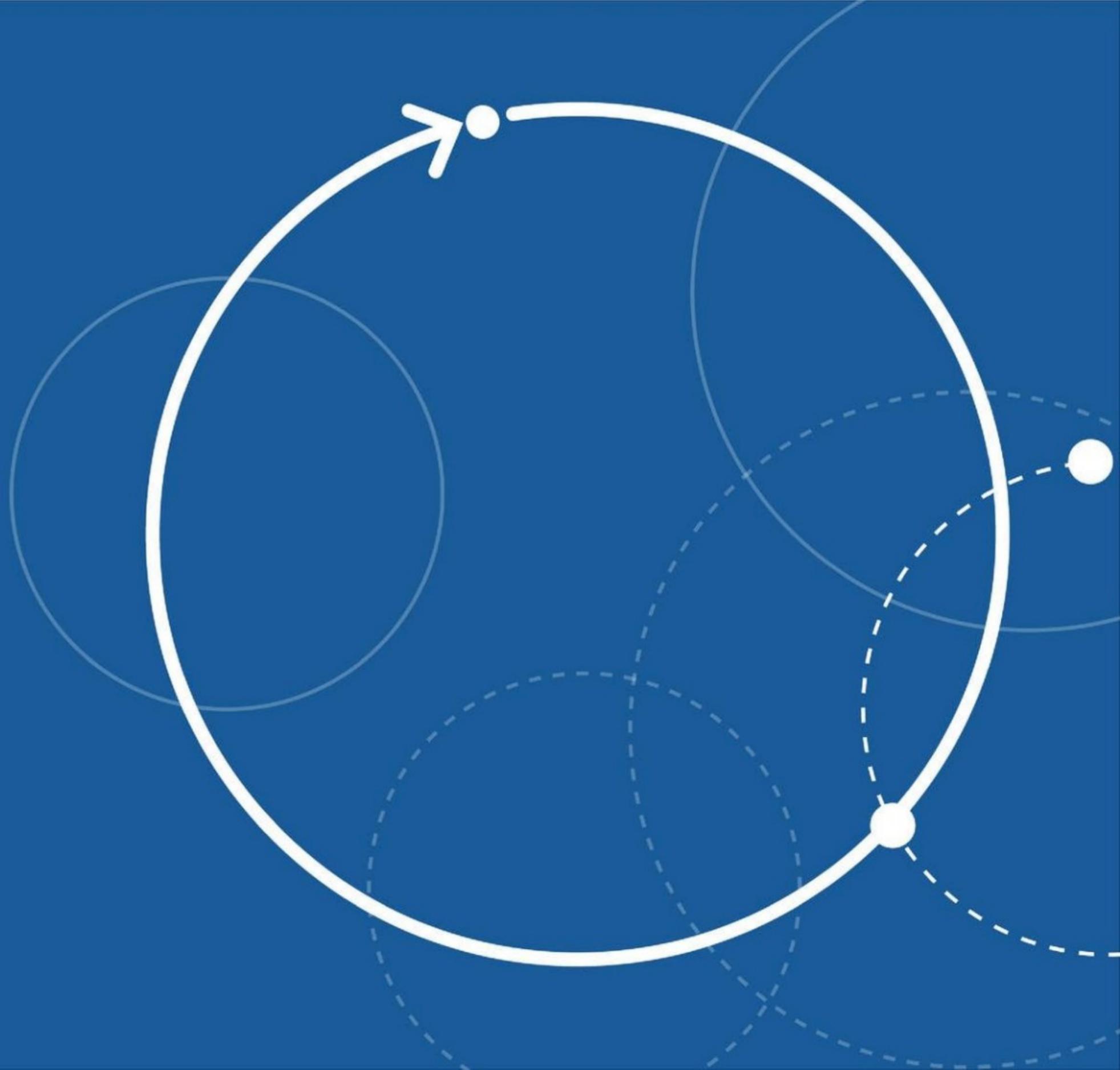
*Condition and performance largely context-dependent at the facility level*



## UPPER MISSISSIPPI LOCKS & DAMS ANNUAL VOLUME OF TRADE VS. DELAYS



# Breakout Room Discussion



# Breakout Room Discussion Topic

1. Identify needs on multimodal network – site specific, bottlenecks, and systemic needs



***Safety***



***Truck  
Parking***



***Technology***



***Mobility &  
Reliability***

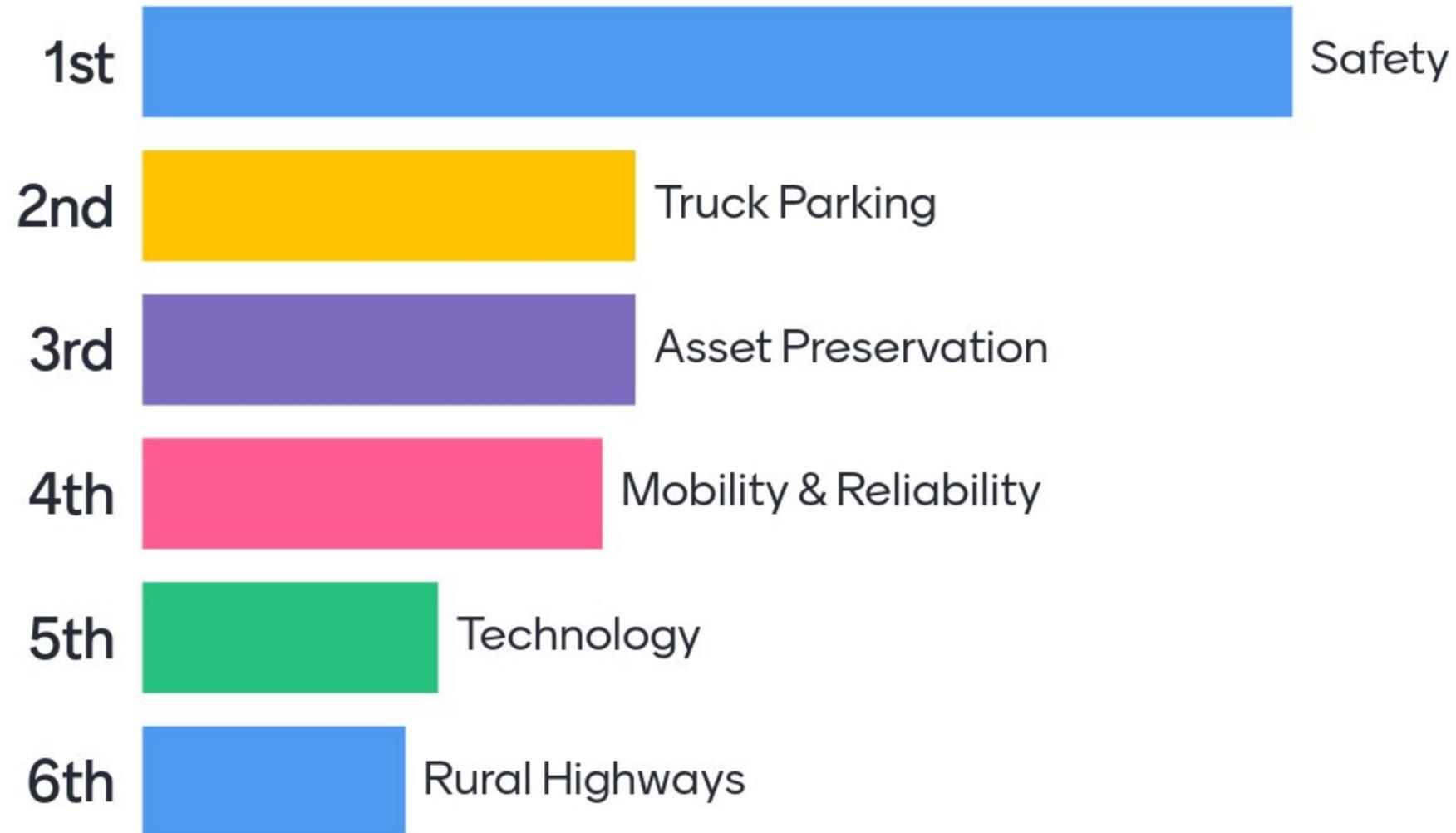


***Asset  
preservation***

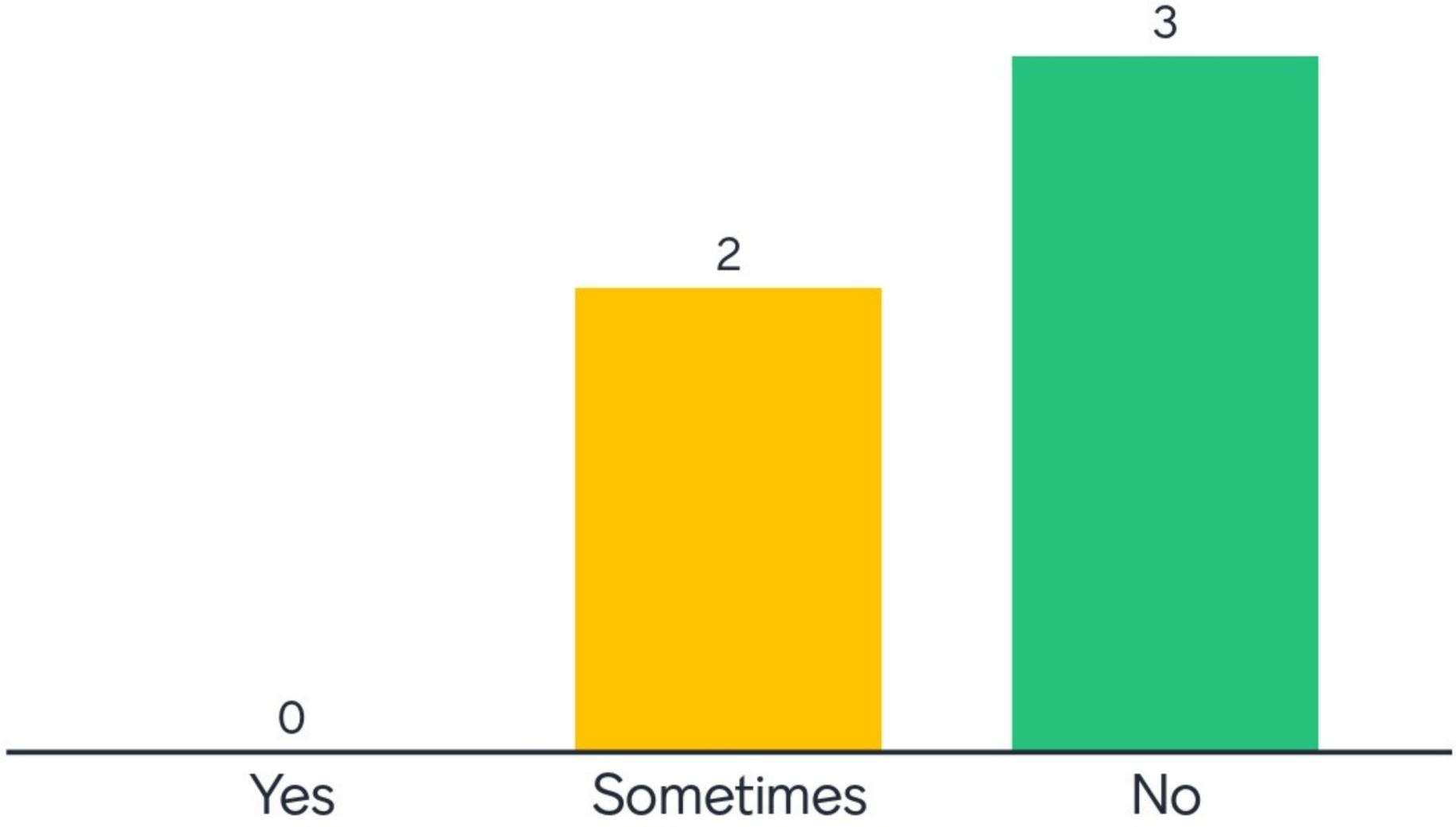


***Rural  
highways***

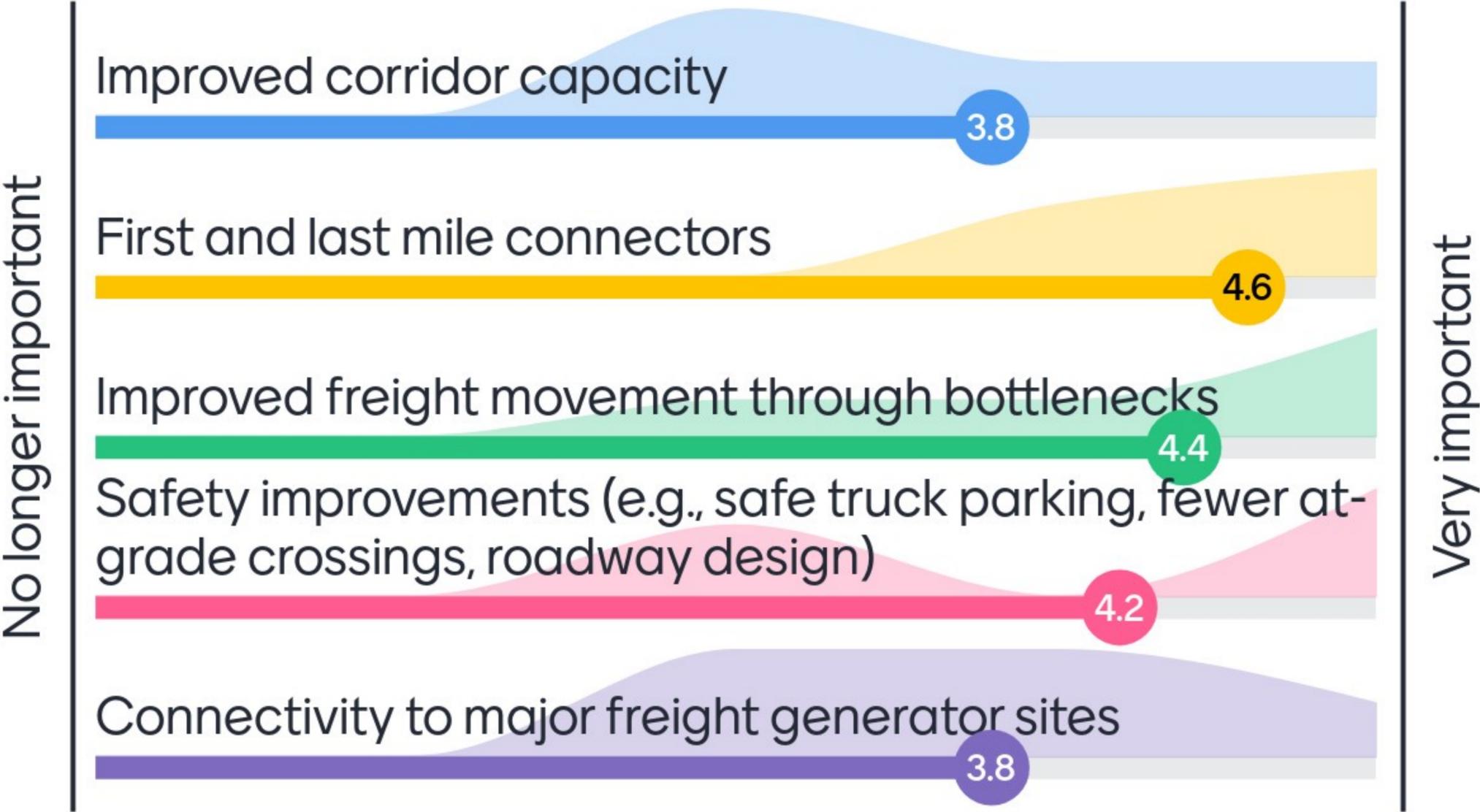
# Rank the multimodal freight needs categories in order of importance:



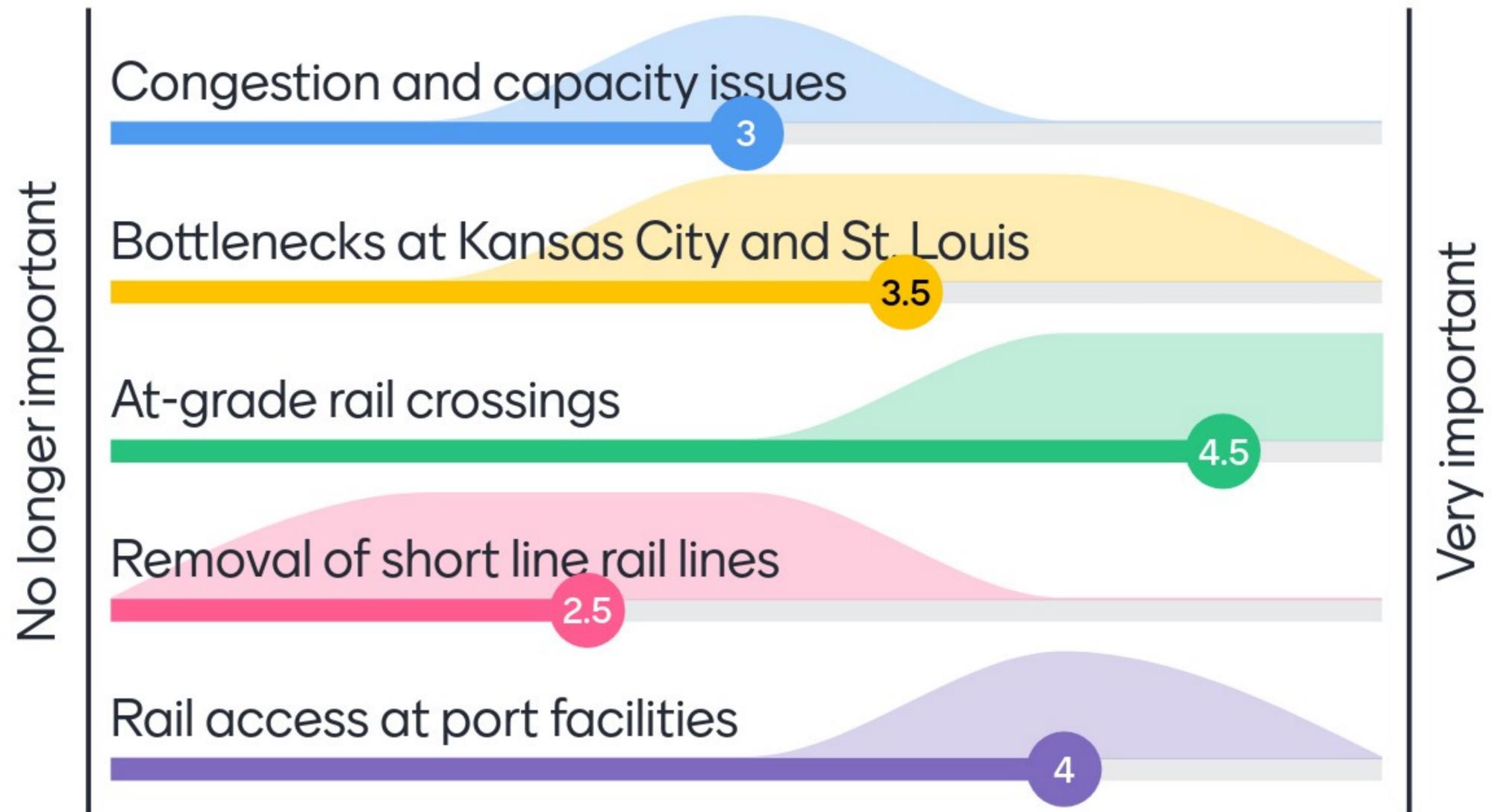
# Do you have sufficient access to legal/authorized truck parking locations?



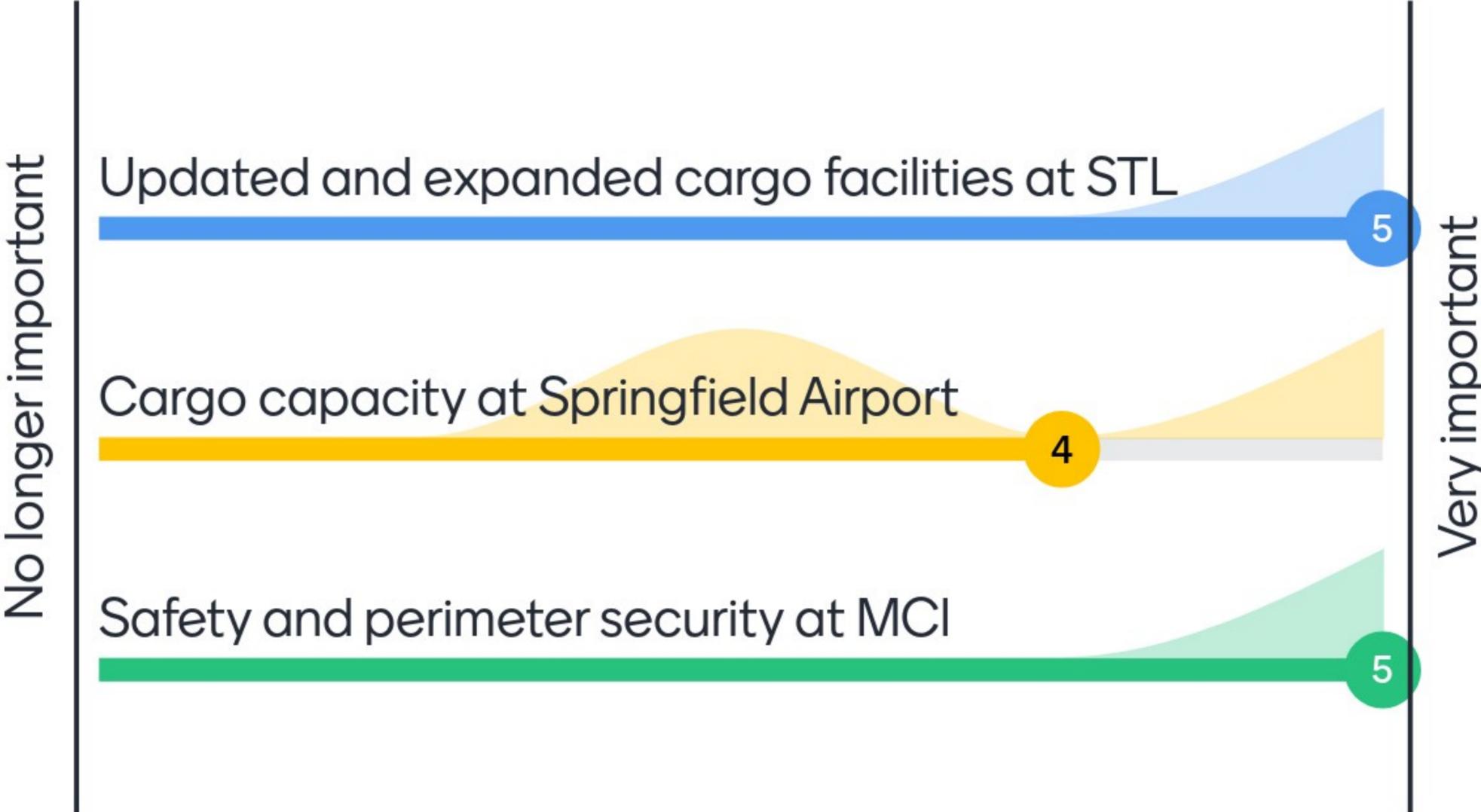
# To what extent are the Highway needs from the 2017 Freight Plan still important?



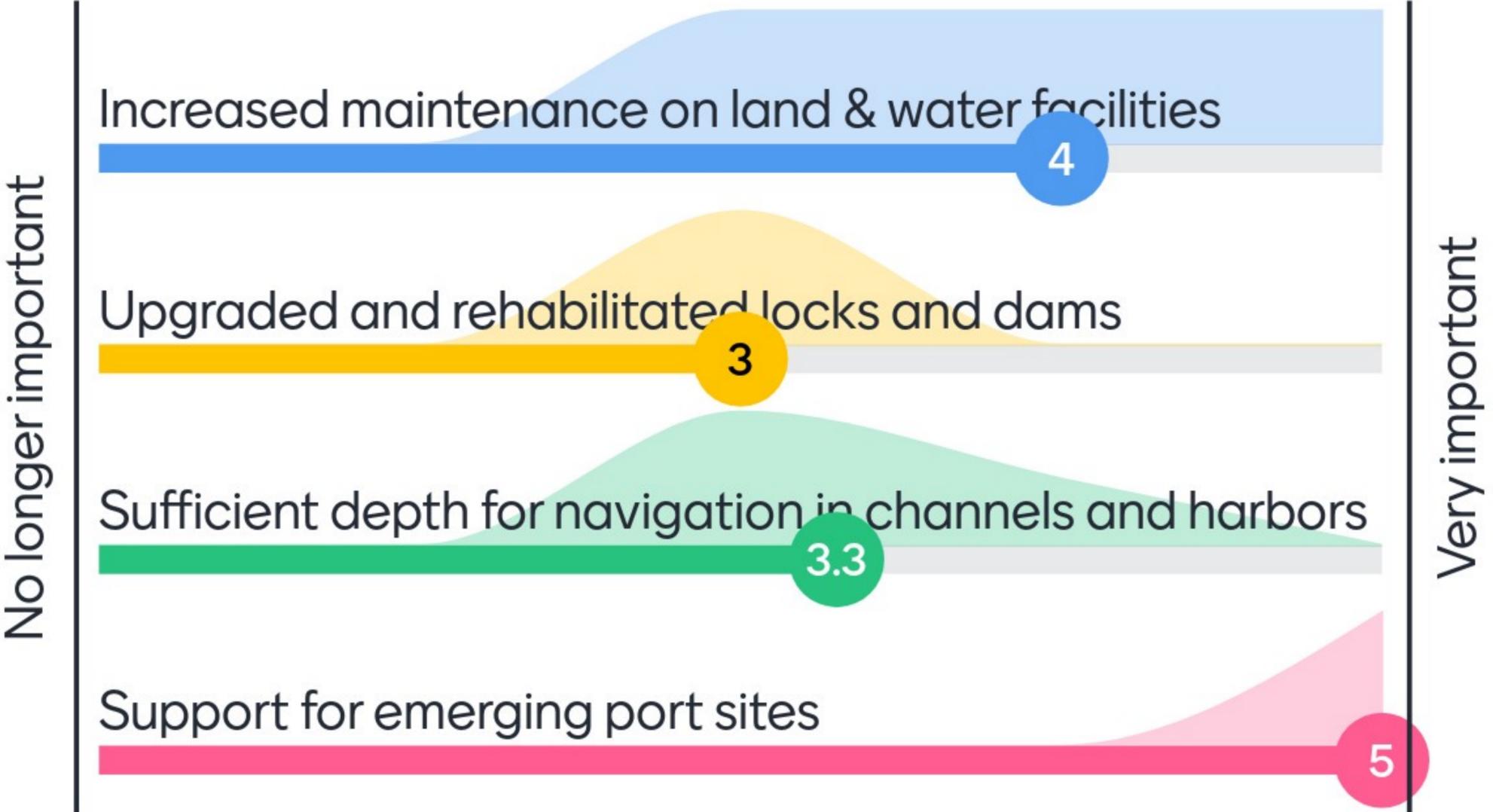
# To what extent are the Rail needs from the 2017 Freight Plan still important?



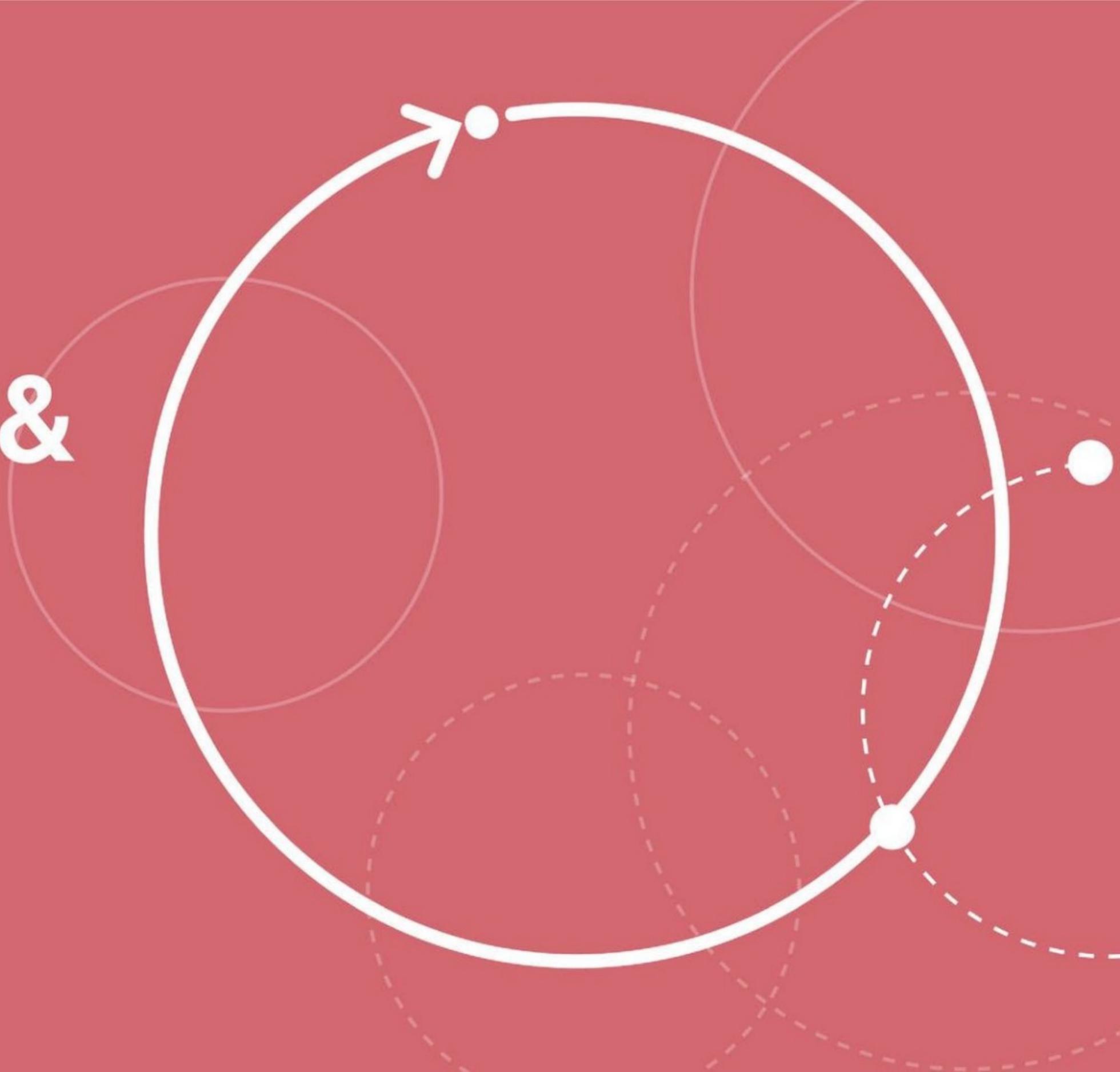
# To what extent are the Air needs from the 2017 Freight Plan still important?



# To what extent are the Water needs from the 2017 Freight Plan still important?



# Other Needs & Challenges

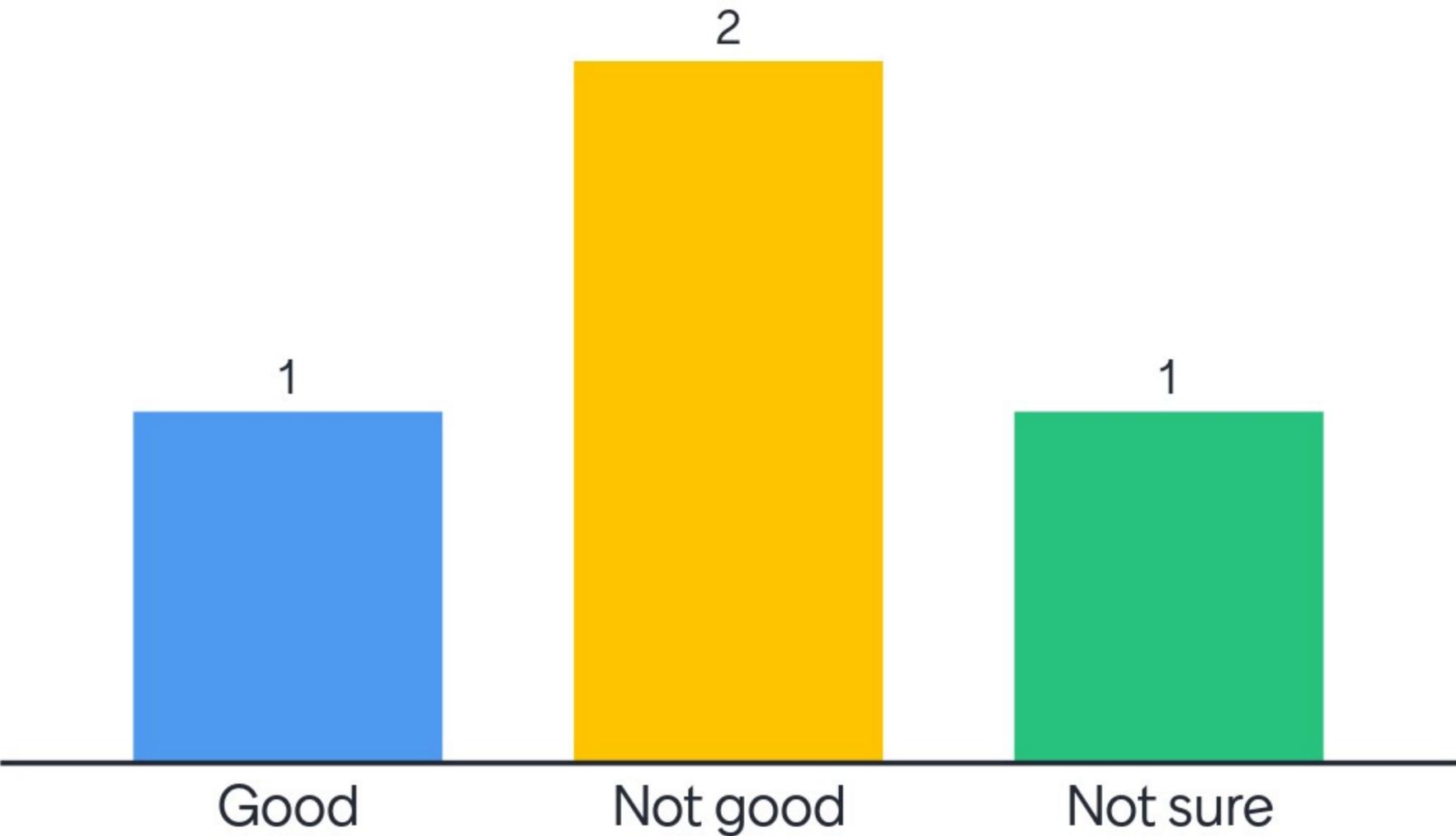


# Other Needs & Challenges

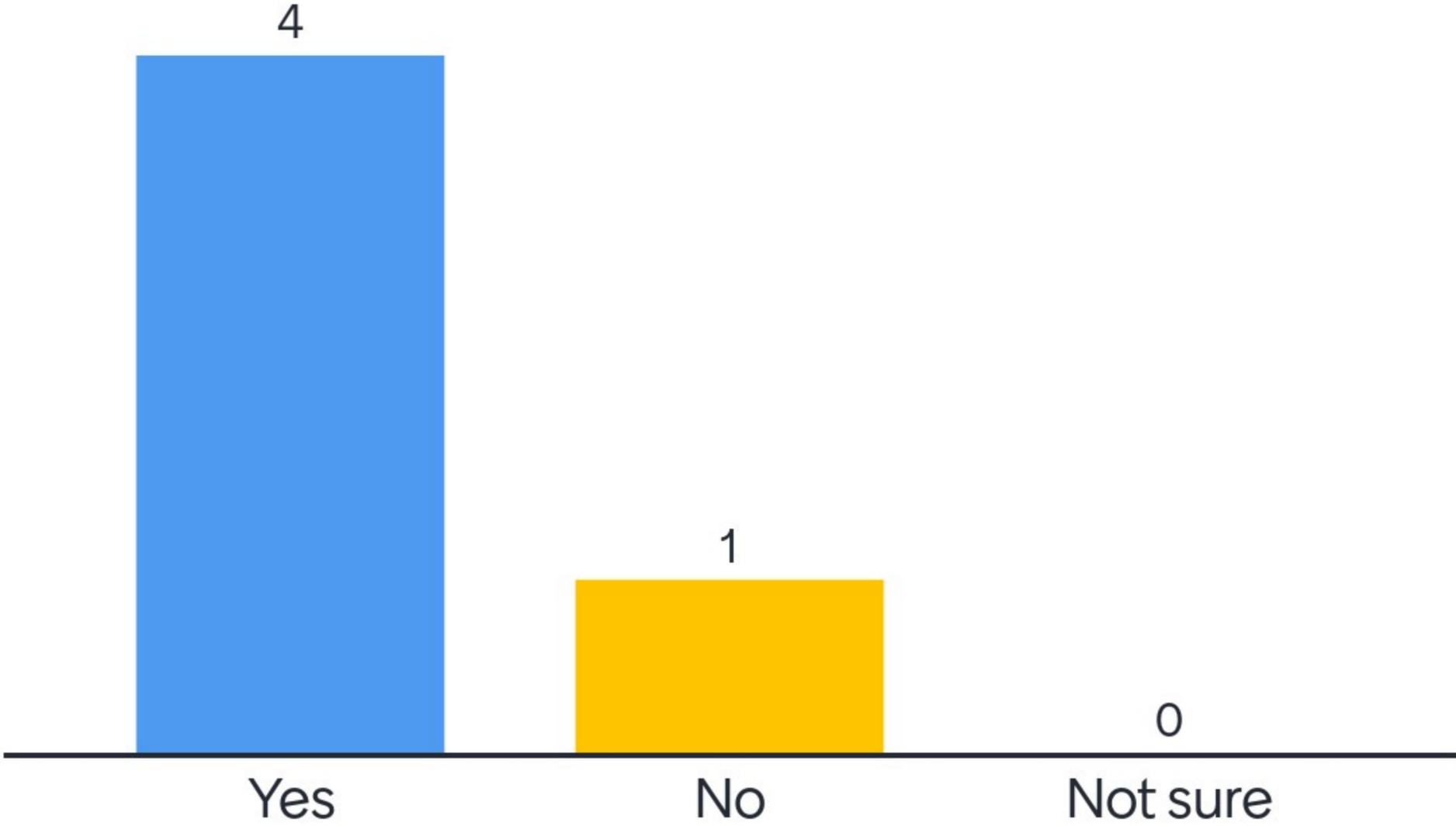
[www.menti.com](https://www.menti.com) voting code: 95 68 24

- How is incident clearance and emergency response?
- Does the network provide adequate access between rural & urban regions?
- Does the transportation network impact business location and economic development opportunities in your industry? Why?
- Other needs & challenges that we should be aware of?

# How is incident clearance and emergency response?



# Does the transportation network provide sufficient access between urban & rural regions?



# In a few words, how does the transportation network impact business location decisions and economic development opportunities in your industry?

Very important and controlled access highways are desired.  
Distance to interstate is tier 1 screening factor

It is second to access to labor.

It is critical for local economic development efforts.  
Business and Industrial parks require rail and truck access  
at a minimum with wide spaces.

Access and infrastructure are one of the first things we  
consider when reviewing a potential land investment as this  
is paramount to our customers who need terrific access to a  
reliable roadway network.

i see the biggest challenge is data driven decision making  
for funding infrastructure

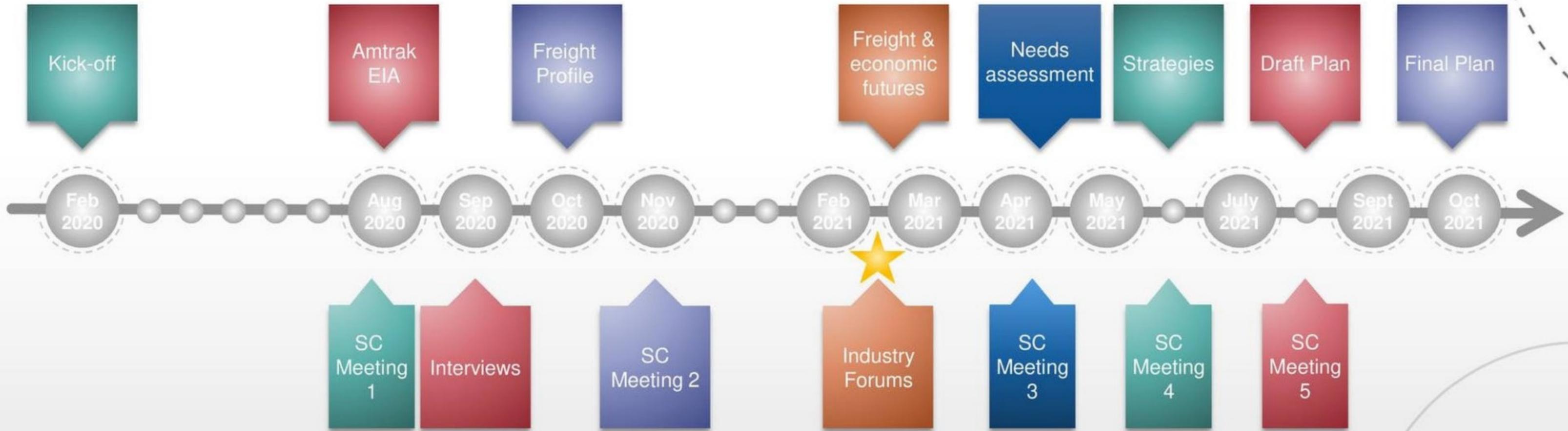
**Are there any other needs or challenges that we should know about?**



# Schedule and Next Steps



# Schedule and Key Milestones



# Next Steps

Finalize designation of  
Missouri Priority Freight Network

Finalize MoFAS tool

Complete needs assessment

Goals & strategies

Project prioritization & ranking

Keep track of the planning  
process here:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

# Thank you!



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# Industry Forum Meetings Summary

# Missouri Department of Transportation (MoDOT) Missouri Statewide Freight and Rail Industry Forums Summary

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## Overview of Industry Forums

The Missouri Department of Transportation (MoDOT) conducted four industry forums between Tuesday, February 23, and Tuesday, March 2, 2021, via Zoom covering the topics of agriculture/agribusiness; freight carriers; warehousing and distribution; and shippers and manufacturers. These meetings lay the groundwork for recommendations for the Missouri State Freight & Rail Plan (SFRP). Topics for the plan include how to leverage for continued opportunities in the state, help MoDOT manage the shared freight and rail network, and think strategically about improving the state's transportation network.

The industry forums were designed to cover specific topics and gain feedback from industry leaders in the public and private sectors. Input is used to identify freight assets, refine the freight transportation needs assessment, and finalize the Missouri Priority Freight Network.

Questions were posed to the group regarding:

- Multimodal freight needs
- The extent to which highway, rail, air, and water needs from the 2017 Freight Plan are still important
- Critical highway and rail corridors
- Incident clearance and emergency response
- Access between urban and rural regions
- How the transportation network impacts business location decisions and economic development opportunities
- Sufficient access to legal/authorized truck parking locations
- Overall freight needs and challenges

Each industry forum started with a presentation from MoDOT about the draft SFRP. Meeting participants were then split into breakout rooms to have discussions about the information presented and discuss any questions or concerns they had. The Agriculture/Agribusiness, Freight Carriers, Warehousing & Distribution, and Shippers & Manufacturers Industry Forum summaries are below.

## Agriculture/ Agribusiness Industry Forum

The Agriculture/Agribusiness Industry Forum took place on Tuesday, February 23, 2021, from 9:00 – 11:00 a.m. via Zoom. Thirteen participants attended the forum. Themes and topics discussed in the main session and breakout rooms included:

- Deficient structures on and along the Missouri River,
- Agriculture imports and exports via ports, and
- Airports in relation to agriculture.

## **Freight Carriers Industry Forum**

- The Freight Carriers Industry Forum took place on Wednesday, February 24, 2021, from 9:00 – 11:00 a.m. via Zoom. Sixteen participants attended the forum. Themes and topics discussed in the breakout rooms included: Improved freight and rail lines between Kansas City and St. Louis,
- Engaging railroads early in the planning process,
- More at-grade separations of roads and railroad lines,
- The need to work with the state on river crossings and adding ports,
- Truck parking is a major challenge, and
- How future funding relates to the SFRP.

After the breakout sessions, the group convened and discussed:

- Additional improvements to ports to help move agriculture cargo,
- The need to modernize ports,
- The importance of truck parking,
- Airports needing to focus more on air-cargo,
- E-commerce being an issue at airports, and
- The importance of e-commerce to shippers and customers.

## **Warehousing & Distribution Industry Forum**

The Warehousing & Distribution Industry Forum took place on Thursday, February 25, 2021, from 9:00 – 11:00 a.m. via Zoom. Twenty-eight participants attended the meeting. Themes and topics discussed in the main session and breakout rooms included:

- Connectivity between rural and urban ports seeming better from the urban perspective than from the rural perspective,
- Growing and expanding ports in rural areas,
- Exploring technology in more detail in the recommendations and strategies, and
- Improving crash clearance zones and predetermined detour routes.

## **Shippers & Manufacturers Industry Forum**

The Shippers Industry Forum took place on Tuesday, March 2, 2021, from 9:00 – 11:00 a.m. via Zoom. The meeting had 22 attendees. Themes and topics discussed in the main session and breakout rooms included:

- Access between urban and rural areas;
- Safety, technology, mobility & reliability, asset preservation and rural highways;

- Increased access to truck parking;
- The need for improvements at Highway 6 east of Kirksville and U.S. 63;
- Peak hour travel reliability; and
- A focus on economic development.

# Regional Stakeholder Meetings Summary

# 2021 Missouri State Freight and Rail Plan Regional Stakeholder Meetings Summary

## Overview:

The Missouri Department of Transportation hosted the Missouri State Freight and Rail Plan (SFRP) Stakeholder Meetings on May 4<sup>th</sup>, 5<sup>th</sup>, 11<sup>th</sup>, and 13<sup>th</sup> from 9 a.m. – 11 a.m. The objectives of the meetings were to gather insight, input and feedback from Missouri planners and policymakers on regional economic and industry trends, as well as important freight transportation needs. A PowerPoint presentation was provided to review all the trends.

## Meeting Summary:

1. **Welcome:** Cheryl Ball, MoDOT Freight and Rail Plan Project Manager, provided a welcome and encouraged participation and input to help shape the freight plan.
2. **Introduction:** Paula Dowell, Cambridge Systematics (CS), provided an overview on the background of the SFRP and what would be discussed in the meeting. Stakeholder engagement for the plan includes initial interviews with key stakeholders, SFRP steering committee, interviews and surveys, industry forums and stakeholder meetings.
3. **Missouri Freight Profile:** Katie Kirk, CS, provided an overview of the current plan. The plan encompasses four main modes that carry freight: the state highway system, railroad network, marine ports and waterways, and cargo-handling airports. A total of 985 million tons of goods were shipped in 2018 worth \$1.1 trillion. By 2045, it is predicted that 1.2 billion tons of goods will be shipped throughout Missouri (within the state, through the state, and to the state) worth \$1.8 trillion. Commodities are not predicted to change significantly except for coal, which is already trending downward nationally. Most of the freight moves through the state without stopping. Freight supports some of the biggest industries in the state: agriculture, mining, manufacturing, etc.
4. **Economic Futures:** Katie Kirk and Paula Dowell presented how MoDOT is working to update future forecasts and how national trends may or may not affect Missouri. MoDOT will then pick two or three trends to study in-depth and model in the MoFAS tool. National trends impacting freight include renewable energy, multimodal infrastructure, instability due to climate, retail & e-commerce, technology adoption, and trade agreements.
5. **Freight System Needs:** Katie Kirk and Paula Dowell gave an overview of the process for identifying freight system needs. Multiple rounds of stakeholder engagement meetings have provided insight about freight system needs. MoDOT is looking at six categories: safety, truck parking, technology, mobility & reliability, asset preservation, and rural highways. A mapping tool was developed and used during the meetings to gain feedback from stakeholders and identify places in the state with freight system needs and potential projects.
6. **Passenger Rail Update:** Katie Kirk discussed the Virtual Open House which is focusing on passenger rail in Missouri. The Open House is active May 3<sup>rd</sup> through June 21<sup>st</sup> on MoDOT's website.

7. **Schedule and Next Steps:** The project kicked off in February 2020 and will wrap up in fall 2021. There will be another round of participation and engagement before finalizing the SFRP. The next steps are to finalize MoFAS tool and make it useful to any planner working in the state.

#### **Tuesday, May 4: NW & NE Districts**

The northwest and northeast districts meeting was held on Tuesday, May 4, 2021. The overarching themes expressed by stakeholders were:

- The impacts of climate change and flooding along the Mississippi River;
- The future of electric vehicles and charging stations; and
- The need for additional truck parking near Cameron, MO at US 36, and I-35.

#### **Wednesday, May 5: STL & SE Districts**

The St Louis and southeast districts meeting was held on Wednesday, May 5, 2021. Overarching themes expressed by stakeholders were:

- The importance of multimodal connections and
- Safety on roadways.

#### **Tuesday, May 11: KC & Central Districts**

The Kansas City and central districts meeting was held on Tuesday, May 11, 2021. The overarching themes expressed by stakeholders were:

- Changes in the work-force;
- Partnerships with surrounding states; and
- Increased port access.

#### **Thursday, May 13: SW District**

The southwest districts meeting was held on Thursday, May 13, 2021. The overarching themes expressed by stakeholders were:

- Electric vehicles and the implementation of charging stations; and
- The importance of multimodal connectivity.

#### **Conclusion**

Many of the same topics were brought up across all meetings by stakeholders. The main themes that spanned all meetings were:

- The need for multimodal connections in all districts (including increased access to ports);
- The future of electric vehicles, charging stations, and how that could affect the gas tax; and
- Partnering with nearby states- as most of the freight traveling in the state goes through the state and Missouri is not its destination.

Attachment 1 consists of questions and comments from stakeholders that participated in each meeting. Menti, a real-time polling platform, was used to gather feedback on the Missouri SFRP during each meeting. Attachment 2 lists all Menti questions and responses for each meeting.

# Attachment 1

## Stakeholder Questions & Comments

The question (Q), answers (A), and comments (C) are organized into the sections of the presentation in which they were discussed.

### NW & NE Districts

- Missouri Freight Profile
  - Q - Was 2018 a flood year on the MI?
  - A - 2019 was a significant flood year, but 2018 had some flooding. We have had flooding on the Missouri 3 of the last 5 years.
  - Q - What modes are used when flooding occurs?
  - A - Depends on the shipper. Flooding doesn't impact one mode, it can impact ports, roads and depends on the shipper. When flooding occurred, wind turbines changed over to truck.
- Economic Futures
  - C - Tesla is putting a charging station in Hannibal right now at a Casey's!
  - Q - Thinking of autonomous trucks and broadband impacts on rural areas
  - A - The impacts will not be evenly spread. Pre-COVID, e-commerce was seeing a surge in rural areas. With climate change and flooding, some of that will be geographic based and may not be equal between urban and rural areas.
  - Q - What about drone delivery for some packages?
  - A - Yes, drones working in rural areas and cargo blimps. We will see more robots on the sidewalks and technology lockers.
  - Q - Backing up to climate change info--does the mix of concrete and asphalt need to be reexamined as things change to make them better and longer lasting?
  - A - That's what we call hardening of the infrastructure and falls under resiliency.
  - Q - I don't know that 5G is possible on our major highways in rural areas.... that is what CAVs take...
  - A - Some of the technology we already have on our cars and not as reliant on 5G
  - Q - Don't blockchains take a lot of energy?
  - A - Yes, they can.
  - C - my idea of untapped potential was lots of river space with no ports, lots of room distribution centers and warehouses
- Freight System Needs
  - Q - Can we get the link to the mapping tool in the chat
  - A - The link will be provided
  - Q - Where are the rail lines where goods can get into the system and off?
  - A - The dashed layer on the map
  - C - I'm working on a port expansion in Lewis County in northeast
  - Q - Is there any rail freight access in northeast Missouri? Is there any rail/port access?
  - C - I'm assuming that rail is all just cross thru
  - Q - Air expansion in Cameron, MO, Interstate Interchange improvements in Cameron and St. Joseph, port development in St. Joseph
  - Q - Does the rail cross Highway 63 in La Plata? that might be a decent location
  - C - NE part of the state would be ideal for rail/port/highway access.

- C - Cameron is working towards improving truck parking, but needs the highway improvements to help facilitate and improve safety
- C - Port need in Alexandria, MO identified on map. They had a private individual ready to go. Was for a dry fertilizer port.
- C - For the Alexandria thing, the NE MoDOT people to talk with would be Amy Crawford, Area Engineer and Rob Frees, Planning Manager.
- Expanding the runway in Cameron, MO to allow for larger freight and passenger with access at US 36 and I-35.
- Hwy. 63 and rail crossing improvements in La Plata.
- Cameron, MO truck parking improvement. They have invested in a private truck stop around Hwy. BB on the east side of I-35. The desire is for interchange improvements to allow better access to the truck stop.
- C - Need improved rail access (comment from Cheryl Ball) to encourage business location.
- C - Broadband in Lewis County can be spotty
- C - I would just add that continuing the four-lane highway from Kirksville north to Iowa is a priority for us.
- C - Looking at the map you get a feel of how important the rural roads are for all north Missouri depend almost entirely on low volume and minor routes

#### **STL & SE Districts**

- Missouri Freight Profile
  - Q - When you show the different categories, are those broken down by corporation or totaled as a whole?
  - A - We used a couple of different sources. The stats presented earlier were statewide industry stats.
- Economic Futures
  - Q - Just a reminder that air is also an important part of multimodal, but I don't see it listed here?
  - A - We recognize it's an important mode and will discuss it further.
  - C - The STL airport has seen the uptick of e-commerce on the air side for online retail and shopping. Last month was almost a 20%-30% growth rate year over year in air-cargo. MCI might be seeing the same thing. There is a need for quick demand. Air-cargo networks have played a key role for cargo to get on trucks and then get to its destination.
  - C - We are seeing more and more door to door delivery with e-commerce and a greater increase in that last mile service. More freight moving through neighborhoods. Panel trucks, vans, autos, cargo bikes.
  - C - In the SE district, there are a lot of spots where you can't get broadband or service.
- Freight System Needs
  - C - I-70 throughout the STL region, it is a primary corridor in St. Louis. As a primary E/W corridor it supports several industrial sites and GM Wentville site and part of a system that supports overall manufacturing in the region. Capacity and condition are a concern. The section in St. Charles Co. where Norfolk southern goes over the I-70 sees a daily congestion point. 141 to 170 in front of St. Louis airport where it supports industrial sites. Existing manufacturing sites.
  - C - Safety concerns on I-70 near the airport. There are backups due to crashes.
  - C - The road network east out of Missouri at Charleston is very limiting for freight movement and involves Illinois and Kentucky.

- C – The I-40 corridor in Arkansas is maxed out and freight movement north south is important to Missouri.
- C - Don't forget about the passenger rail as well and how that can help the region.

### **KC & Central Districts**

- Missouri Freight Profile
  - No questions or comments were presented by stakeholders.
- Economic Futures
  - Q - How do we start that process at a local level? Is there a plan in place on where to start? Is it with Union Pacific Rails in our area? What guidelines are there for this process?
  - A - As part of the state freight plan, we're engaging with rail lines as to where those opportunities may be. At any level, there is an opportunity to discuss these issues. As far as guidelines are, those are in the planning process.
  - C - One consideration to add: Workforce location and availability related to supportive land use. We have an active goods movement committee at MARC. One Opportunity to consider: Containerized freight on inland waterways.
  - C - MoDOT works with planning organizations in the region for projects. It helps the state decide where we want to head in the future. MPOs and agencies are major partners in the plan and in implementation.
  - C - Looking ahead at upcoming slides. In KC region, we looked at similar driving forces of change during our last MPO long-range plan. We considered all the ones mentioned in these set of slides, plus one additional not mentioned here. Demographic changes. Some factors which could be impactful in the future:
    - Fewer working adults to support retiree benefits.
    - Competition for resources between ages and races.
    - Demand for transportation choices.
    - Labor shortages and rising unemployment.
  - C - Thanks Martin- those are all very good and are captured in our alternative economic forecasts. The items we are discussing now are considered as potential disruptors- things that are not easily predicted with regards to potential impacts.
  - C - Another set of measures not listed here is how we can mitigate potential impacts to the future.
  - C - One of the key lessons we learned was partnering with neighboring states and to look at this as a regional or national level. Processes need to take place to develop coordinated frameworks.
  - C - Many neighboring states have developed policy frameworks for the adoption of CAV technologies as part of their transportation planning processes.
  - C - For autonomous vehicles we will really need national level adoption of visual cues and signage for these vehicles to read and use for guidance. Fragmentation won't allow these vehicles to navigate on our roadways.
  - C - I love these intermodal connectors from Canada to Mexico. Great move!!!!
  - C - Our eco devo partners here in KCMO have expressed that multimodal transportation options is by far the most impactful to freight and good movement.
- Freight System Needs
  - C - Access to the proposed port in Jefferson City.

- Q - The port in Cooper Howard county, they own the area of the port but were having issues with expanding the port and cannot get the adjacent company to communicate with them. Is there anything that could be done about that?
- A - It sounds like a conversation with local planners and the entity that owns the adjacent land.
- C - Big time customer of the river runner
- Q - Could we schedule an update on these plans to MARC's Total Transportation Policy Committee in July or August?

## **SW District**

- Missouri Freight Profile
  - C - An analysis of transloading facilities would be helpful to include in the data. How much freight is moving through that and the types of freight.
    - The freight analysis includes a section on freight generators and digs deeper into the topic.
  - Q - What are you seeing as automaker are changing fleets to electric and how you would handle production of implement infrastructure that could support the transition?
  - A - It really depends on the manufacturer themselves. Tesla, for example, builds their own charging stations. Gas stations themselves could add them to their facilities or people could put them on their own land. It is in the early implementation stage.
  - C - The time it takes to charge an electric vehicle is interesting. I'm wondering if how often to charge an electric vehicle could have an impact on delivery and freight.
  - Q - On the last consideration, do you think sites will be identified that serve as multi-modal facilities?
  - A -The freight generators analysis helped establish the network of terminals and freight infrastructure throughout the state to help understand the broader picture. When we talk with stakeholders, that's a great opportunity to learn about opportunities and ideas coming up.
- Economic Futures
  - C - what have we heard for electric vehicle infrastructure keeping up with automaker predictions of electric vehicles.
  - A - There are no good projections of electric vehicle charge stations.
  - C - Electric vehicle charging time concerns
  - A - There are DC fast chargers which reduce charge time.
  - C - Is the study going to identify additional sites that could include multimodal site. This would be helpful for MPO planning. -
  - A - Freight generator work the team did helps understand where some of the industries and needs are located. We will document these sites.
  - A - This Could be a recommended strategy. (Cheryl Ball)
  - C - We are getting a new Amazon fulfilment facility in the area, so we are thinking of some of these things but don't have any solutions right now.
  - C - Wilson logistics (or Locomotion) is doing a pilot with Peloton that they might want to test on our roads.
- Freight System Needs

- C - East side of Springfield. Working on grant opportunities to widen road. Lecompton drive needs improvement for intermodal facility
- C - Interchange at Hwy 13 and I-44. Affecting ability for region to grow.
- Q - opportunity to connect the rail network to the airport for a transloading facility.
- A - Traditionally not since airports are usually low weight, high volume and trains are the opposite.
- C - City of Republic is very interested in Route MM corridor improvements. Highway 60 to I-44 along MM corridor. City would like to connect Route MM to ZZ.
- C - entire US 60 corridor east of Republic to east of state line to address at grade crossings.
- C - City of Monet has a lot of manufacturing but there is no great way to get to I-44 to the north.
- C - Improved connections to NW Arkansas which is a major activity center. Route 39 south or Route 37 south out of Monet.
- C - Nevada, MO - Need better intermodal access with rail and road.

## Attachment 2

### Menti Questions & Responses

During this section of the meeting a series of interactive questions were asked, and participants were asked to respond. Questions were asked through [www.menit.com](http://www.menit.com) and real-time responses were shown on the screen and are captured in the summary PowerPoint presentations. The following is a review of the questions by area.

#### NW & NE Districts

**Question:** How might these trends affect Missouri's economy?

- Results will be checked after the meeting
- For the most part, folks think there's a high probability this will happen except for climate

**Question:** Are there other trends that you think will impact Missouri's businesses & industries?

- Continuing refusal to invest in transportation
- Ensuring a qualified workforce
- Lack in skilled workers
- Demographics as the average age of Missourians increases
- Need to react to climate change and climate change mitigation measures
- Reaction and aftermath of COVID pandemic
- Increased traffic without adequate funding to keep infrastructure up to date
- People leaving rural areas for urban areas
- No dedicated funding for other modes limits ability to respond and build resiliency
- Disparity between rural/ urban
- Increased polarity in politics
- Population trends, investment in improving transportation options and roads, ensuring a qualified workforce, competing to further our economic development, and bringing new businesses to our area, how will we bounce back from COVID
- When the next pandemic hits and what the response will be

**Question:** How prepared are Missouri's businesses and industries to respond to these trends?

- Very Prepared (1)
- Prepared (0)
- Neutral (5)
- Unprepared (13)
- Not sure (0)

**Question:** For companies that rely on Missouri's multimodal freight transportation network, what are your region's strengths?

- Strong rail and ports in the region
- River, road, rail
- Good passenger air
- River and rail served
- Space for development

- Untapped potential (my idea of untapped potential was lots of river space with no ports, lots of room distribution centers and warehouses)
- Modal connectivity
- Access to interstate, the MO river, and railways plus we are within just over an hour from MCI
- Versatile network that can serve all needs

**Question:** What are your region's weaknesses?

- Lack of river and rail
- Undeveloped river infrastructure
- Need to start tapping into our potential
- Road improvements especially I-70
- Inadequate funding to develop freight transportation assets
- MO River instability
- Poor highway quality (need that to get to ports or rail)
- Low population means low traffic means limited MoDOT investment

**Question:** What are your region's opportunities?

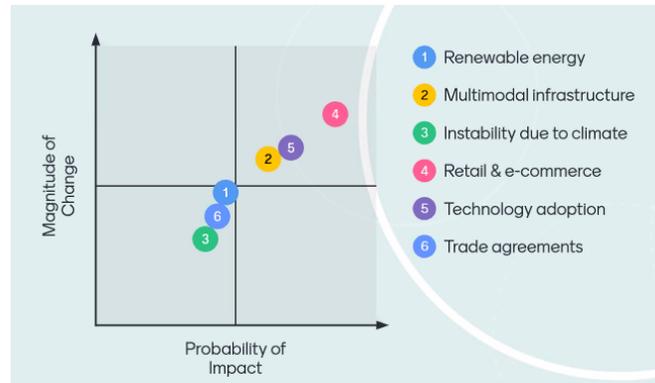
- Access to I-70
- Unlimited
- Expanding ports
- Working as a mega region throughout Midwest
- Lots of space for development and expansion
- Potential passenger rail
- Updating highway connectivity, utilization of rail and ports
- Attractive place to live
- Potential opportunities at roecrans airport
- Low cost of living

**Question:** What are your region's threats?

- Declining population
- Flooding
- Aging population
- Road closures due to flooding
- Get left behind
- Flooding, climate issues
- Lack of infrastructure investments
- Nearby states with more business-friendly policies
- Taxes don't support infrastructure projects
- Perception
- Lack of change or willingness to change

### **STL & SE Districts**

**Question:** How might these trends affect Missouri's economy?



**Question:** Are there other trends that you think will impact Missouri’s businesses & industries?

- Healthcare/ bio tech
- The growth of distribution centers is impressive and drives demand
- Availability of workforce
- Workforce development
- Need to think how to assess non-fossil fuel vehicles so contribute to transportation fund
- Telework changing where employees are located
- Growth patterns
- Future pandemics
- 3D printing
- University costs and options
- Fewer owning and driving cars
- Current administration looking at connections in transportation

**Question:** How prepared are Missouri’s businesses and industries to respond to these trends?

- Very Prepared (0)
- Prepared (1)
- Neutral (6)
- Unprepared (5)
- Not sure (0)

**Question:** For companies that rely on Missouri’s multimodal freight transportation network, what are your region’s strengths?

- Multimodal connectivity
- Rail/water connections
- MI River system access and port network
- Capacity availability via air
- SEMO Port, two rail systems, interstate
- Connected highway system

**Question:** What are your region’s weaknesses?

- Workforce
- Underfunded needs, especially non-highway

- Lack of funding
- Workforce in general
- Aging infrastructure
- Infrastructure funding sustainability
- Desire to widen highway versus total transportation network
- Aging bridges on farm to market roads maintained by the state
- Farm to market roads with little funding

**Question:** What are your region's opportunities?

- Public ports can expand
- Serve as a larger air freight hub
- Connections with I-57, I-55 and 60 for distribution centers
- Land for development

**Question:** What are your region's threats?

- Competition from neighboring states
- Lack of broadband in many areas
- River flooding
- Lack of workforce
- Other states are getting very competitive and stepping up their game and we cannot afford to lag behind
- Workforce shortage, need to comment on contributing factor
- New Madrid earthquake fault line

### KC & Central Districts

**Question:** How might these trends affect Missouri's economy?



**Question:** Are there other trends that you think will impact Missouri's businesses & industries?

- Automated vehicles
- Autonomous truck drivers
- Remote work
- Driver demographics
- Dilapidated roads and bridges

- Disinvestment in public infrastructure
- Automated warehouses
- Population shifts-rural to urban, urban to suburban, and suburban to rural
- Cyber security
- Automation and gas emissions in agriculture
- Competition from other areas
- The trends we can model or attempt to model, but I think it's the unexpected event that will create the biggest impacts both in the long and short term
- 3-D printing?
- Political instability

**Question:** How prepared are Missouri's businesses and industries to respond to these trends?

- Very Prepared (0)
- Prepared (1)
- Neutral (6)
- Unprepared (4)
- Not sure (2)

**Question:** For companies that rely on Missouri's multimodal freight transportation network, what are your region's strengths?

- KC multi modal network is very robust
- Actual options in multimodal
- At the intersection of many roads and rail corridors
- Railroad system
- Diverse industry sectors in the KC region
- Diversity of options
- State's position in the national network
- Well organized to promote via KC Smart Port
- Significant highway capacity
- Cost of construction

**Question:** What are your region's weaknesses?

- Funding uncertainty
- Workforce capacity constraints
- As others have mentioned- top would be disinvestment
- Reluctance to adopt changes
- Ability to get workers to jobs via transit
- Aging infrastructure

**Question:** What are your region's opportunities?

- Strong e-commerce base exists
- Strong automotive industry
- River as mode of transport
- Build more multi-modal access points to rail

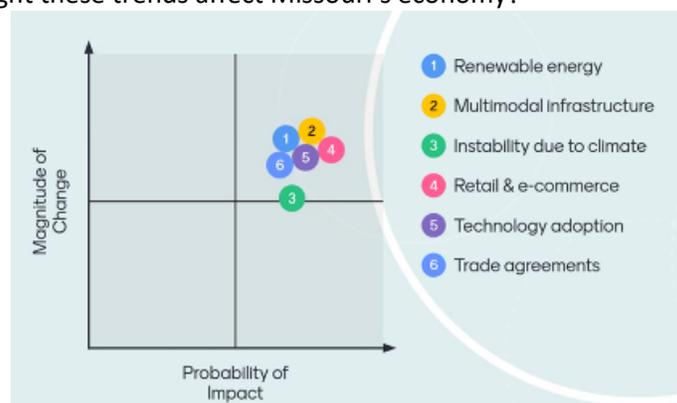
- Container on barge
- Focus on traded sectors- advanced manufacturing
- Regional hub
- Progressive utility Evergy

**Question:** What are your region's threats?

- Capacity limits
- Competition with other states
- No industry sector focus area
- Floods and other extreme climate events
- Matching workforce to needs
- Pass through is fine, but not being a destination limits market and industry participation
- Underinvestment at state level on infrastructure
- Disinvestment in public infrastructure
- Adapting infrastructure to changing needs
- Lack of transportation and childcare for the workforce

### SW District

**Question:** How might these trends affect Missouri's economy?



**Question:** Are there other trends that you think will impact Missouri's businesses & industries?

- Workforce
- Changing workforce (skills and availability) – negative
- Infrastructure
- Social political policies that discourage new businesses from locating to Missouri or make recruiting talent difficult
- Gig workers- e-commerce – delivery
- Population growth
- Remote working and mobility of Gen z and Millennial workers, livability over job opportunities
- Infrastructure and workforce
- Telework will enable more people to locate far away from their workplace

- Continued rural population loss
- Lack of resources/ state-enabled toll for local governments to take on infrastructure projects
- Missouri expansion of biofuels
- Connectivity of communities and highways and transition areas. Finding cost-share resources for smaller metro and communities to participate in needed infrastructure. More resources for transload buildouts to connect communities closer to home

**Question:** How prepared are Missouri's businesses and industries to respond to these trends?

**Responses recorded within Menti, delayed on screen**

**Question:** For companies that rely on Missouri's multimodal freight transportation network, what are your region's strengths?

- Intermodal connections
- Large rail network
- SWMO is positioned well with BNSF and CP/KCS crossroads here
- Locations near I-44 and 249
- Interstate system
- Pavement/Bridge/System conditions
- Central continental location
- BNSF and KCS with east/west and north/south access.
- Rail and airports
- Geographic location
- I-49 corridor connector completion to NWA and region

**Question:** What are your region's weaknesses?

- Lack of water transport access
- Difficulty attracting and retaining talent
- No dedicated funding for modes
- Limited resources for major infrastructure buildouts needed
- No passenger rail transport

**Question:** What are your region's opportunities?

- Connect rail to air facilities for shorter international transport times to central US on high value goods
- Expansion of navigable waterway designations for port authorities
- Central location good for distribution centers
- Given connectivity of I-44/49 corridors, regionally embracing attributes for better positioning and regional growth
- Well positioned with interstate and air as those modes grow in use
- Tourism exposure
- Think of ourselves as a megaregion, rather than region within a state within the Midwest

**Question:** What are your region's threats?

- Weather

- Stagnant dedicated state funding
- Impacts of climate change- fuel costs, economy, etc.
- Cybersecurity!

# KC / Central Regional District Meeting Presentation



MISSOURI

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# State Freight & Rail Plan

---

Regional  
Stakeholder  
Meetings

*presented to*  
*Regional Stakeholder Meeting*  
*Attendees*

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



May 2021

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# Meeting Purpose

Gather insight, input & feedback from Missouri planners and policymakers on regional economic and industry trends, as well as important freight transportation needs.

## Agenda

- Overview
- Missouri Freight Profile
- Economic Futures
- Freight System Needs
- Passenger Rail Update
- Schedule and Next Steps

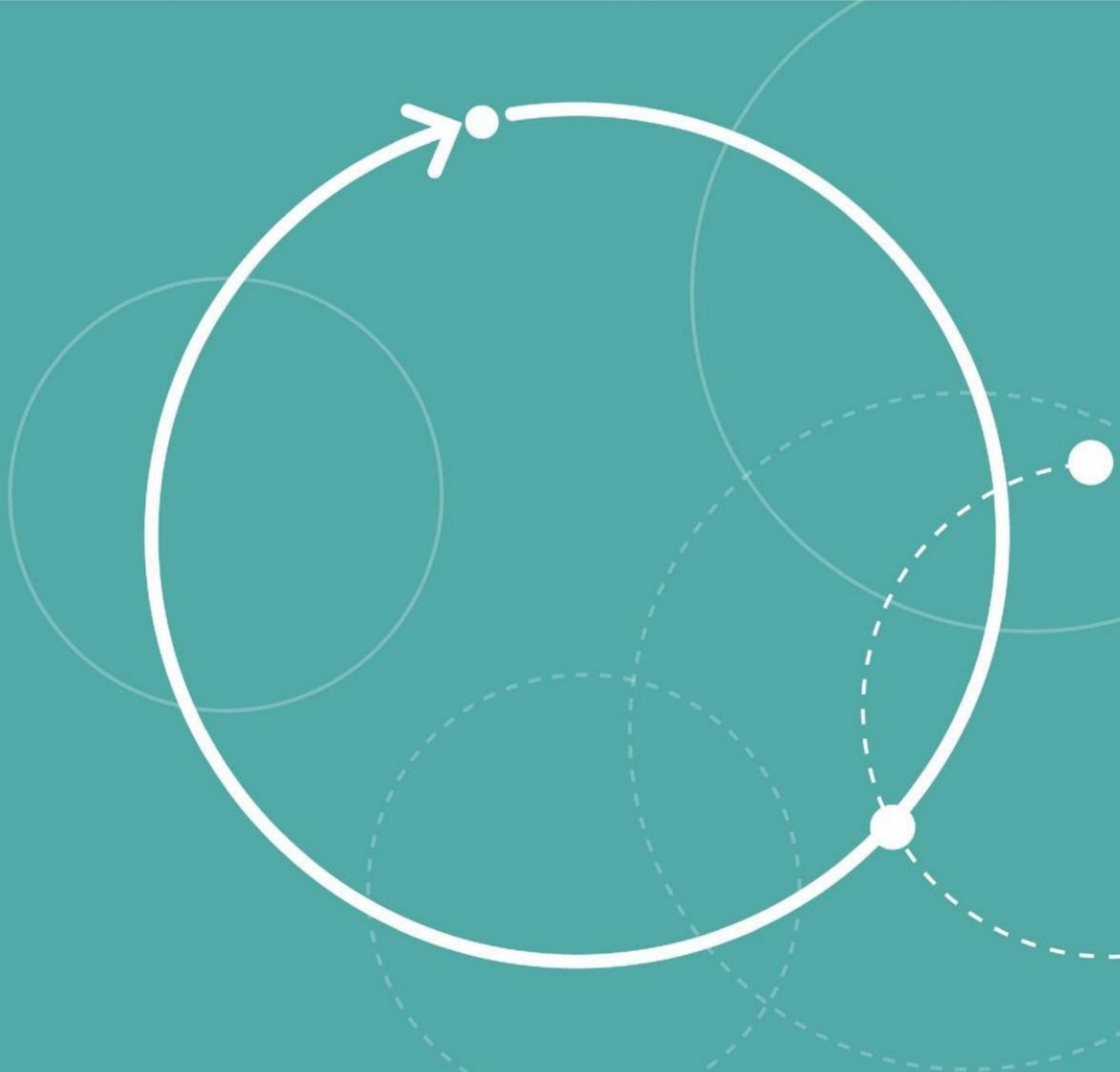
# What are you most excited about when it comes to the future of freight?

A word cloud centered on the word "technology" in large blue font. Other prominent words include "economy" in yellow, "new technology like evs" in green, "faster faster faster" in pink, "better rail usage" in blue, "clean freight" in green, "clean fleets" in pink, "economic growth" in yellow, "last mile" in purple, "economic development" in purple, "jobs" in yellow, and "rivers" in blue. The words are arranged in a circular pattern around the central "technology" word.

economic growth  
clean freight better rail usage  
faster faster faster  
clean fleets new technology like evs  
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# Overview



# 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?*

# 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*



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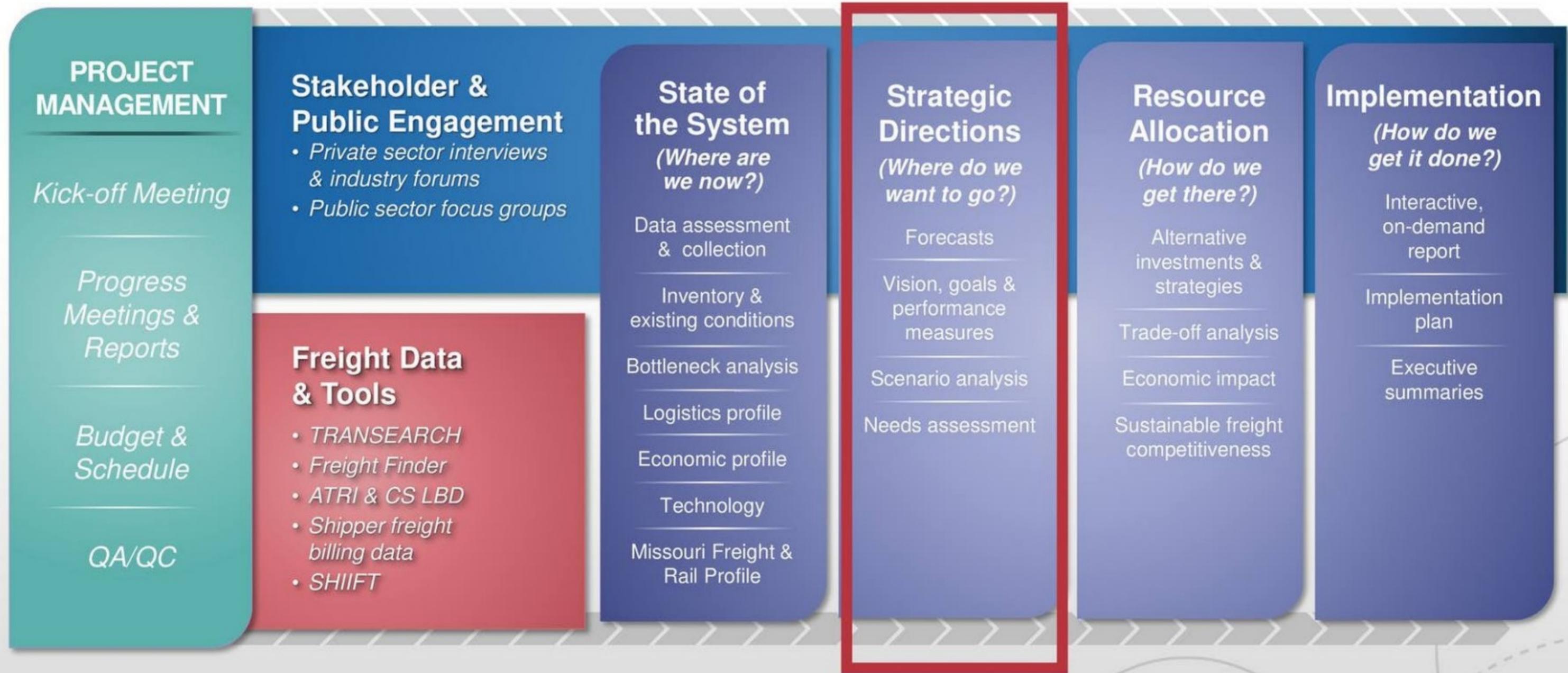


*Informs and supports economic growth opportunities*



*Monitors resiliency and fluidity across the freight network*

# Approach Overview



# Stakeholder Engagement Approach

*Initial interviews with key stakeholders*

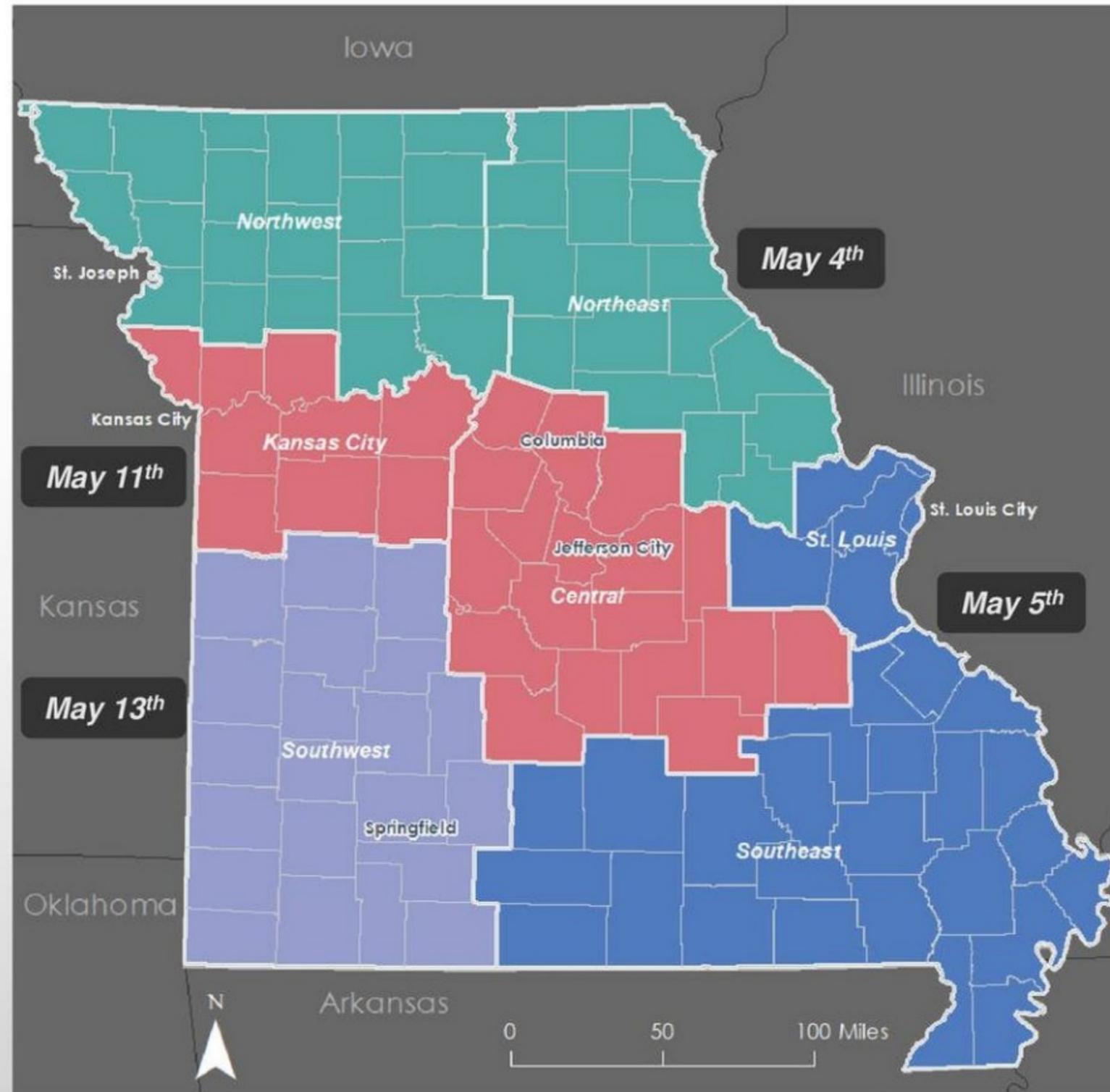
*SFRP Steering Committee*

*Interviews and surveys*

*Industry forums and stakeholder meetings*



# Series of 4 Regional Stakeholder Meetings



# How Will Input Be Used

## *Today's Meeting*

### **ECONOMIC FUTURES**

Identify trends and prospects that may impact Missouri's economy

### **NEEDS ASSESSMENT**

Input on mobility, safety, truck parking and other needs

Determine "disruptors" most likely to impact Missouri's future freight volumes and economic activity

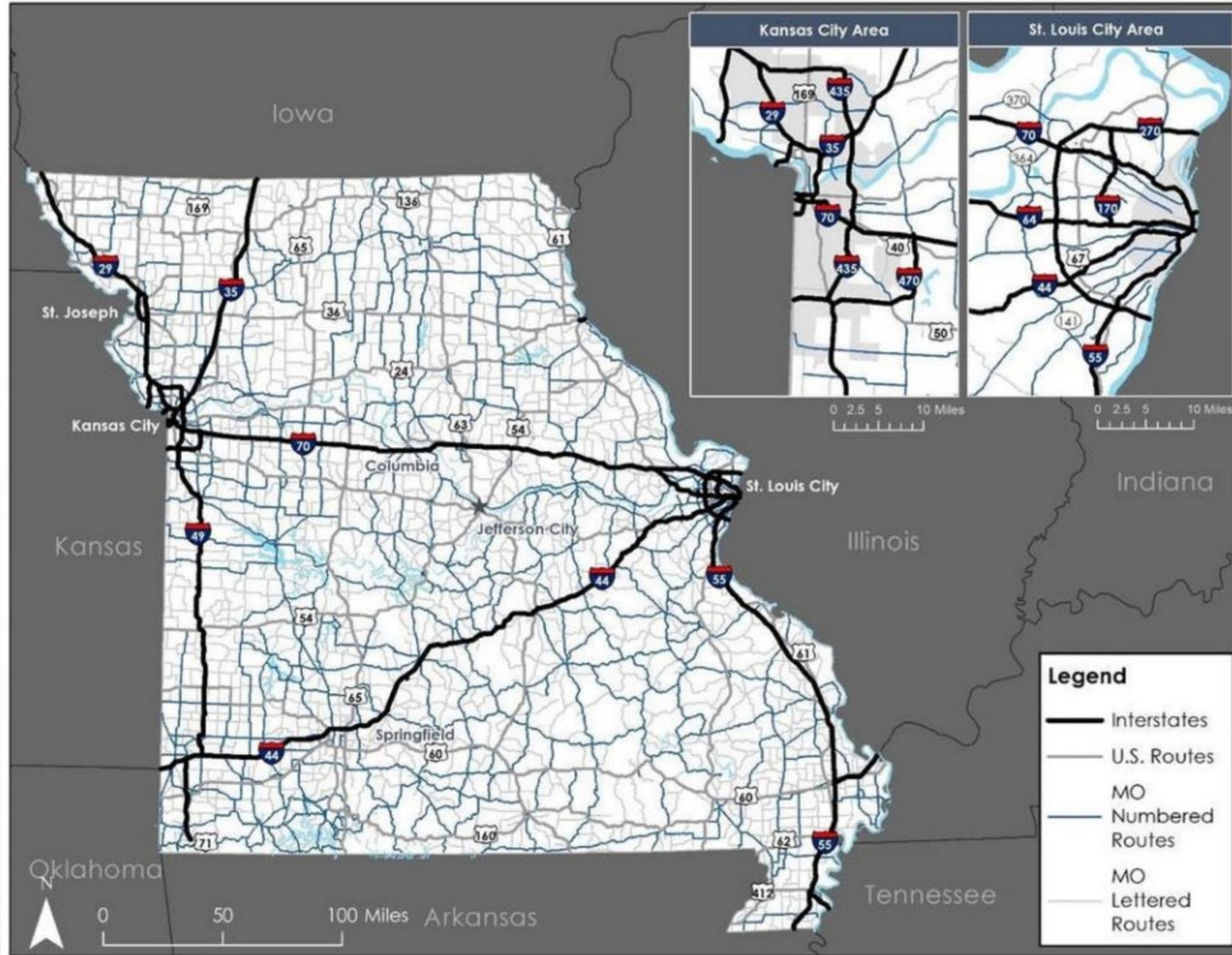
Refine freight transportation needs assessment

**LAY GROUNDWORK FOR RECOMMENDATIONS**

# Missouri Freight Profile



# State Highway System



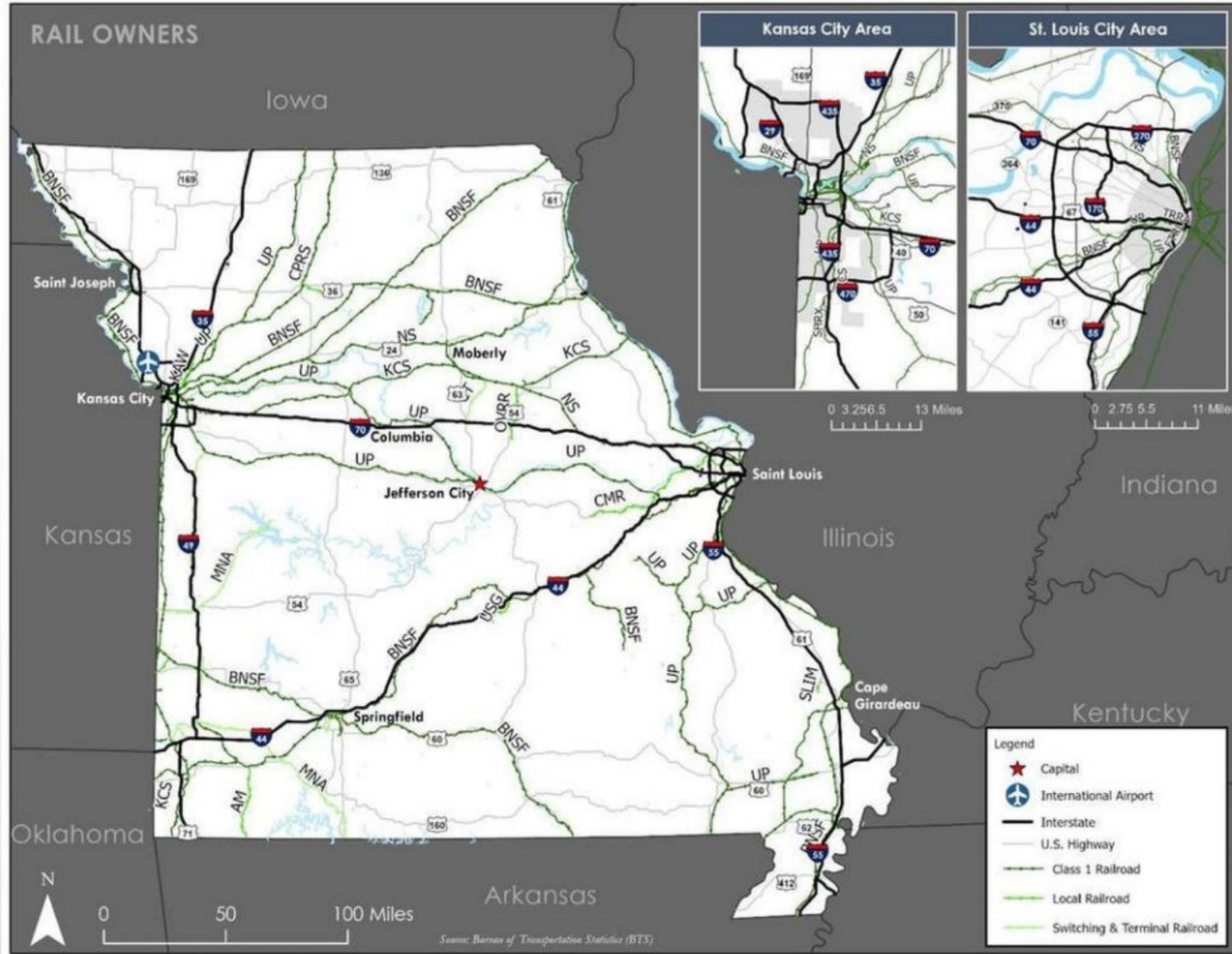
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Trucks carried  
**406.6M** tons of goods  
worth **\$495.6B**  
on Missouri highways

## Top 5 by Tonnage:

- Non-metallic minerals (aggregates)
- Farm products
- Food/kindred products
- Petroleum/coal
- Secondary movements



# State Railroad Network



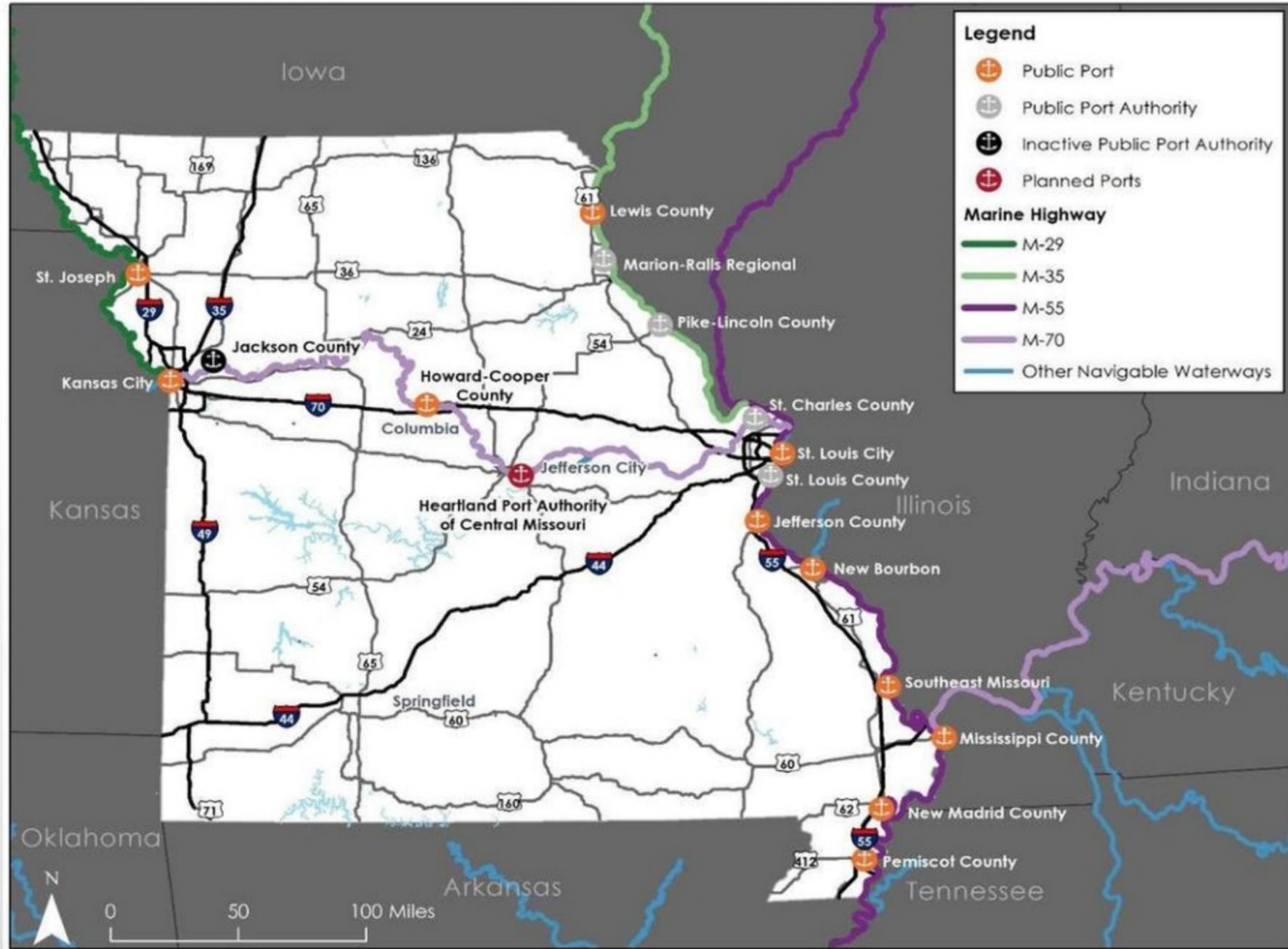
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# Marine Ports



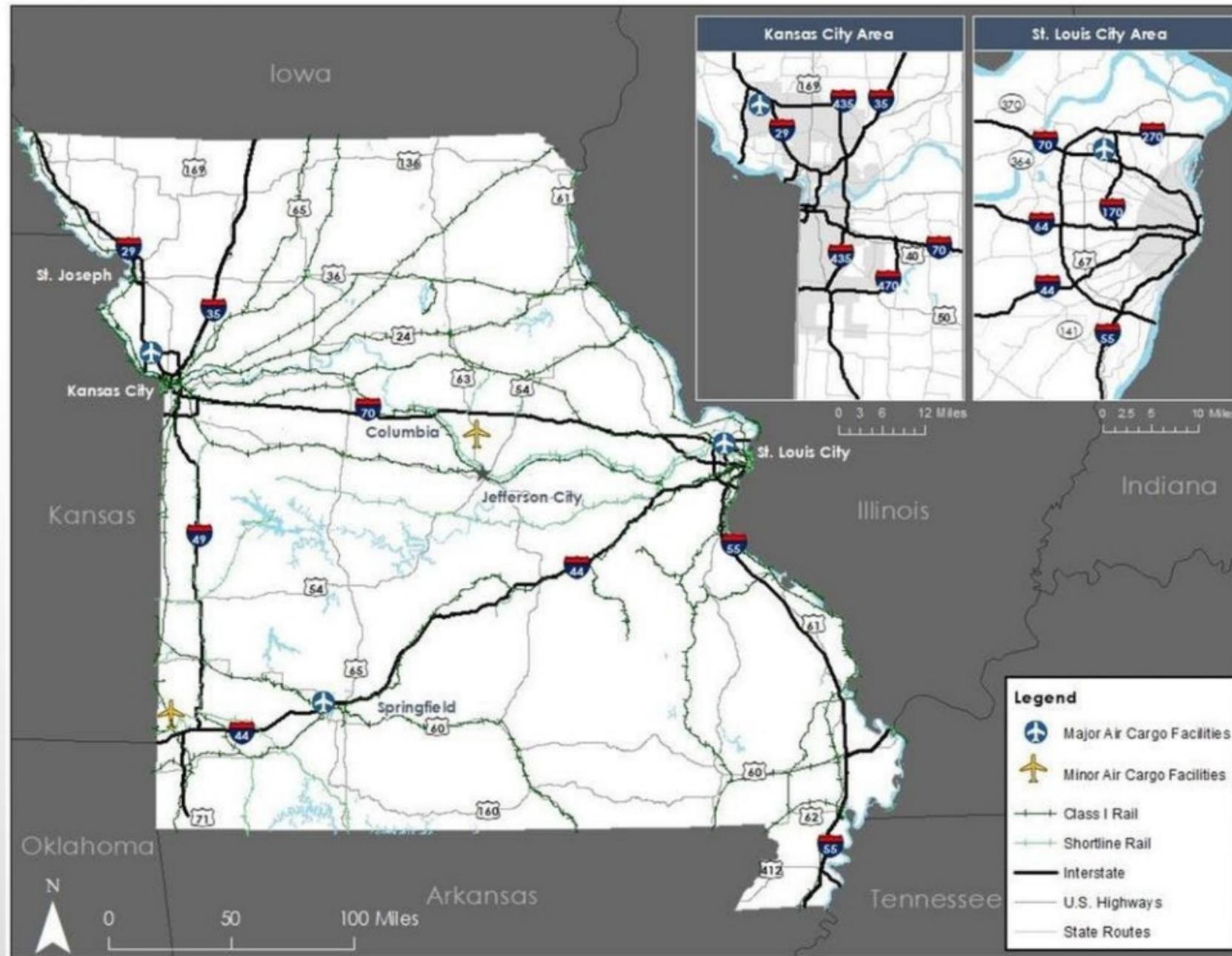
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- Chemicals/allied products



# Cargo-handling Airports



In 2018,  
Airplanes at MCI, STL, and  
SGF carried **201K** tons of  
goods worth **\$22B**

at Missouri airports

## Top 5 by Value:

Misc. Manufacturing

Transportation Equip.

Electrical Machinery & Equip.

Instruments, Optical, Watches/Clocks

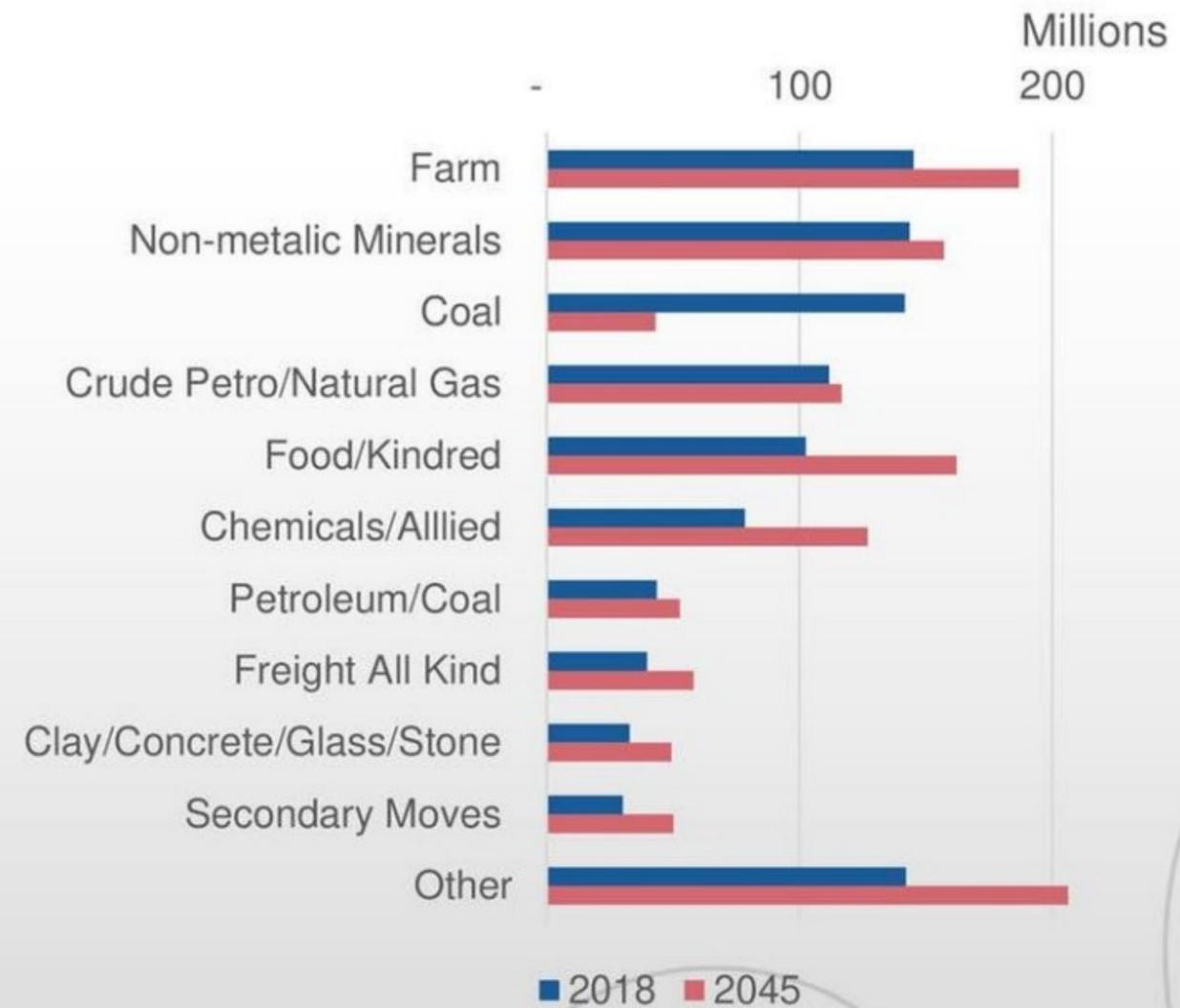
Chemicals/Allied

# Commodity Flow Summary – Tons

## FREIGHT TONS BY MODE (M)



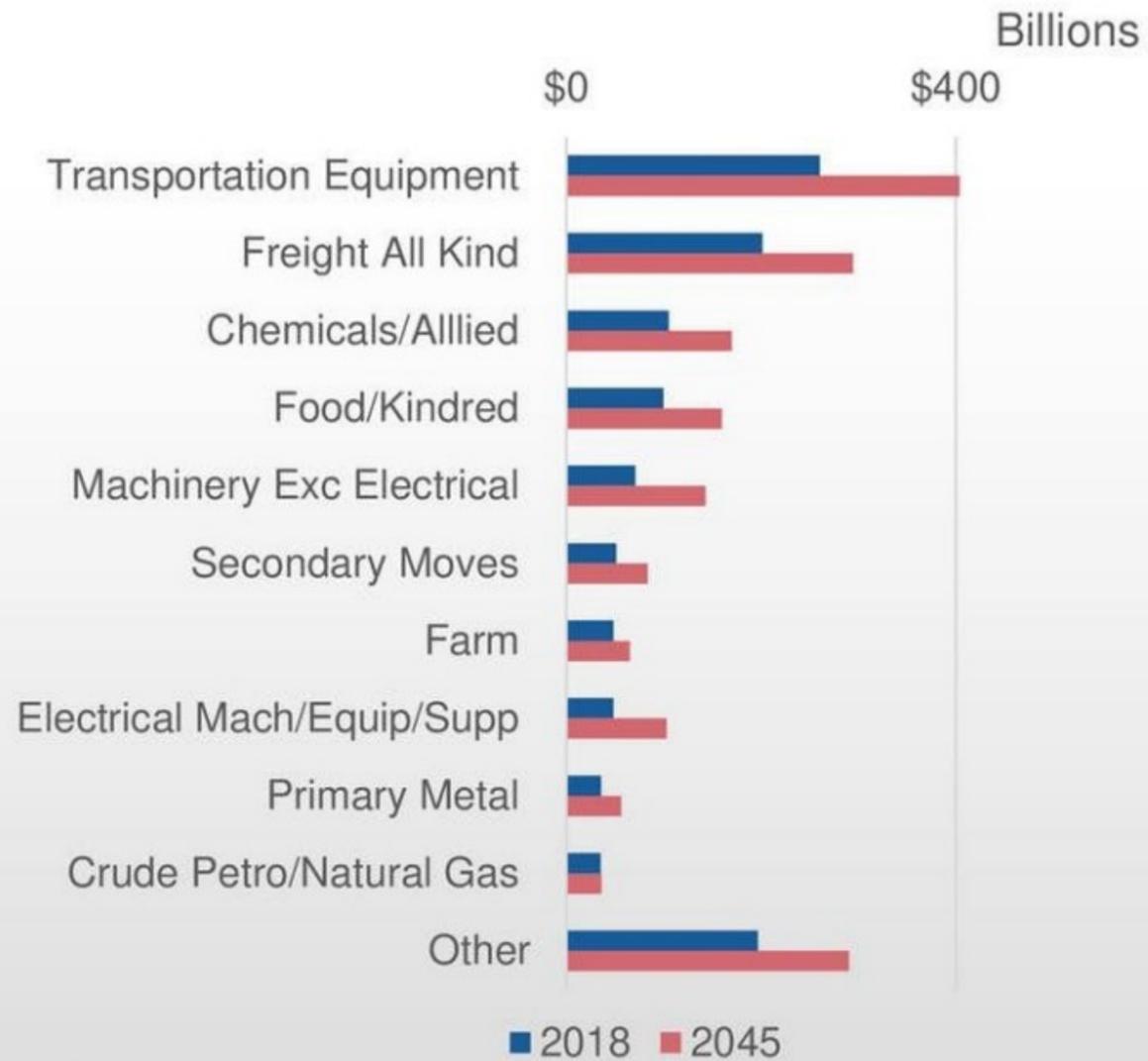
## TOP COMMODITIES 2018-2045



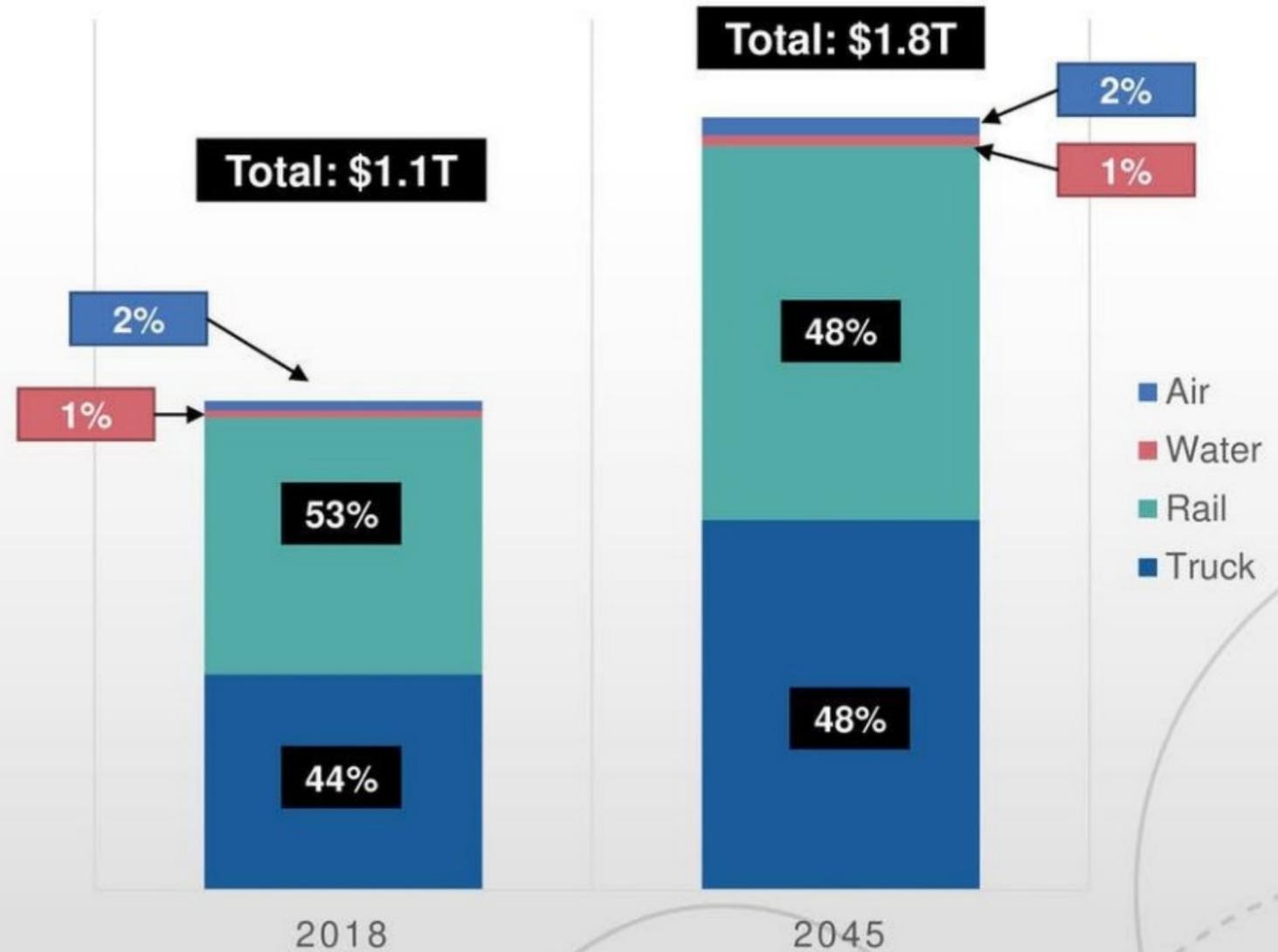
Sources: IHS Transearch, STB Waybill

# Commodity Flow Summary – Value

## TOP COMMODITIES 2018-2045



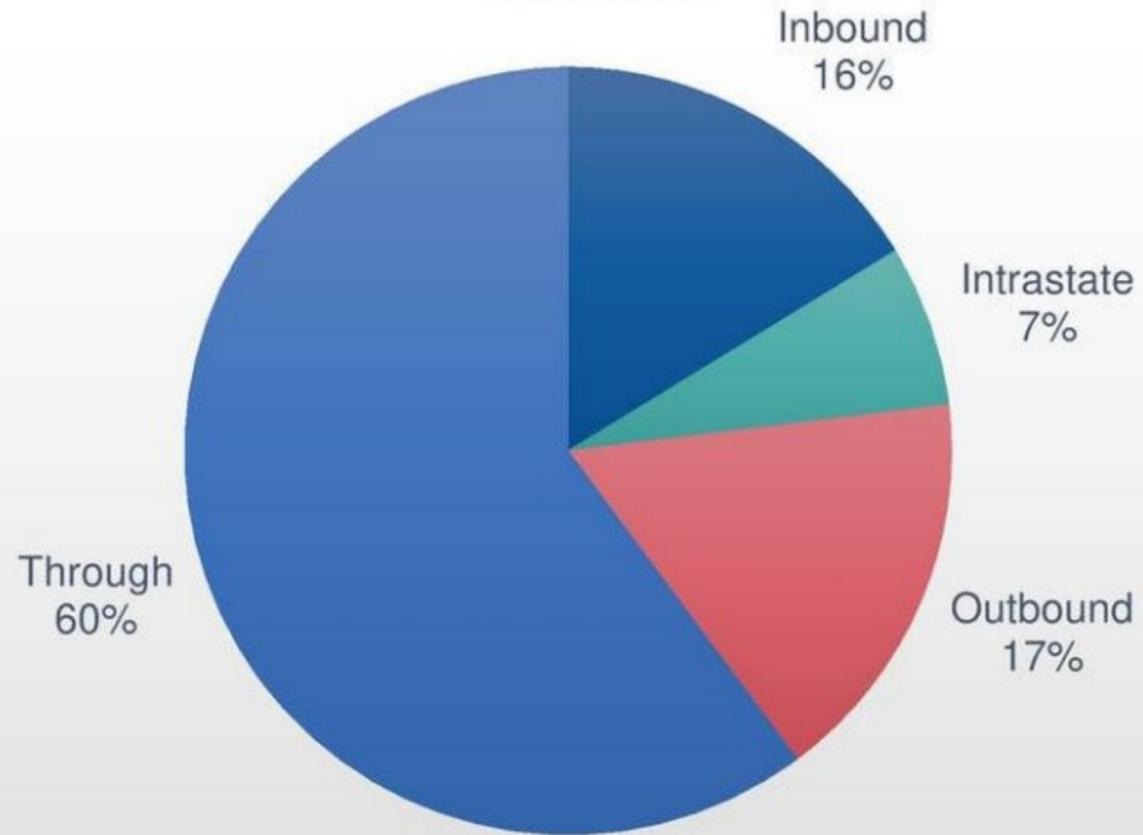
## FREIGHT VALUE BY MODE (\$B)



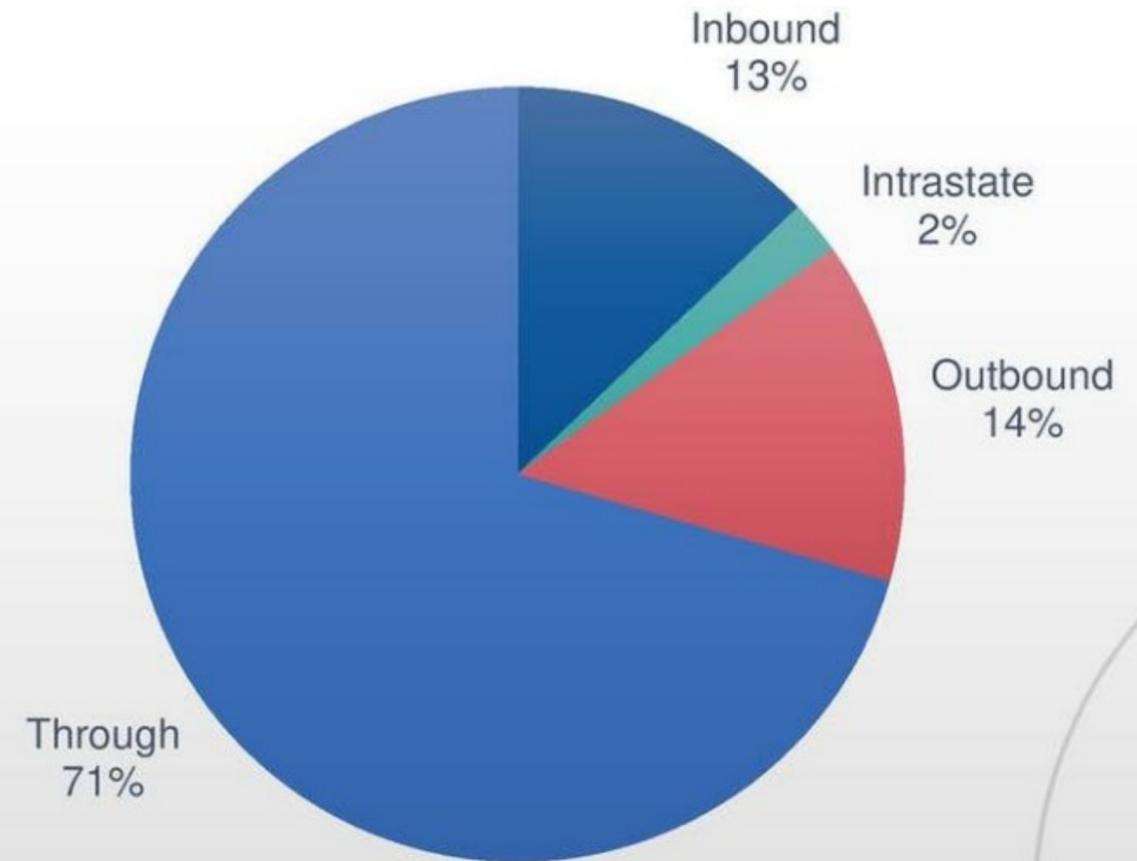
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# Directional Flow

## Tonnage by Direction, All Modes



## Value by Direction, All Modes



Source(s): IHS Transearch, STB Waybill

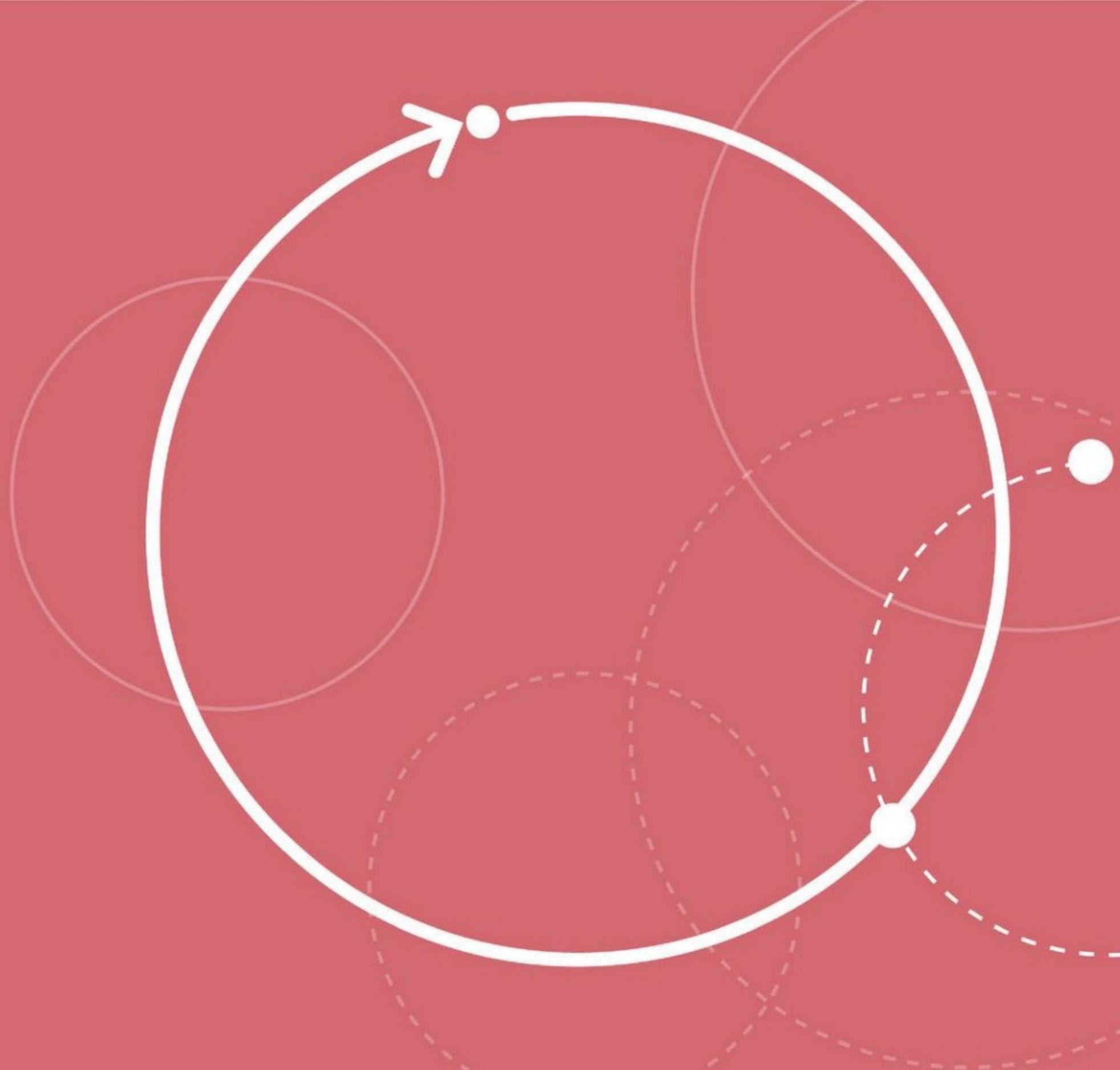
# Industry Employment

	Industry Sector	Employment
<b>Producers</b>	Agriculture, Forestry, Fishing & Hunting	156,634
	Mining, Quarrying and Oil & Gas Extraction	3,633
	<b>Manufacturing</b>	<b>267,907</b>
<b>Services</b>	Transportation & Warehousing	97,053
	Waste Management & Remediation	7,046
<b>Attractors</b>	Utilities	15,587
	Construction	129,188
	Wholesale Trade	130,913
	Retail Trade	307,751
	Food Services & Drinking Places	237,073
	Non-Freight	1,342,383

## Top Employing Manufacturing Subsectors:

- Transportation equip. 44,500
- Food 40,000
- Fabricated metal prod. 32,100
- Machinery 31,900
- Chemicals 19,000

# Economic Futures



# National Trends Impacting Freight

Renewable  
Energy

Multimodal  
Infrastructure

Instability  
due to  
Climate

Retail & E-  
Commerce

Technology  
Adoption

Trade  
Agreements

# Renewable Energy

Shifts to renewable energy sources and fuel types (such as battery electric vehicles) will impact industries, freight flows and supporting infrastructure.

## Considerations

- Alternative fueling infrastructure
- Challenges for state revenue streams (i.e. motor fuel tax)
- Need for strong supply chains for metal and parts

## Opportunities

- Automobile manufacturers driving transition – potential partnership with states
- Manufacturing sector job growth
- Shifting supply chains and expanded industry opportunities

# Multimodal Infrastructure

Highway networks are already over capacity in many states and regions, and demand is projected to increase. Coupled with increased population, overall future demands on the highway system suggest need for modal diversification.

## Considerations

- Need for modernized assets
- Strong and diverse multimodal connections
- Freight- and rail-supportive land use coordination at local level

## Opportunities

- Shifting passenger traffic off roadway network (i.e. expanded passenger and intercity rail, Hyperloop)
- Class I investments in rail assets
- Federal infrastructure investment package

# Instability due to Climate

Flooding, tornadoes, and other extreme weather events cost billions of dollars in damages annually. This impacts industry, navigability along the inland waterways, and operations on highway and rail networks, among other impacts.

## Considerations

- Lock and dam network Mississippi River System already strained
- Existing assets in need of modernization
- Agriculture impacts significant (harvests, shipments, facilities)

## Opportunities

- Establish dedicated and resilient multimodal freight network
- National/regional partnerships to invest in critical multistate assets
- New or relocated inland ports

# Retail & E-Commerce

Growing demand for e-commerce continues to impact freight industry and employment, as well as land use changes. The COVID-19 pandemic has accelerated some e-commerce trends, including the importance of stockpiling vs. just-in-time distribution. This trend could have an impact on land use and the network of links and nodes throughout the U.S.

## Considerations

- Shifting warehousing strategies
- Heavily reliant on truck modes
- Final 50 feet delivery challenges

## Opportunities

- Smarter curb management
- Stronger regional relationships to address warehousing & distribution networks
- Increasing use of domestic suppliers

# Technology Adoption

Adoption of connected and autonomous vehicles (CAVs) is already impacting the trucking industry. Coupled with drones and platooning technology, upgrades to broadband and transportation infrastructure as well as state legislation will be necessary.

## Considerations

- Fragmented broadband infrastructure in rural areas
- Public policy hurdles
- Modernized supporting infrastructure needed

## Opportunities

- Solution to some truck driver labor challenges
- New manufacturing & tech job opportunities
- Blockchain for better visibility of product, information and financial flows

# Trade Agreements

In the aftermath of the COVID-19 pandemic, the lack of stockpiles of personal protective equipment (PPE), toilet paper, and other essential goods has shifted trade agreement priorities from “free trade” to ensuring deals protect the rights and interests of American workers.

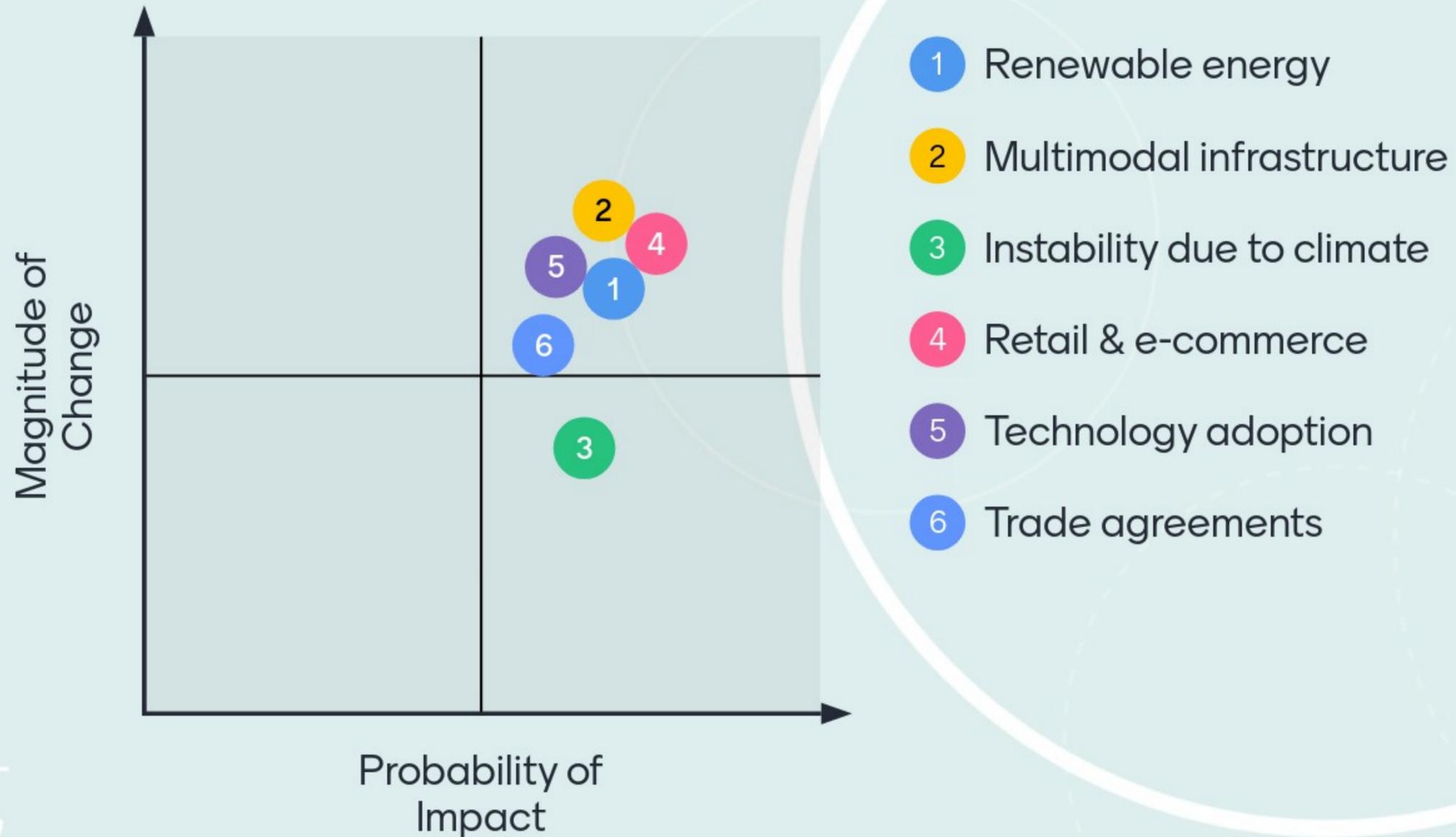
## Considerations

- Intermodal connectors to support increased inbound/outbound flows vs. through flows
- Modernized facilities
- Workforce development

## Opportunities

- Increased investment in domestic sourcing
- Growth in advanced manufacturing
- Developments in industrial space – new and repurposed

# How might these trends affect Missouri's economy?



# Are there other trends that you think will impact Missouri's businesses & industries?

Automated Vehicles

Autonomous Truck Drivers.

Remote work

Driver demographics

Dilapidated roads and bridges

Disinvestment in public infrastructure

Population shifts - rural to urban, urban to suburban, and suburban to rural

Automated warehouses

Cyber security



# Are there other trends that you think will impact Missouri's businesses & industries?

Automation and Gas emissions in Agriculture

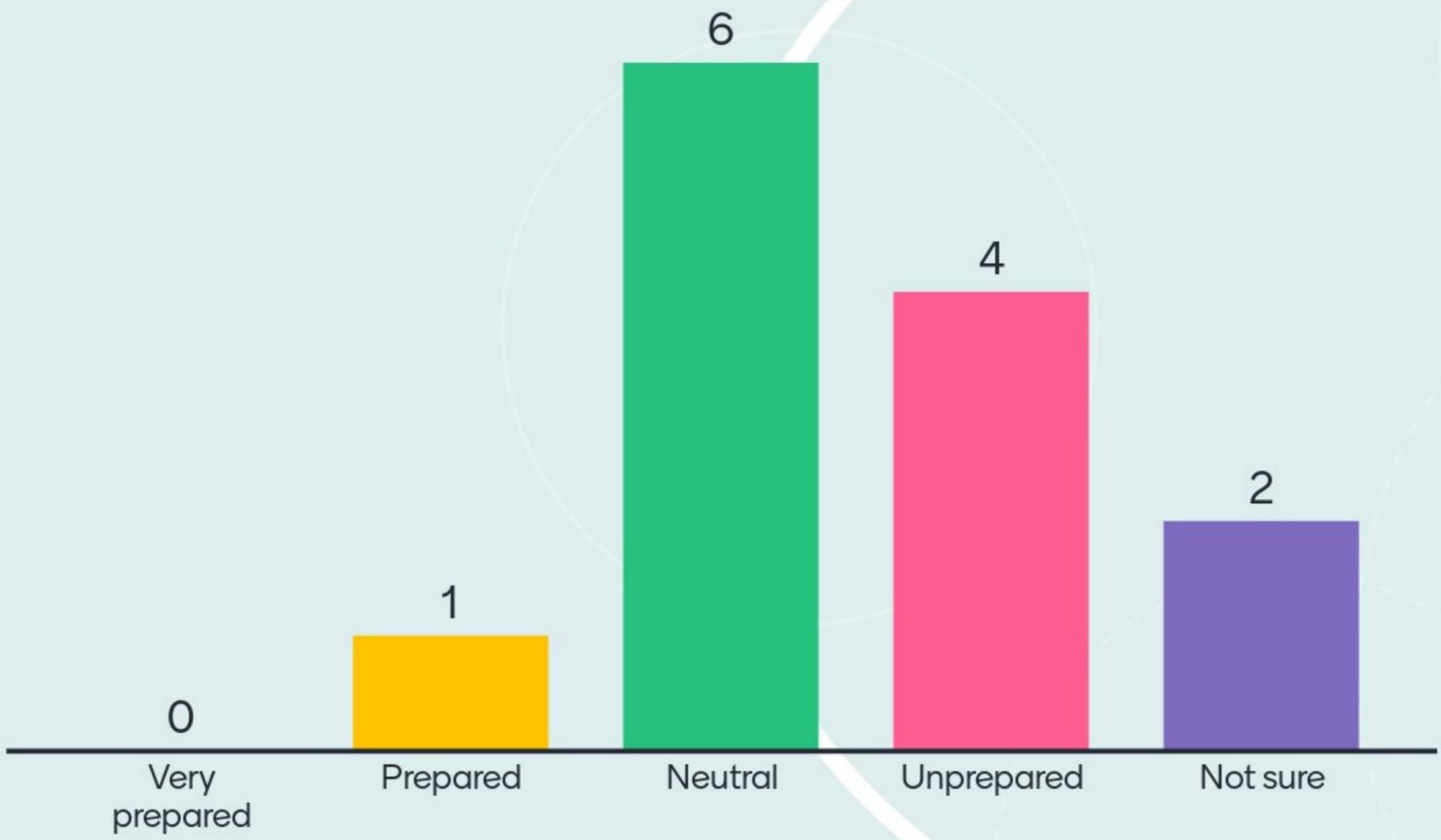
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At the intersection of many road and rail corridors

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Diverse industry sectors in the KC region.

Diversity of options

state's position in the national network

Well organized to promote via KC SmartPort

Significant highway capacity



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

cost of construction

Aging infrastructure.

Failing roads and bridges

Access to rail - no sidings for multi-modal

Access to funding for Rail spurs and upgrading our local river port to its full potential

Foreign ownership of land around our port and the complications of communication.

For us locally with have the multi model access of 3 ways: rails, river and Interstate all under 5 miles of each other, but means to develop in a rural area is a challenge.



# What are your region's weaknesses?

funding uncertainty

Workforce capacity constraints

As others have mentioned - top would be disinvestment

Reluctance to adopt changes

Ability to get workers to jobs via transit

Aging infrastructure.

good east - west connection, not as good north south on highways

poor public transportation'

# What are your region's opportunities?

strong e-commerce base exists

Strong automotive industry

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Build more multi-modal access points to rail

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Underinvestment at state level on infrastructure

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Lack of transportation and childcare for the workforce

no funding for intermodal connections

# Freight System Needs



# Freight System Needs



***Safety***



***Truck  
Parking***



***Technology***



***Mobility &  
Reliability***



***Asset  
preservation***



***Rural  
highways***

# Link to Mapping Tool

- <https://camsys.maps.arcgis.com/apps/webappviewer/index.html?id=35e1e49c751e42e38c7fb84d76febced>

# Virtual Open House focusing on passenger rail in MO being held May 3<sup>rd</sup> - June 4<sup>th</sup>. Link available via: <https://www.modot.org/missouri-state-freight-and-rail-plan>

IN MISSOURI, THE TOTAL ANNUAL ECONOMIC IMPACTS GENERATED BY THE RIVER RUNNER INCLUDE:

 **1,250**  
JOBS ANNUALLY

 **\$65 MILLION**  
IN ANNUAL LABOR INCOME

 **\$208 MILLION**  
IN ANNUAL ECONOMIC ACTIVITY

MORE THAN

**\$22 MILLION**

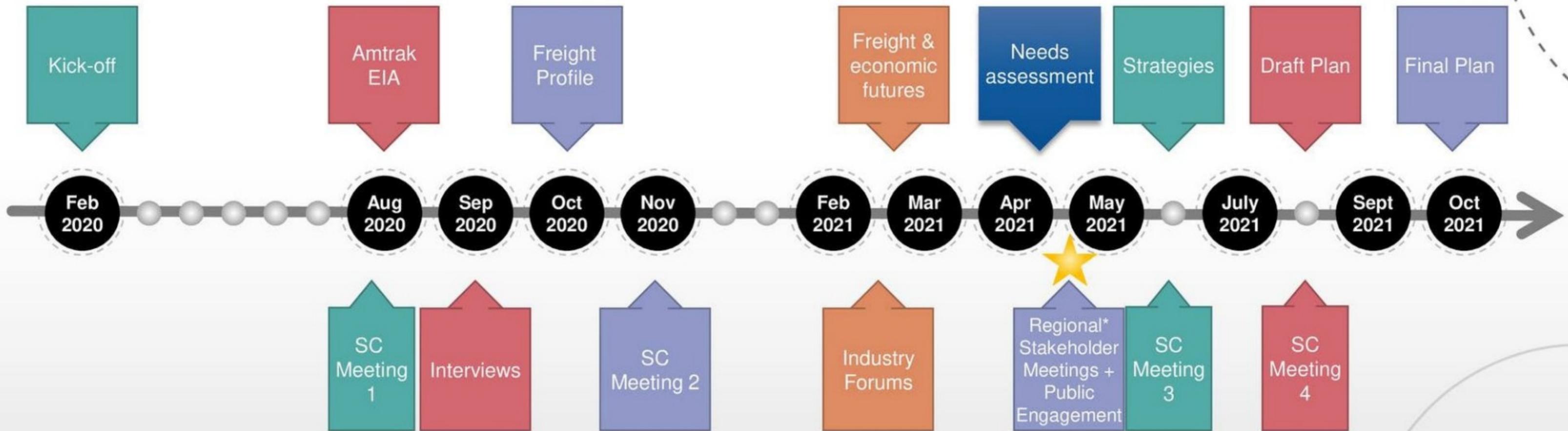
IN ANNUAL TAX REVENUE



# Schedule and Next Steps



# Schedule and Key Milestones



# Next Steps

Finalize MoFAS tool

Complete needs assessment

Establish goals & strategies

Project prioritization & ranking

Keep track of the planning process here:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

# Thank you!



**Cheryl Ball, IMPM**

MoDOT Project Manager

Waterways and Freight Administrator

o: 573.526.5578

e: [Cheryl.Ball@MoDOT.MO.gov](mailto:Cheryl.Ball@MoDOT.MO.gov)



**Liz Prestwood**

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o: 417.829.8016

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# NW / NE Regional District Meeting Presentation



MISSOURI

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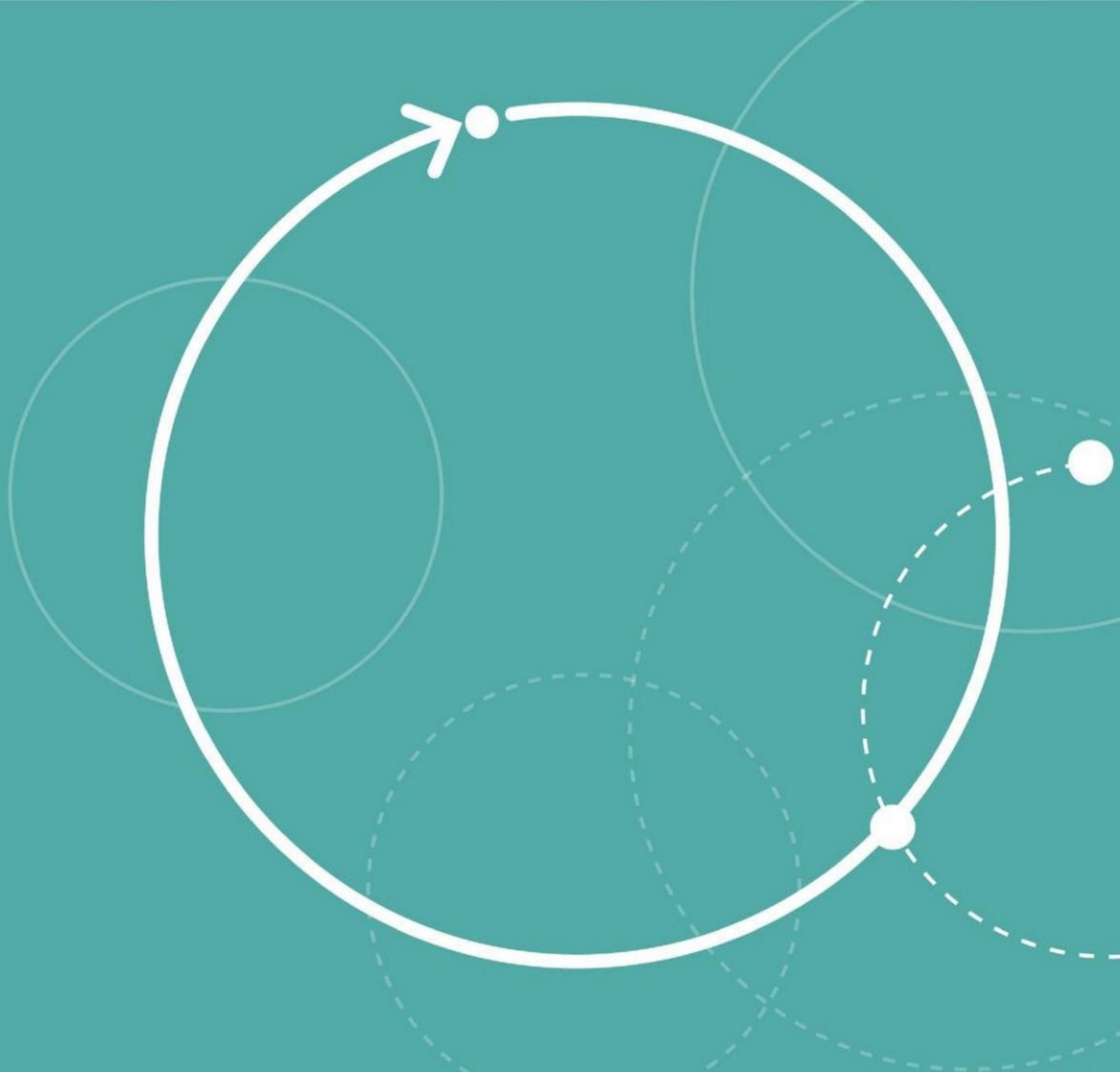
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economy  
efficiency  
movement of goods  
infrastructure  
efficiencies  
jobs  
ports  
robotsforlastfootdelivery  
on time  
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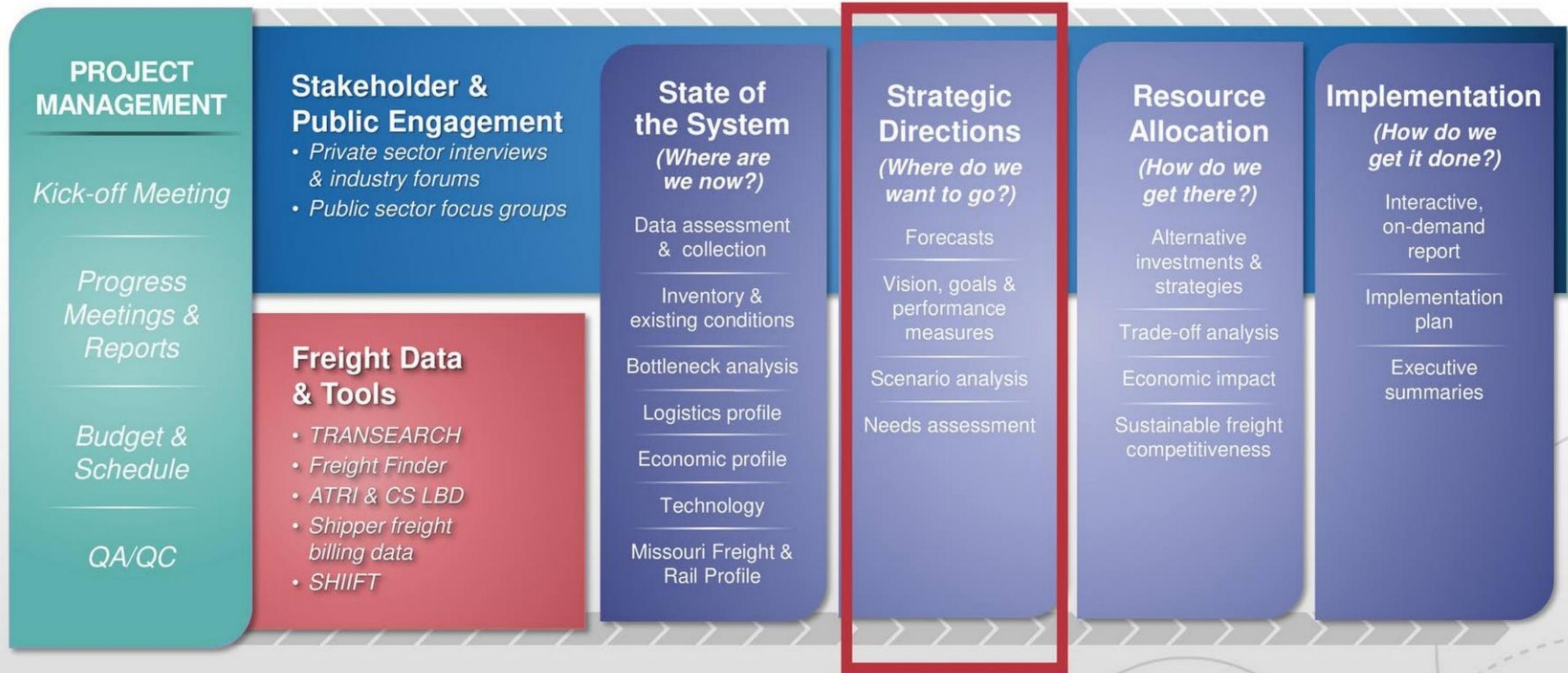


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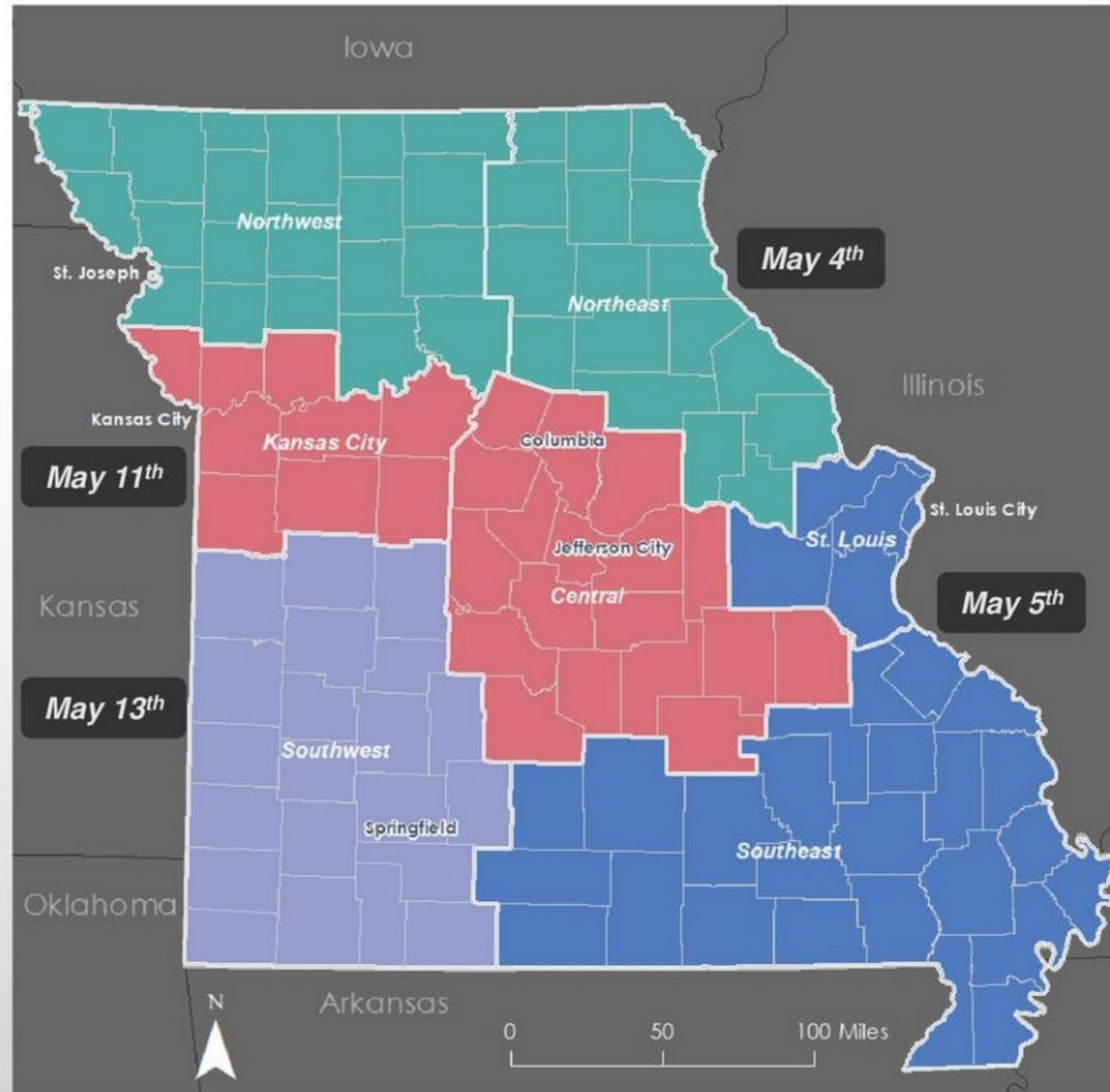
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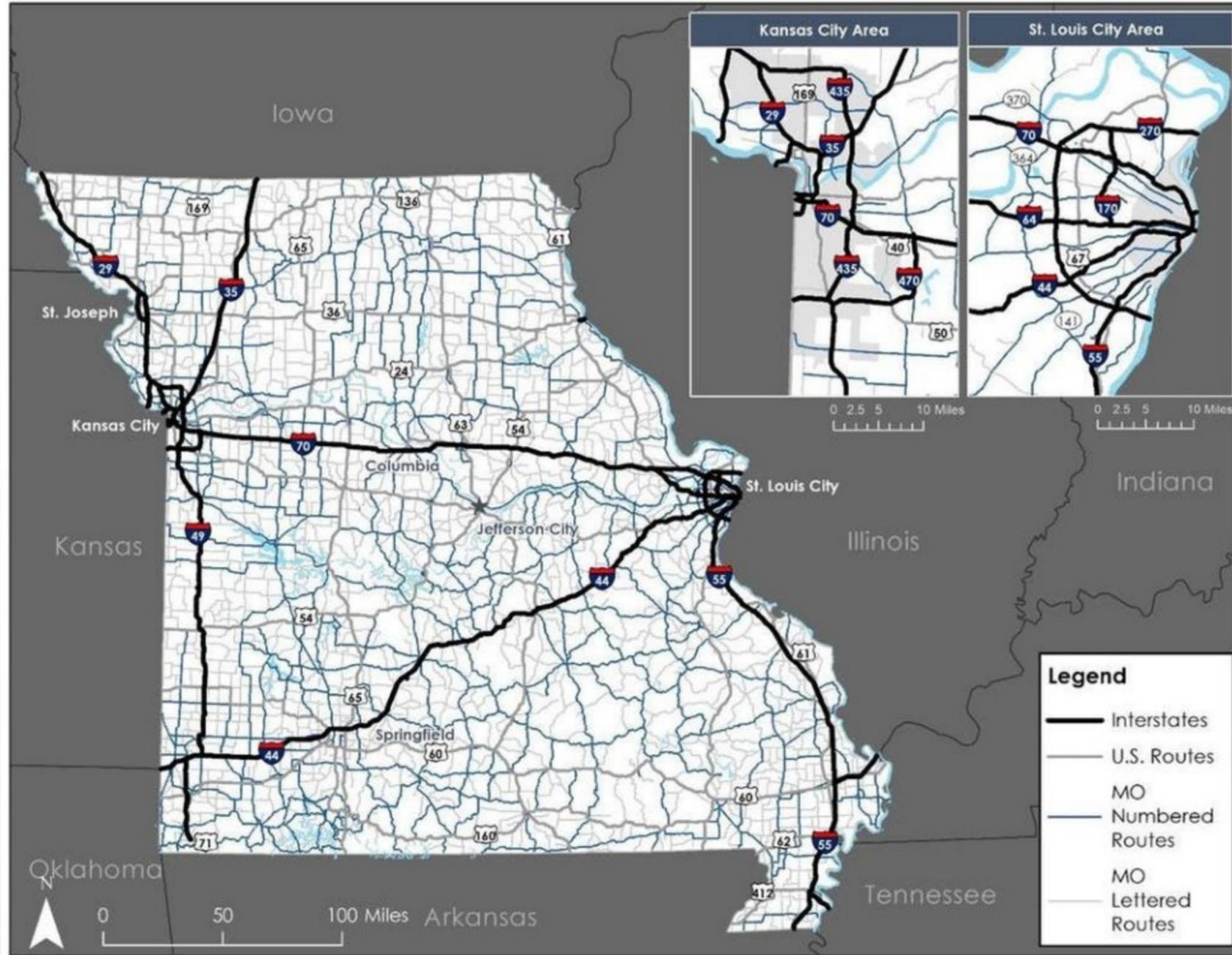
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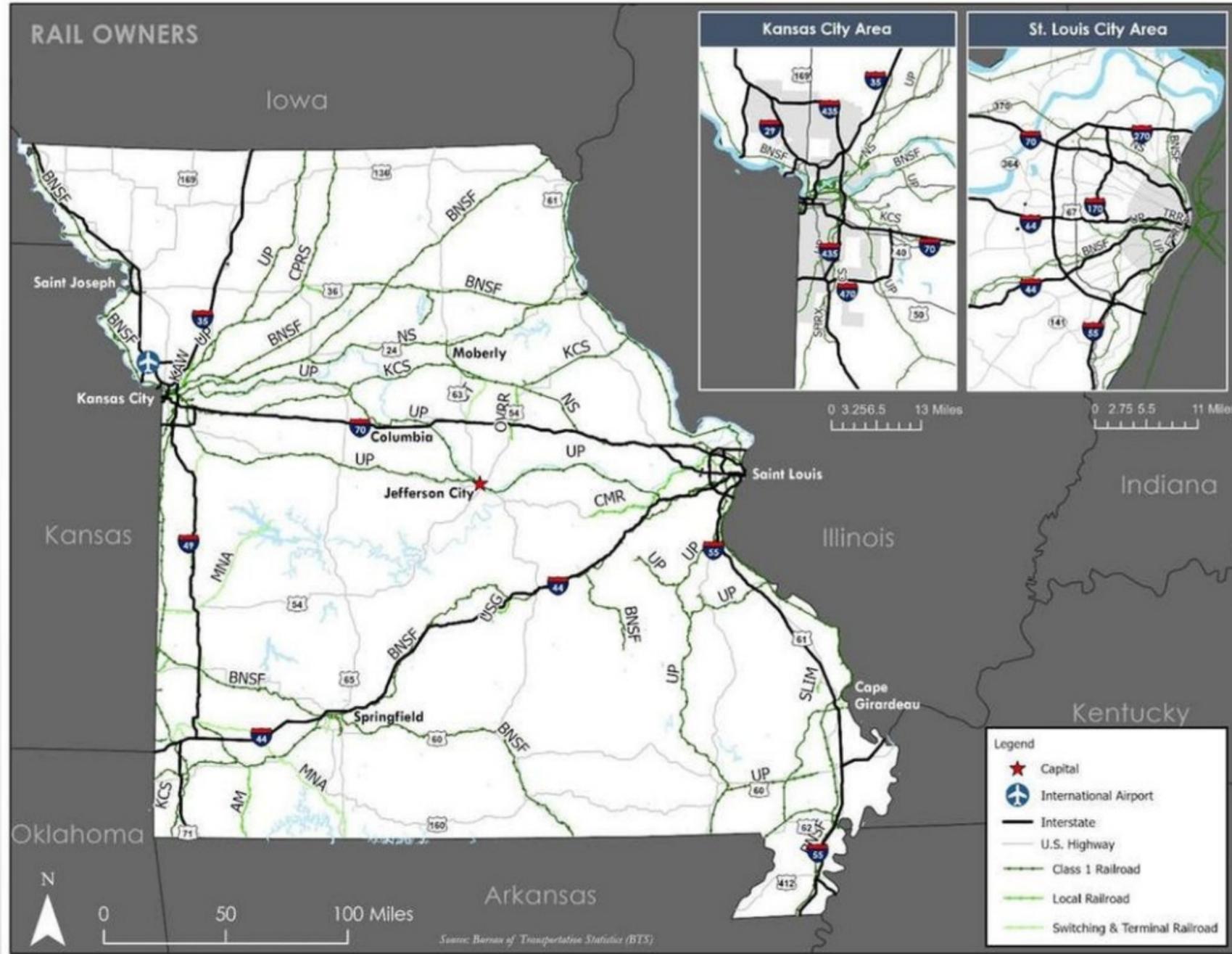
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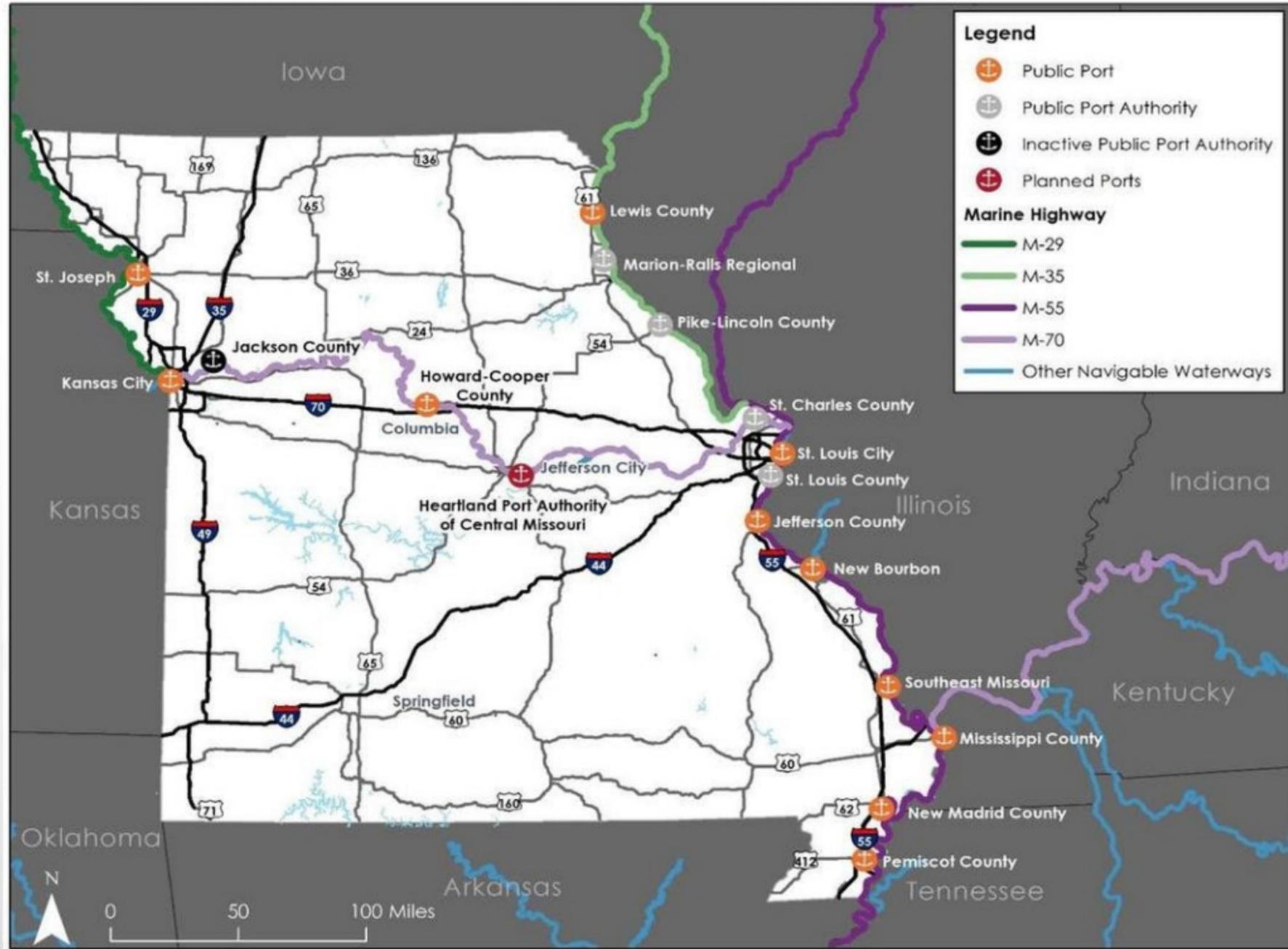
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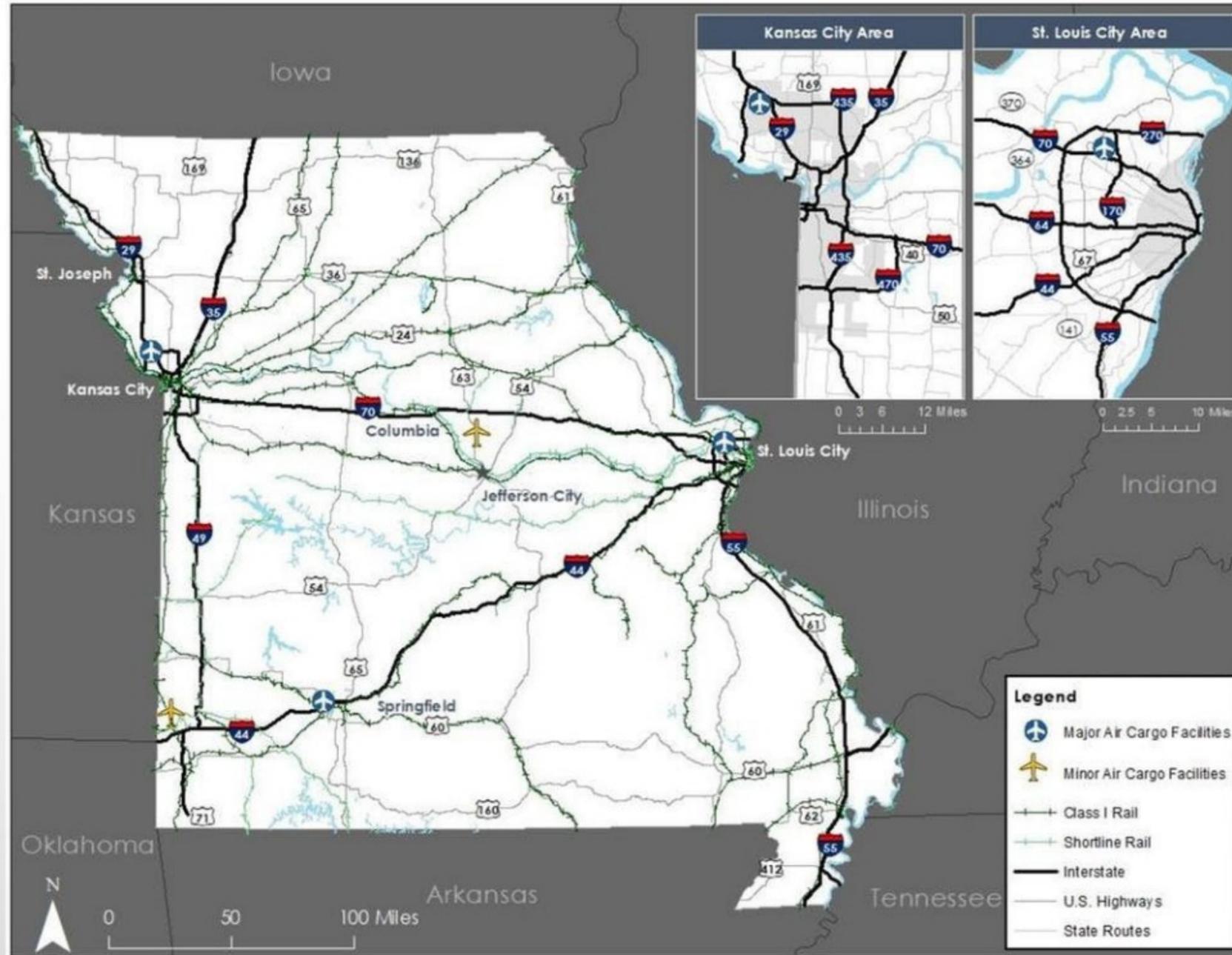
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## Top 5 by Value:

Misc. Manufacturing

Transportation Equip.

Electrical Machinery & Equip.

Instruments, Optical, Watches/Clocks

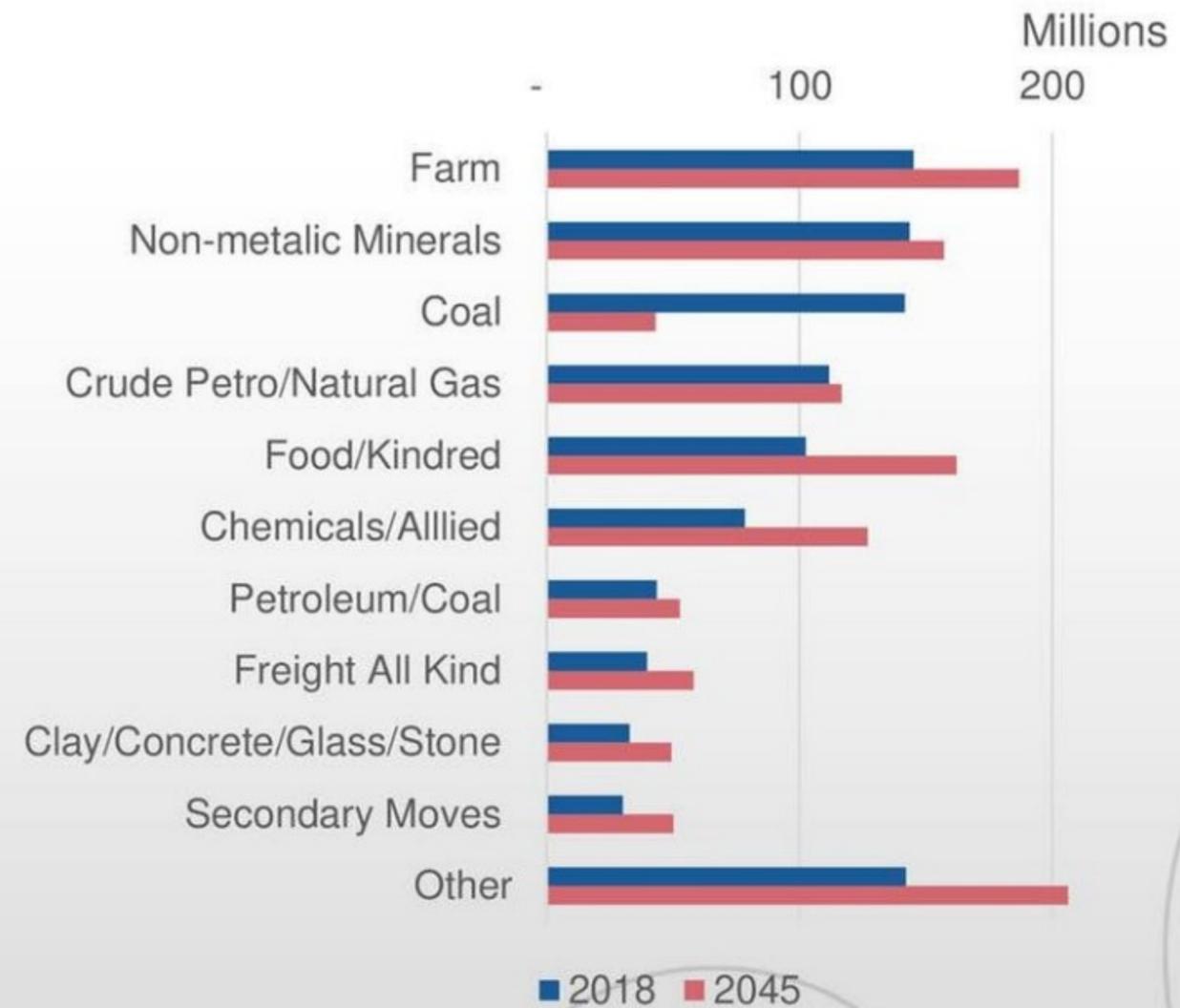
Chemicals/Allied

# Commodity Flow Summary – Tons

## FREIGHT TONS BY MODE (M)



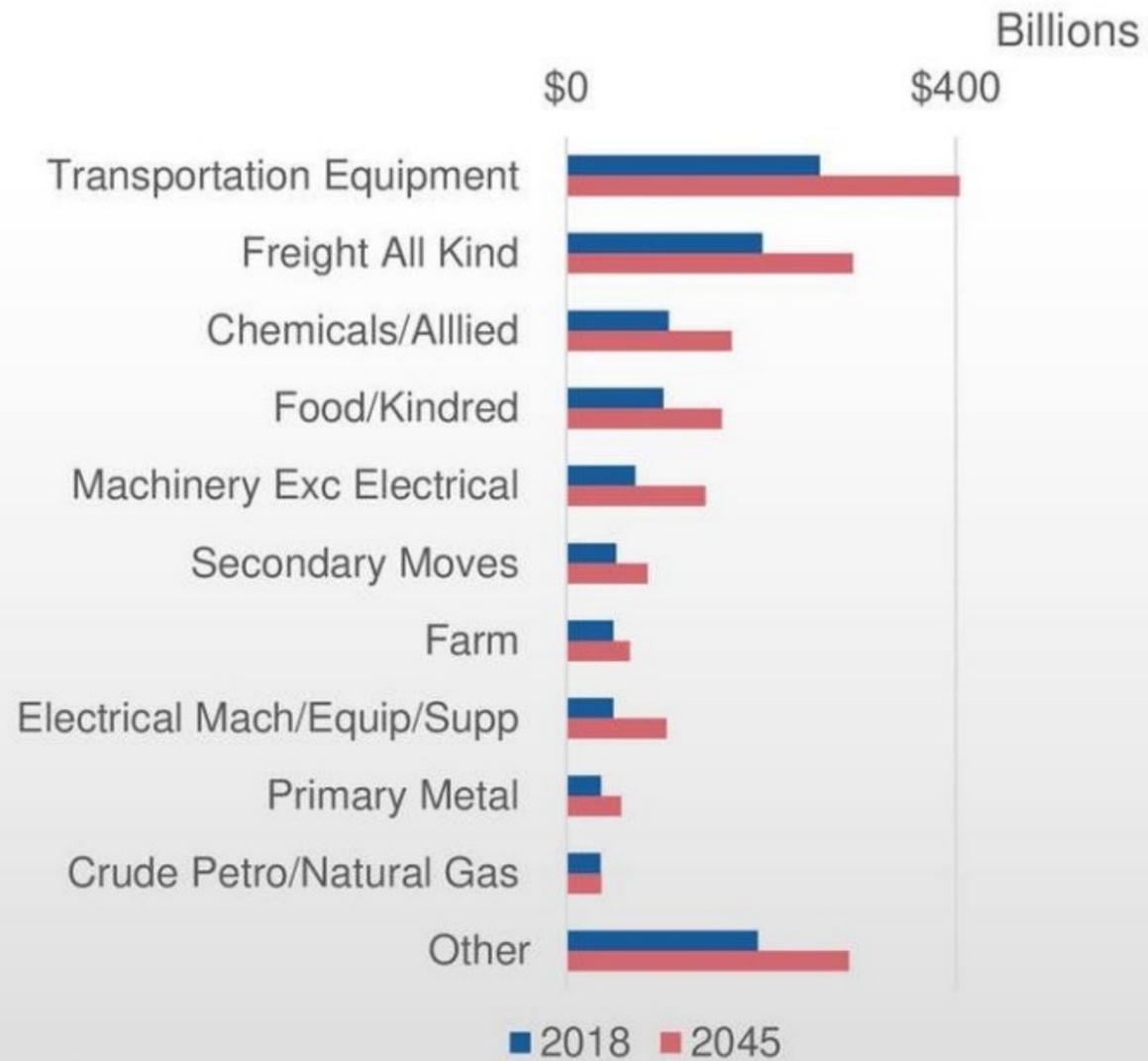
## TOP COMMODITIES 2018-2045



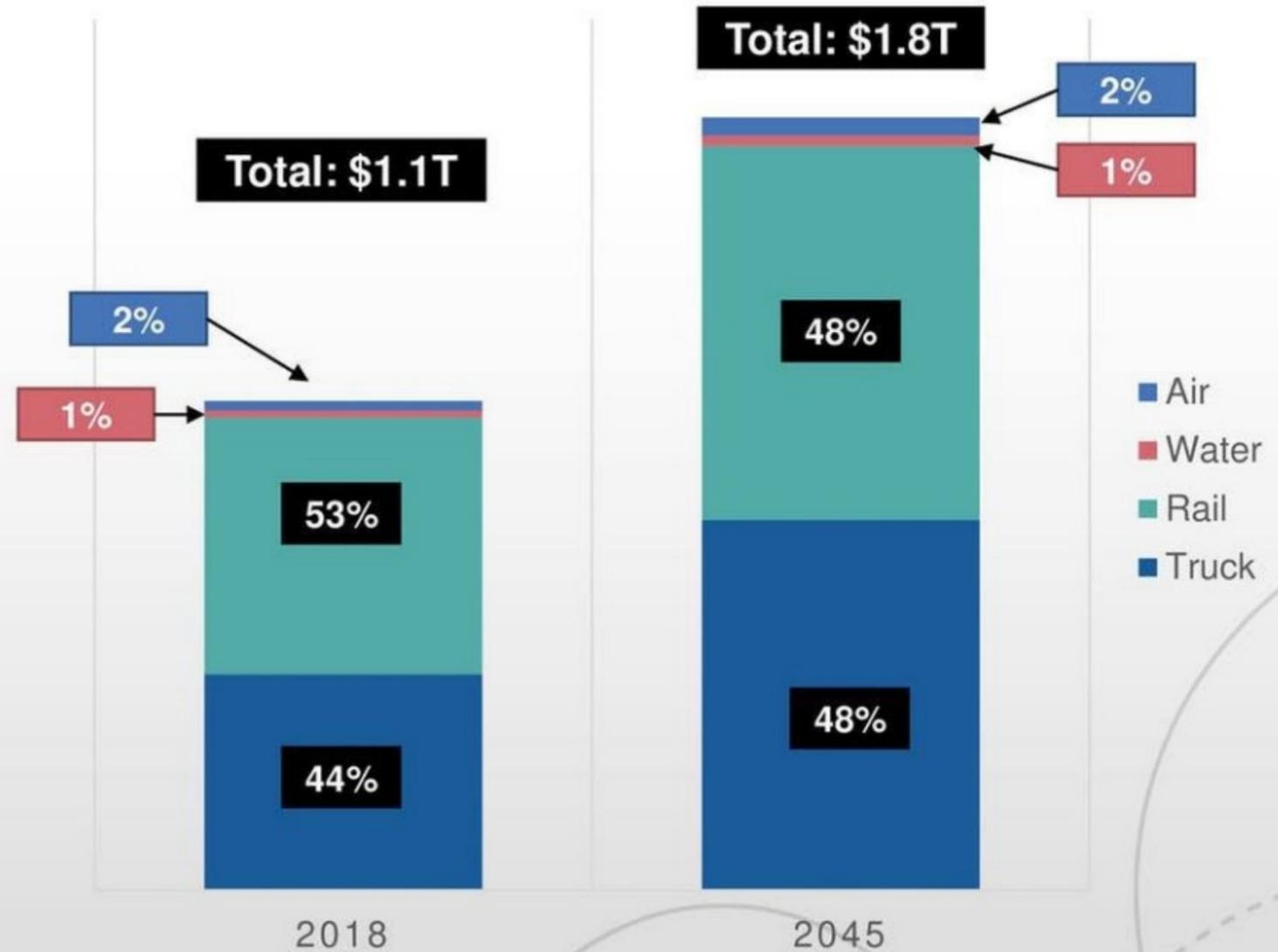
Sources: IHS Transearch, STB Waybill

# Commodity Flow Summary – Value

## TOP COMMODITIES 2018-2045



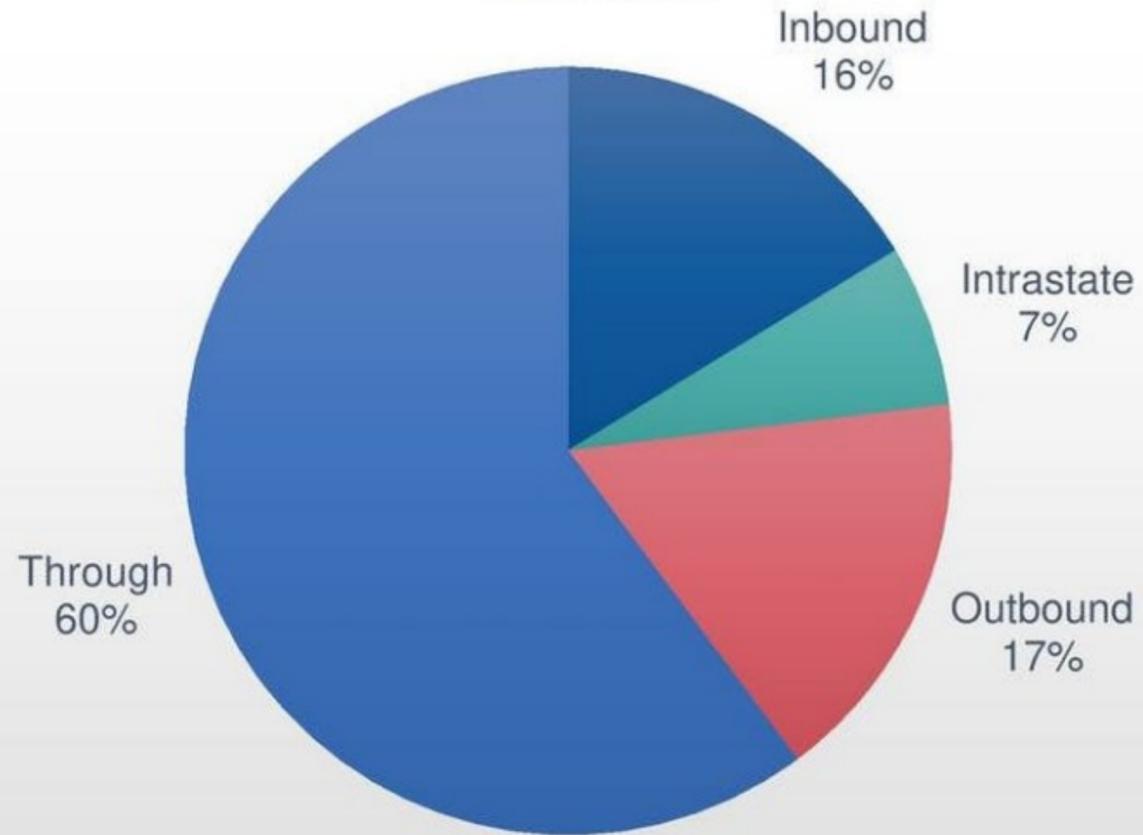
## FREIGHT VALUE BY MODE (\$B)



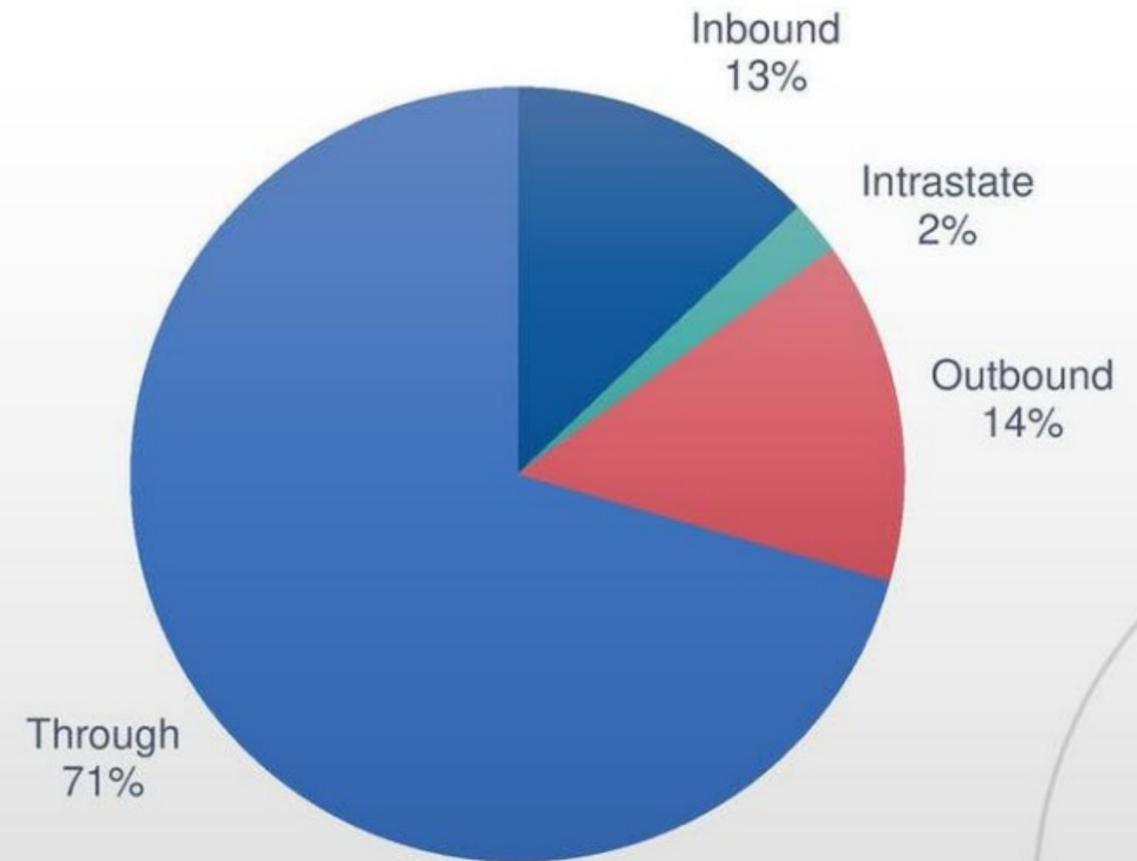
Sources: IHS Transearch, STB Waybill

# Directional Flow

## Tonnage by Direction, All Modes



## Value by Direction, All Modes



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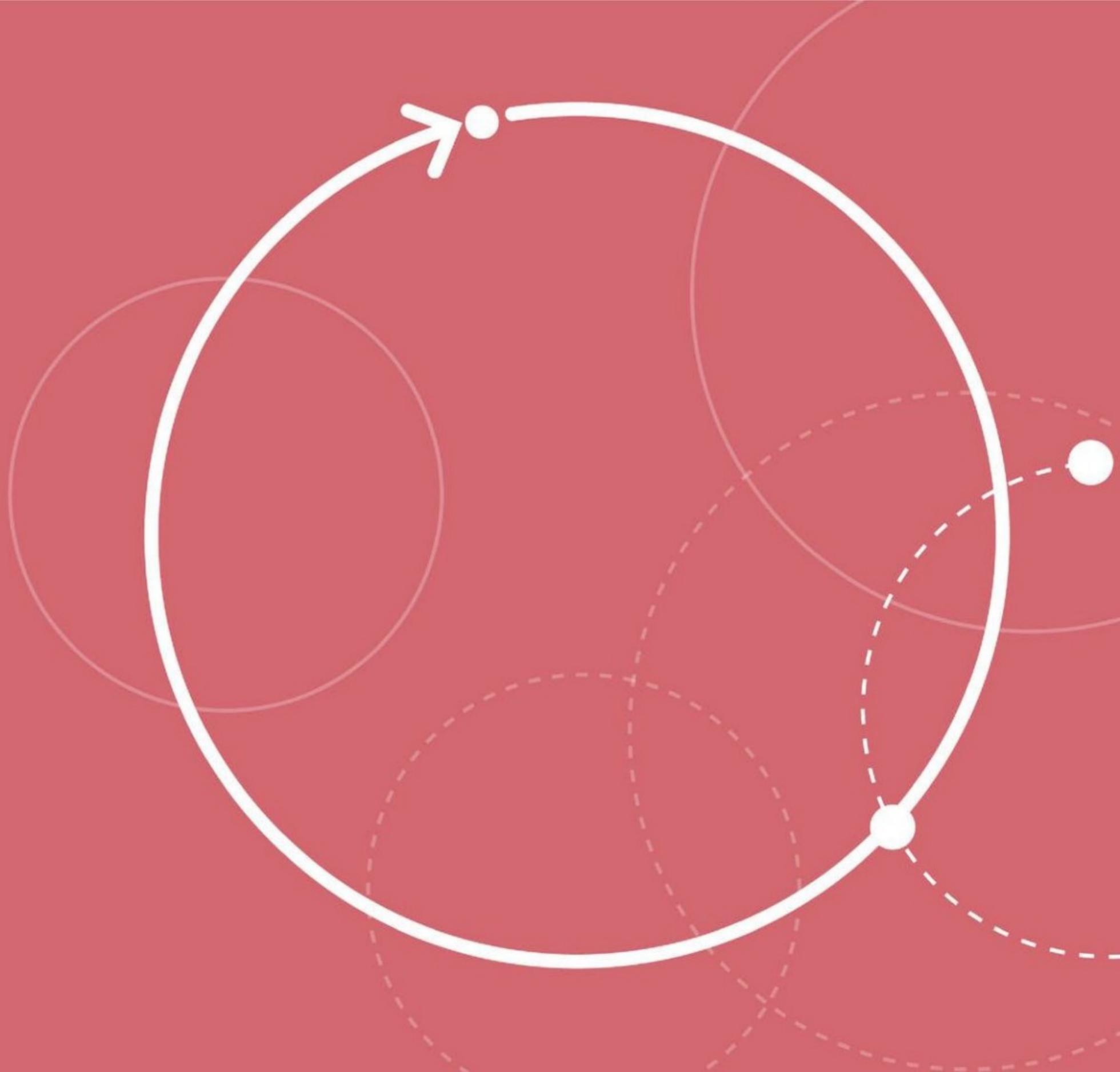
# Industry Employment

	Industry Sector	Employment
<b>Producers</b>	Agriculture, Forestry, Fishing & Hunting	156,634
	Mining, Quarrying and Oil & Gas Extraction	3,633
	<b>Manufacturing</b>	<b>267,907</b>
<b>Services</b>	Transportation & Warehousing	97,053
	Waste Management & Remediation	7,046
<b>Attractors</b>	Utilities	15,587
	Construction	129,188
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	Food Services & Drinking Places	237,073
	Non-Freight	1,342,383

## Top Employing Manufacturing Subsectors:

- Transportation equip. 44,500
- Food 40,000
- Fabricated metal prod. 32,100
- Machinery 31,900
- Chemicals 19,000

# Economic Futures



# National Trends Impacting Freight

Renewable  
Energy

Multimodal  
Infrastructure

Instability  
due to  
Climate

Retail & E-  
Commerce

Technology  
Adoption

Trade  
Agreements

# Renewable Energy

Shifts to renewable energy sources and fuel types (such as battery electric vehicles) will impact industries, freight flows and supporting infrastructure.

## Considerations

- Alternative fueling infrastructure
- Challenges for state revenue streams (i.e. motor fuel tax)
- Need for strong supply chains for metal and parts

## Opportunities

- Automobile manufacturers driving transition – potential partnership with states
- Manufacturing sector job growth
- Shifting supply chains and expanded industry opportunities

# Multimodal Infrastructure

Highway networks are already over capacity in many states and regions, and demand is projected to increase. Coupled with increased population, overall future demands on the highway system suggest need for modal diversification.

## Considerations

- Need for modernized assets
- Strong and diverse multimodal connections
- Freight- and rail-supportive land use coordination at local level

## Opportunities

- Shifting passenger traffic off roadway network (i.e. expanded passenger and intercity rail, Hyperloop)
- Class I investments in rail assets
- Federal infrastructure investment package

# Instability due to Climate

Flooding, tornadoes, and other extreme weather events cost billions of dollars in damages annually. This impacts industry, navigability along the inland waterways, and operations on highway and rail networks, among other impacts.

## Considerations

- Lock and dam network Mississippi River System already strained
- Existing assets in need of modernization
- Agriculture impacts significant (harvests, shipments, facilities)

## Opportunities

- Establish dedicated and resilient multimodal freight network
- National/regional partnerships to invest in critical multistate assets
- New or relocated inland ports

# Retail & E-Commerce

Growing demand for e-commerce continues to impact freight industry and employment, as well as land use changes. The COVID-19 pandemic has accelerated some e-commerce trends, including the importance of stockpiling vs. just-in-time distribution. This trend could have an impact on land use and the network of links and nodes throughout the U.S.

## Considerations

- Shifting warehousing strategies
- Heavily reliant on truck modes
- Final 50 feet delivery challenges

## Opportunities

- Smarter curb management
- Stronger regional relationships to address warehousing & distribution networks
- Increasing use of domestic suppliers

# Technology Adoption

Adoption of connected and autonomous vehicles (CAVs) is already impacting the trucking industry. Coupled with drones and platooning technology, upgrades to broadband and transportation infrastructure as well as state legislation will be necessary.

## Considerations

- Fragmented broadband infrastructure in rural areas
- Public policy hurdles
- Modernized supporting infrastructure needed

## Opportunities

- Solution to some truck driver labor challenges
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- Blockchain for better visibility of product, information and financial flows

# Trade Agreements

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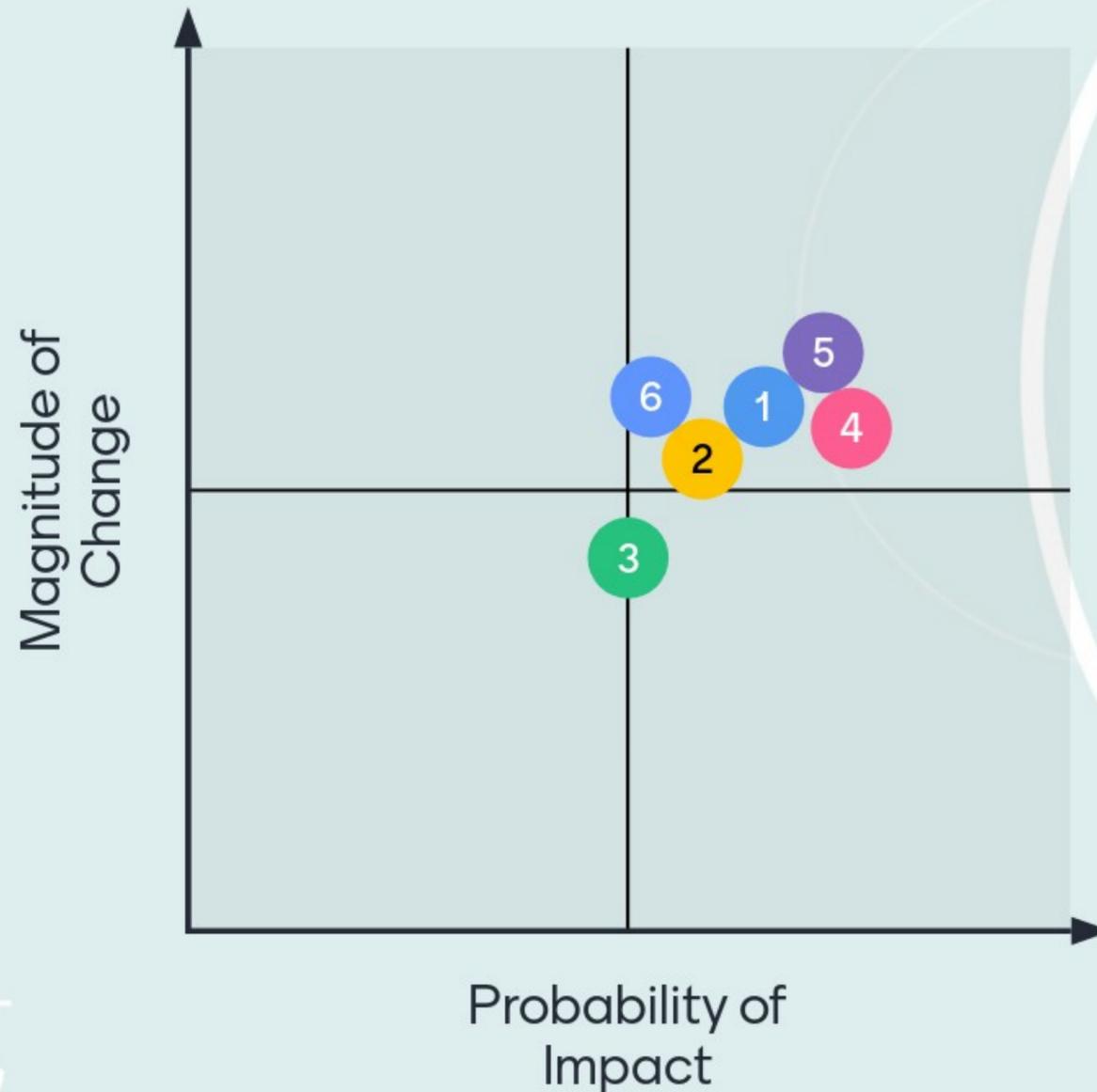
## Considerations

- Intermodal connectors to support increased inbound/outbound flows vs. through flows
- Modernized facilities
- Workforce development

## Opportunities

- Increased investment in domestic sourcing
- Growth in advanced manufacturing
- Developments in industrial space – new and repurposed

# How might these trends affect Missouri's economy?



- 1 Renewable energy
- 2 Multimodal infrastructure
- 3 Instability due to climate
- 4 Retail & e-commerce
- 5 Technology adoption
- 6 Trade agreements

# Are there other trends that you think will impact Missouri's businesses & industries?

Continuing refusal to invest in transportation

Ensuring a qualified workforce

Lack is skilled workers

Demographics as the average age of Missourians increases.

Need to react to climate change & climate change mitigation measures

Reaction and aftermath of COVID pandemic

Increased traffic without adequate funding to keep infrastructure up to date

no dedicated funding for other modes limits ability to respond and build resiliency

People leaving the rural areas for urban areas



# Are there other trends that you think will impact Missouri's businesses & industries?

Disparity between rural/urban

Increased polarity in politics.

Access to jobs by population via transit

Population trends, investment in improving transportation options and roads, ensuring a qualified workforce, competing to further our economic development and bringing new businesses to our area, how will we bounce back from COVID

Reduce social financial assistance to give people incentive to get back into the workforce

Unprepared

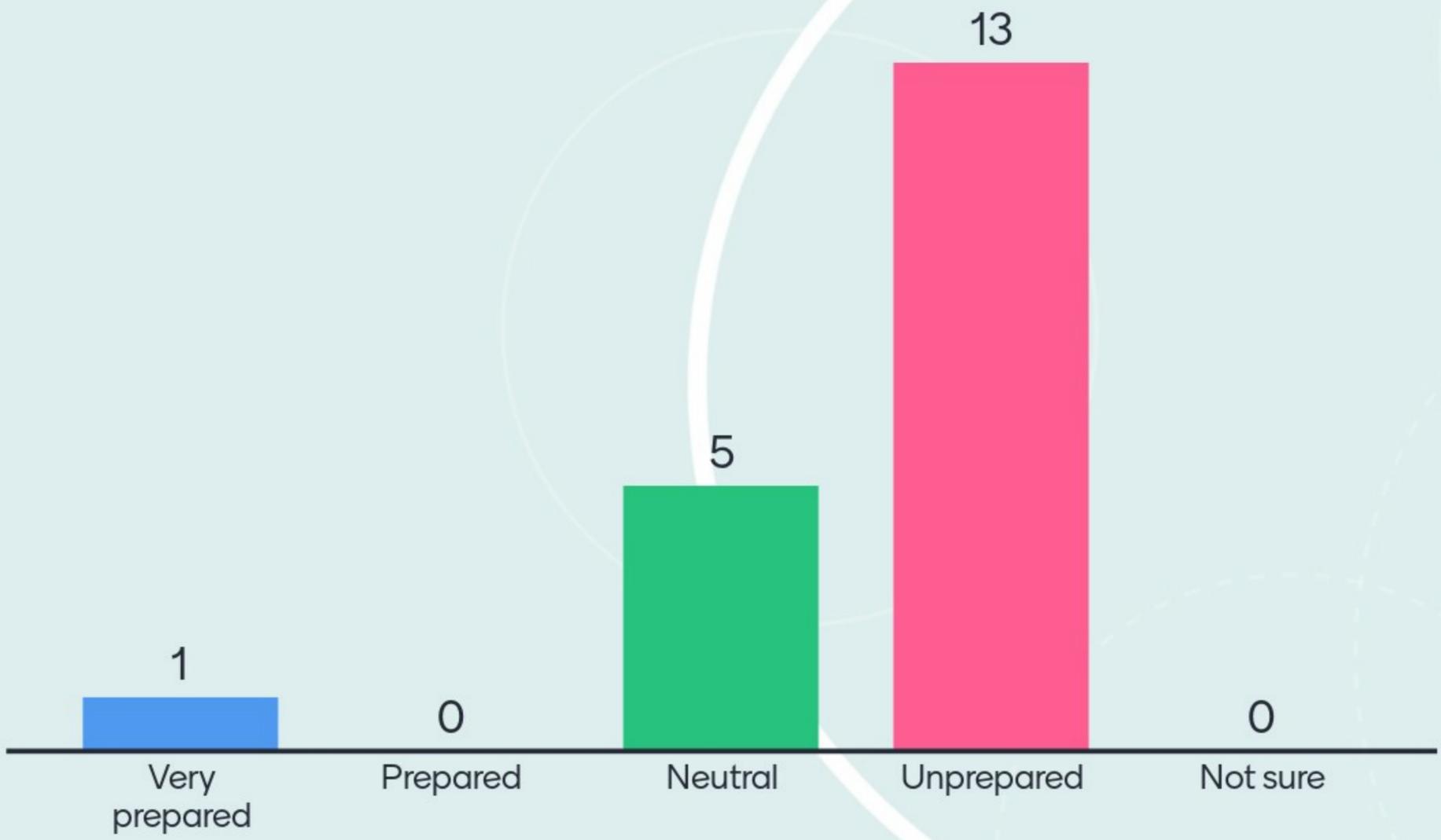
When the next pandemic hits and what response will be

as telework is more common, relocation of workers and freight support to other areas

Missouri River instability



# How prepared are Missouri's businesses & industries to respond to these trends?



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

Strong rail and ports in the region

River, road, rail

Good passenger air

River and Rail Served

Space for development

untapped potential

Modal connectivity

Access to interstate, the Missouri River and railways plus we are within just over an hour from MCI

Versatile network that can serve any and all needs



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

Funding for transportation

Small population to draw skilled workers from.

need to start tapping some of that potential

We don't use the River access enough.  
Flooding has caused some issues with that.  
Our roads are in bad shape.

Making the best use of our infrastructure, outdated road and rails, unused potential of river

unwilling to support automated vehicles



# What are your region's weaknesses?

Lack of river and rail

Road improvements especially I 70

Poor highway quality. Need that to get to ports or rail

Undeveloped river infrastructure

Inadequate funding to develop freight transportation assets.

low population means low traffic means limited MoDOT investment

need to start tapping into our potential

Missouri River instability



# What are your region's opportunities?

Access to I 70

Unlimited

expanding ports

Working as a mega region throughout Midwest.

Lots of space for development and expansion

Potential Passenger rail,

Updating highway connectivity, utilization of rail and ports

attractive place to live

Potential opportunities at Rosecrans Airport

# What are your region's opportunities?

low cost of living

Skilled workforce



# What are your region's threats?

Declining population

Flooding

Aging population

Road closures due to flooding

get left behind

Flooding, climate issues.

Lack of infrastructure investments

Nearby states with more business friendly policies

Taxes don't support infrastructure projects



# What are your region's threats?

Perception

Lack of Change or willingness to change

# Freight System Needs



# Freight System Needs



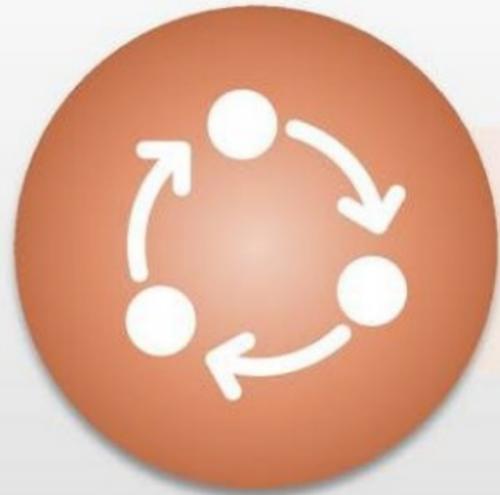
***Safety***



***Truck  
Parking***



***Technology***



***Mobility &  
Reliability***



***Asset  
preservation***



***Rural  
highways***

# Link to Mapping Tool

- <https://camsys.maps.arcgis.com/apps/webappviewer/index.html?id=35e1e49c751e42e38c7fb84d76febced>

# Virtual Open House focusing on passenger rail in MO being held May 3<sup>rd</sup> - June 4<sup>th</sup>. Link available via: <https://www.modot.org/missouri-state-freight-and-rail-plan>

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MORE THAN

**\$22 MILLION**

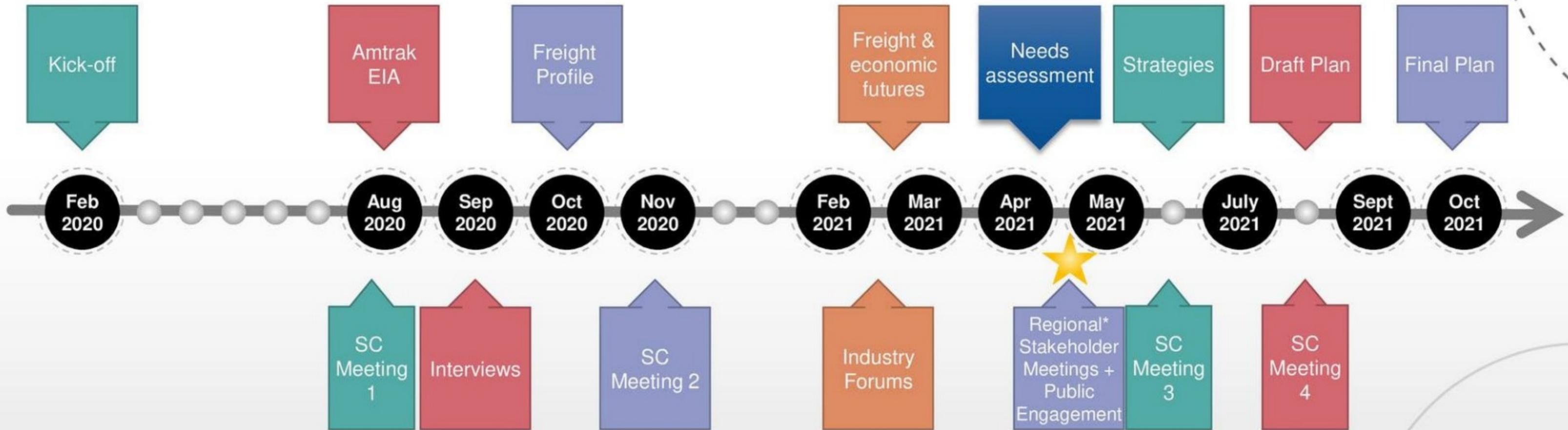
IN ANNUAL TAX REVENUE



# Schedule and Next Steps



# Schedule and Key Milestones



# Next Steps

Finalize MoFAS tool

Complete needs assessment

Establish goals & strategies

Project prioritization & ranking

Keep track of the planning process here:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

# Thank you!



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Waterways and Freight Administrator

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**Liz Prestwood**

MoDOT Deputy Project Manager

Policy and Innovation Program Manager

o: 417.829.8016

e: [Elizabeth.prestwood@modot.mo.gov](mailto:Elizabeth.prestwood@modot.mo.gov)



# STL / SED Regional District Meeting Presentation



# MISSOURI State Freight & Rail Plan

Regional  
Stakeholder  
Meetings

*presented to*  
*Regional Stakeholder Meeting*  
*Attendees*

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



May 2021

# Guidelines for Virtual Meetings

01

Plan to log in a few minutes early to avoid any technology issues. Edit your name to also include your organization.

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- please go to [www.Menti.com](https://www.Menti.com) and type in code **3269 3069**



# Meeting Purpose

Gather insight, input & feedback from Missouri planners and policymakers on regional economic and industry trends, as well as important freight transportation needs.

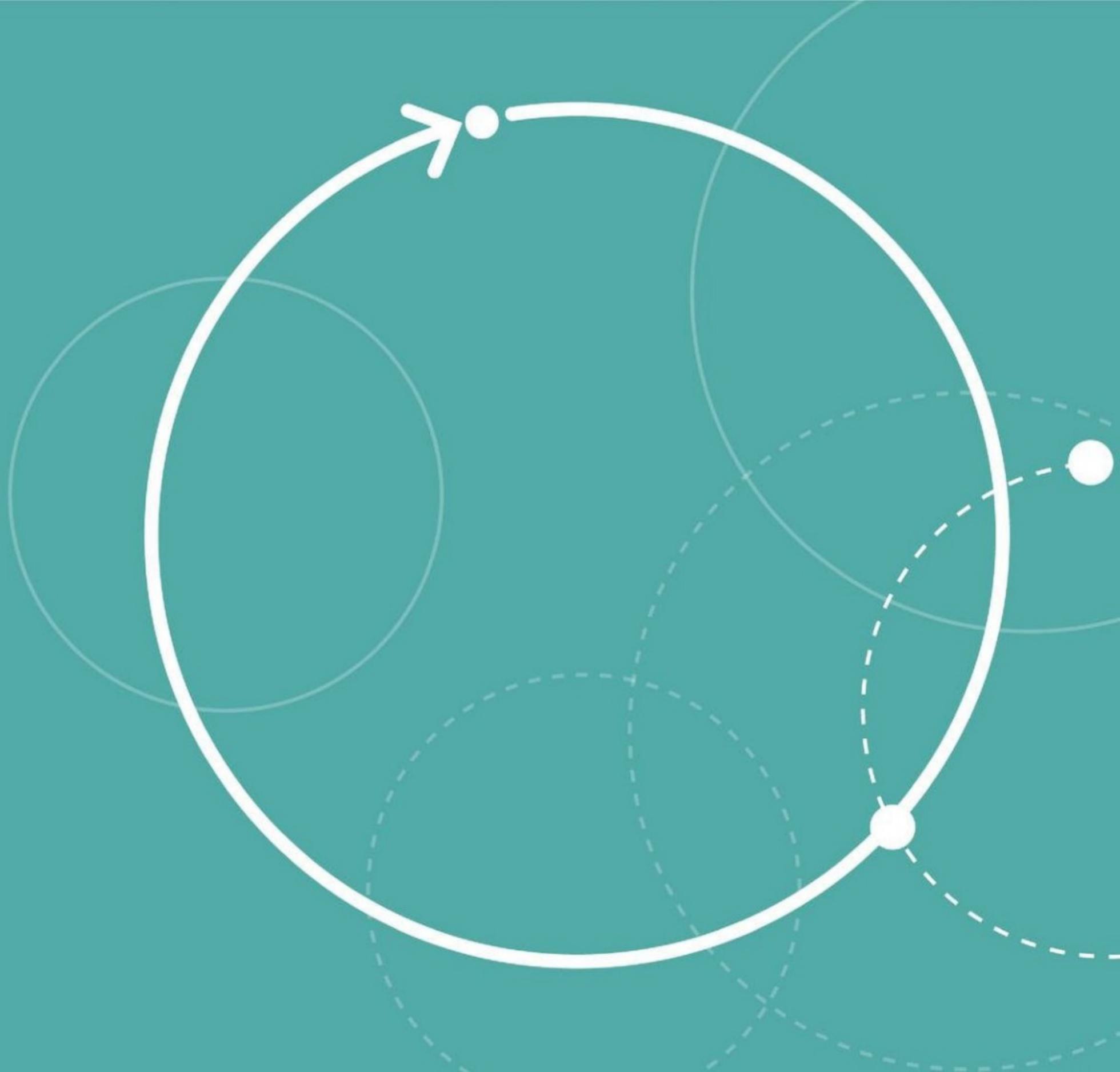
## Agenda

- Overview
- Missouri Freight Profile
- Economic Futures
- Freight System Needs
- Passenger Rail Update
- Schedule and Next Steps

# What are you most excited about when it comes to the future of freight?

short delivery times  
economy  
connection  
new technologies  
technology  
growth of air cargo  
new opportunities  
jobs  
attraction of new biz

# Overview



# 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?*

# 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*

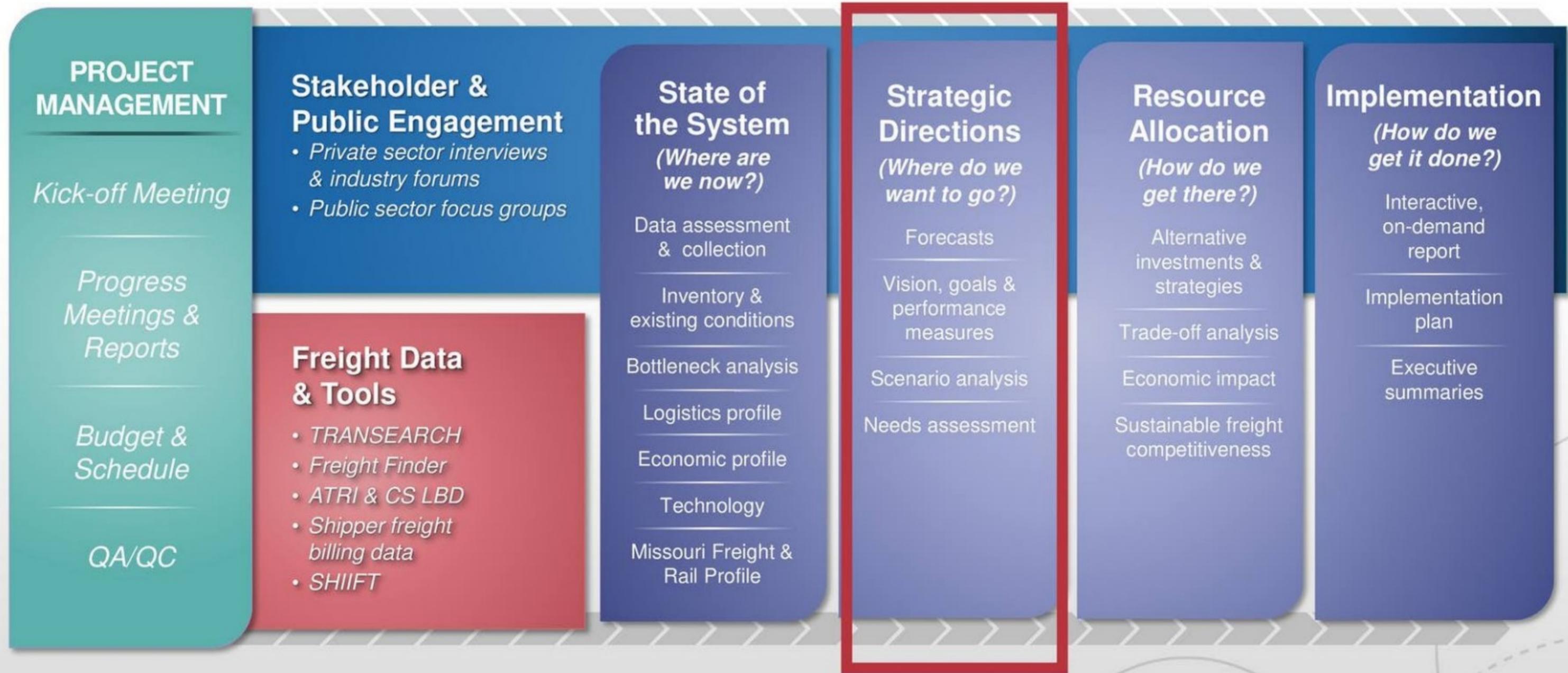


*Informs and supports economic growth opportunities*



*Monitors resiliency and fluidity across the freight network*

# Approach Overview



# Stakeholder Engagement Approach

*Initial interviews with key stakeholders*

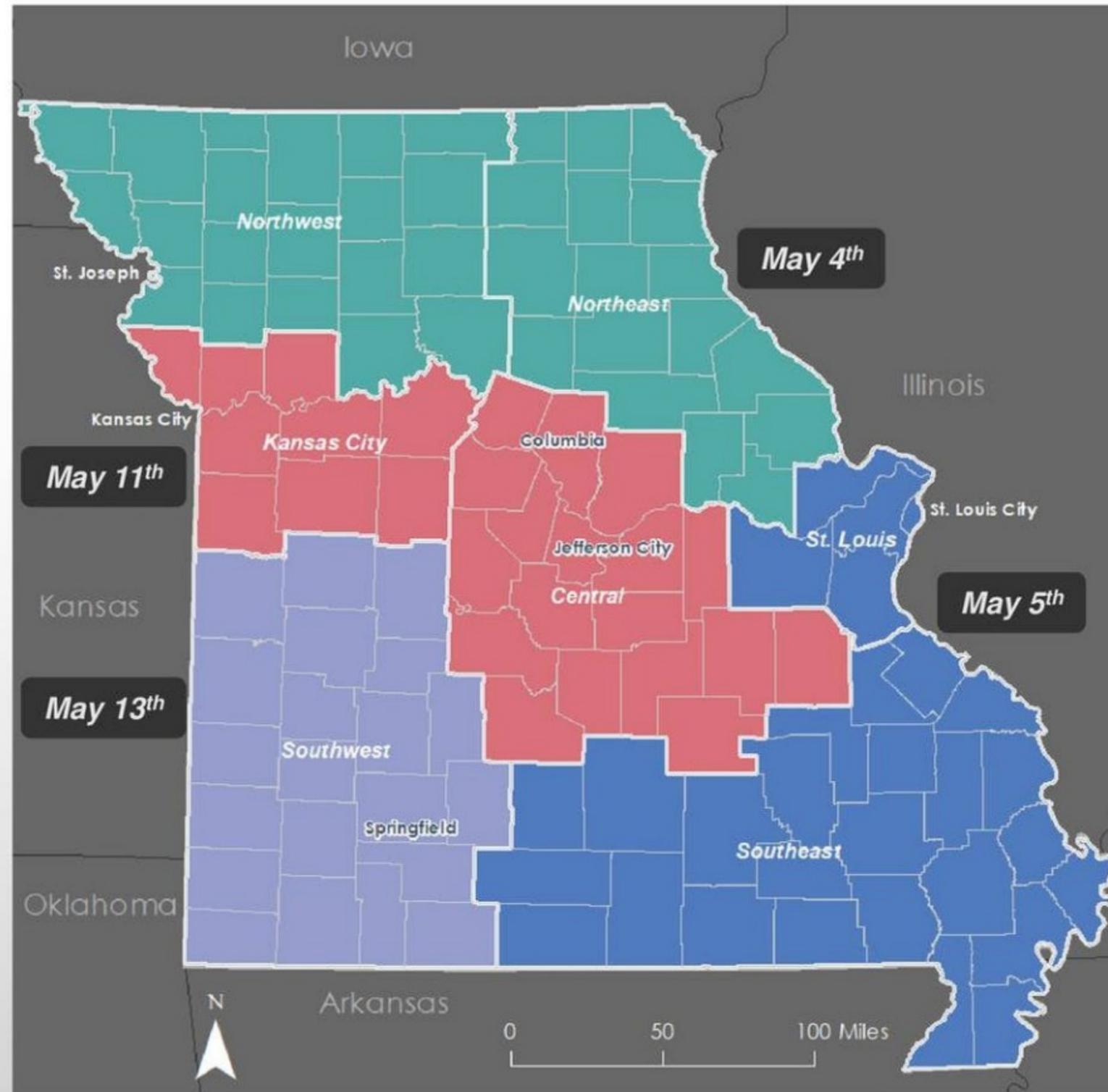
*SFRP Steering Committee*

*Interviews and surveys*

*Industry forums and stakeholder meetings*



# Series of 4 Regional Stakeholder Meetings



# How Will Input Be Used

## *Today's Meeting*

### **ECONOMIC FUTURES**

Identify trends and prospects that may impact Missouri's economy

### **NEEDS ASSESSMENT**

Input on mobility, safety, truck parking and other needs

Determine "disruptors" most likely to impact Missouri's future freight volumes and economic activity

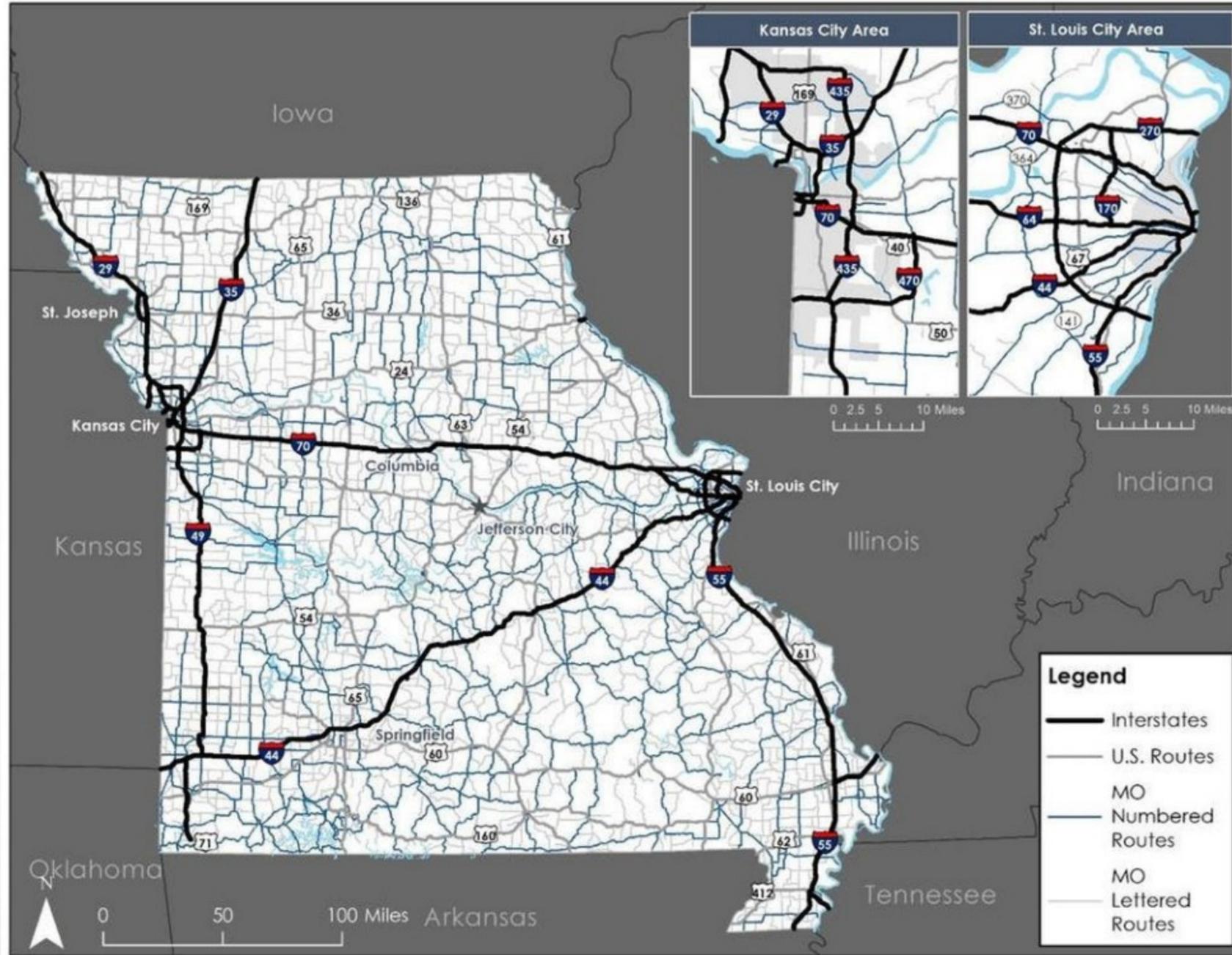
Refine freight transportation needs assessment

**LAY GROUNDWORK FOR RECOMMENDATIONS**

# Missouri Freight Profile



# State Highway System



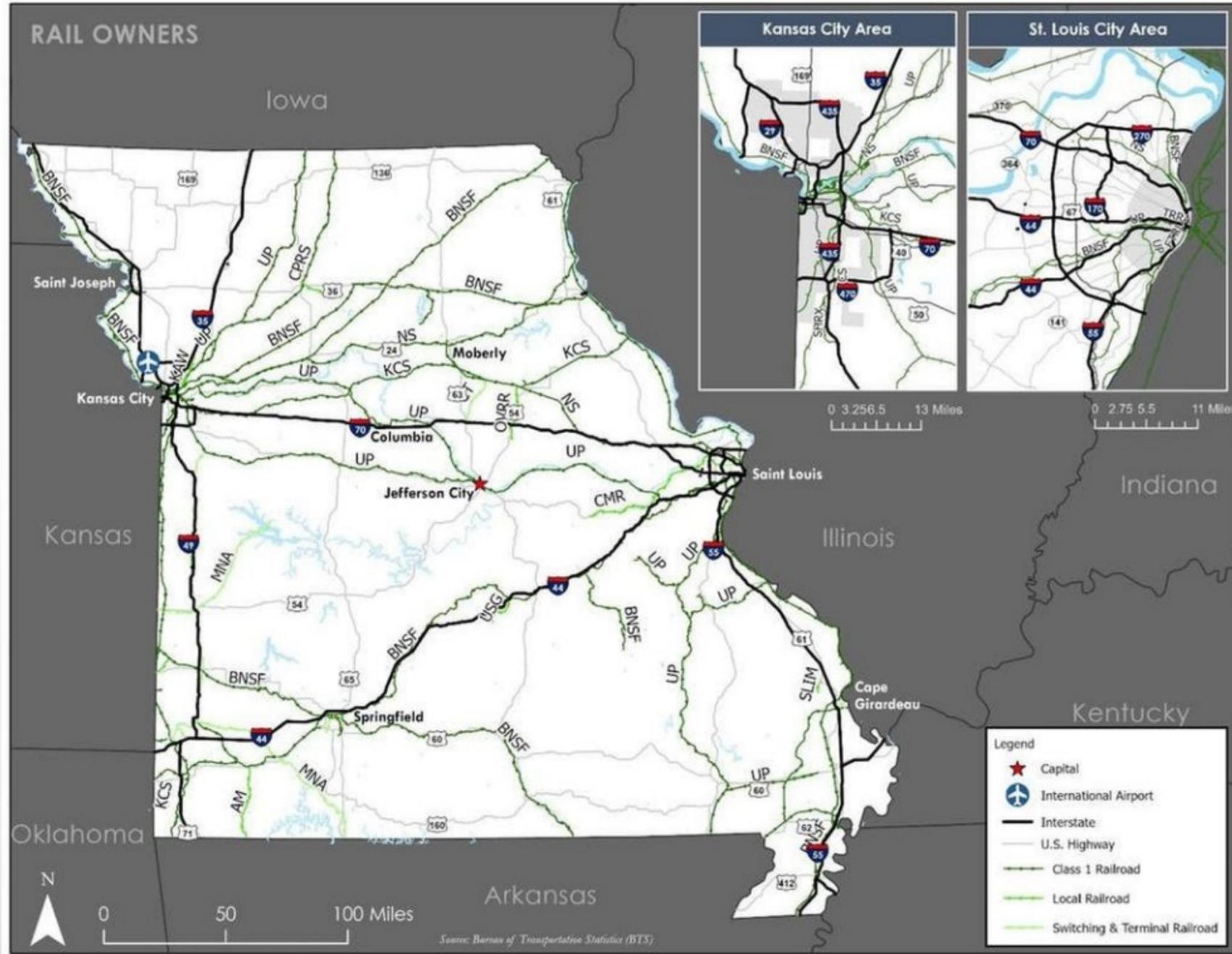
In 2018,  
Trucks carried  
**406.6M** tons of goods  
worth **\$495.6B**  
on Missouri highways

## Top 5 by Tonnage:

- Non-metallic minerals (aggregates)
- Farm products
- Food/kindred products
- Petroleum/coal
- Secondary movements



# State Railroad Network



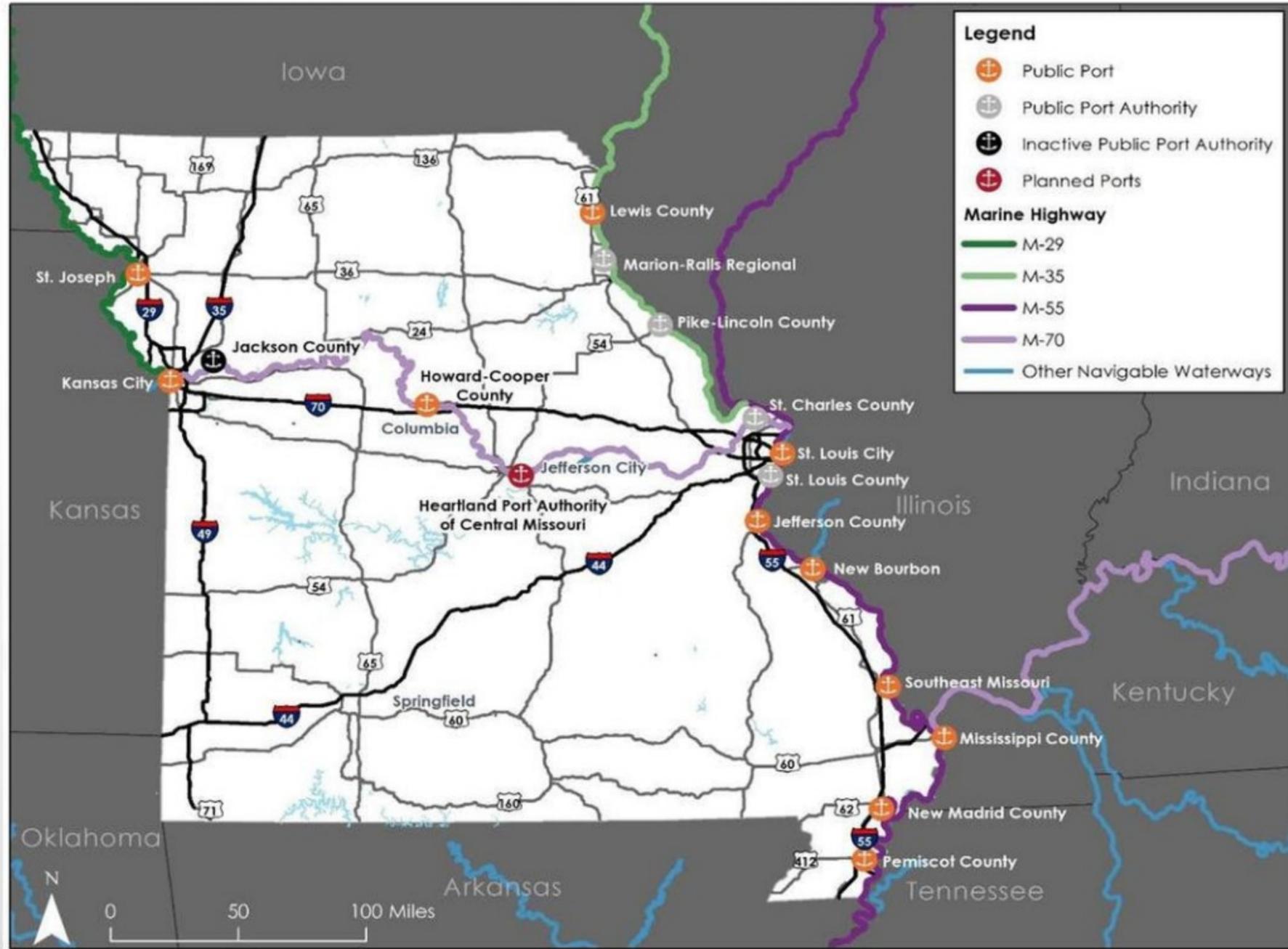
In 2018,  
**Railroads carried 445.9M tons of goods worth \$590.3B**  
 on Missouri Class I and short line rail track

## Top 5 by Tonnage:

- Coal
- Food/kinred products
- Farm products
- Chemicals/allied products
- Transportation equipment



# Marine Ports



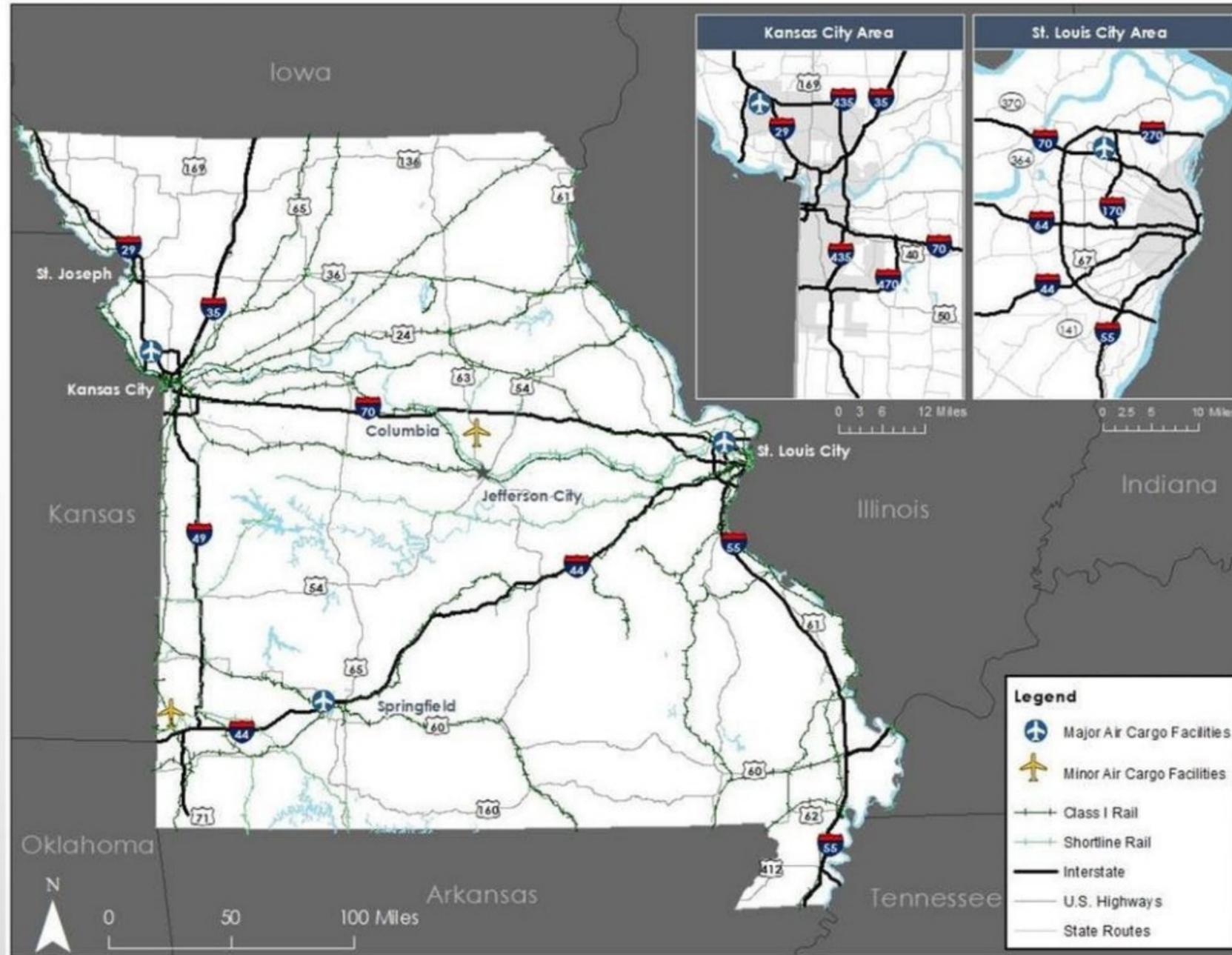
In 2018,  
**Barges and vessels carried 39.9M tons of goods worth \$15.5B**  
 via Missouri ports & waterways

## Top 5 by Tonnage:

- Non-metallic minerals (aggregates)
- Farm products
- Clay, concrete, glass & stone
- Coal
- Chemicals/allied products



# Cargo-handling Airports



In 2018,  
Airplanes at MCI, STL, and  
SGF carried **201K** tons of  
goods worth **\$22B**  
at Missouri airports

## Top 5 by Value:

Misc. Manufacturing

Transportation Equip.

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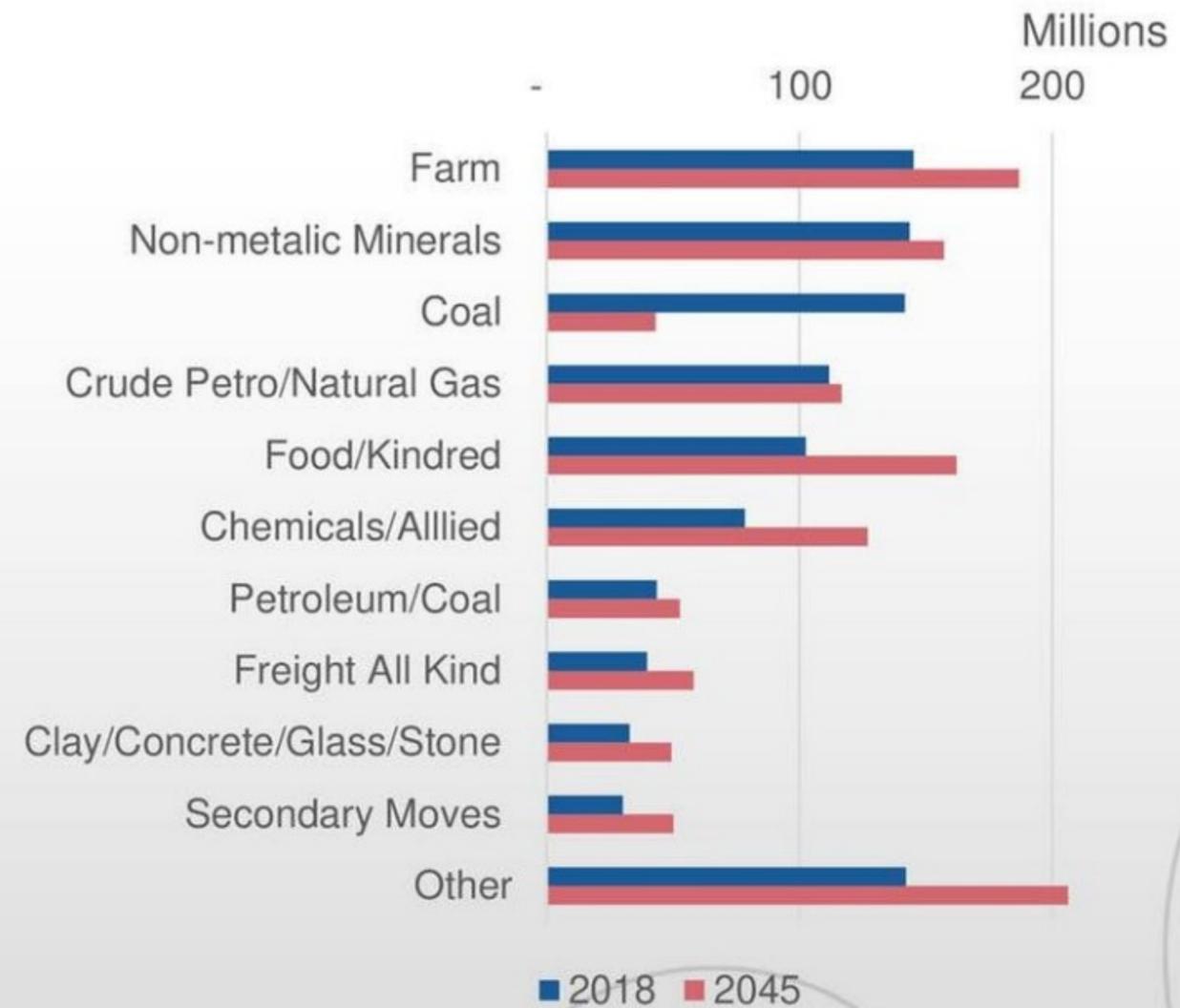
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# Commodity Flow Summary – Tons

## FREIGHT TONS BY MODE (M)



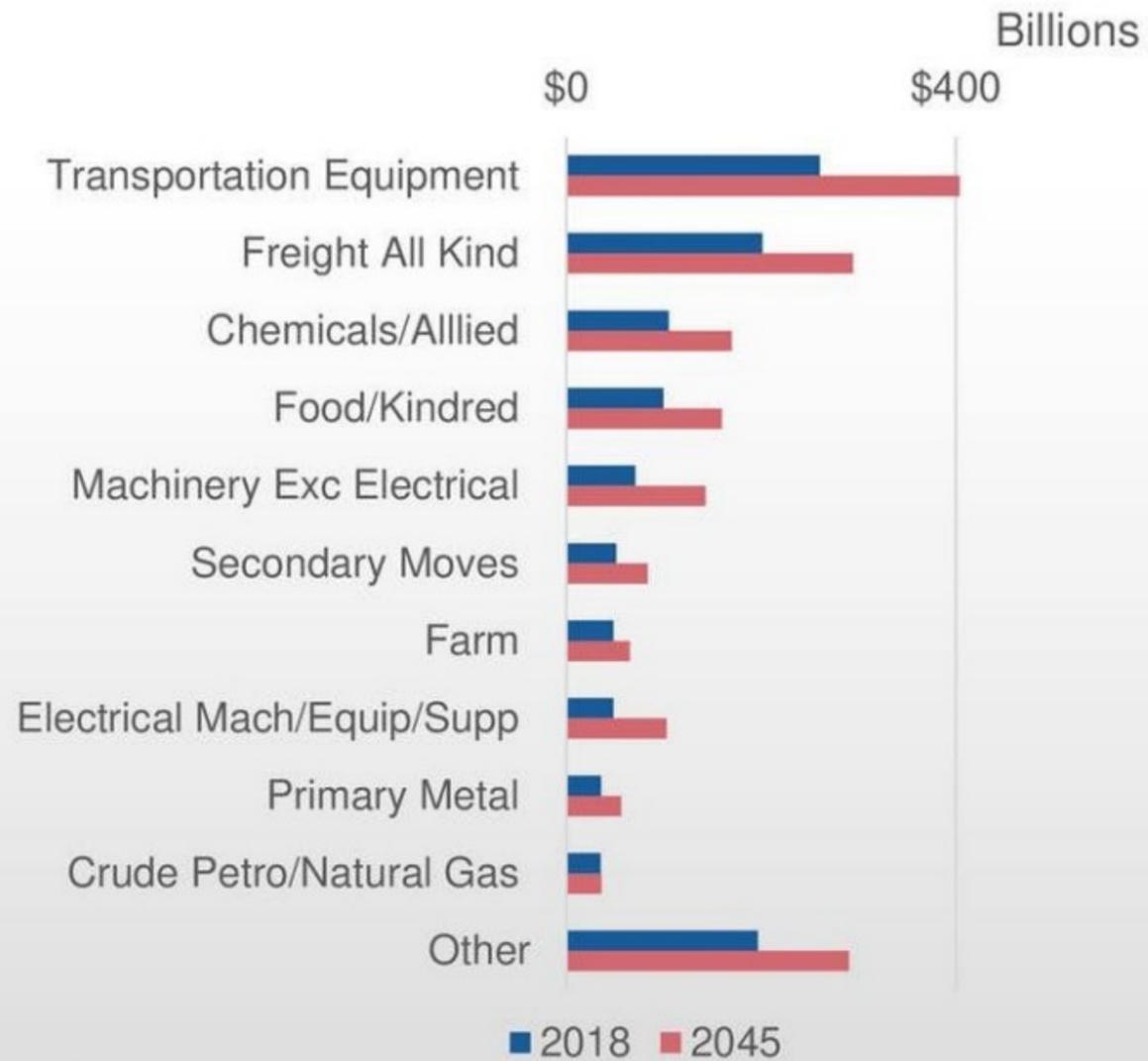
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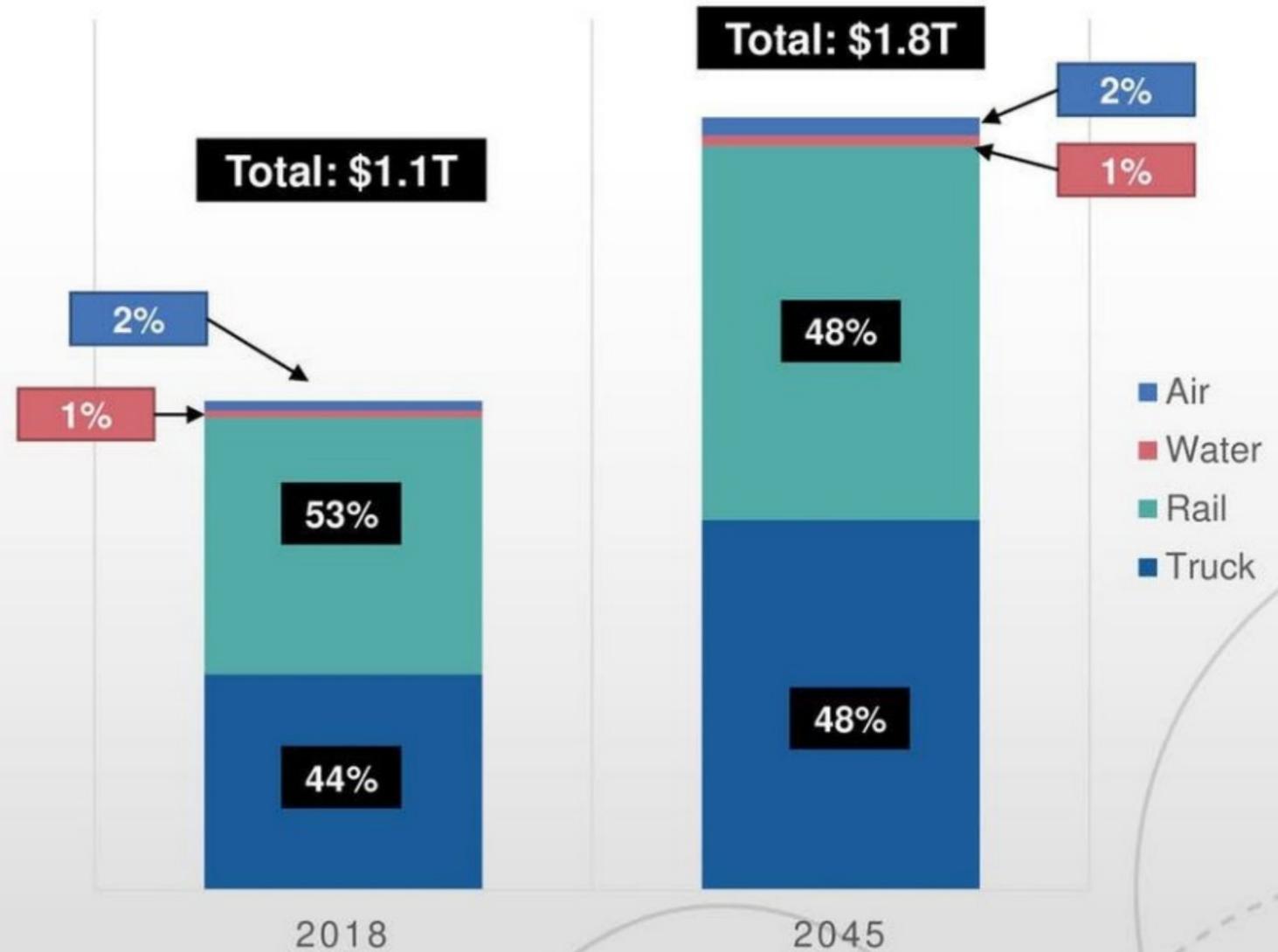
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# Commodity Flow Summary – Value

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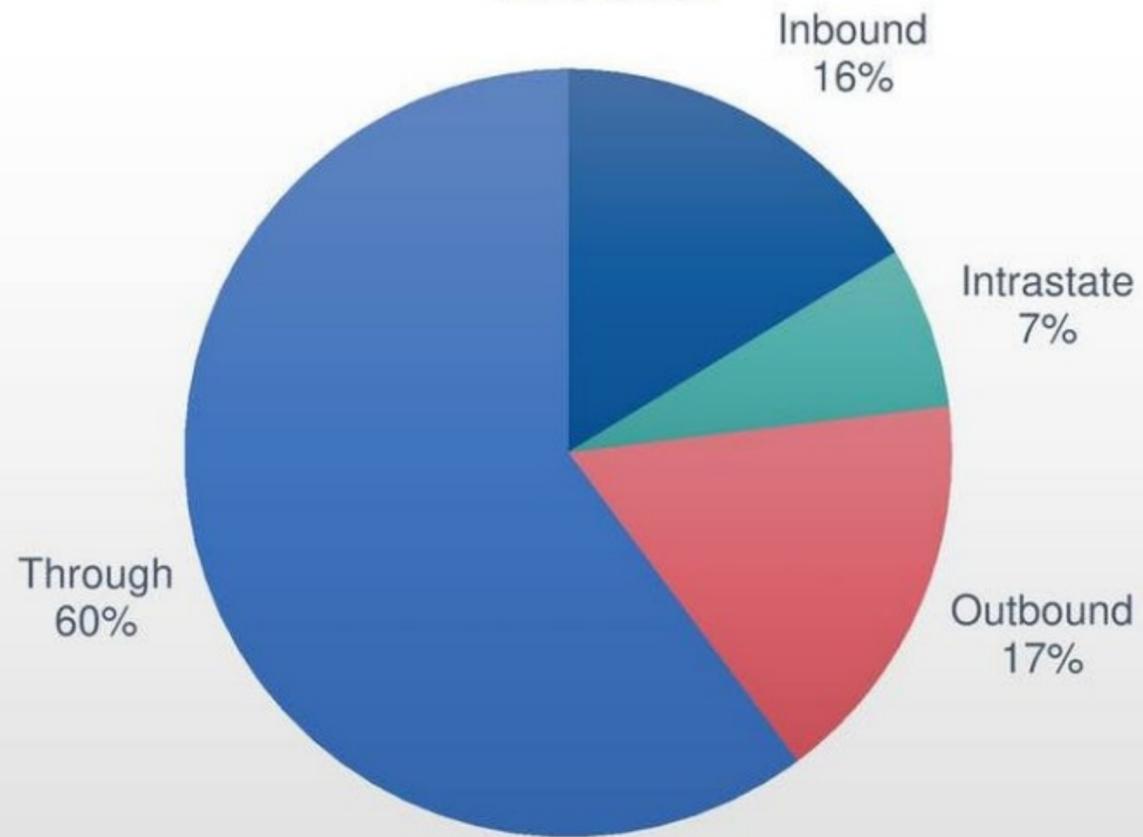
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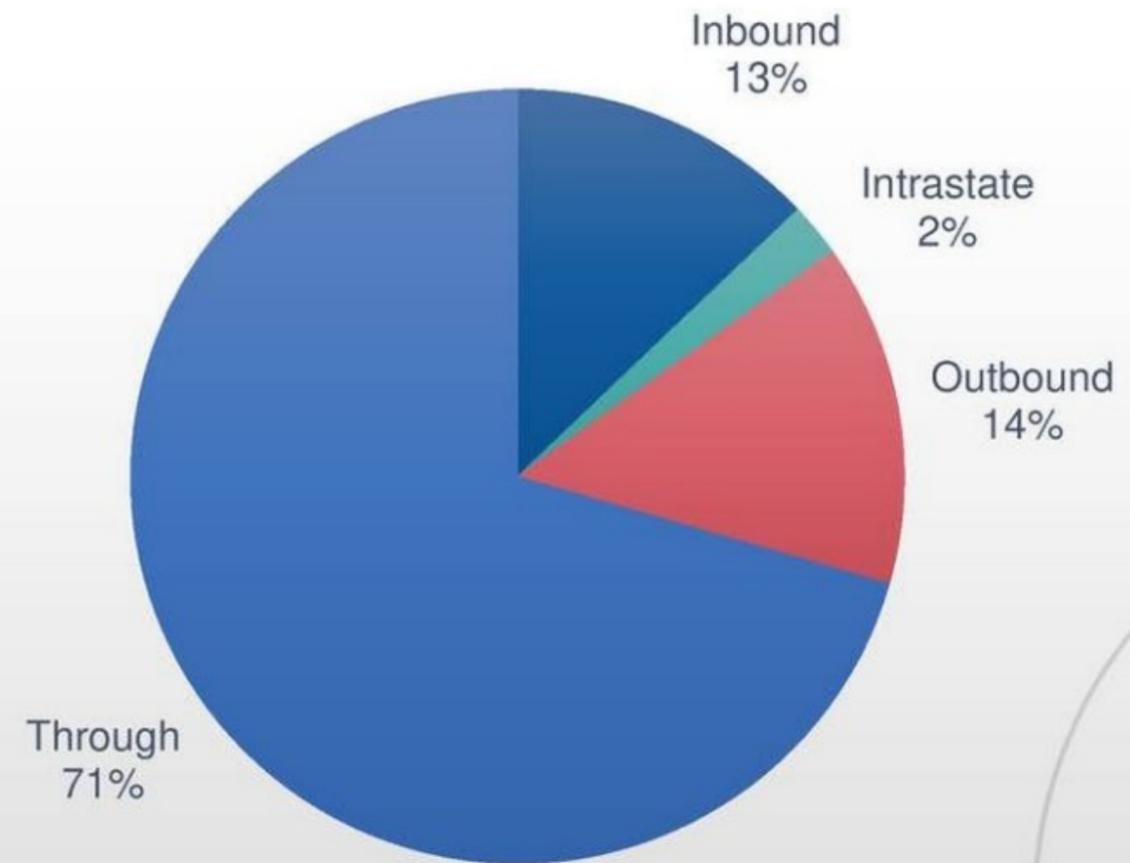
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## Value by Direction, All Modes



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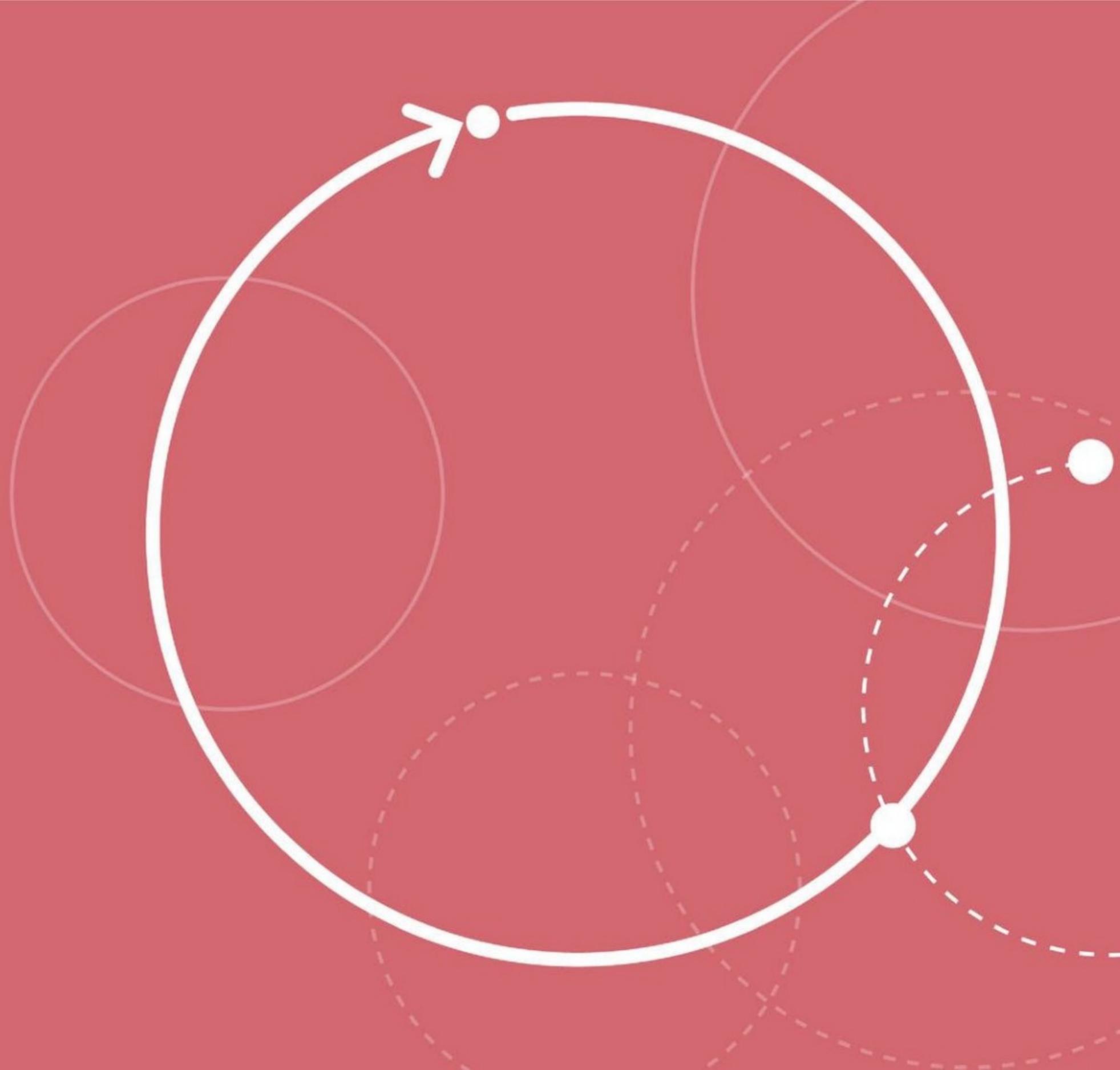
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Energy

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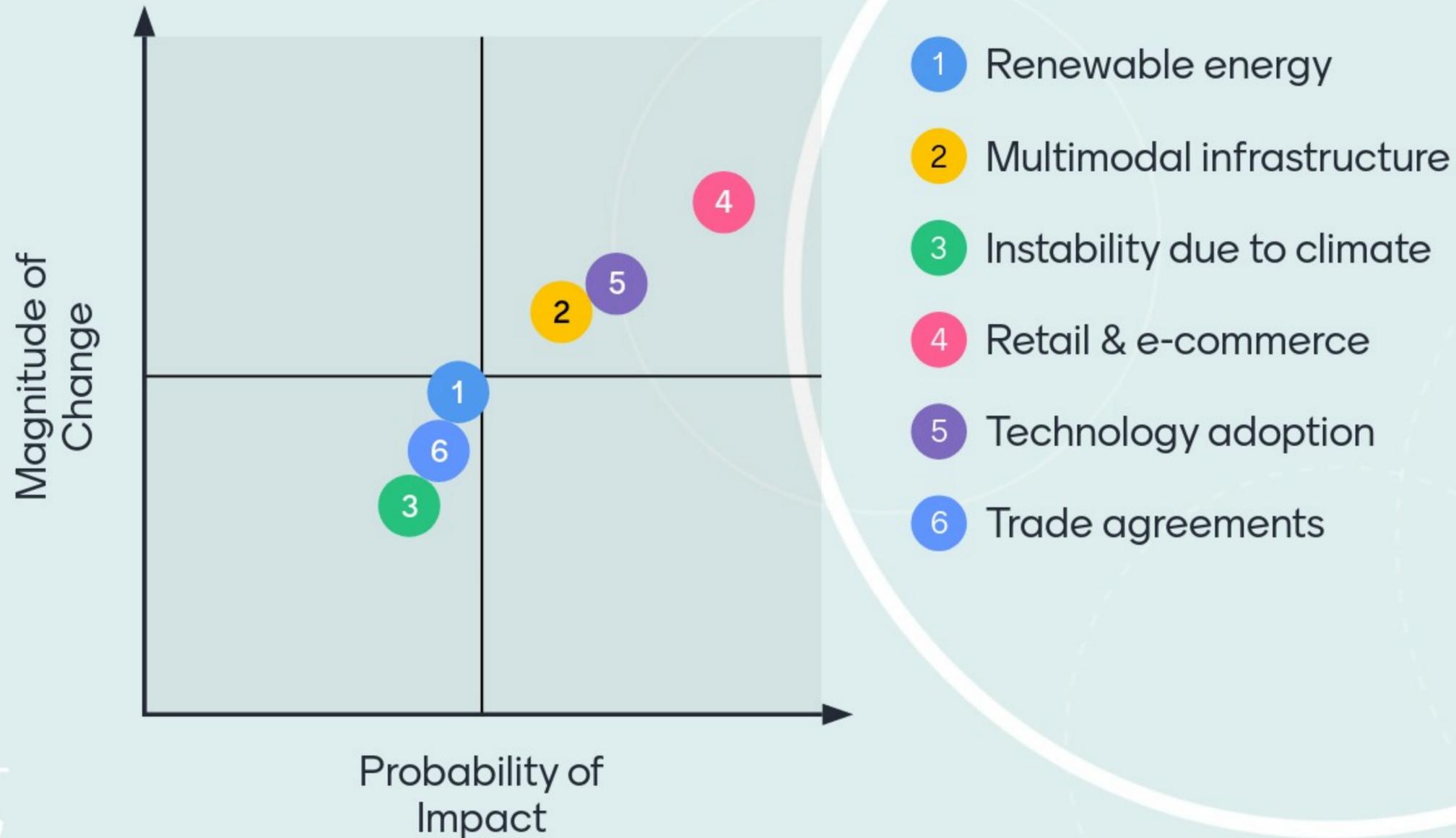
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- Modernized facilities
- Workforce development

## Opportunities

- Increased investment in domestic sourcing
- Growth in advanced manufacturing
- Developments in industrial space – new and repurposed

# How might these trends affect Missouri's economy?



# Are there other trends that you think will impact Missouri's businesses & industries?

Healthcare/biotech

Workforce development

Growth patterns

The growth of distribution centers is impressive and drives demand.

Need to think now how to assess non-fossil fuel vehicles so they contribute to transportation fund.

Future pandemics

Availability of workforce

telework changing where employees are located

3D printing

# Are there other trends that you think will impact Missouri's businesses & industries?

University costs, options

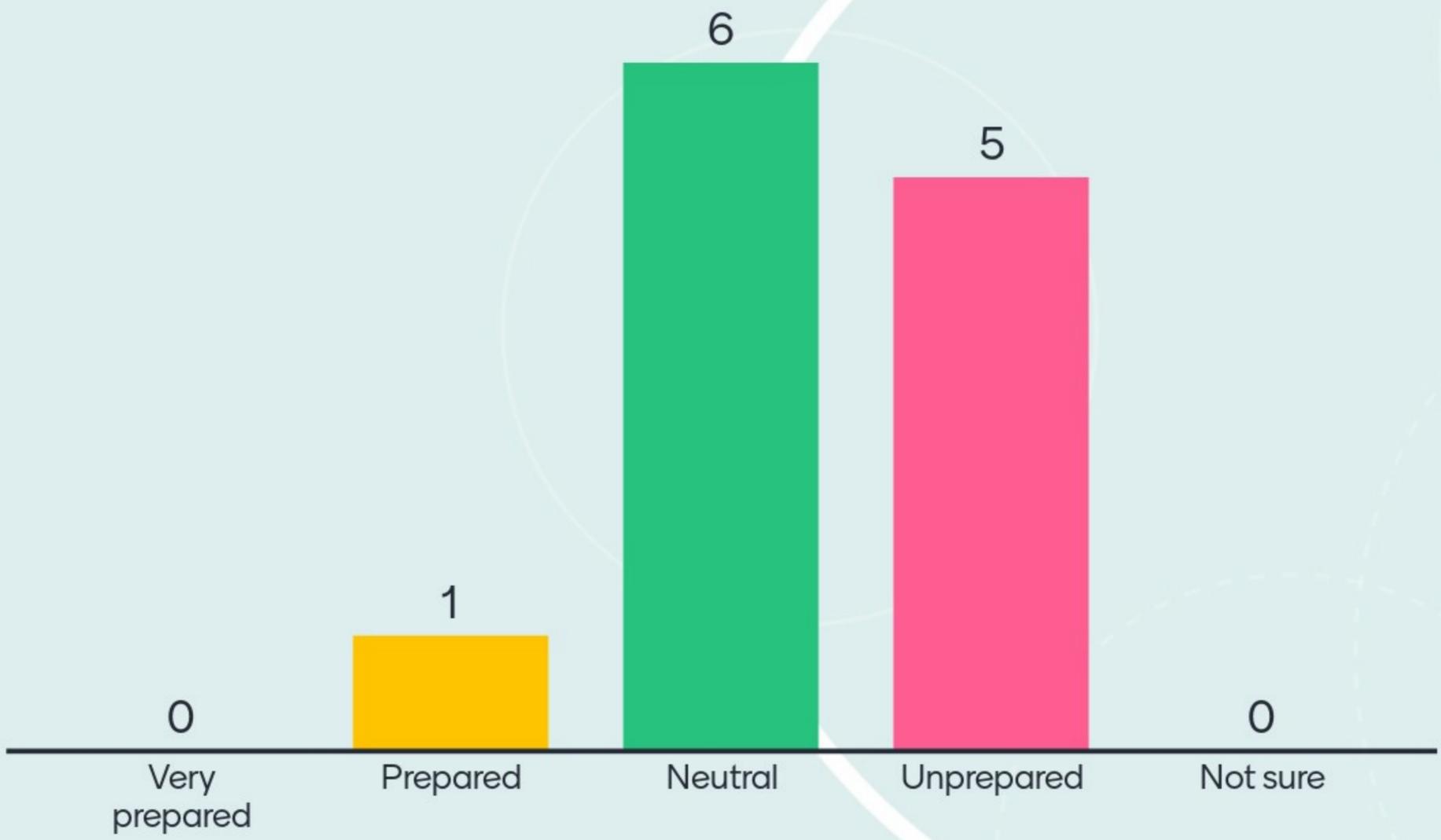
Fewer people owning and driving cars

current administration looking at connections in transportation

Infrastructure funding sustainability



# How prepared are Missouri's businesses & industries to respond to these trends?



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

Multimodal connectivity

Capacity availability via air

Funding

Rail/Water connections

SEMO Port, two rail systems,  
Interstate

Aging infrastructure

Mississippi River system access and  
port network

connected highway system

lack of dedicated funding for rail and  
water



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

Ability to maintain infrastructure and rebuild

Lack of funding for large scale projects

Serve as a larger air freight hub.

# What are your region's weaknesses?

workforce

Workforce in general

Desire to widen highways versus total transportation network

Underfunded needs, especially non-highway

Aging infrastructure

aging bridges on farm to market roads maintained by the state

Lack of funding

Infrastructure funding sustainability

farm to market roads with little funding

# What are your region's opportunities?

Public ports have the ability to expand.

Serve as a larger air freight hub.

connections with I-57, I-55, and 60 for distribution centers

Land for development

lots of rail

Better collaboration/communication



# What are your region's threats?

Competition from neighboring states

lack of broadband in many areas

River flooding

Other states are getting very competitive and stepping up their game and we cannot afford to lag behind...stay focused

Lack of workforce

workforce shortage...no need to comment on contributing factor.

New Madrid earthquake fault line

competing within the communities for development



# Freight System Needs



# Freight System Needs



***Safety***



***Truck  
Parking***



***Technology***



***Mobility &  
Reliability***



***Asset  
preservation***



***Rural  
highways***

# Link to Mapping Tool

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MORE THAN

**\$22 MILLION**

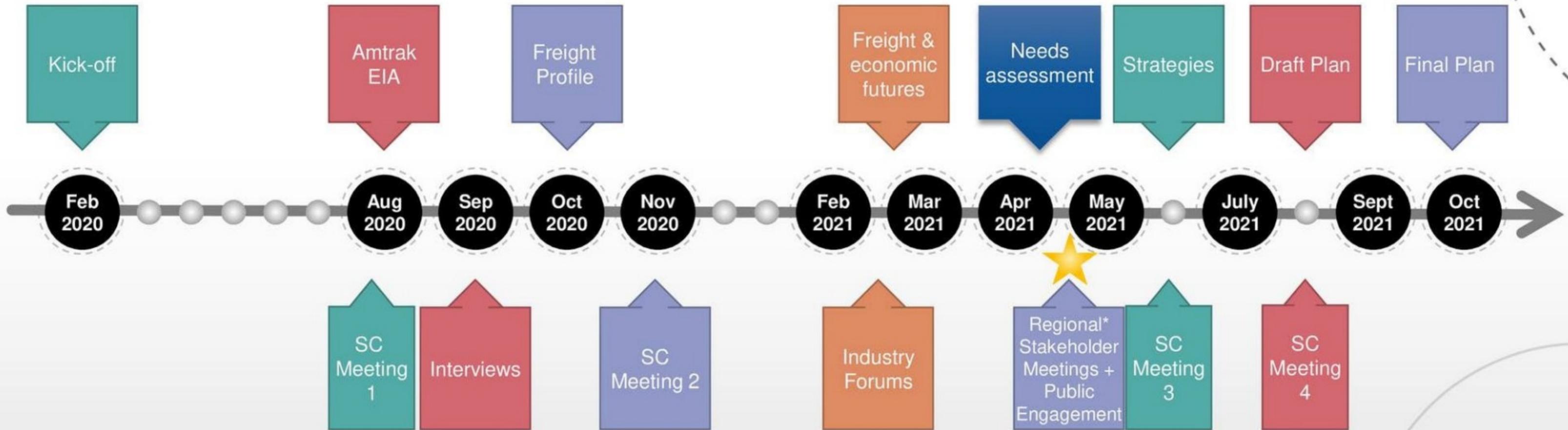
IN ANNUAL TAX REVENUE



# Schedule and Next Steps



# Schedule and Key Milestones



# Next Steps

Finalize MoFAS tool

Complete needs assessment

Establish goals & strategies

Project prioritization & ranking

Keep track of the planning process here:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

# Thank you!



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# SW Regional District Meeting Presentation



MISSOURI

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# State Freight & Rail Plan

---

Regional  
Stakeholder  
Meetings

*presented to*  
*Regional Stakeholder Meeting*  
*Attendees*

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



May 2021

# Guidelines for Virtual Meetings

01

Plan to log in a few minutes early to avoid any technology issues. Edit your name to also include your organization.

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- please go to [www.Menti.com](http://www.Menti.com) and type in code **3269 3069**



# Meeting Purpose

Gather insight, input & feedback from Missouri planners and policymakers on regional economic and industry trends, as well as important freight transportation needs.

## Agenda

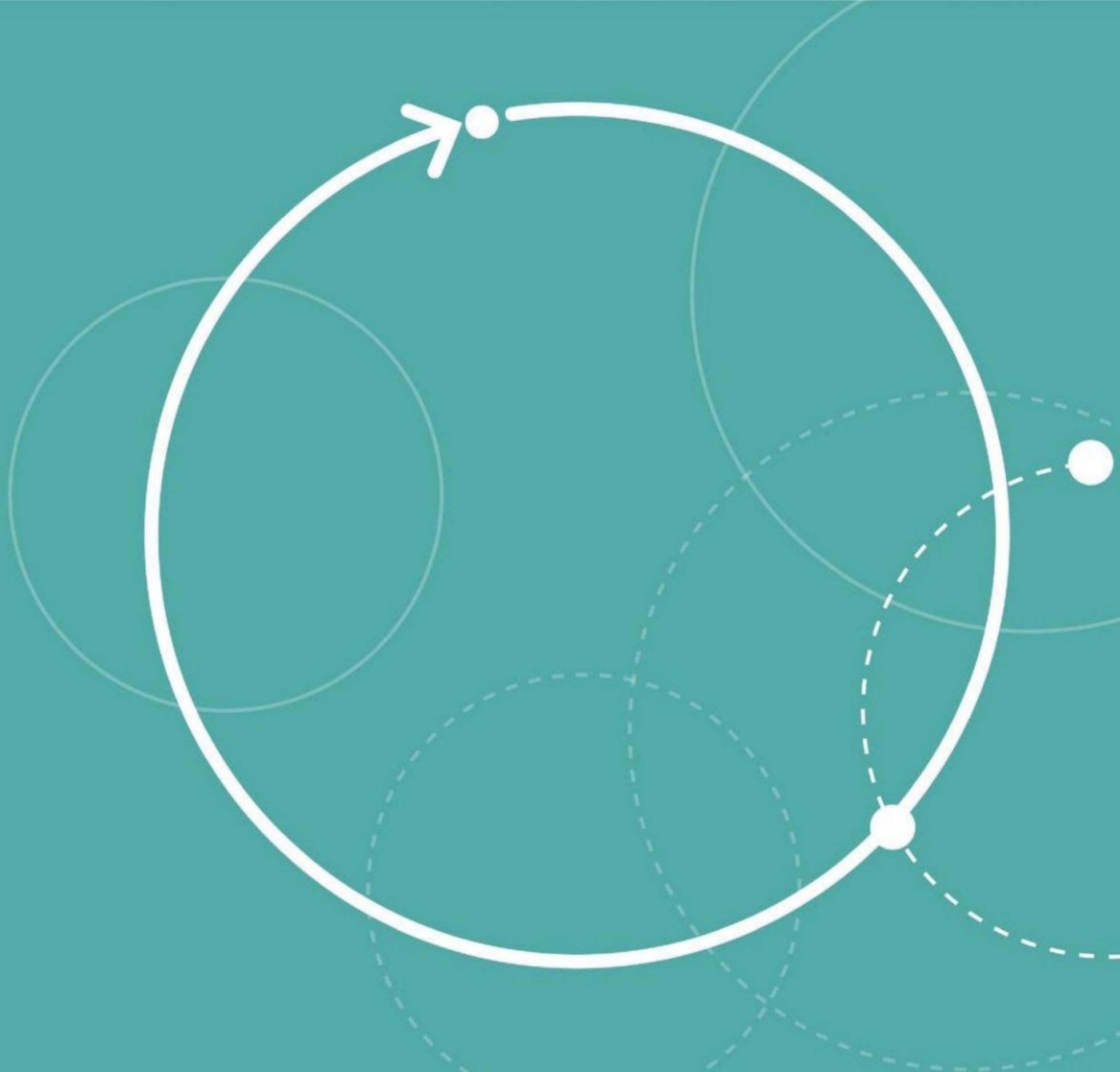
- Overview
- Missouri Freight Profile
- Economic Futures
- Freight System Needs
- Passenger Rail Update
- Schedule and Next Steps

# What are you most excited about when it comes to the future of freight?

commerce  
efficiency  
business opportunities  
jobs  
climate solutions  
opportunity  
autonomous  
river  
global safety  
efficiency  
reduce highway congestion



# Overview



# 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?*

# 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*

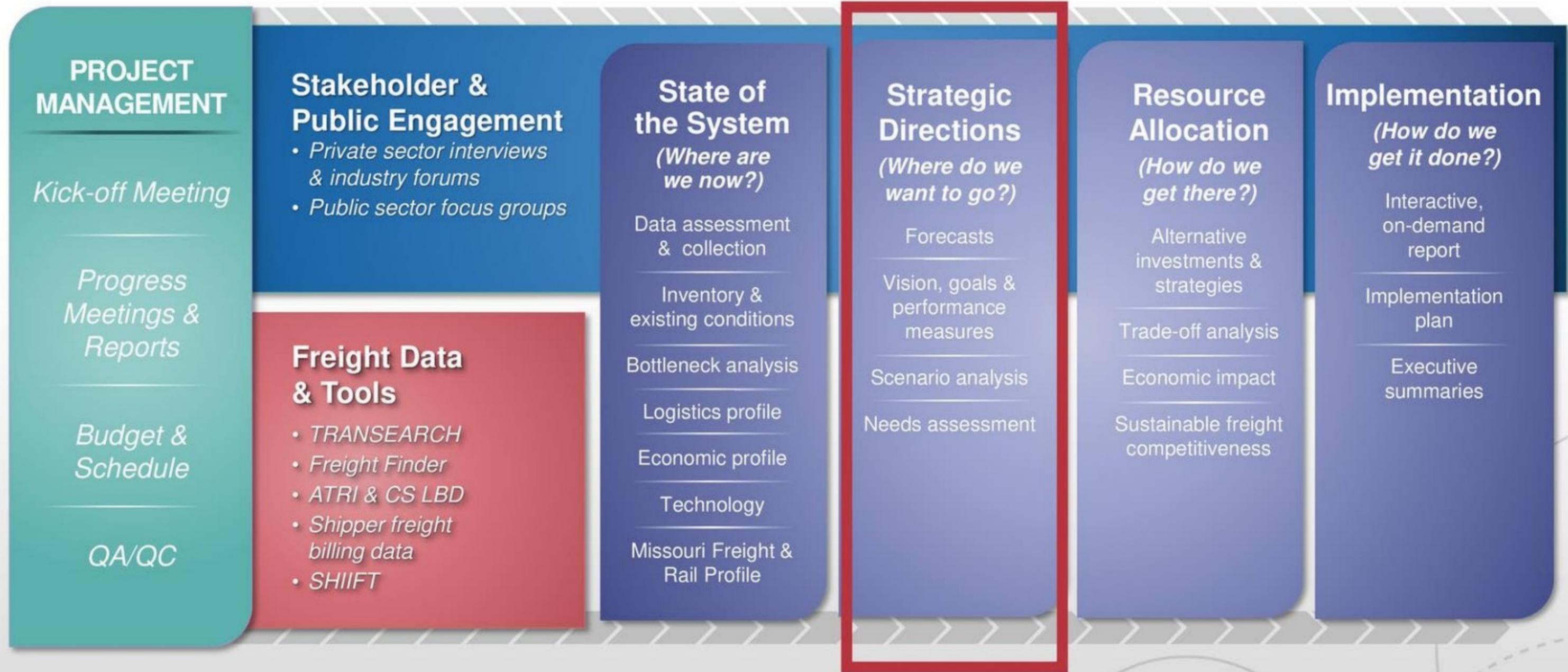


*Informs and supports economic growth opportunities*



*Monitors resiliency and fluidity across the freight network*

# Approach Overview



# Stakeholder Engagement Approach

*Initial interviews with key stakeholders*

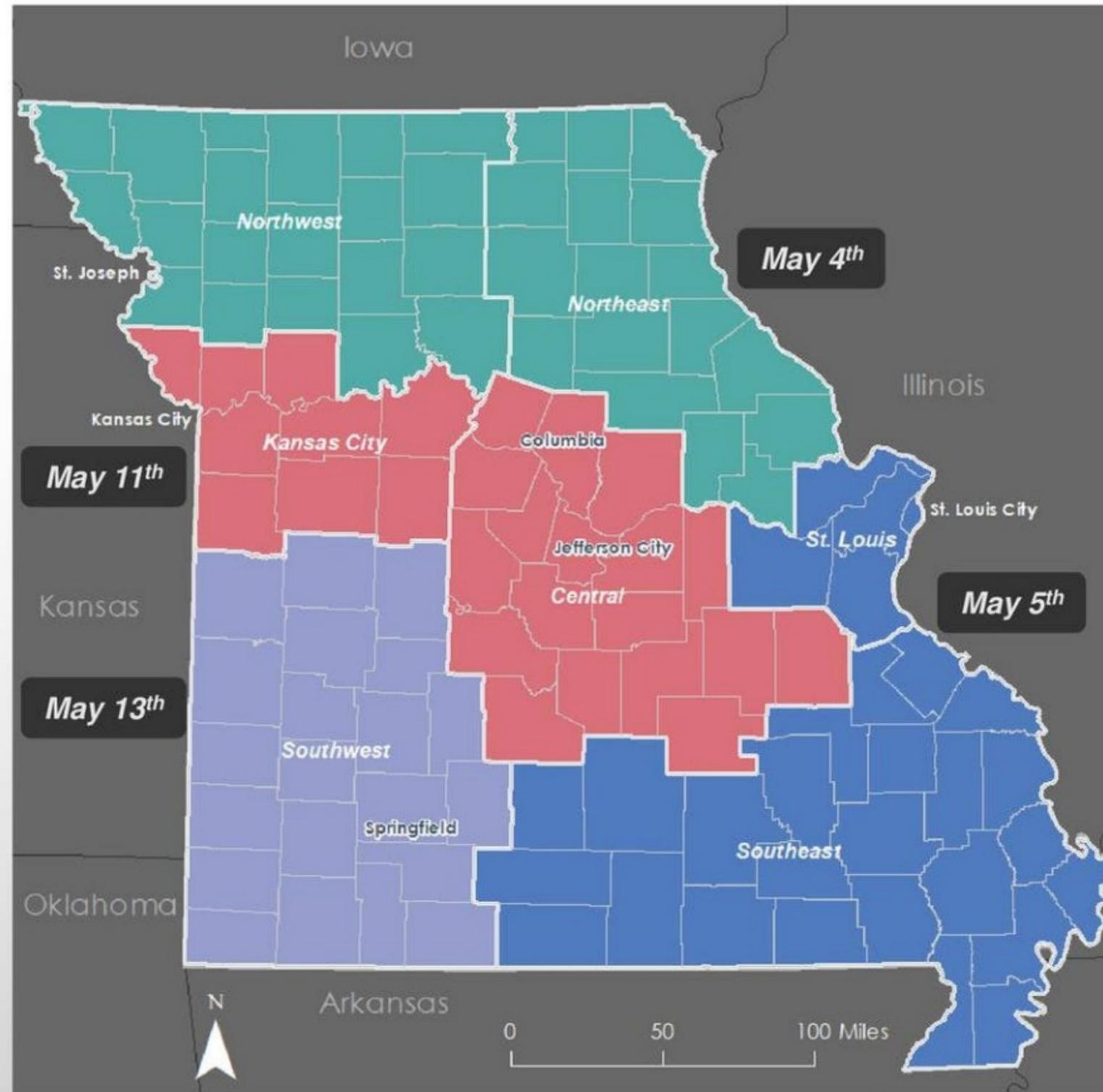
*SFRP Steering Committee*

*Interviews and surveys*

*Industry forums and stakeholder meetings*



# Series of 4 Regional Stakeholder Meetings



# How Will Input Be Used

## *Today's Meeting*

### **ECONOMIC FUTURES**

Identify trends and prospects that may impact Missouri's economy

### **NEEDS ASSESSMENT**

Input on mobility, safety, truck parking and other needs

Determine "disruptors" most likely to impact Missouri's future freight volumes and economic activity

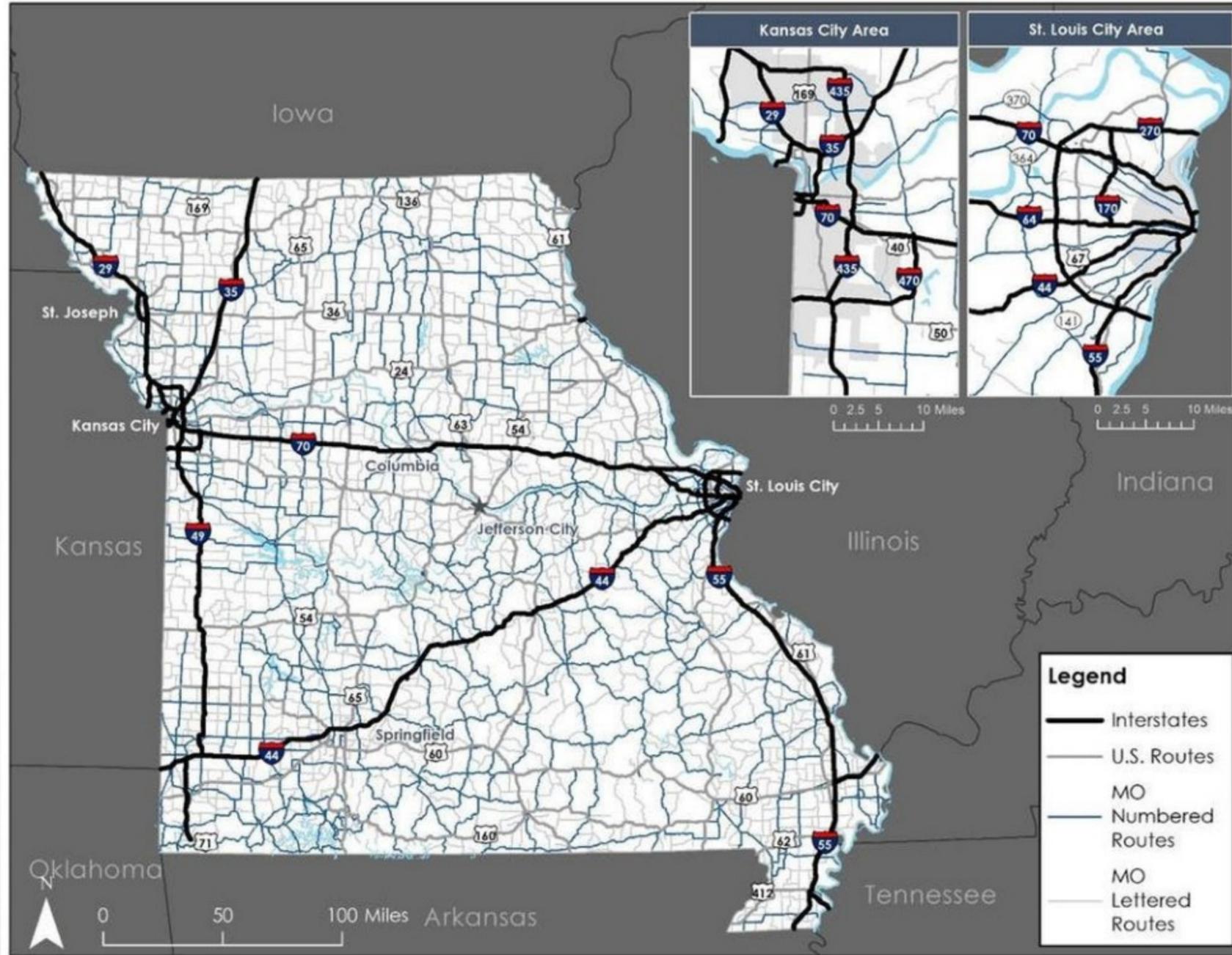
Refine freight transportation needs assessment

**LAY GROUNDWORK FOR RECOMMENDATIONS**

# Missouri Freight Profile



# State Highway System



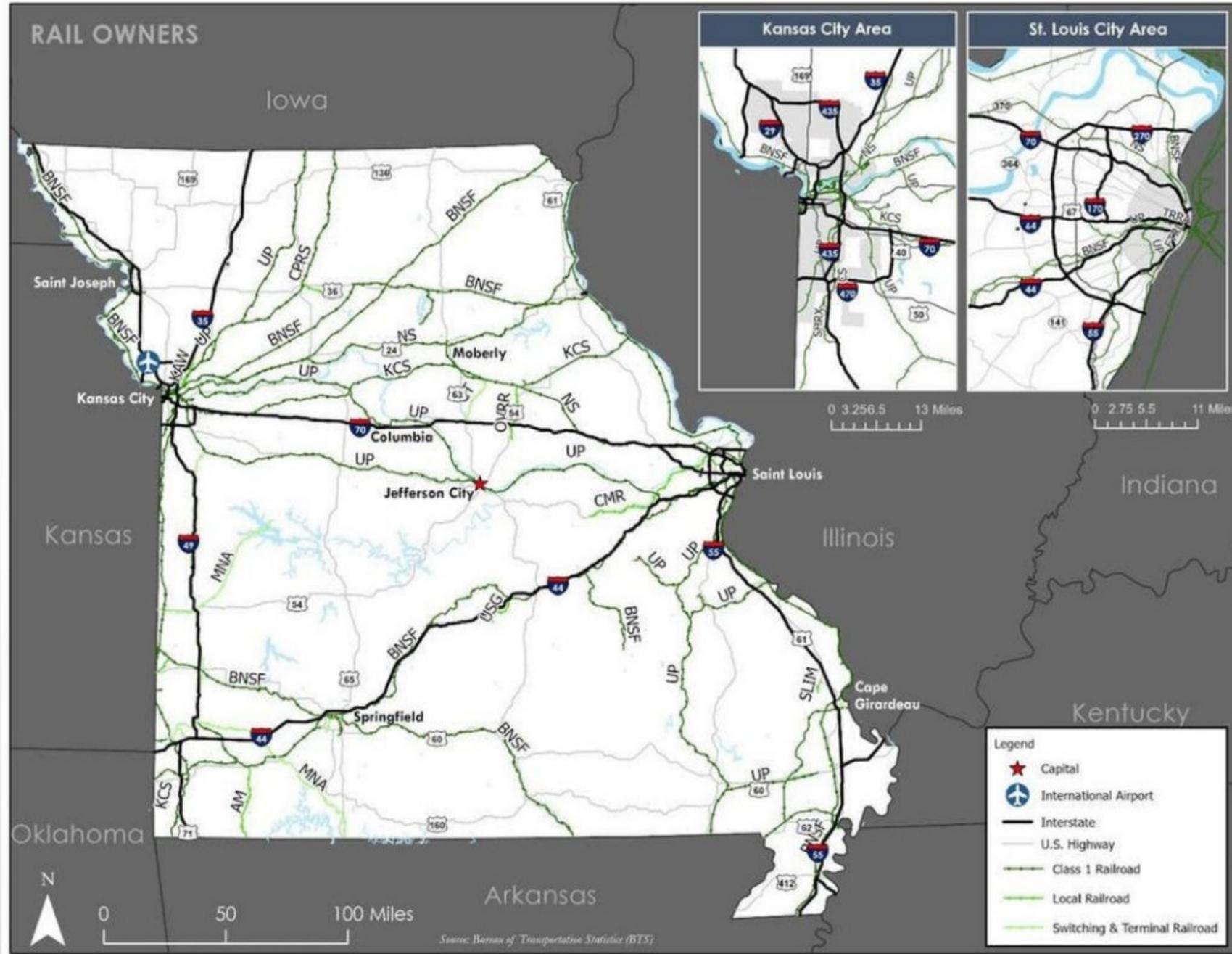
In 2018,  
Trucks carried  
**406.6M** tons of goods  
worth **\$495.6B**  
on Missouri highways

## Top 5 by Tonnage:

- Non-metallic minerals (aggregates)
- Farm products
- Food/kindred products
- Petroleum/coal
- Secondary movements



# State Railroad Network



In 2018,  
**Railroads carried 445.9M tons of goods worth \$590.3B**  
 on Missouri Class I and short line rail track

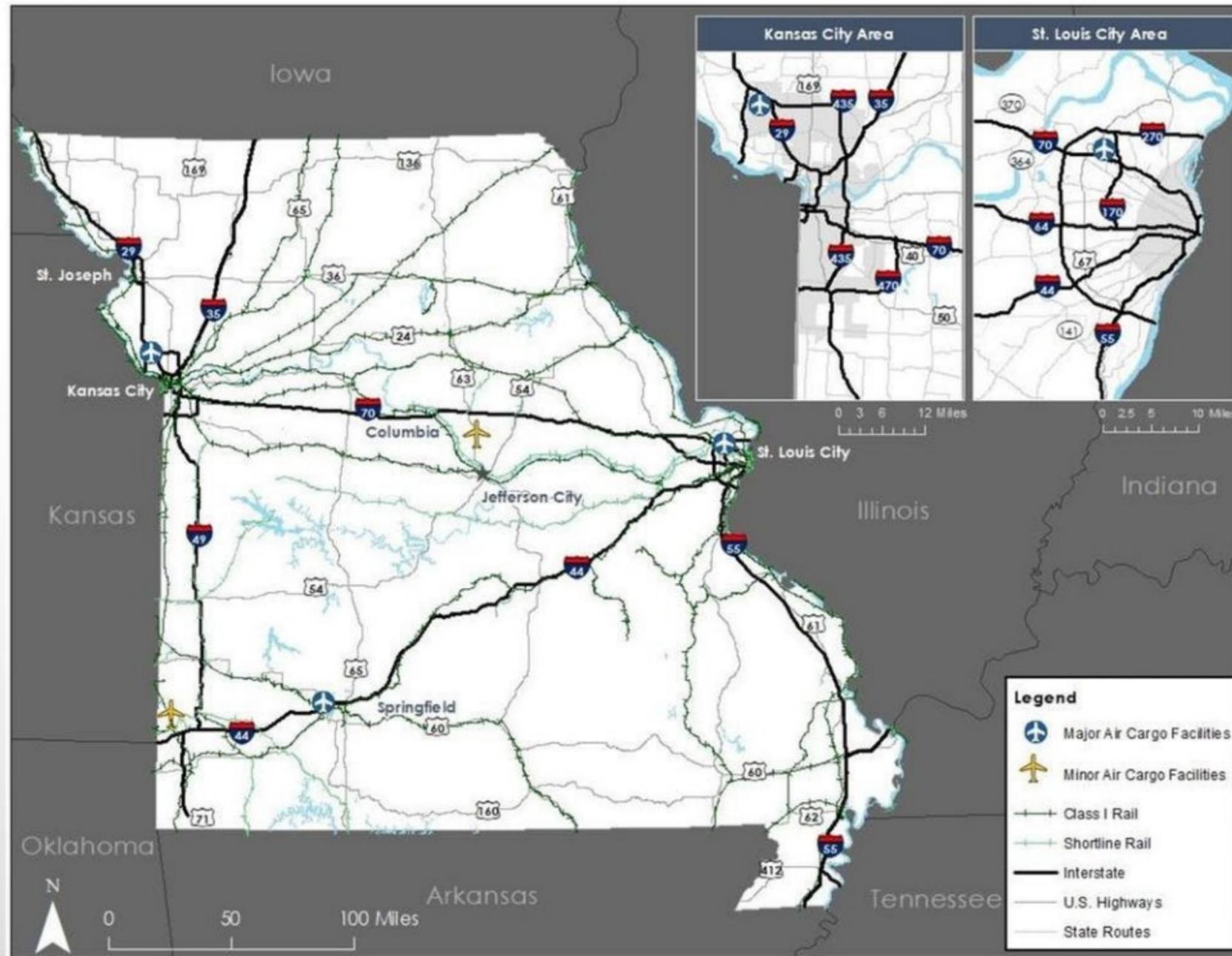
## Top 5 by Tonnage:

- Coal
- Food/kinred products
- Farm products
- Chemicals/allied products
- Transportation equipment





# Cargo-handling Airports



In 2018,  
Airplanes at MCI, STL, and  
SGF carried **201K** tons of  
goods worth **\$22B**

at Missouri airports

## Top 5 by Value:

Misc. Manufacturing

Transportation Equip.

Electrical Machinery & Equip.

Instruments, Optical, Watches/Clocks

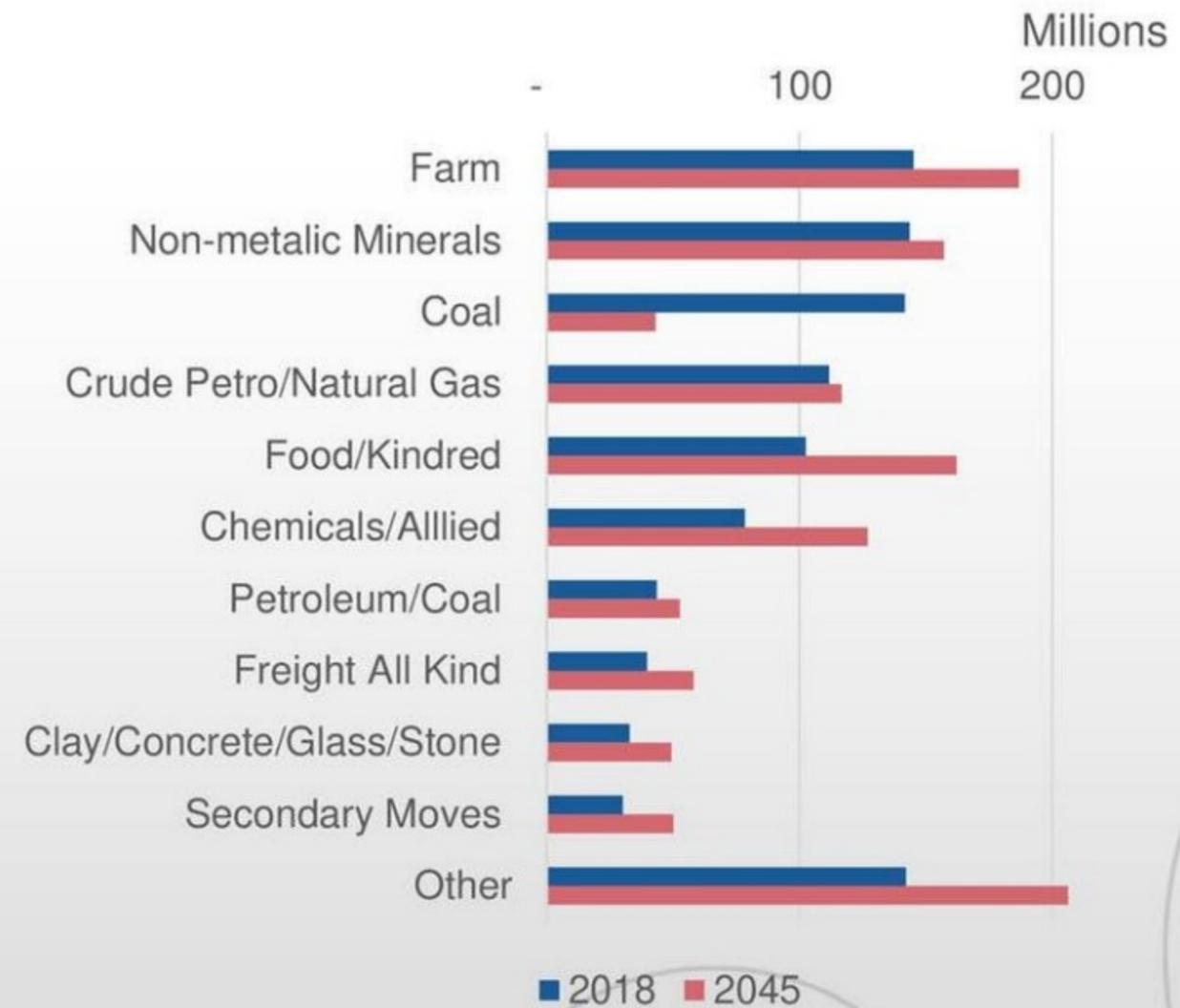
Chemicals/Allied

# Commodity Flow Summary – Tons

## FREIGHT TONS BY MODE (M)



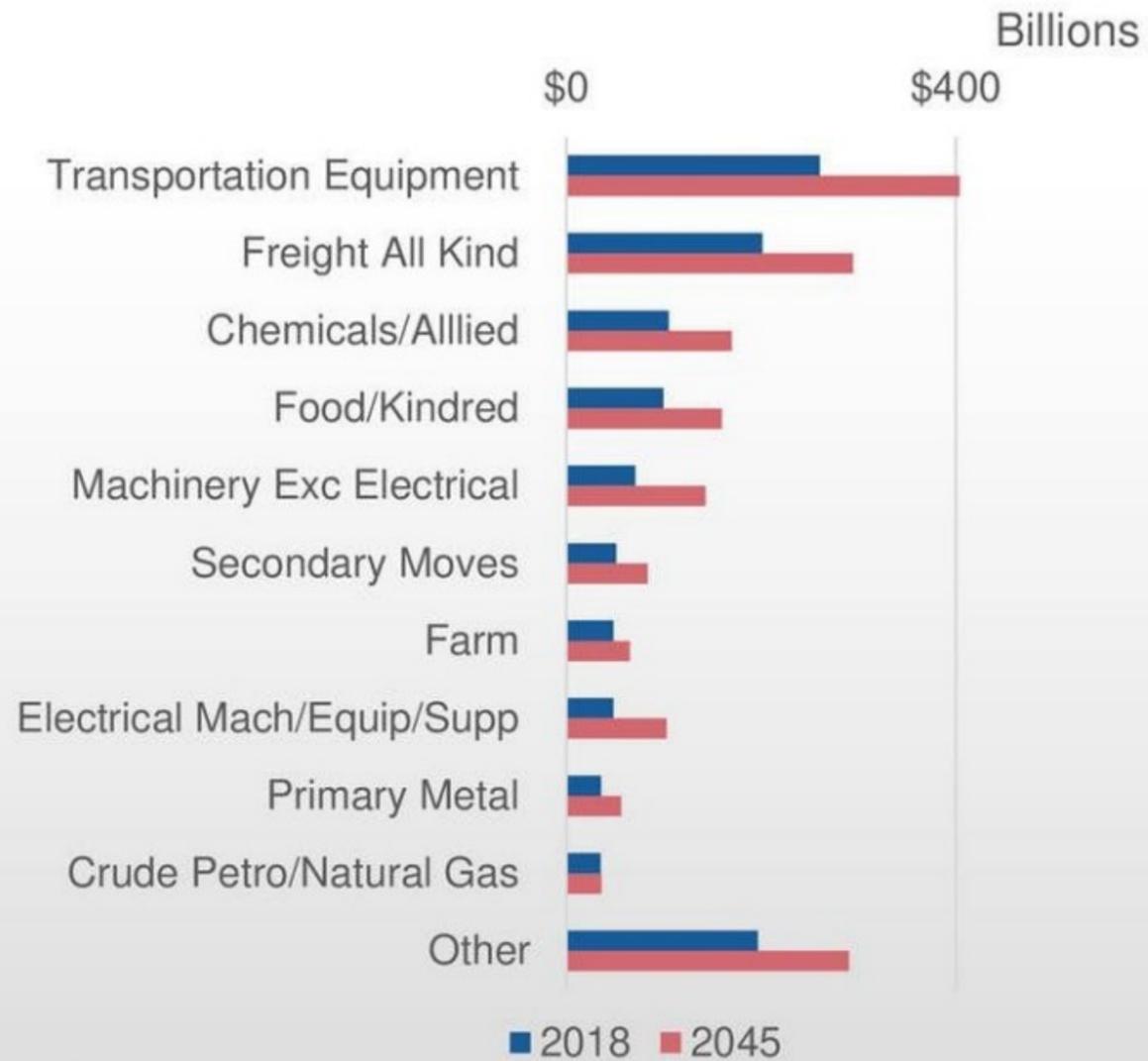
## TOP COMMODITIES 2018-2045



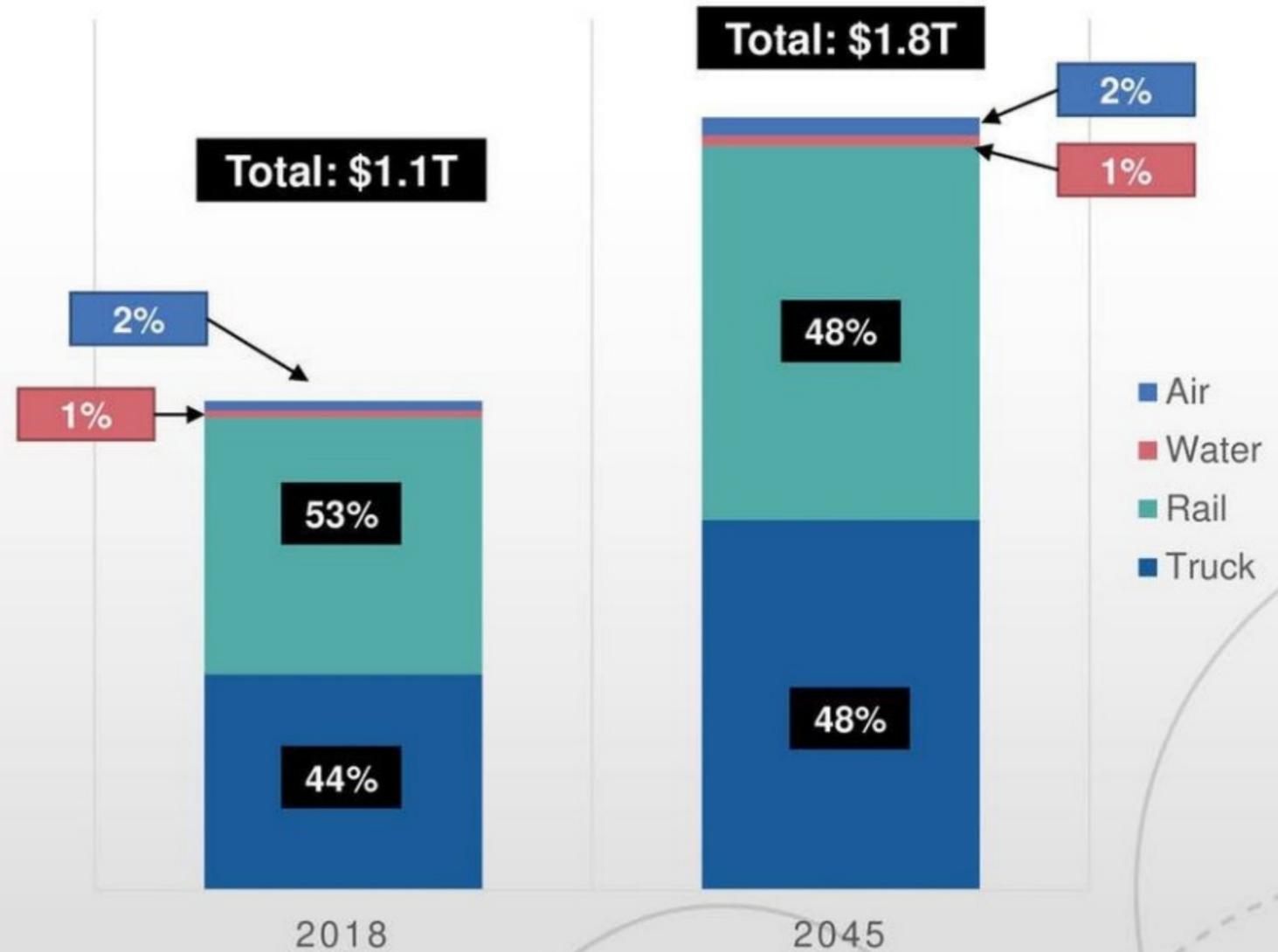
Sources: IHS Transearch, STB Waybill

# Commodity Flow Summary – Value

## TOP COMMODITIES 2018-2045



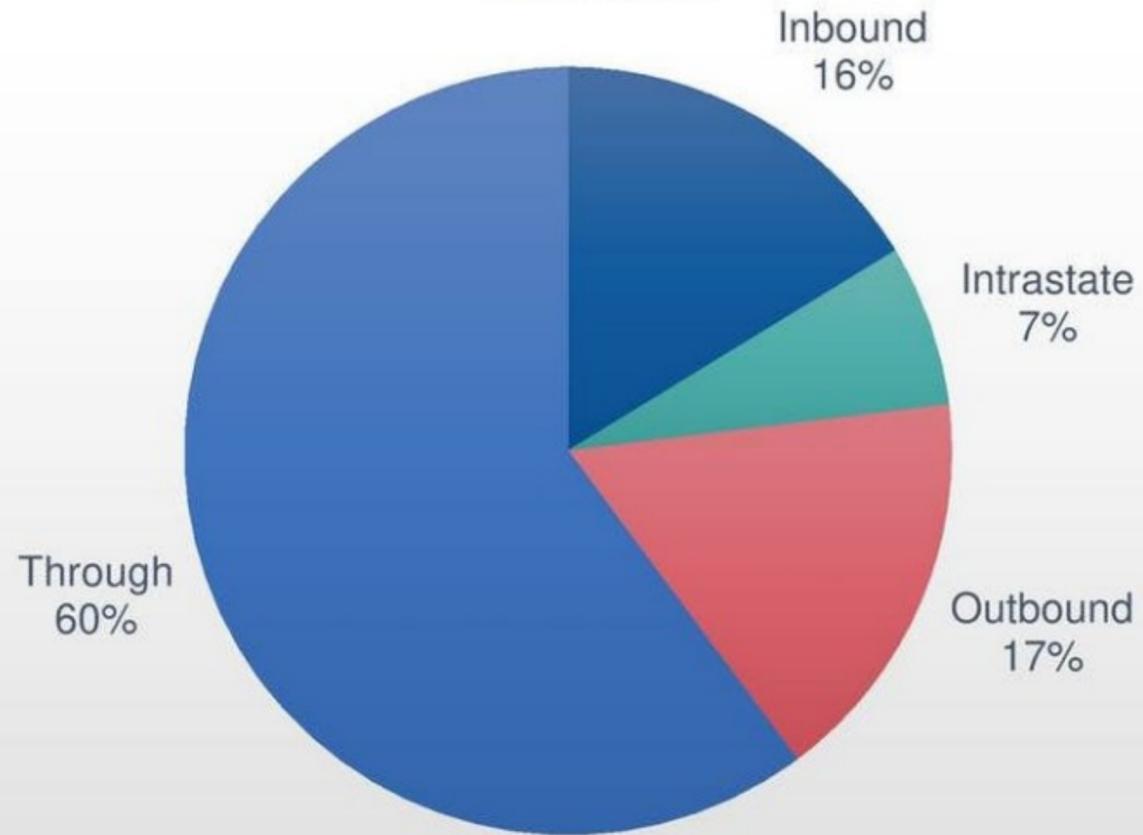
## FREIGHT VALUE BY MODE (\$B)



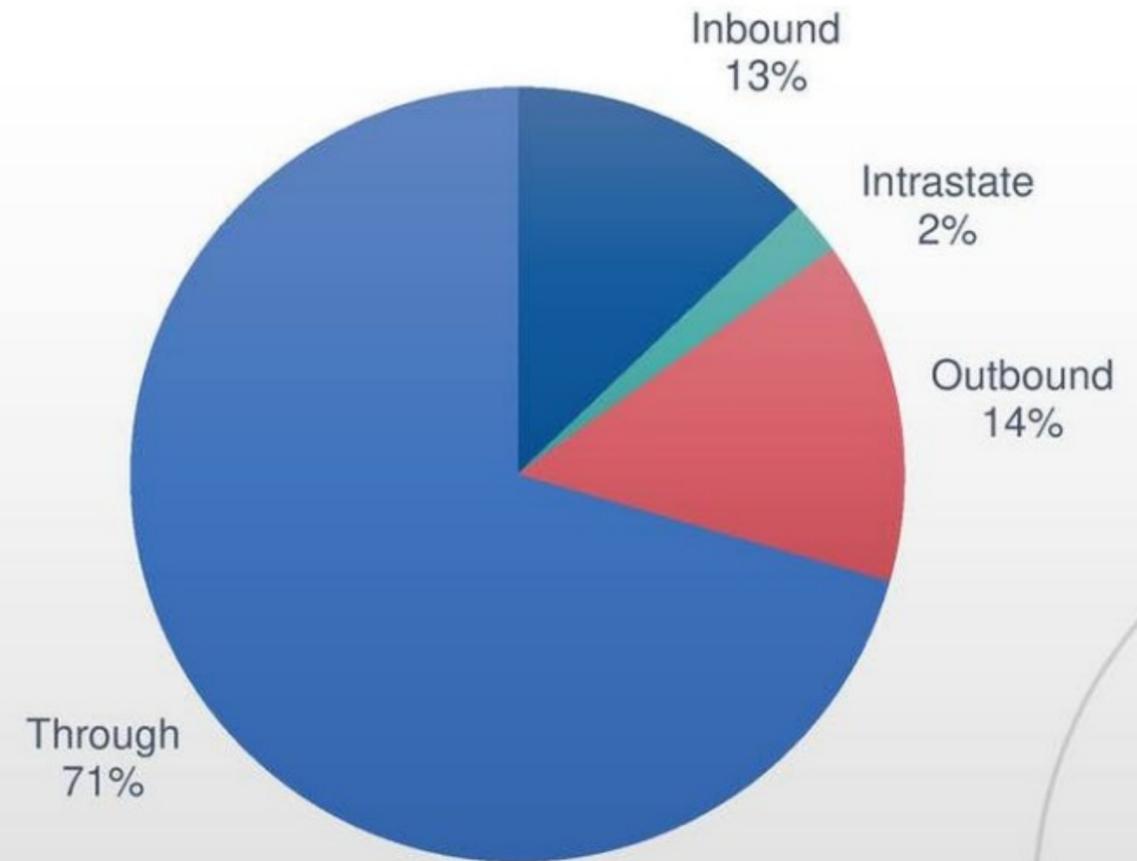
Sources: IHS Transearch, STB Waybill

# Directional Flow

## Tonnage by Direction, All Modes



## Value by Direction, All Modes



Source(s): IHS Transearch, STB Waybill

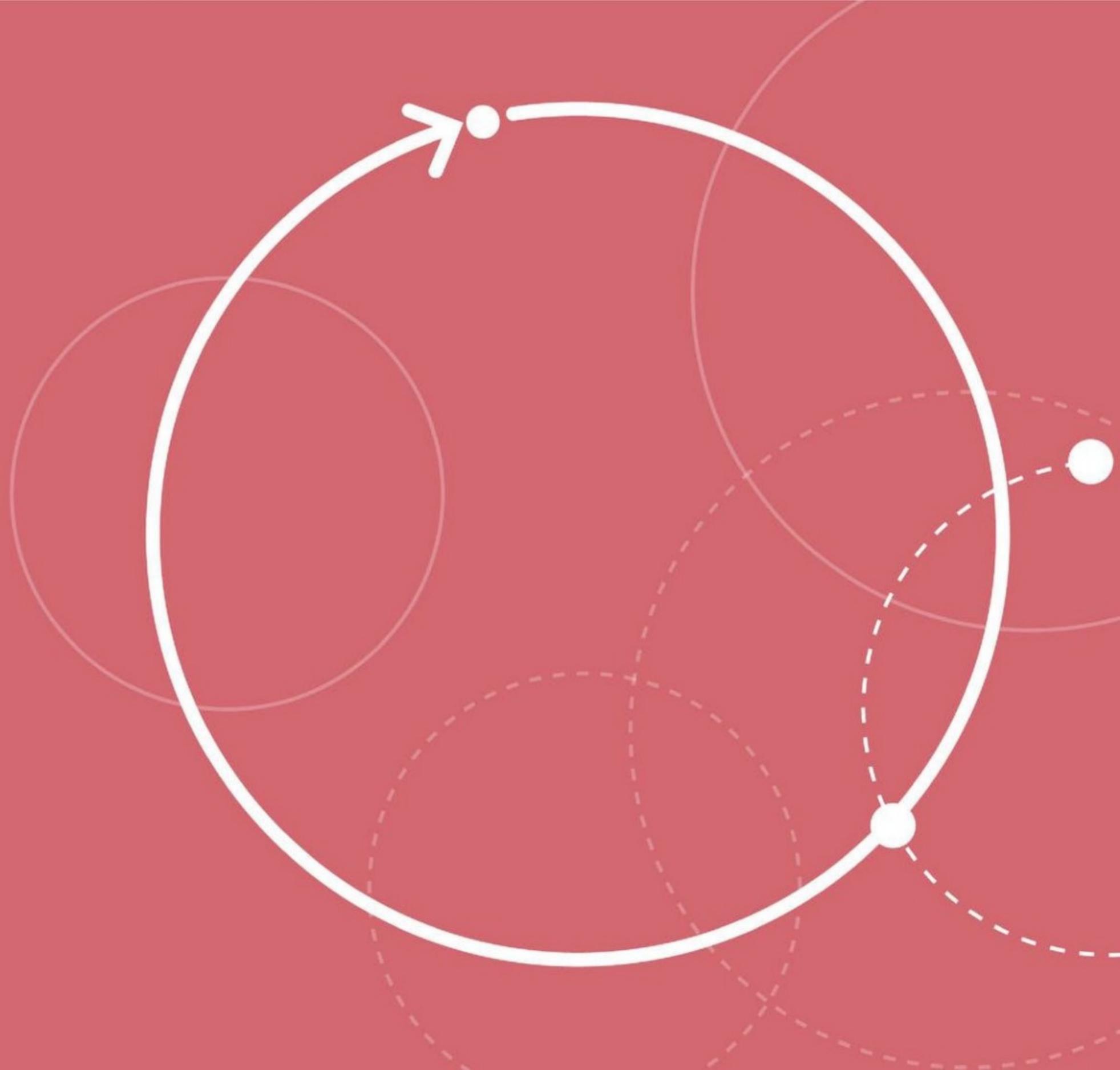
# Industry Employment

	Industry Sector	Employment
Producers	Agriculture, Forestry, Fishing & Hunting	156,634
	Mining, Quarrying and Oil & Gas Extraction	3,633
	Manufacturing	267,907
Services	Transportation & Warehousing	97,053
	Waste Management & Remediation	7,046
Attractors	Utilities	15,587
	Construction	129,188
	Wholesale Trade	130,913
	Retail Trade	307,751
	Food Services & Drinking Places	237,073
	Non-Freight	1,342,383

## Top Employing Manufacturing Subsectors:

- Transportation equip. 44,500
- Food 40,000
- Fabricated metal prod. 32,100
- Machinery 31,900
- Chemicals 19,000

# Economic Futures



# National Trends Impacting Freight

Renewable  
Energy

Multimodal  
Infrastructure

Instability  
due to  
Climate

Retail & E-  
Commerce

Technology  
Adoption

Trade  
Agreements

# Renewable Energy

Shifts to renewable energy sources and fuel types (such as battery electric vehicles) will impact industries, freight flows and supporting infrastructure.

## Considerations

- Alternative fueling infrastructure
- Challenges for state revenue streams (i.e. motor fuel tax)
- Need for strong supply chains for metal and parts

## Opportunities

- Automobile manufacturers driving transition – potential partnership with states
- Manufacturing sector job growth
- Shifting supply chains and expanded industry opportunities

# Multimodal Infrastructure

Highway networks are already over capacity in many states and regions, and demand is projected to increase. Coupled with increased population, overall future demands on the highway system suggest need for modal diversification.

## Considerations

- Need for modernized assets
- Strong and diverse multimodal connections
- Freight- and rail-supportive land use coordination at local level

## Opportunities

- Shifting passenger traffic off roadway network (i.e. expanded passenger and intercity rail, Hyperloop)
- Class I investments in rail assets
- Federal infrastructure investment package

# Instability due to Climate

Flooding, tornadoes, and other extreme weather events cost billions of dollars in damages annually. This impacts industry, navigability along the inland waterways, and operations on highway and rail networks, among other impacts.

## Considerations

- Lock and dam network Mississippi River System already strained
- Existing assets in need of modernization
- Agriculture impacts significant (harvests, shipments, facilities)

## Opportunities

- Establish dedicated and resilient multimodal freight network
- National/regional partnerships to invest in critical multistate assets
- New or relocated inland ports

# Retail & E-Commerce

Growing demand for e-commerce continues to impact freight industry and employment, as well as land use changes. The COVID-19 pandemic has accelerated some e-commerce trends, including the importance of stockpiling vs. just-in-time distribution. This trend could have an impact on land use and the network of links and nodes throughout the U.S.

## Considerations

- Shifting warehousing strategies
- Heavily reliant on truck modes
- Final 50 feet delivery challenges

## Opportunities

- Smarter curb management
- Stronger regional relationships to address warehousing & distribution networks
- Increasing use of domestic suppliers

# Technology Adoption

Adoption of connected and autonomous vehicles (CAVs) is already impacting the trucking industry. Coupled with drones and platooning technology, upgrades to broadband and transportation infrastructure as well as state legislation will be necessary.

## Considerations

- Fragmented broadband infrastructure in rural areas
- Public policy hurdles
- Modernized supporting infrastructure needed

## Opportunities

- Solution to some truck driver labor challenges
- New manufacturing & tech job opportunities
- Blockchain for better visibility of product, information and financial flows

# Trade Agreements

In the aftermath of the COVID-19 pandemic, the lack of stockpiles of personal protective equipment (PPE), toilet paper, and other essential goods has shifted trade agreement priorities from “free trade” to ensuring deals protect the rights and interests of American workers.

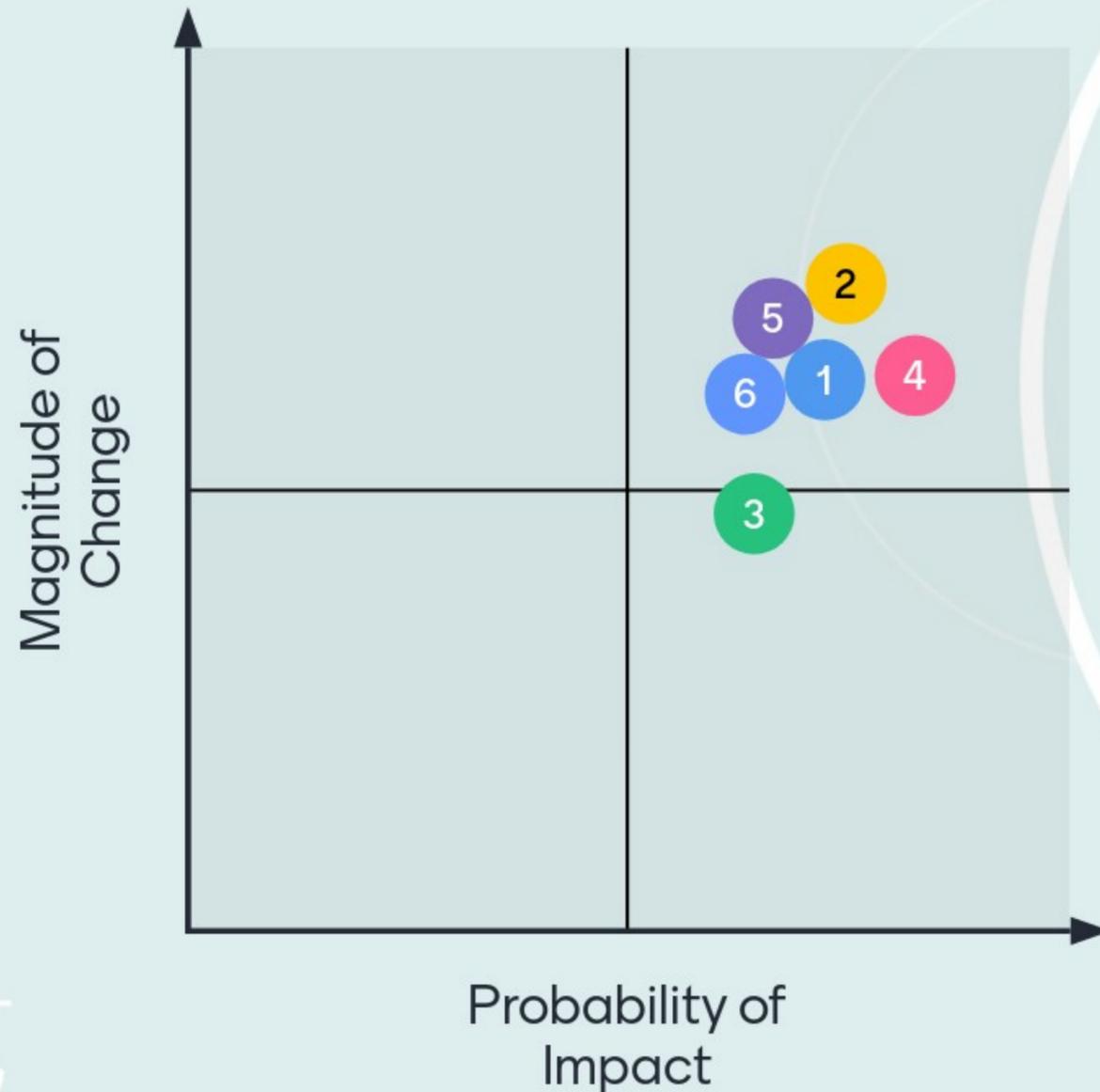
## Considerations

- Intermodal connectors to support increased inbound/outbound flows vs. through flows
- Modernized facilities
- Workforce development

## Opportunities

- Increased investment in domestic sourcing
- Growth in advanced manufacturing
- Developments in industrial space – new and repurposed

# How might these trends affect Missouri's economy?



- 1 Renewable energy
- 2 Multimodal infrastructure
- 3 Instability due to climate
- 4 Retail & e-commerce
- 5 Technology adoption
- 6 Trade agreements

# Are there other trends that you think will impact Missouri's businesses & industries?

workforce

Changing workforce (skills and availability) - negative

Infrastructure

Social political policies that discourage new businesses from locating to Missouri or make recruiting talent difficult

Gig workers - e commerce- delivery

Population growth

Infrastructure and workforce

telework will enable more people to locate far away from their workplace

Continued rural population loss

# Are there other trends that you think will impact Missouri's businesses & industries?

Lack of resources/state-enabled tools for local governments to take on infrastructure projects

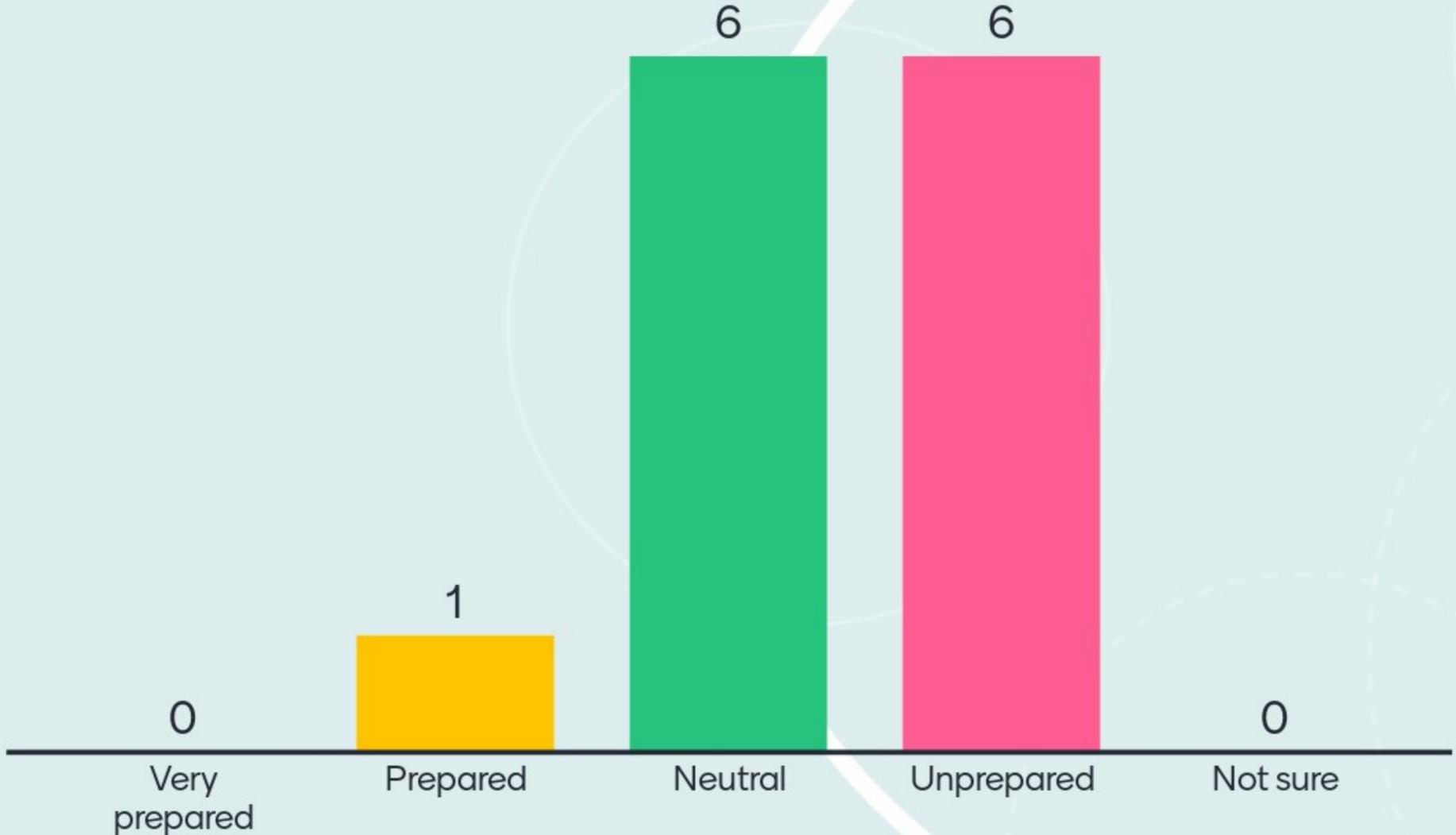
Rail and airports

missouri expansion of bio fuels

Connectivity of communities and highways and transition areas. Finding costshare resources for smaller metro and communities to oarticipate in needed infrastucture More resources for transload buildouts to connect communities closer to home



# How prepared are Missouri's businesses & industries to respond to these trends?



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

Intermodal connections

Location near I-44 and 249

Central continental location

large rail network

Interstate system

BNSF and KCS with east/west and north/south access.

SWMO is positioned well with BNSF and CP/KCS crossroads here.

Pavement/Bridge/System conditions

Rail and airports



# For companies that rely on Missouri's multimodal freight transportation network, what are your region's *strengths*?

Geographic location

I-49 corridor connector completion to NWA and region



# What are your region's weaknesses?

Lack of water transport access

Limited resources for major infrastructure buildouts needed

Assuming everything will stay the same - modes

Difficulty attracting and retaining talent

No passenger rail transport

no dedicated funding for modes

limited transit to getr workeers to jobs



# What are your region's opportunities?

Connect rail to air facilities for shorter international transport times to central US on high value goods

Expansion of navigable waterway designations for port authorities

central location good for distribution centers

Given connectivity of I44/49 corridors, regionally embracing attributes for better positioning and regional growth

Well positioned with Interstate and air as those modes grow in use

Tourism exposure

Think of ourselves as a megaregion, rather than region within a state within the Midwest



# What are your region's threats?

Weather

Stagnant dedicated state funding

Impacts of climate change - fuel costs, economy, etc

Cybersecurity!

Stagnant population growth, lack of diverse employment opportunities, lack of advanced workforce and training



# Freight System Needs



# Freight System Needs



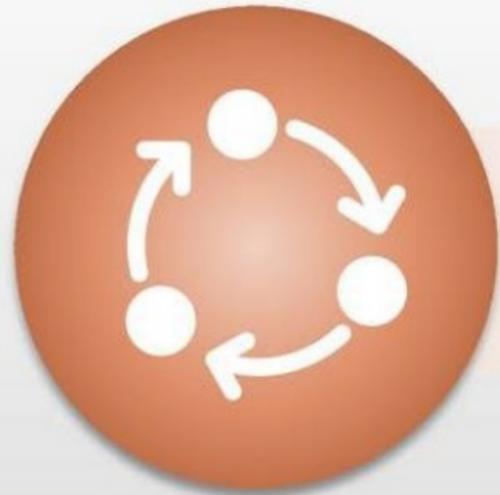
***Safety***



***Truck  
Parking***



***Technology***



***Mobility &  
Reliability***



***Asset  
preservation***



***Rural  
highways***

# Link to Mapping Tool

- <https://camsys.maps.arcgis.com/apps/webappviewer/index.html?id=35e1e49c751e42e38c7fb84d76febced>

# Virtual Open House focusing on passenger rail in MO being held May 3<sup>rd</sup> - June 4<sup>th</sup>. Link available via: <https://www.modot.org/missouri-state-freight-and-rail-plan>

IN MISSOURI, THE TOTAL ANNUAL ECONOMIC IMPACTS GENERATED BY THE RIVER RUNNER INCLUDE:

 **1,250**  
JOBS ANNUALLY

 **\$65 MILLION**  
IN ANNUAL LABOR INCOME

 **\$208 MILLION**  
IN ANNUAL ECONOMIC ACTIVITY

MORE THAN

**\$22 MILLION**

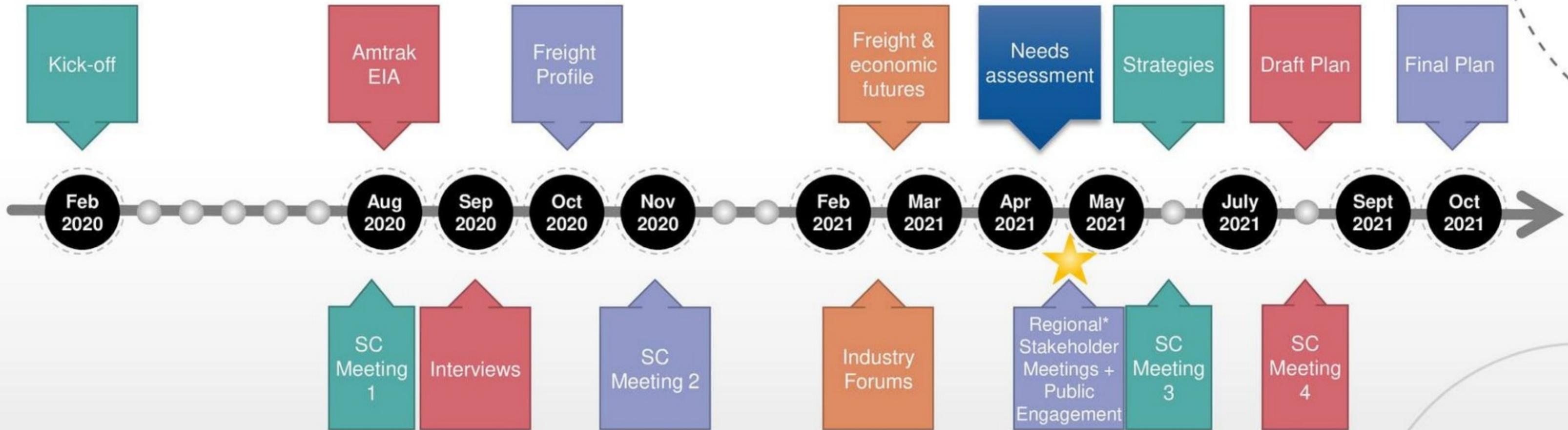
IN ANNUAL TAX REVENUE



# Schedule and Next Steps



# Schedule and Key Milestones



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Finalize MoFAS tool

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Keep track of the planning process here:

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# Thank you!



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# Passenger Rail Survey Promotional Flier

A collage of transportation-related images is positioned at the top of the page. It includes a city skyline at night, a blue passenger train with the number 4005, a person holding orange safety handles, and a woman standing on a train platform. The images are framed by circular and dashed-line graphics.

# Help shape the future of passenger rail service in Missouri!

The Missouri Department of Transportation is hosting a virtual public open house on passenger rail as part of the development of the 2021 State Freight and Rail Plan. Learn more about Missouri's passenger rail network, ask questions to MoDOT and the Project Team and share your thoughts on how passenger rail service can better serve the citizens of Missouri. The information will be available from May 4 to June 16, 2021. You can participate in the open house by scanning the QR code or visiting:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

**SCAN HERE  
TO GET STARTED!**



# Passenger Rail Survey Results Summary

## MoDOT Virtual Passenger Rail Open House Summary

### ***Overview***

The Missouri Department of Transportation (MoDOT) hosted a Virtual Passenger Rail Public Open House from May 3, 2021 – June 11, 2021 via MoDOT's Website. This virtual open house was part of the development of the 2021 State Freight and Rail Plan (SFRP). The SFRP identifies current and future trends to help make informed decisions on future investments in the freight and passenger rail industries in Missouri. Freight and rail plans are required documents for the state to receive federal funding for future transportation projects. Currently, there are no dedicated federal funding sources for passenger rail, so the SFRP and gathering input is vital to the *Missouri River Runner's* long-term viability.

### ***Meeting Summary***

Two hundred thirty-two (232) members of the public attended the virtual open house. The content included:

- The purpose and schedule of the SFRP;
- Goals and objectives of the SFRP;
- MoDOT's role in passenger rail;
- Existing passenger rail conditions throughout the state;
- On-time performance (OTP) and funding for the passenger rail; and
- The economic impact of the passenger rail line.

To promote the open house, MoDOT posted the virtual open house link on their website; promoted it at all industry forums (held in early May 2021); sent a newsletter to the mailing list; asked metropolitan planning organizations (MPOs) and regional planning councils (RPCs) to help promote the open house; posted to the Department's Twitter and Facebook accounts; and sent out a media release which was also included in the Express Lane electronic newsletter. Flyers were also left at the Kirkwood station to encourage participation.

### ***Summary of Questions and Comments***

Participants were able to submit questions and comments to MoDOT and the Project team and share their thoughts on how passenger rail service can better serve the citizens of Missouri. One-hundred nineteen (119) comments were received. Understanding participants' concerns and questions will help the Project team make decisions moving forward. When participants submitted comments, they were able to identify if their comment was about a specific location. Response locations are found in Figure 1.

**Figure 1: Passenger Rail Comment Distribution Map**



The summary below captures common themes noted by the public during the virtual open house:

- **Accessibility.** Many participants submitted comments inquiring on the mobility and reliability of proposed passenger rail routes and connections. Participants also commented about how transporting more bikes should be incorporated into existing and future routes.
- **Convenience.** Participants asked questions about which major cities would be connected via passenger rail and if the *Missouri River Runner* would be expanded.
- **Service Times.** Many of the participant's questions and comments centered on enhancing the Kansas City and St. Louis connection and adding in more service time options. Participants commented on how a connection from Kansas City to Omaha would be helpful for travel.
- **Routes.** Questions and comments regarding routes focused on constructing a passenger rail route along the western border of the state and additionally connecting St. Louis to Springfield. Other comments discussed how having plans to connect to rail lines in other states would help connect Missouri to other communities who could in turn use the rail line to travel to Missouri.
- **Right-of-Way.** Questions came up about how existing rail lines could be used to minimize right-of-way impacts. Participants also mentioned enforcing passenger rail priority laws and building a high-speed rail line between major rail stations.

A few of the comments included:

**Accessibility**

- “With the growth of bicycle travel, the Rock Island trail coming together and the Katy trail, 4 bicycles on the train is not enough. I ride a fully loaded touring bike with 4 panniers as I travel long distance and to use Amtrak to return home at times and getting it in and out of the passenger car is a challenge. Better training for your conductors, sometimes your conductors can be very impatient with cyclists trying to get their bikes on and off. I've tried to go online and look at website at your website and have not really found a lot of valuable information on how to be prepared and be more prepared when I get to the train.”
- “I believe a route between Missouri’s third largest city and St. Louis and/or Kansas City would be beneficial. The groundwork is there, service wouldn’t need to be daily either. It’s my contention that a feasibility study be done. It could be done as a project by students from Missouri State University, therefore keeping costs down.”

**Convenience**

- “We positively have to develop passenger rail over the I-44 corridor between St. Louis to Springfield, MO, to serve the online colleges in Rolla and Springfield, plus the tourist destination of Branson. Furthermore, a connection west of Springfield can be made to the Heartland Flyer giving travelers access to population centers in Oklahoma and Texas. BNSF Railway's Cuba Subdivision is grossly underutilized, thus mainline capacity is not an issue.”
- “Expediting the situation with the Jefferson City station is imperative. But even before the closing there was nowhere to park.”

**Service Times**

- “Please put more effort into passenger rail to make it a better and more viable service. It's the law to prioritize passenger rail on the track over freight. Enforce it! Make the freight trains wait on the side. Make sure tracks and equipment are replaced so there aren't so many breakdowns. It needs dedicated funding at a higher amount than it gets. Work with the federal gov't to make this happen. I would LOVE high speed rail! We need a train to Omaha and Minneapolis. To Little Rock would be great too.”
- “I am a regular rider of Amtrak. I regularly ride from Lee's Summit to Sedalia and back to visit extended family twice a month. I dislike driving because it is risky, costly (especially with the very high gasoline prices) and also stressful. I feel for persons with disabilities unable to drive and persons without cars. We all need the trains. A huge chunk of generation, The Baby Boomers are getting older, poorer and sicker. They depend on others for rides, and often no longer can afford a car. I am very upset that the second Amtrak round trip that was cut due to the pandemic, has not been reinstated yet.”
- “The missing afternoon trains makes it impossible to make a Westbound daily same day excursion trip to Kansas City. It also makes too long a lay-over in Saint Louis for connections with the Texas Eagle and the City of New Orleans (via Amtrak Thruway bus). It also does not allow an afternoon same day return going Westbound on the Missouri River Runner. I strongly recommend that more trains be put between KC and St Louis and that the route be beyond the 750-mile one-way cap that prevents more Federal funding and leaves it to the States that are cash strapped.”

### **Routes**

- “We need passenger rail going north to south on the western edge of the state. By connecting Kansas City to Carthage/Joplin Missouri, Amtrak would have the option of then serving Springfield to the east, and or expanding from Kansas City north to St. Joseph, Omaha Nebraska, Sioux city and Sioux Falls South Dakota, and beyond.”
- “There is currently no major rail access that runs north to south past the Mississippi river with the exception of Small short line passenger rail. The rail infrastructure is there, you just need the Amtrak cars and about three small stations across Missouri to get started. This would serve millions of people in the Midwest who currently only have individual cars on the interstate as a transportation option.”

### **Right of Way**

- “Please put more effort into passenger rail to make it a better and more viable service. It's the law to prioritize passenger rail on the track over freight. Enforce it! Make the freight trains wait on the side. Make sure tracks and equipment are replaced so there aren't so many breakdowns. It needs dedicated funding at a higher amount than it gets.”
- “I would like to be able to travel more on Amtrak through the state, especially from Kansas City to St. Louis and the stops in between. I would also like the state to consider a high-speed option between the 2 cities as an economically viable alternative to car travel on I-70.”

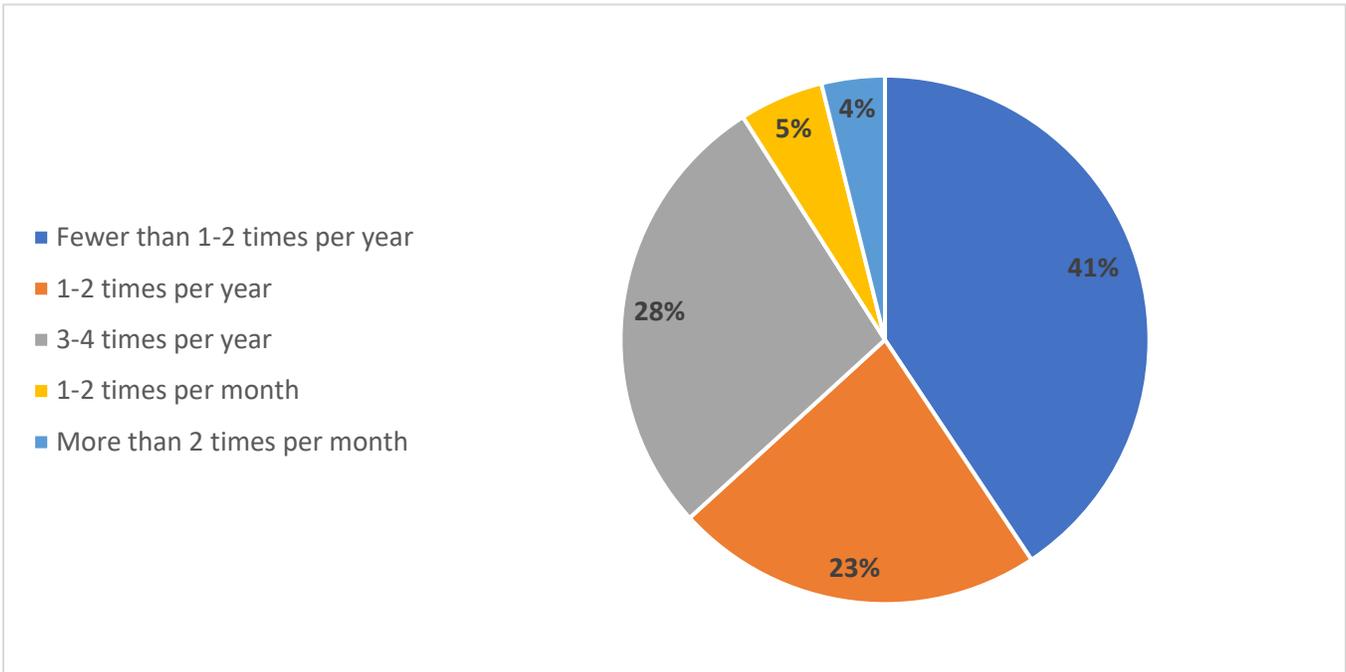
## ***Survey Summary and Results***

### ***Introduction***

A survey link was also part of the Virtual Open House for the MoDOT Passenger Rail Study. A total of 155 people took the survey. Several questions were asked to understand people’s concerns and interests regarding passenger rail. Eight questions provided multiple options to choose or rank and one question was free response. Survey topics included frequency of use, station improvement and common and suggested destinations.

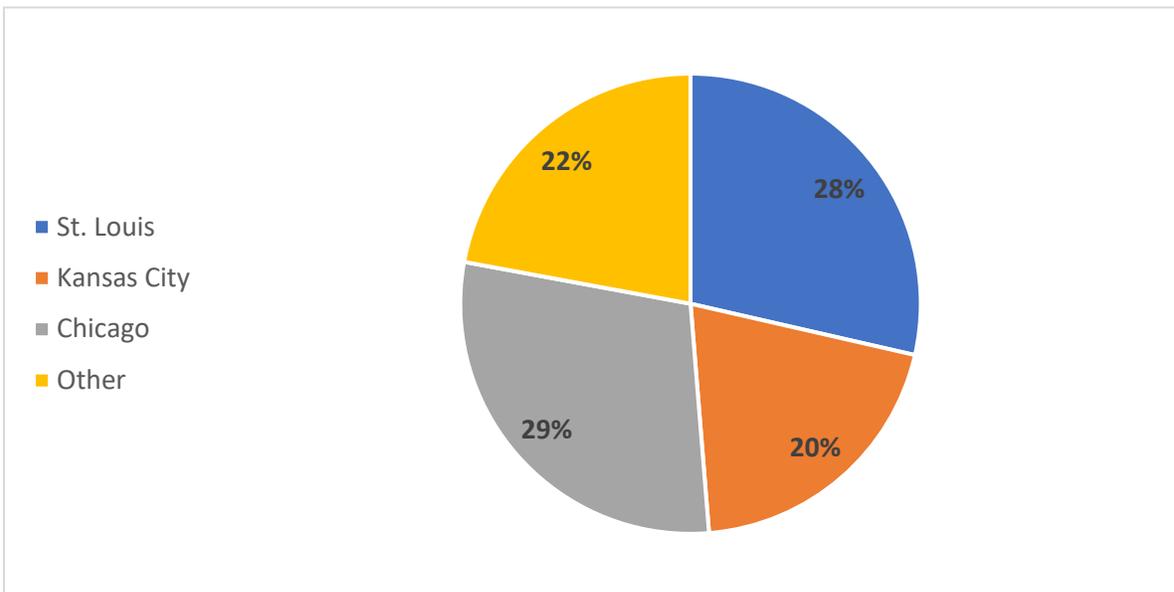
**Survey responses**

**Q1: How frequently do you or someone you know utilize passenger rail?**



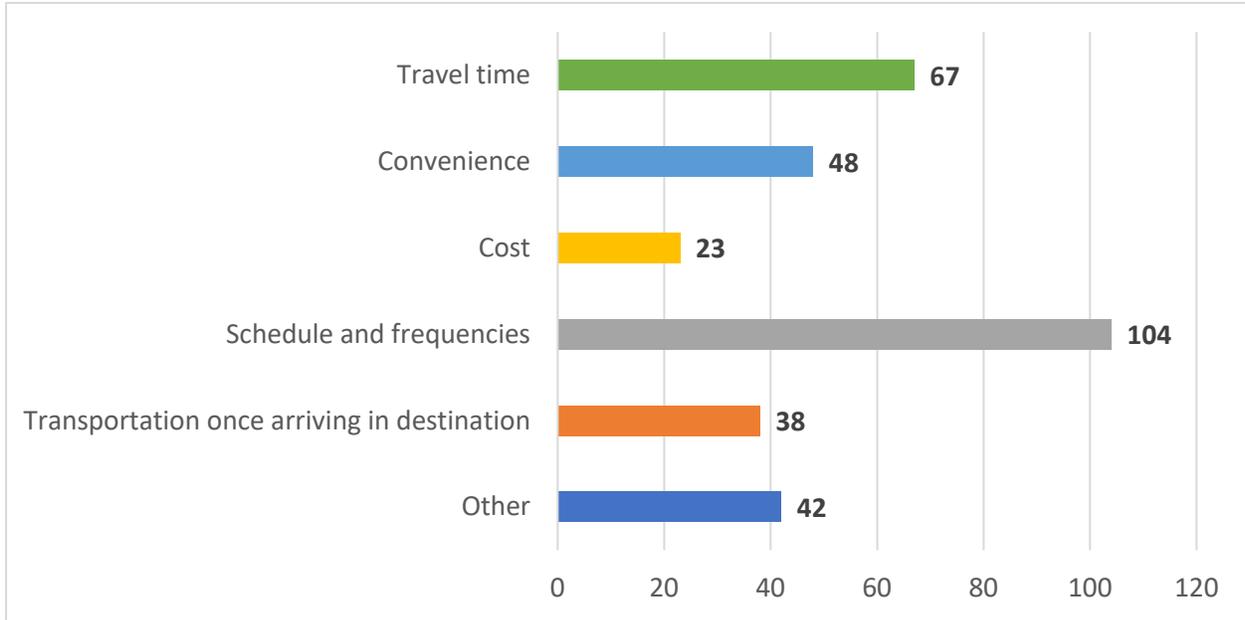
**Q2: When you or someone you know is utilizing passenger rail, where is your most common final destination?**

154 participants answered this question with one skipping it.



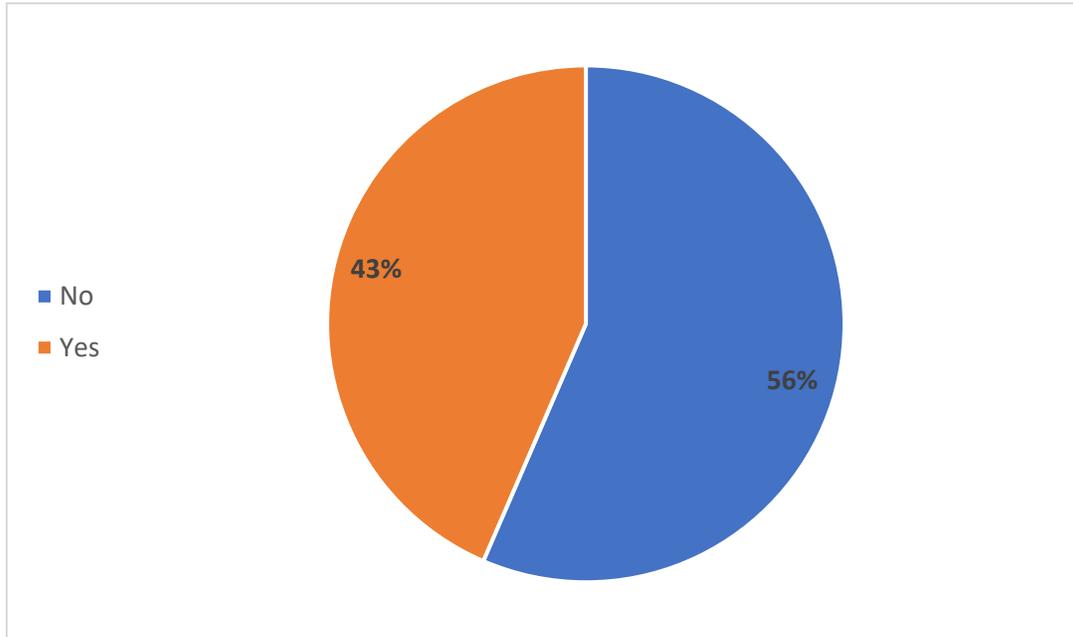
**Q3: What factors are stopping you or someone you know from utilizing passenger rail more often?**

Participants were allowed to select up to three answers for this question.



The most common factor detailed by participants who marked “Other” was their lack of proximity to a station, with many mentioning Springfield or southwest Missouri specifically. Also mentioned was limited bicycle capacity on trains, the potential for delays, and the need for routes to more destinations.

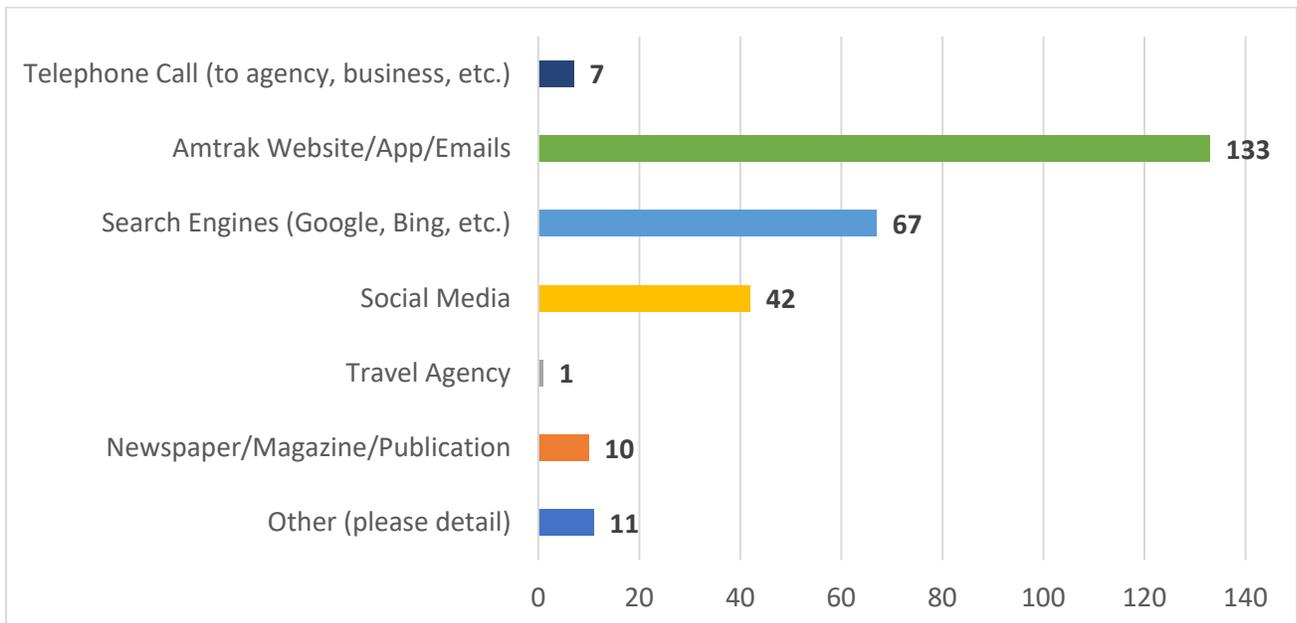
**Q4: Would you be more likely to utilize passenger rail if there were bus connections from stations to nearby cities?**



Participants who marked “Yes” were asked which cities they would want connected. The most common cities within Missouri provided were Columbia, St. Joseph, Springfield, and communities within the St. Louis suburbs.

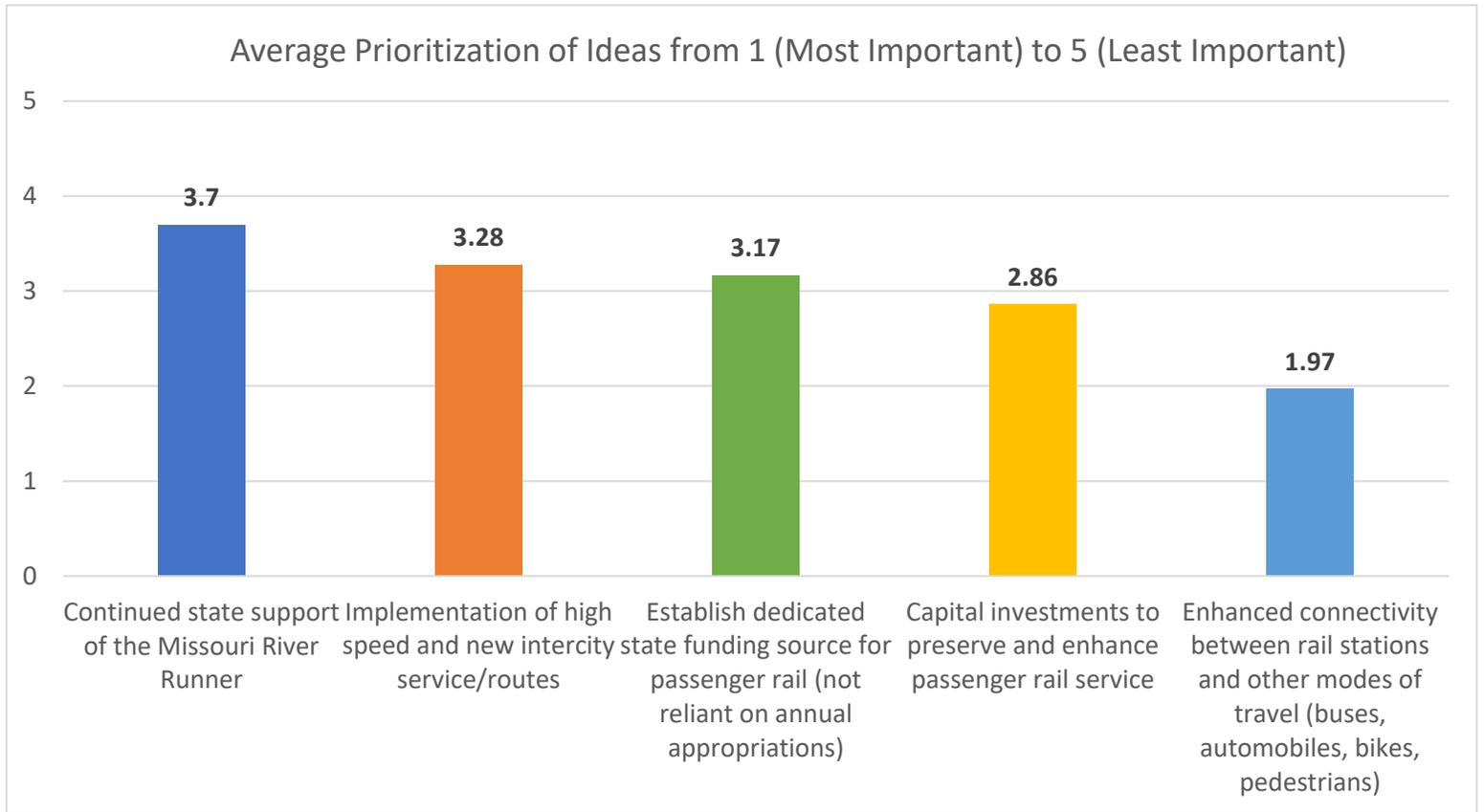
**Q5: Where do you get your information about traveling via intercity passenger rail?**

Participants were allowed to select up to three answers for this question.

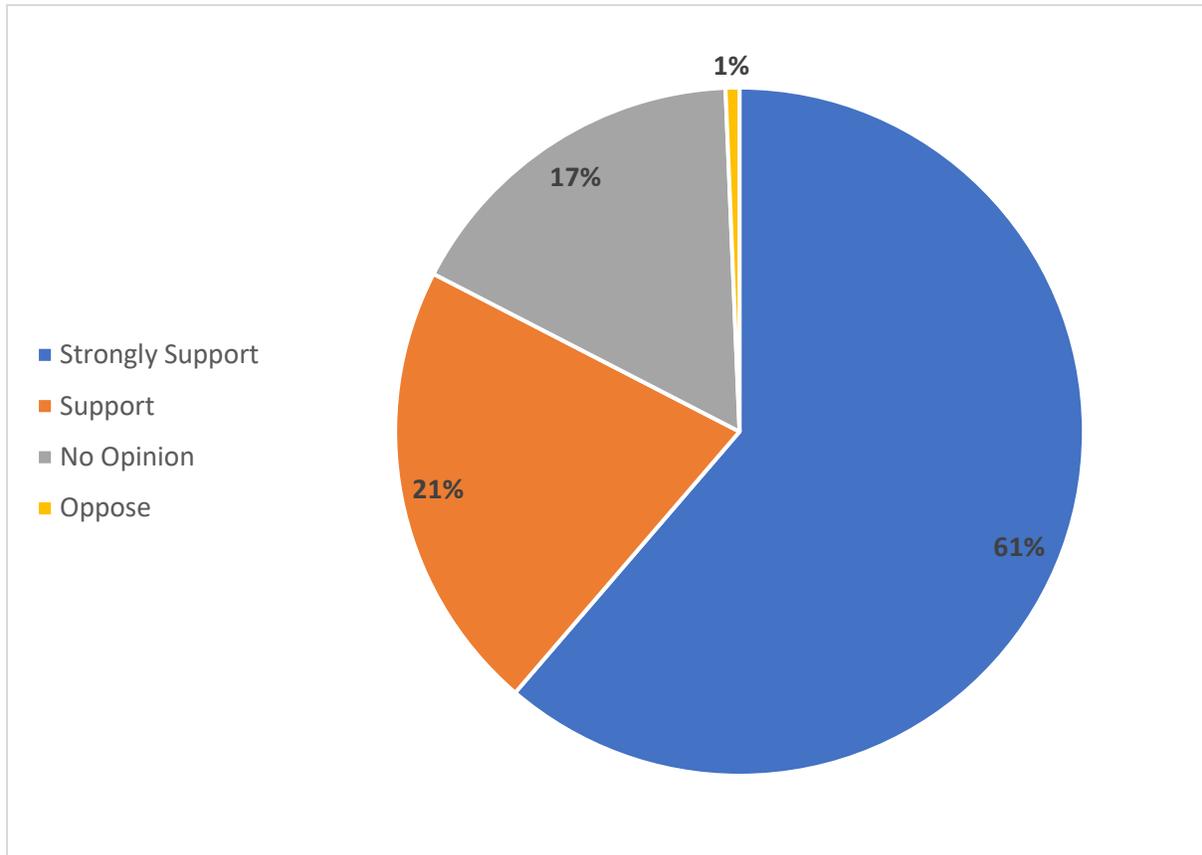


**Q6: Please rank/prioritize your support for these ideas:**

- 1. Continued state support of the Missouri River Runner**
- 2. Implementation of high speed and new intercity service/routes**
- 3. Establish dedicated state funding source for passenger rail (not reliant on annual appropriations)**
- 4. Capital investments to preserve and enhance passenger rail service**
- 5. Enhanced connectivity between rail stations and other modes of travel (buses, automobiles, bikes, pedestrians)**



**Q7: Would you support 3 round trips a day for the Missouri River Runner service between St. Louis and Kansas City?**



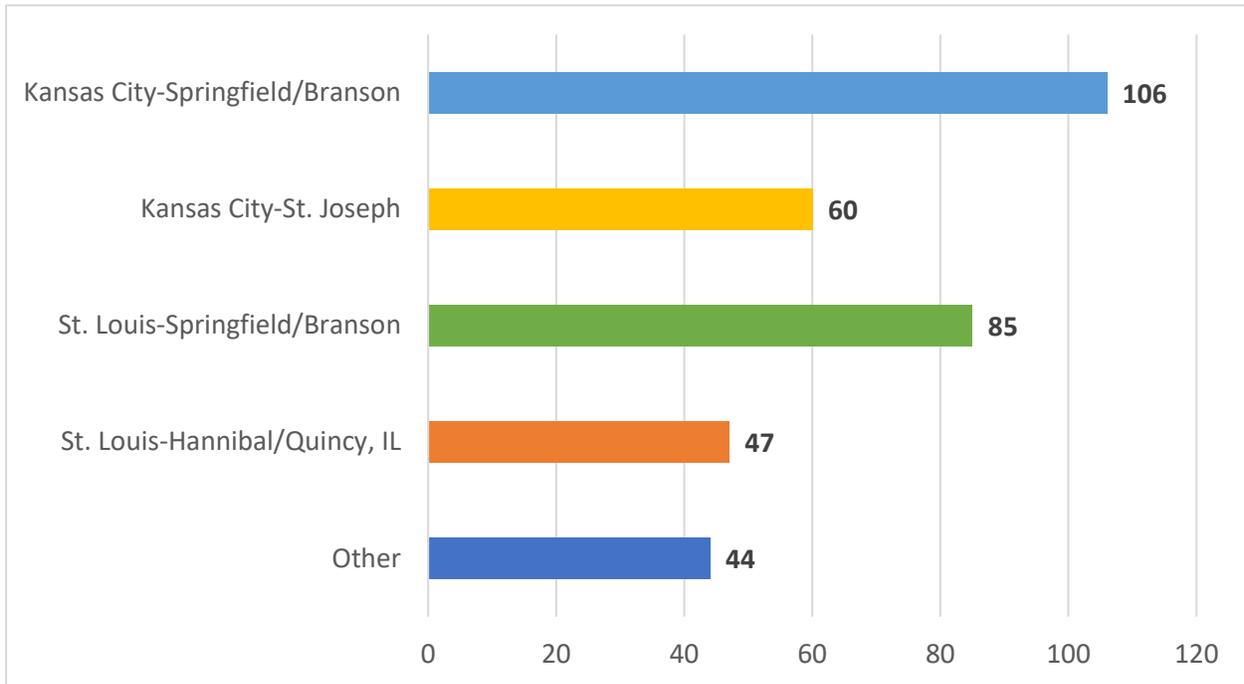
No participants (0%) were in strong opposition of the proposal.

**Q8: Please let us know how the passenger rail stations you frequently visit could be improved (buildings, restrooms, parking, access).**

- 154 participants answered this question with one skipping it.
- A moderate amount responded with "n/a" or that they do not frequently use rail stations.
- Common themes participants noted included improvements to:
  - sanitation/cleanliness particularly in bathrooms
  - waiting area technology and amenities including wifi and entertainment
  - bike/pedestrian accessibility
  - functionality of Jefferson City station, with support toward building a new station
  - canopy coverage, signage and maintenance at Gateway Station
  - parking considerations including dedicated Amtrack user parking, long-term parking, reasonable parking prices and better lighting.

**Q9: Which of these future routes/connections would you like to see as a part of Missouri’s passenger rail system?**

153 participants answered this question with two skipping it. Participants were allowed to select up to three answers for this question.



Routes listed by participants marking “Other” included St. Louis to Cape Girardeau, St. Louis to Rolla and options branching directly from Columbia and Springfield.

***Meeting and survey conclusion***

The survey responses and comments collected as part of the MoDOT’s Virtual Passenger Rail Study Open House provides insight into public opinion on frequencies, quality of stations, routes and destinations related to the present discourse on passenger rail in Missouri. A major theme noted in both the survey feedback and the comments was access to existing passenger rail infrastructure for many participants due to lack of proximity. Residents of the southeast part of the state were the most vocal about this, including calls for future connections to Springfield and Branson. Overall, continued support of the Missouri River Runner was prioritized with high speed and new intercity state services additionally supported. For those in suburbs of Kansas City and St. Louis, the need for improved long-term parking at each station, schedules and frequencies seemed to be the largest preventers of utilizing passenger rail as opposed to transportation upon destination arrival.

## MoDOT Virtual Passenger Rail Open House 2021

Understanding survey responses and comments will help the Project team make decisions moving forward. MoDOT continues to engage the public and receive feedback from stakeholders in determining the future of passenger rail in Missouri.

# Freight Stakeholder Meeting Presentation



MISSOURI

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# State Freight & Rail Plan

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Freight  
Stakeholder  
Meeting

*presented to*  
*Freight Stakeholder Meeting Attendees*

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



September 15, 2021



# Guidelines for Virtual Meetings

**01**  
Edit your name to include your organization.

**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- please go to [www.Menti.com](http://www.Menti.com) and type in code **3677 9664** or scan QR code



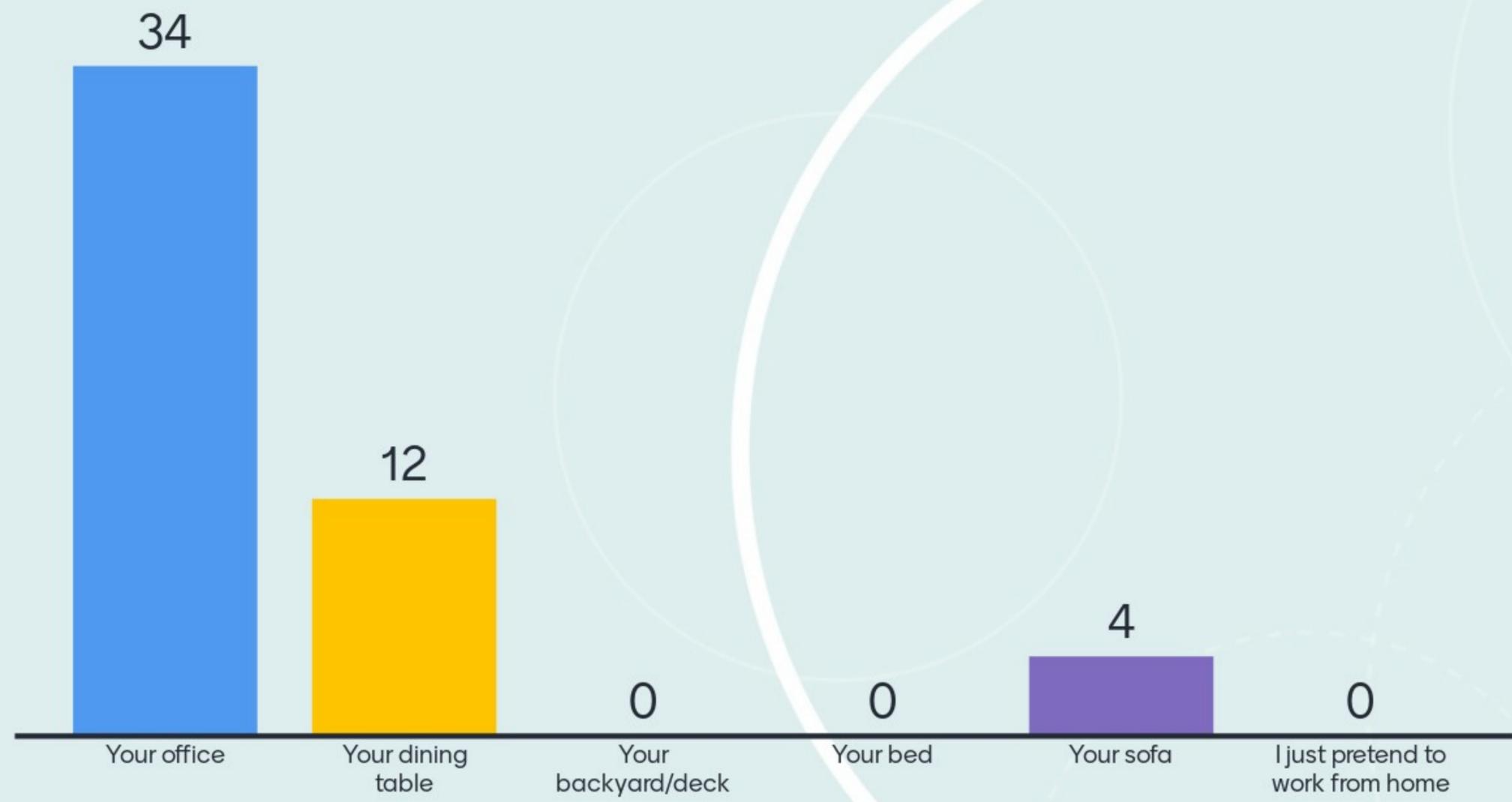
# Meeting Purpose

Reconnect with all public and private sector stakeholders who have participated in the 2021 SFRP process to discuss needs assessment results, strategies and recommendations.

## Agenda

- Project Overview
- Needs Assessment Results
- Strategies and Recommendations
- Schedule and Next Steps

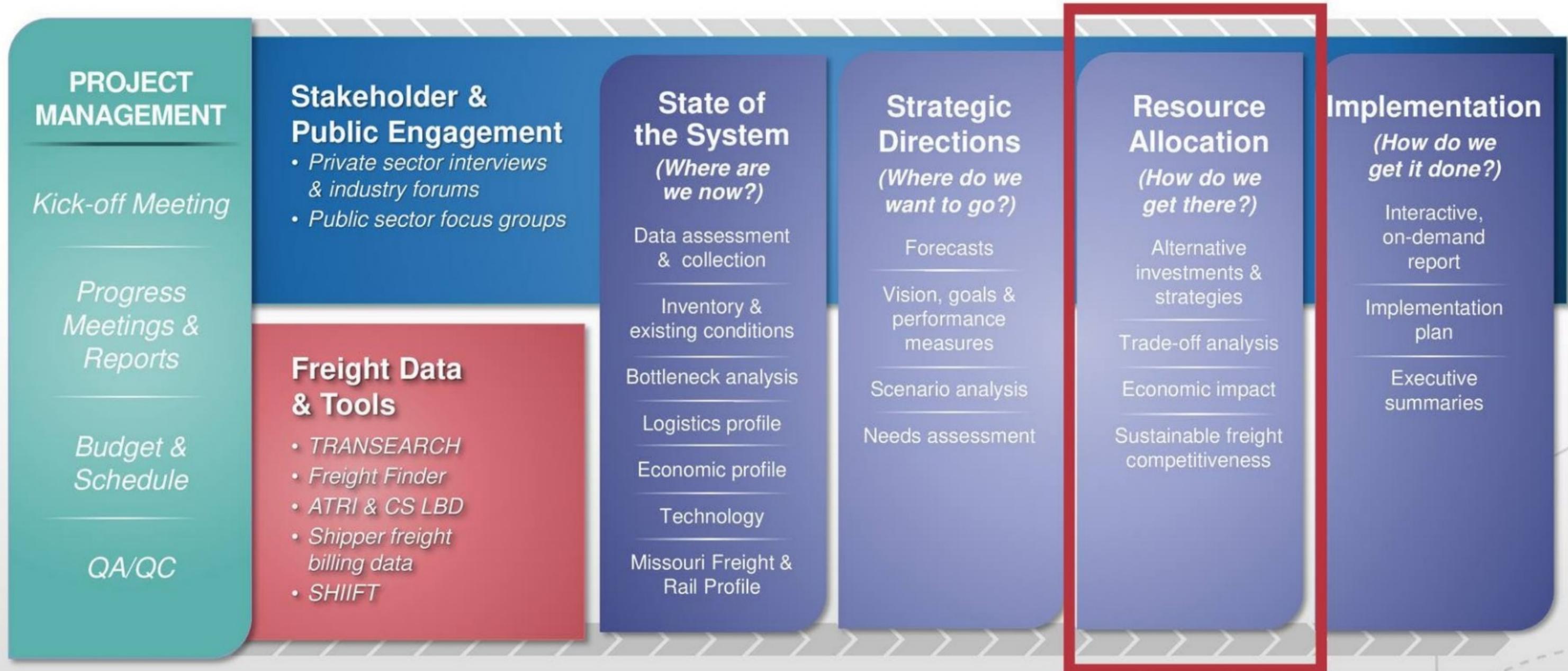
# Where do you most often work from home?



# Project Overview



# Approach Overview



# How Will Input Be Used

## *Today's Meeting*

### NEEDS ASSESSMENT

Identify Missouri's highest-need highway segments

### STRATEGIES

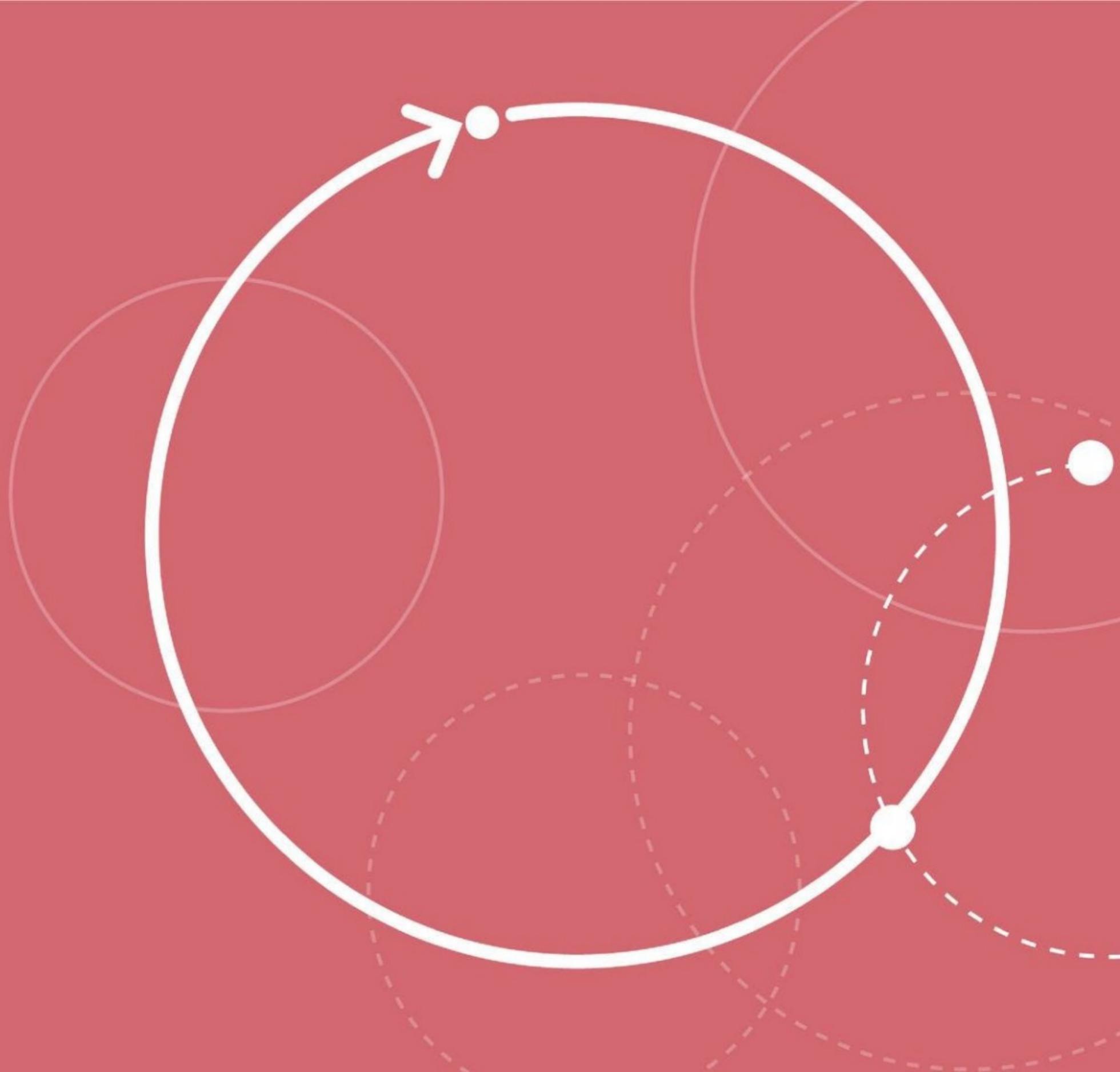
Input on proposed operational, program, and policy strategies

Examine STIP to identify potential unmet freight needs

Refine strategies based on stakeholder feedback

### ESTABLISH RECOMMENDATIONS

# Needs Assessment Results



# Highway Needs Scoring Process

- Data-driven process determines level of freight need across the system
- MoFAS tool scores each asset, calculations change based on geography and urban vs. rural road type

Safety

Truck  
Parking

Technology

Mobility &  
Reliability

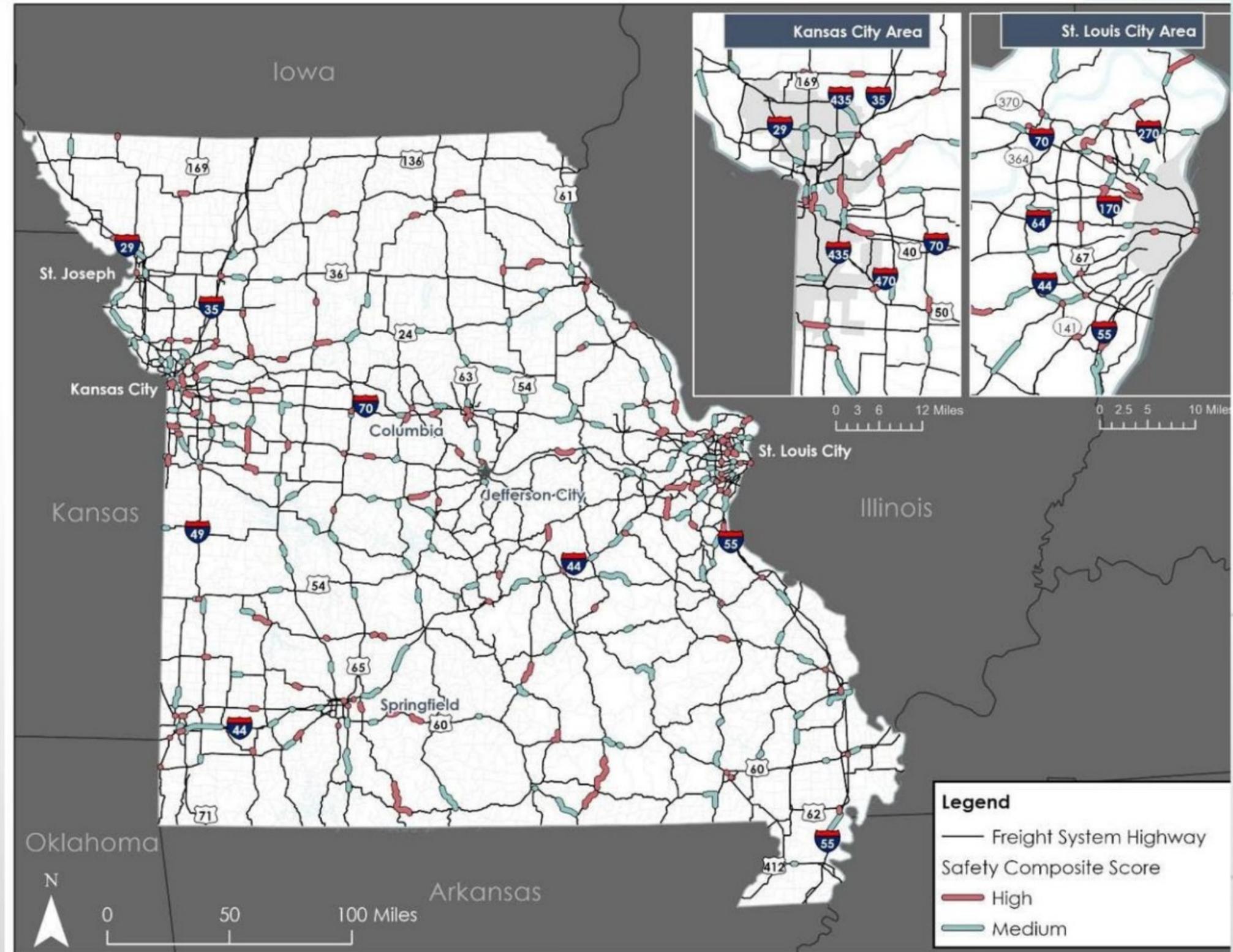
Asset  
Preservation

Freight  
Design

# Highway Safety Needs

## Key Metrics

- Truck-involved crash rate
- Truck-involved severe injuries or fatalities
- At-grade highway-rail crossings

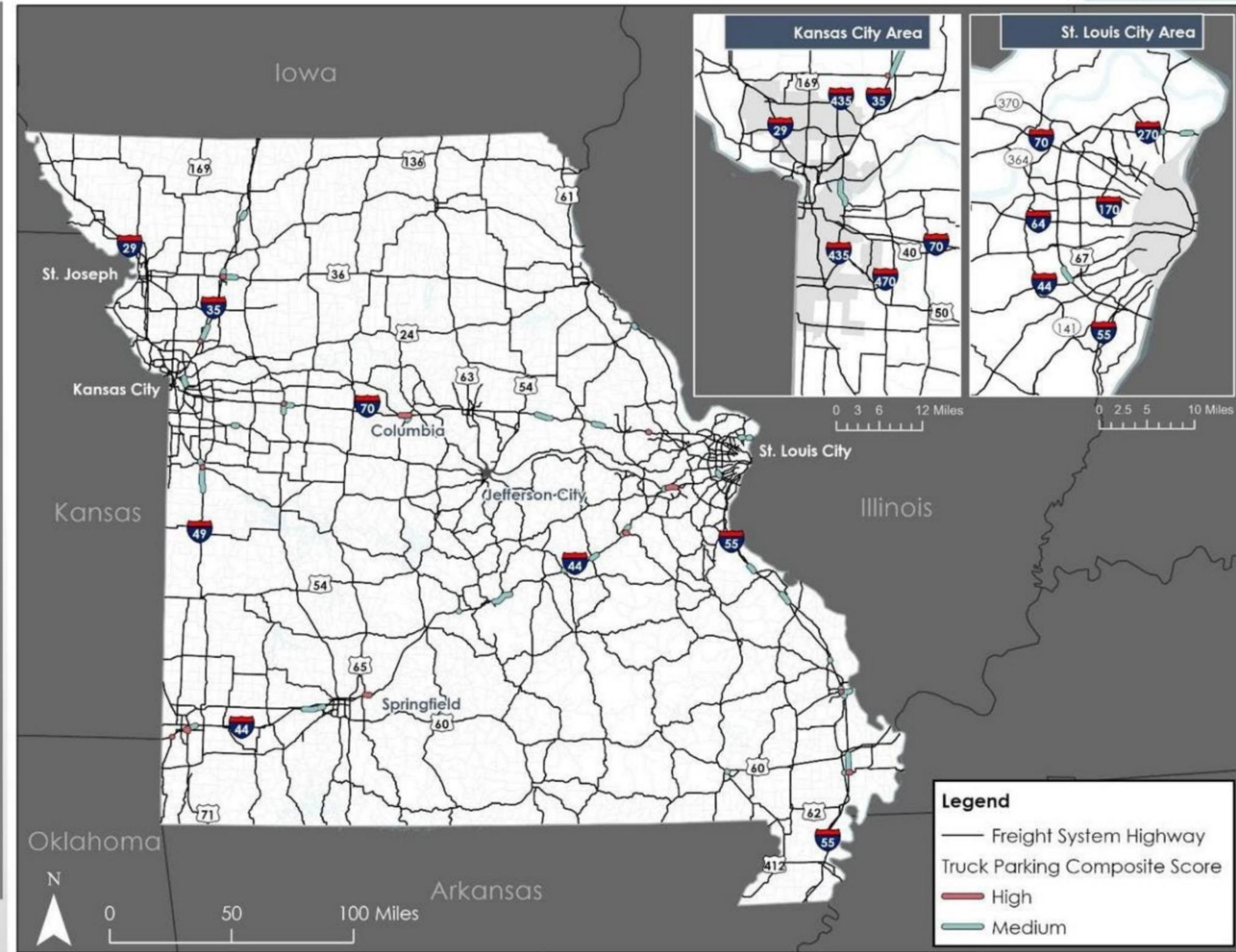


# Truck Parking Needs

## Key Metrics

Crashes involving parked trucks

Interstate truck parking deficit



# Technology Needs

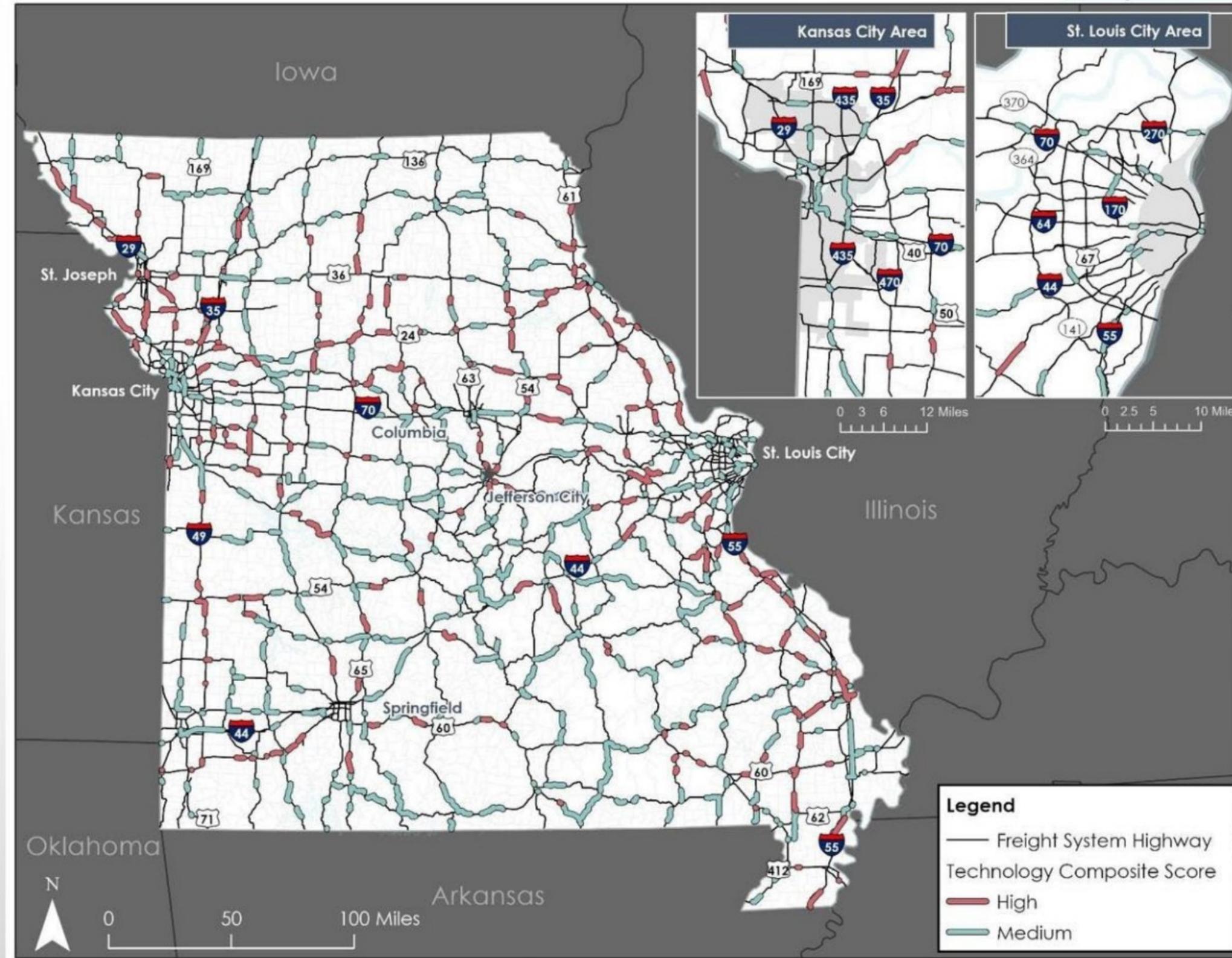
## Key Metrics

Weigh-in-motion needs

Transportation Management Center (TMC) needs

Traveler Information Needs (e.g., dynamic message signs)

Traffic Incident Management Needs (e.g., CCTVs)



# Mobility & Reliability Needs

## Key Metrics

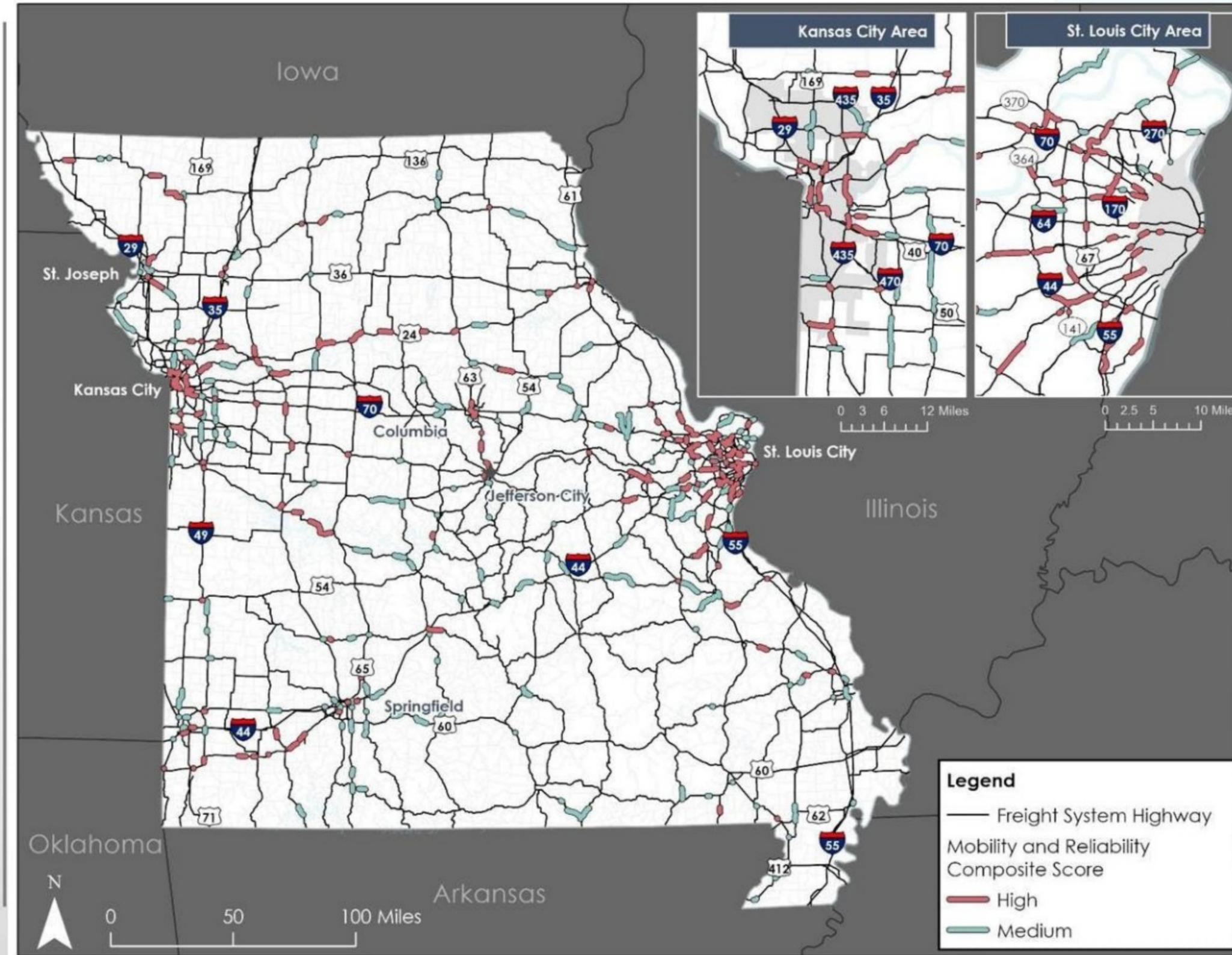
Level of service

Truck travel time reliability

Connectivity to Strategic Industry  
Supply Chains

Connectivity to Intermodal Terminals  
& Gateways

At-Grade Highway-Railroad  
Crossings



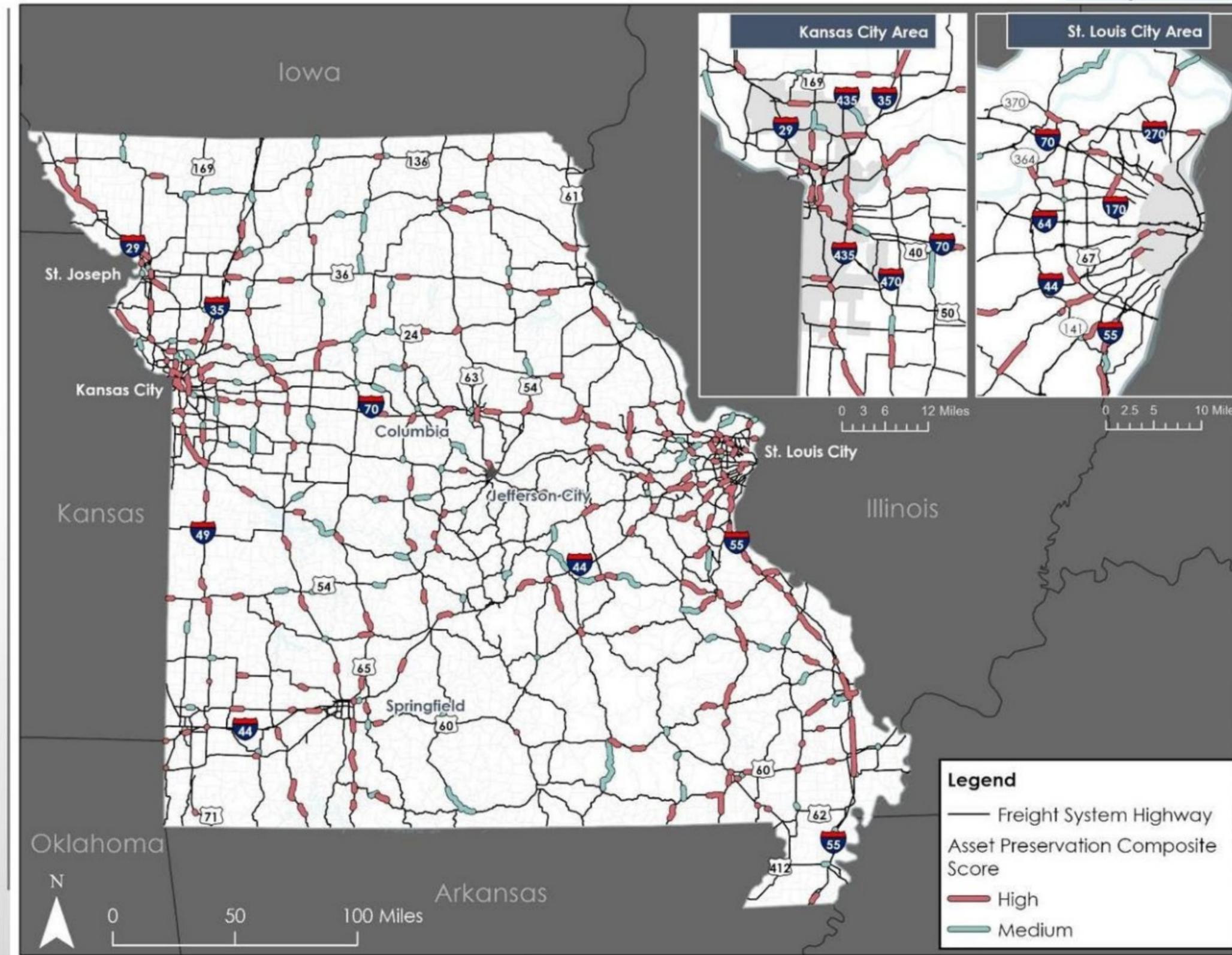
# Asset Preservation Needs

## Key Metrics

Bridge weight restrictions

Bridge condition issues

Pavement condition

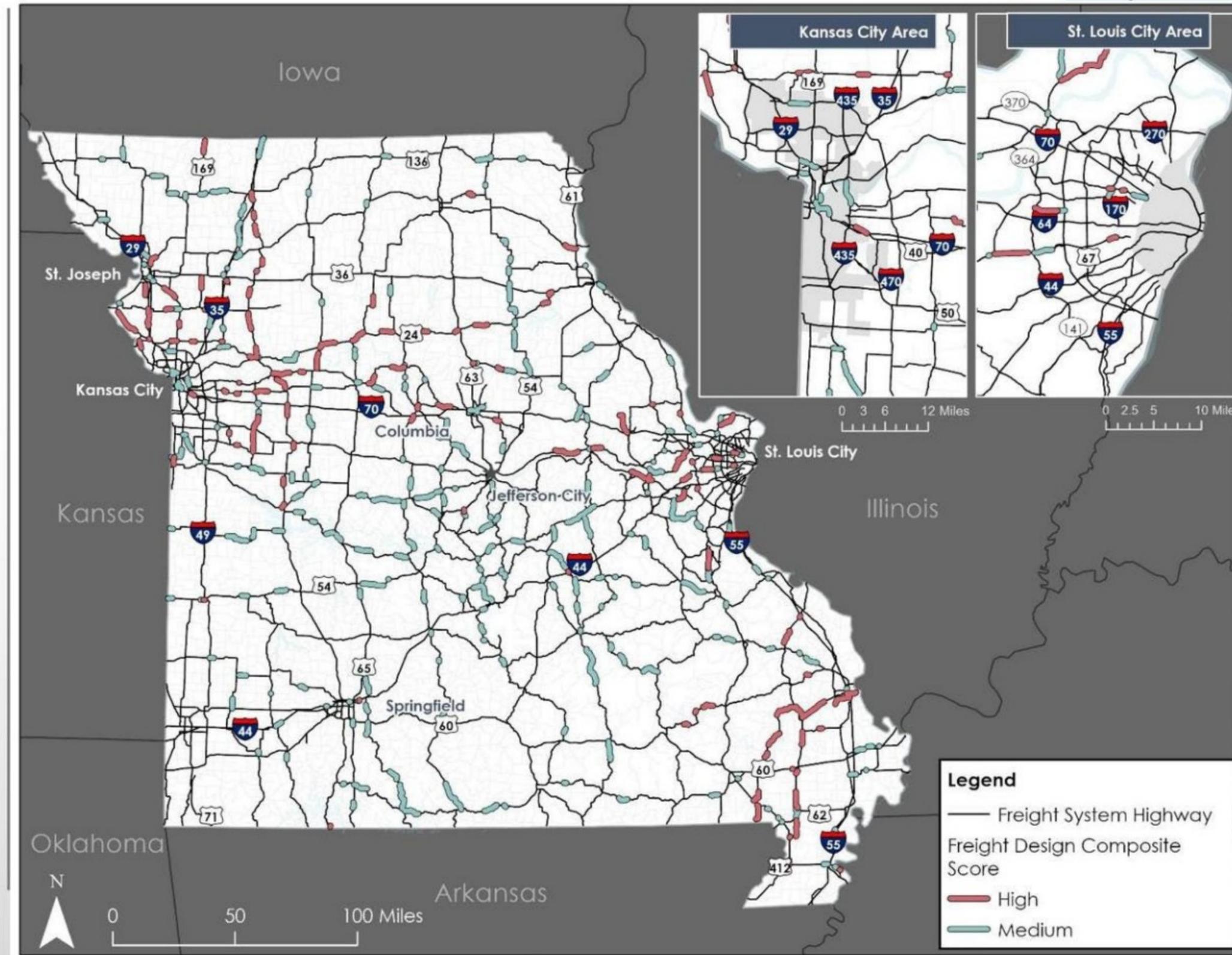


# Freight Design Needs

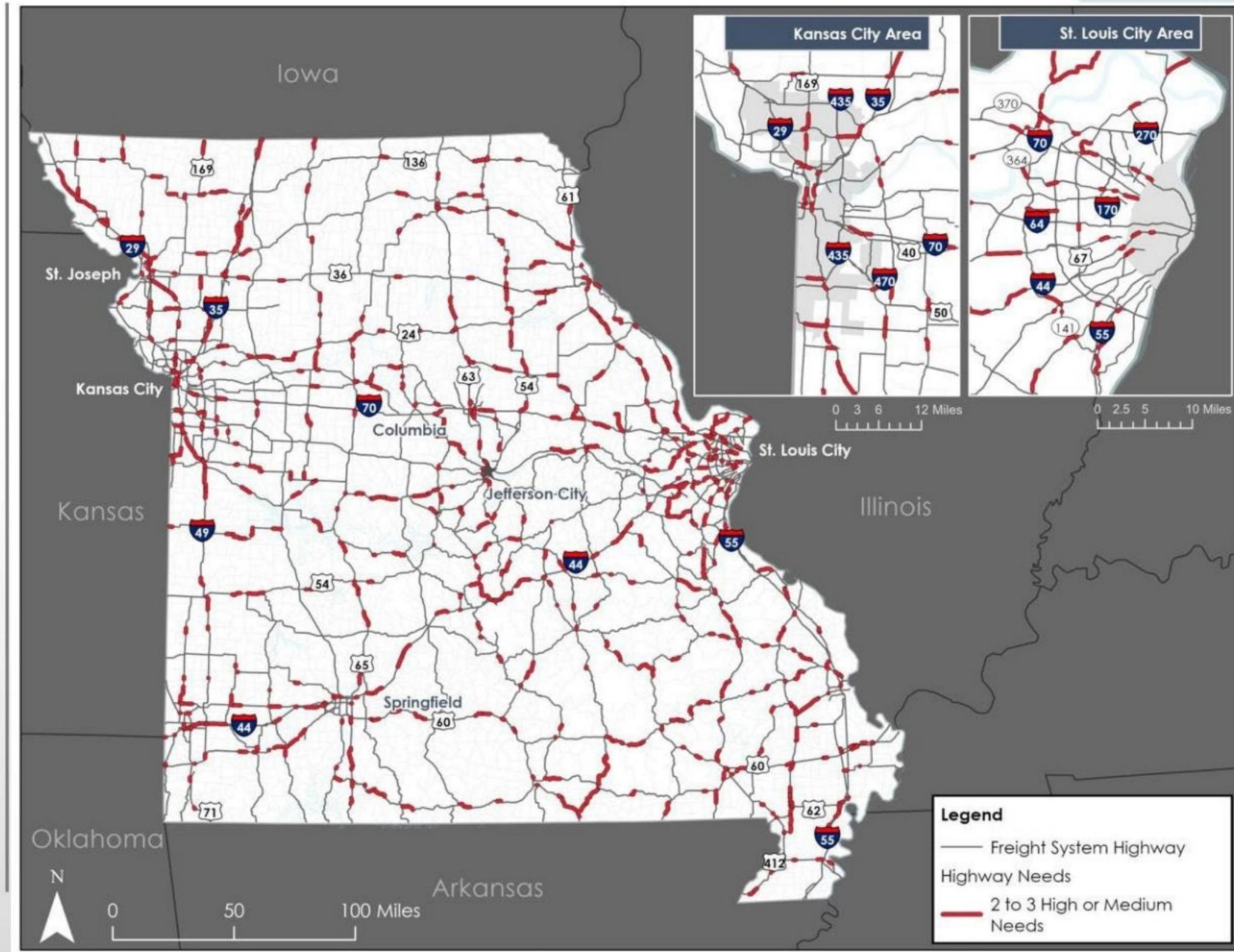
## Key Metrics

Freight critical two-lane highways

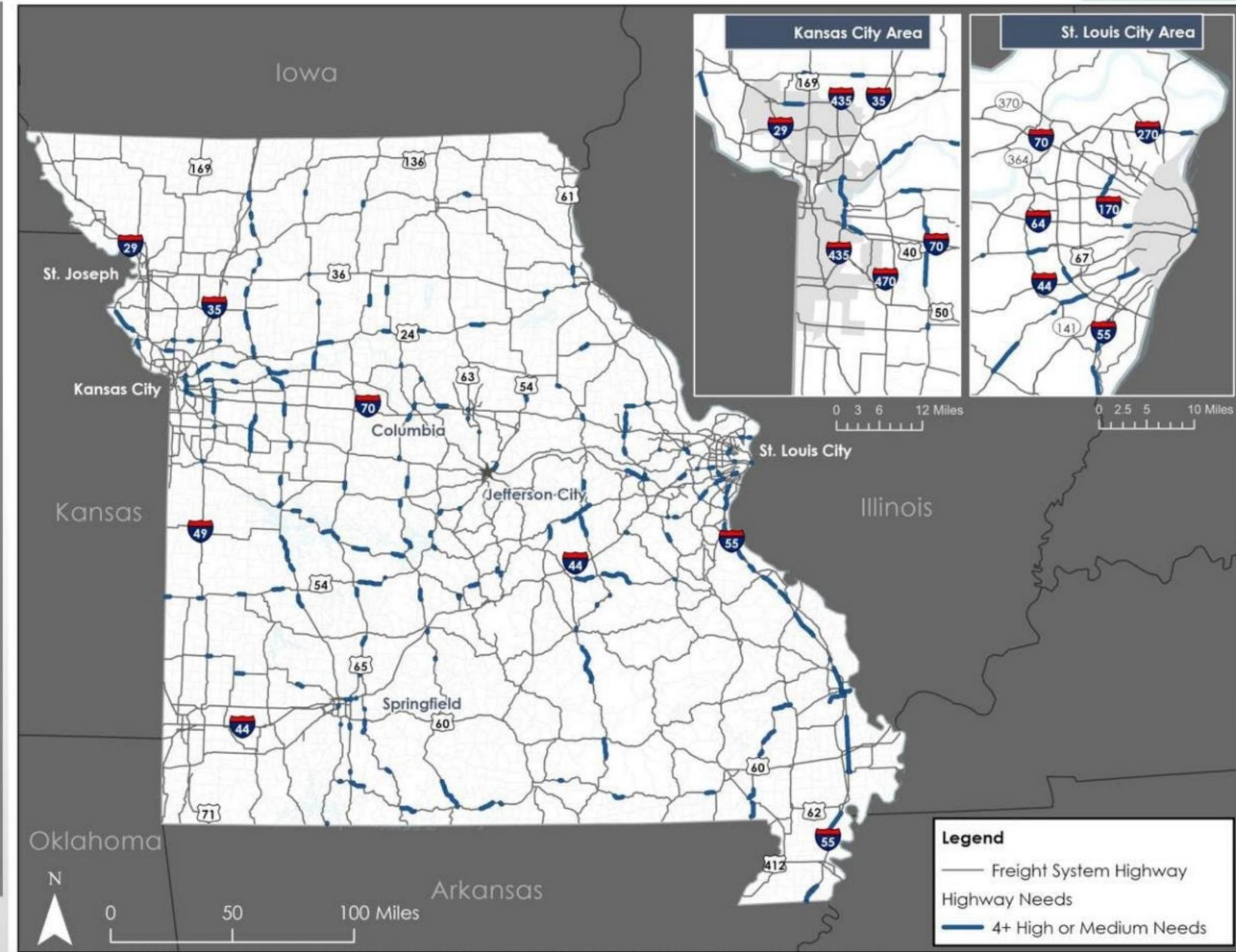
Vertical clearance limitations



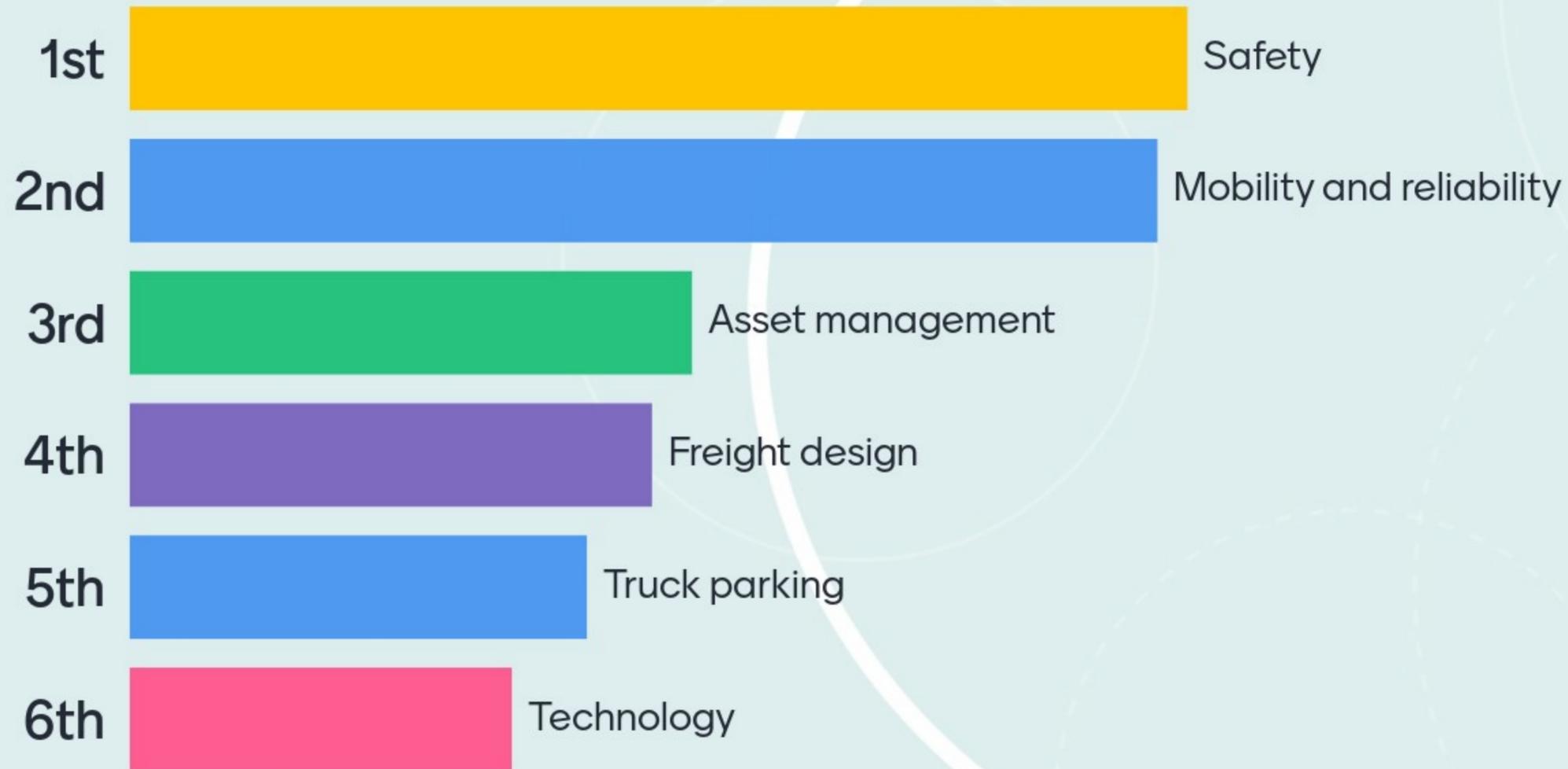
# High Need Highway Segments (2-3 Needs)



# Highest Need Highway Segments (4+ Needs)



# What do you think are the priority freight needs?



# Missouri Freight Rail Needs

Freight Rail Need/Opportunity	Example Project, Program or Policy
Track Capacity	Increase rail gauge to accommodate heavier loads
Safety and Crossings	Rail/road crossing improvements
Funding for Spurs Serving Local Businesses	Construction of new rail spurs; funding program
Intermodal Network, Facilities and Connectivity	New or expanded multimodal facility, e.g. river port, rail yard, etc.
Bottlenecks and Constraints	Infrastructure improvements
Maintaining and Expanding Short Line & Local Railroads	Increased connectivity between Class I's and short lines
Aging Structures and Clearance	Capacity improvements or rehabilitation

# Missouri Passenger Rail Needs

Passenger Rail Need/Opportunity	Example Project, Program or Policy
Funding Shortfall for <i>Missouri River Runner</i>	Operational support and dedicated state funding
Unserved and Underserved Communities	Improved, increased or new Missouri River Runner or intercity rail service
Infrastructure	Track upgrades (passing, siding track)
Stations	New and upgraded stations

# Missouri Air Cargo Needs

Airport	Air Cargo Needs
St. Louis Lambert International	<ul style="list-style-type: none"><li>• Improvements to the I-70 corridor from U.S. 67 to I-170 in front of STL</li><li>• STL Access Improvements and North Cargo Improvements</li><li>• Improvements to I-270 from I-70 to Route 157</li><li>• Demolition and site readiness of northern track of airfield for new cargo facility</li></ul>
Springfield-Branson National	<ul style="list-style-type: none"><li>• Expand cargo apron for aircraft movement and GSE storage</li><li>• Major cargo ramp expansion</li><li>• Expansion to existing air cargo facility</li></ul>
Kansas City International	<ul style="list-style-type: none"><li>• Maintenance and new construction of hangers for air cargo</li><li>• KCI Intermodal Logistics Center infrastructure needs</li><li>• KCI westside infrastructure needs to open ground for development</li><li>• Future improvements to I-435 Interchange at 120th Street (D Highway) to handle increased truck traffic from new industrial development on Airport Westside</li></ul>

# Missouri Port Needs & Themes

Port Need/ Opportunity	Example Project, Program, or Policy
New or Developing Ports	Support establishment of a new or developing proposed port
Port Expansion	Land acquisition or development of new facilities
Upgraded and Resilient Infrastructure	Rehabilitation of dock facilities and other needed infrastructure
Multimodal Connectivity	Construction of transload facility, rail track, access roads, etc.
Cargo Diversification	Container-on-barge service, new cargo-handling infrastructure

# Are there other multimodal freight needs MoDOT should consider?

High speed rail

CAV

Truck Rail combinations that address driver/equipment productivity, highway congestion, and truck parking.

Is there any information from this study that supports or informs future priority of Hyperloop?  
Any data to support a freight business case for that technology?



# Strategies and Recommendations



# Process of Developing Strategies



Develop comprehensive list of strategies, vet with stakeholders



Screen strategies to develop recommendations



Prioritize recommendations and develop implementation framework

# Categories of Strategies and Recommendations

Operations and Technology

Programs

Policies & Coordination

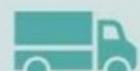
Infrastructure

# Preliminary Operations and Technology Strategies

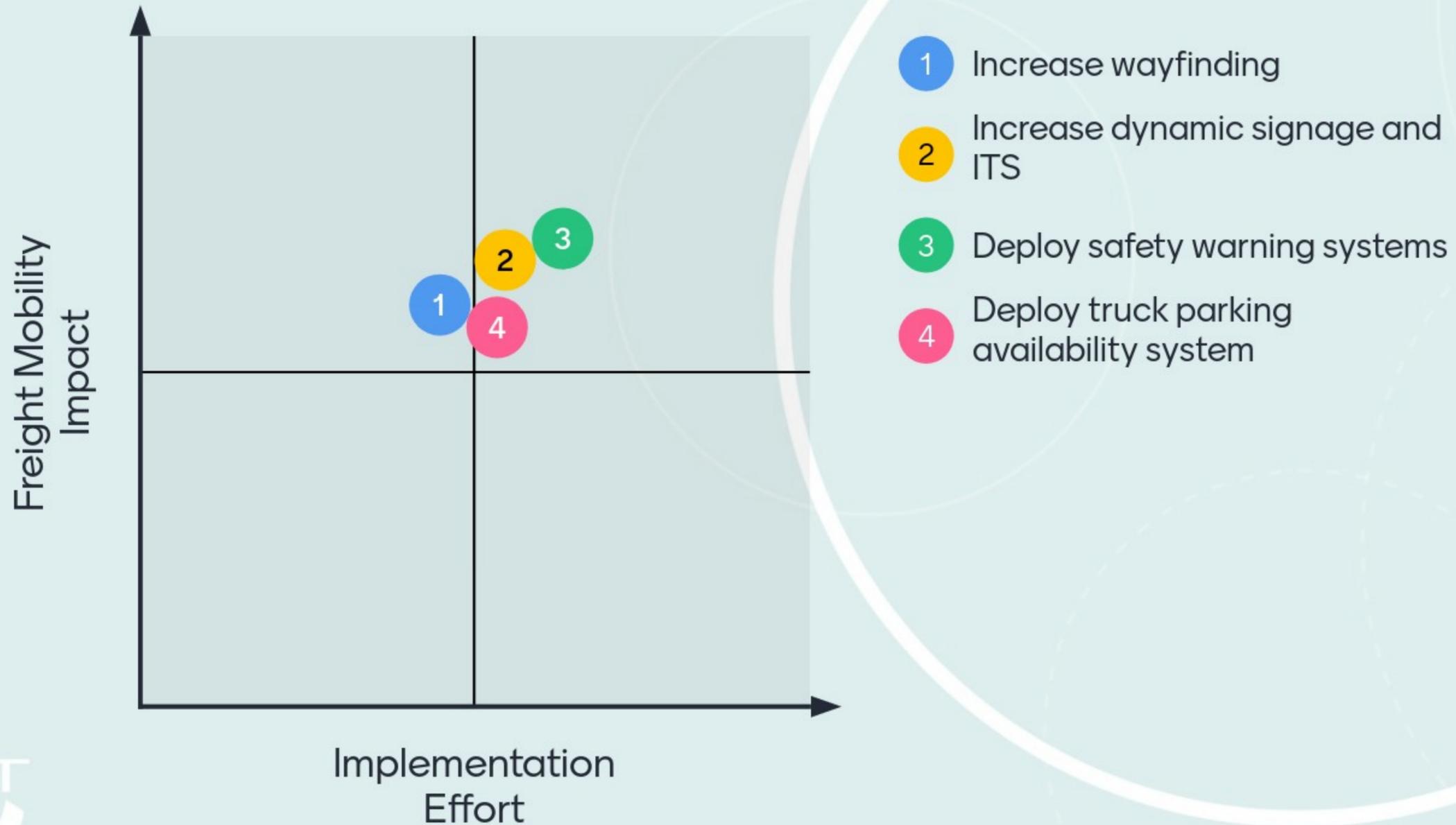
 Increase wayfinding via road marking, signage, and lighting on the highway freight network

 Increase signage and ITS on freight routes for locations of truck parking, safety hot spots, queuing, blocked rail crossings, etc.

 Deploy advanced warning systems (over-height, over-weight, over-speed, hazards, detours/rerouting, etc.)

 Deploy Truck Parking Availability System along PHFN

# Please rate the following operations and technology strategies



# Preliminary Program Strategies



Implement freight-centric design guidelines for safety, bridges, interchanges, truck parking, and construction



Develop wayfinding and signage guidelines for urban and rural areas to include private roads and major freight generators



Expand freight data collection program to include vehicle classification counts, truck parking capacity/utilization, safety hot spots, etc.

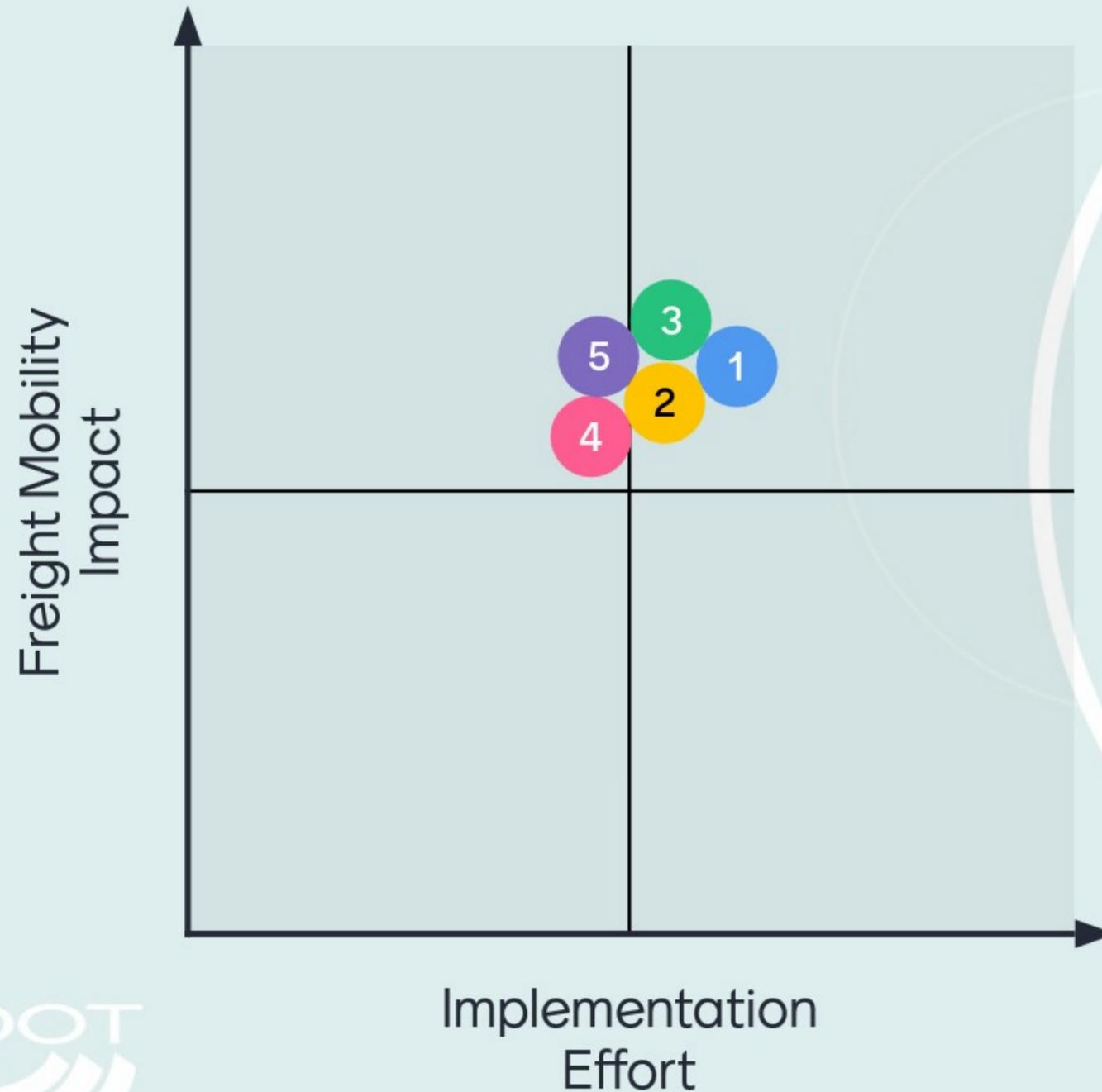


Develop a freight transportation planning training program for local and regional planners



Develop a freight transportation public education and awareness program and share the road campaign

# Please rate the following program strategies



- 1 Freight centric design guidelines
- 2 Signage and wayfinding guidelines
- 3 Freight data collection program
- 4 Freight training program for local and regional partners
- 5 Freight education and outreach program



# Preliminary Program Strategies



Continuation of Freight Advisory Committee with public and private sector stakeholders



Integrate multimodal freight into regional planning programs

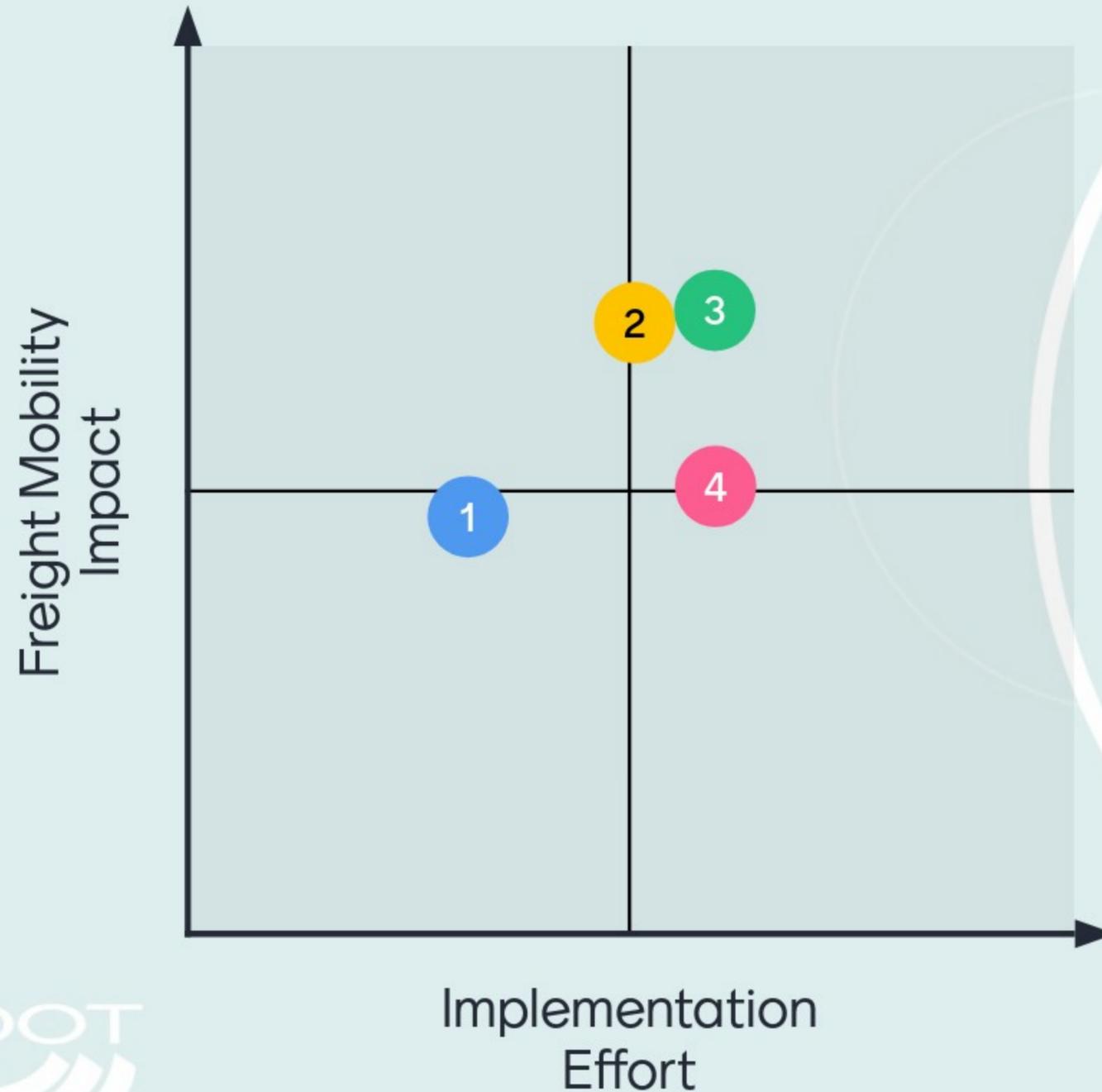


Develop regional multimodal thoroughfare planning program



Expand opportunities, regulations, and policies for intraregional mass transit or van-pool program for major freight employment sites

# Please rate the following program strategies



- 1 Continuation of FAC
- 2 Integrate freight into regional planning programs
- 3 Develop regional multimodal thoroughfare planning program
- 4 Expand mass transit and van-pool for major freight employment sites

# Preliminary Policy, Outreach, and Coordination Strategies



Integrate freight considerations into project development guidance on the MoPFN



Explore opportunities for public-private partnerships for projects and programs

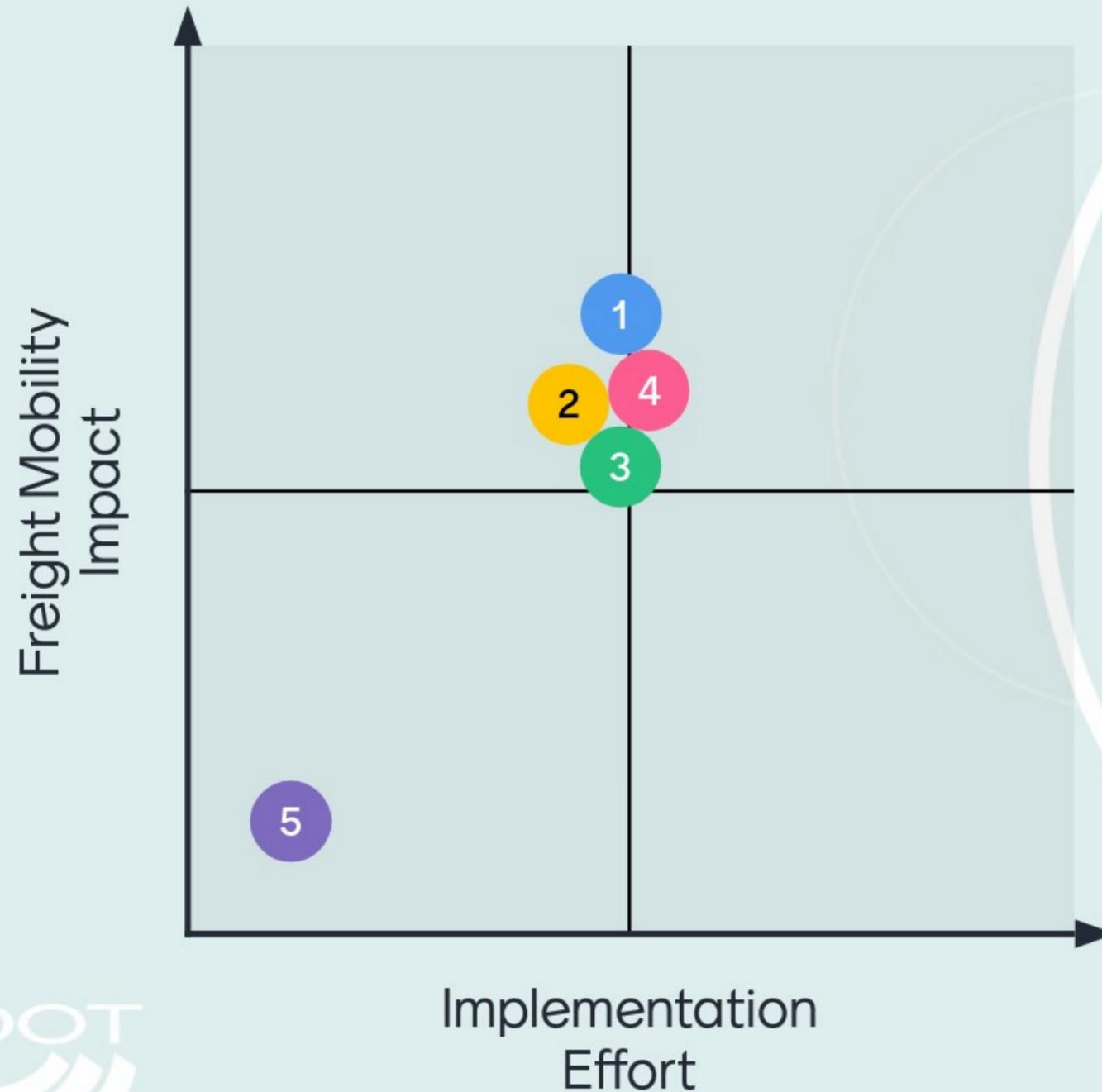


Convene a biennial freight and industry transportation summit



Develop truck traffic impact analysis guidelines to include truck parking/queuing impact and inspection locations in urban and rural areas

# Please rate the following policy strategies



- 1 Integrate freight considerations into project development on the freight network
- 2 Explore PPP opportunities for freight investments
- 3 Convene a biennial freight and industry transportation summit
- 4 Develop truck traffic impact analysis guidelines
- 5



# Preliminary Policy, Outreach, and Coordination Strategies



Evaluate feasibility of off-peak operations



Develop land use guidelines for mitigating freight and industry conflicts with residential and commercial land uses

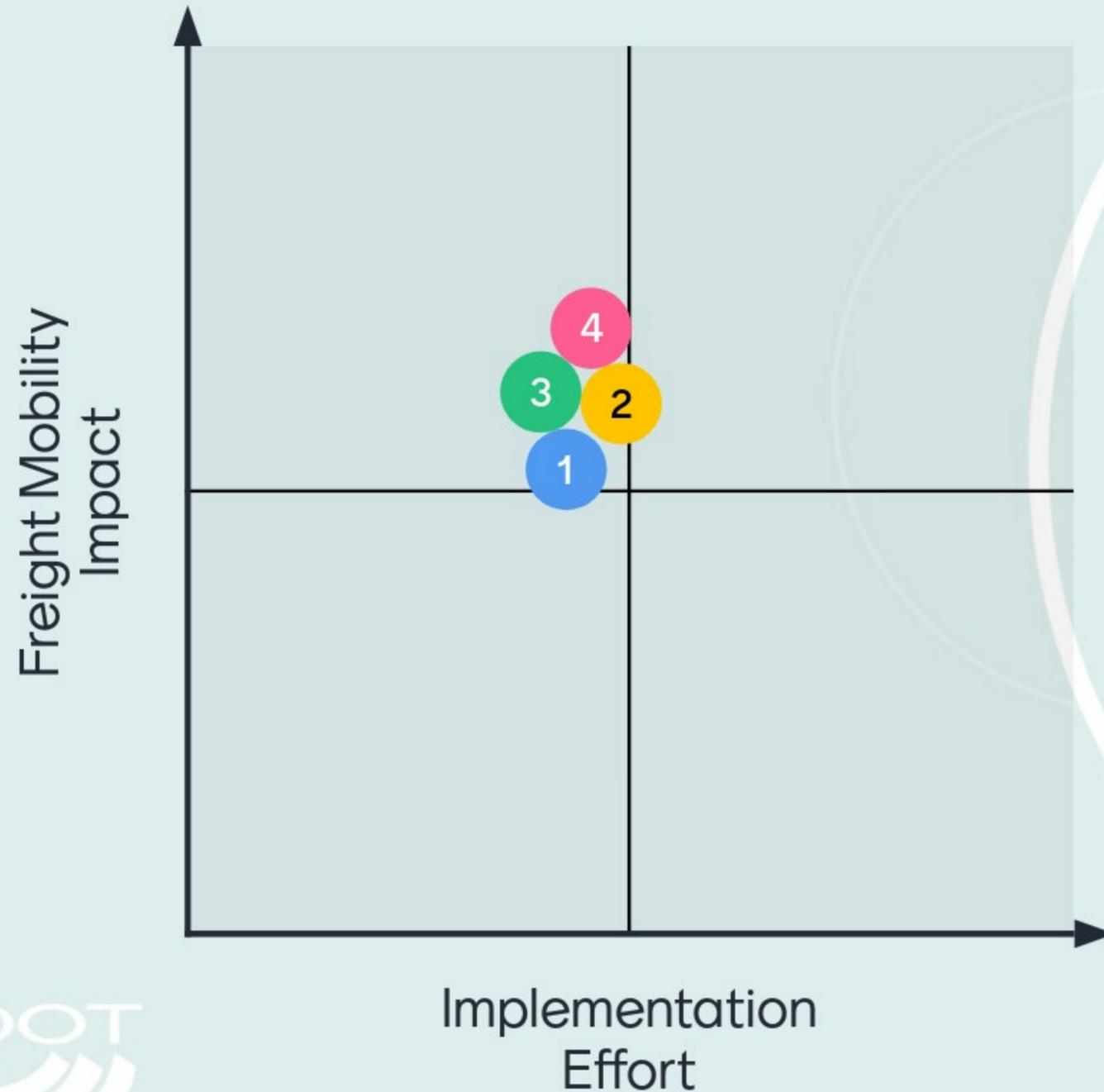


Collaborate with truck stop operators to develop new or expand existing truck parking



Collaborate with regional stakeholders to encourage truck parking at non-MoDOT public facilities and private commercial and industrial sites

# Please rate the following policy strategies



- 1 Evaluate feasibility of off-peak freight operations
- 2 Develop freight supportive land use guidelines
- 3 Collaborate with truck stop operators to develop new truck parking
- 4 Collaborate with partners to develop non MoDOT truck parking at public and private facilities

# What are additional operations, program, and policy strategies MoDOT should consider?

Truck to rail freight conversions, work with manufacturing and customers to get greater access to rail freight instead of trucks

Work with neighboring states, so the feel is consistent for truck operators. Be 1 Midwest Region, not regions within a state.

In more rural areas we need wider shoulders and better signage.

Coordinate with neighboring states

Reengage old rail lines to improve freight and passenger transportation in rural areas

Increase state funding of railroad public private partnerships.

Invest in grade separations for high-use/risk at-grade crossings

Electric charging infrastructure for trucks

Increase opportunities to expand regional freight planning to flow into the state plan



# Process of Developing Infrastructure Strategies



Map planned projects on the identified freight needs



Assess what needs the projects are meeting

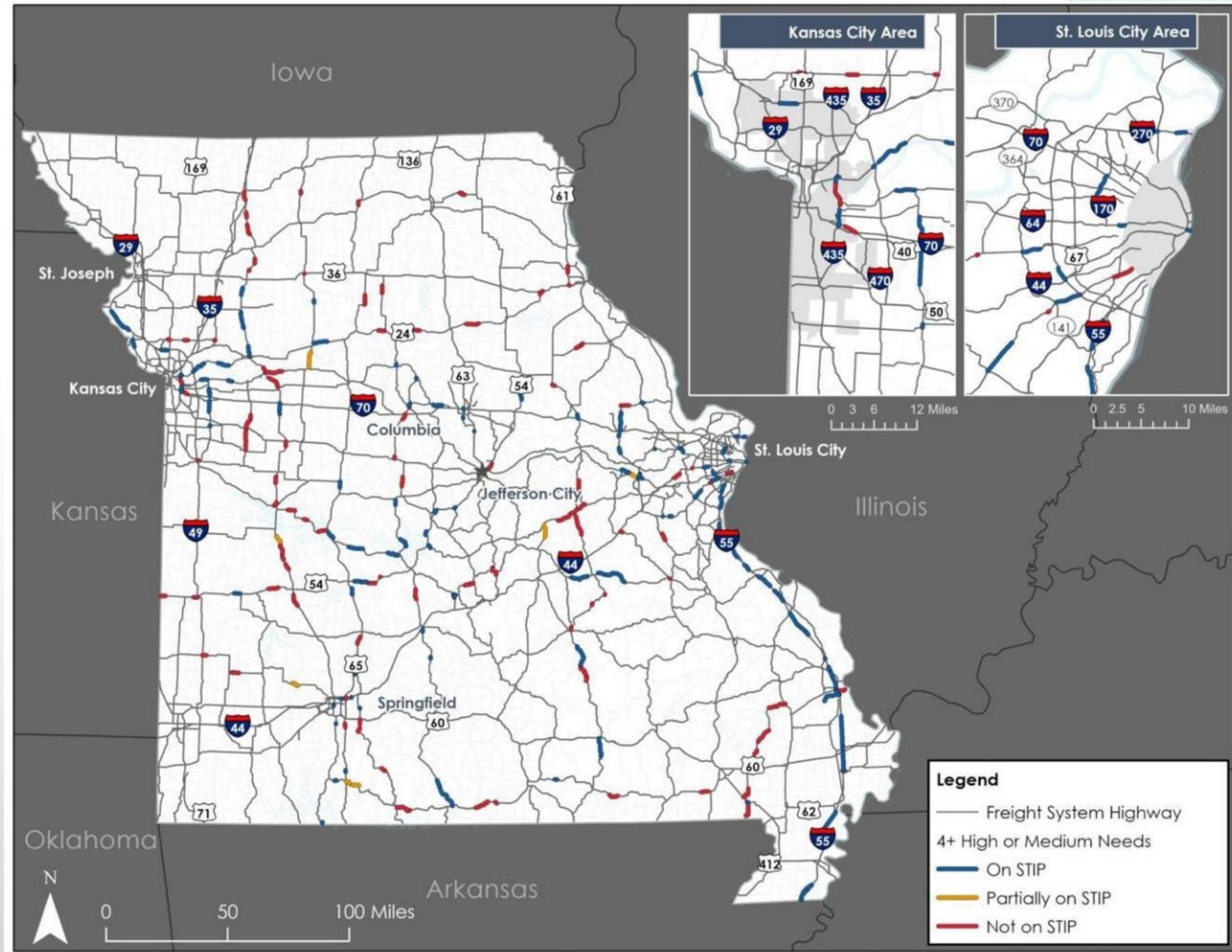


Prioritize recommendations and develop 5-year Freight Investment Plan (FIP)



Identify unmet freight needs

# STIP Projects on Highest Need Highway Segments



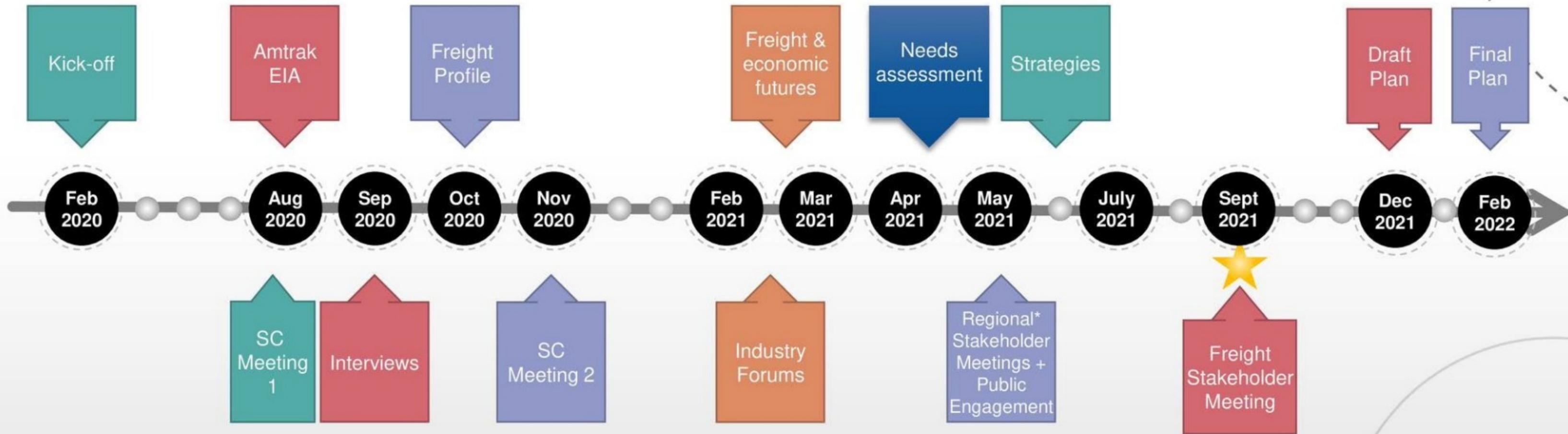
# Next Steps

- Evaluate extent to which STIP project addressing freight needs
- Develop 5-year FIP
- Compile stakeholder identified projects
- Identify strategic projects
- Incorporate multimodal projects
- Develop unconstrained multimodal FIP

# Schedule and Next Steps



# Schedule and Key Milestones



# Next Steps

Project prioritization & ranking

Establish strategies

Develop recommendations

Final SFRP documentation &  
interactive platform

Keep track of the planning  
process here:

<https://www.modot.org/missouri-state-freight-and-rail-plan>

# Thank you!



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# Freight Stakeholder Meeting Summary

## Virtual Freight Stakeholder Meeting for 2021 Missouri State Freight and Rail Plan

### Overview:

The Missouri Department of Transportation (MoDOT) hosted the Virtual Freight Stakeholder Meeting for the 2021 Missouri State Freight and Rail Plan (SFRP) on Wednesday, September 15<sup>th</sup>, 2021 from 9 a.m. – 11 a.m. The objective of the meeting was to gather insight, input and feedback from Missouri industry planners, policy makers and stakeholders on regional economic and industry trends, as well as important freight transportation needs. Attached is pdf of the whole presentation with Menti slides included.

### Meeting Summary:

- 1. Introduction:** Cheryl Ball (MoDOT Project Manager) welcomed the group to the Virtual Freight and Stakeholder Meeting for 2021 for the Missouri SFRP. Paula Dowell (Cambridge Systematics) provided an overview of the agenda for the meeting. The meeting invite was sent to stakeholders who had previously attended the regional meetings for the Missouri SFRP.
- 2. Project Overview:** Paula Dowell (Cambridge Systematics) presented a project overview to the group. The current phase is resource allocation. This includes alternative investments and strategies; trade-off analysis; economic impact; and sustainable freight analysis. Stakeholder input from the meeting today will be used to help inform the needs assessment and strategies.
- 3. Needs Assessment Results:** Katie Kirk (Cambridge Systematics) discussed the highway needs scoring process and associated categories and use of the data-driven process to determine the level of freight need across the system. These categories include safety; truck parking; technology; mobility and reliability; asset preservation; and freight design. The team is working on assigning scores to segments of the roadway network to look at the highway system statewide. In the MoFAS tool, you can filter for looking at regions of the state and urban vs rural areas.

Highway safety needs key metrics included truck-involved crash rate, truck-involved severe injuries or fatalities and at-grade highway-rail crossings.

Truck parking needs key metrics included crashes involving parked trucks and interstate truck parking deficit. The highest truck parking needs are on interstates approaching cities. There was some discussion around truck parking throughout the meeting. As part of truck parking profile, the team did look at Missouri facilities and private facilities. Sometimes public doesn't understand the need for truck parking. Might have to be some creative solutions in the future when running into difficulties.

Technology needs key metrics were weigh-in-motion needs, transportation management center (TMC) needs, traveler information needs (e.g., dynamic message signs), and traffic incident management needs (e.g., CCTVs).

**Q:** Crashes involving parked trucks -- are these in public locations.

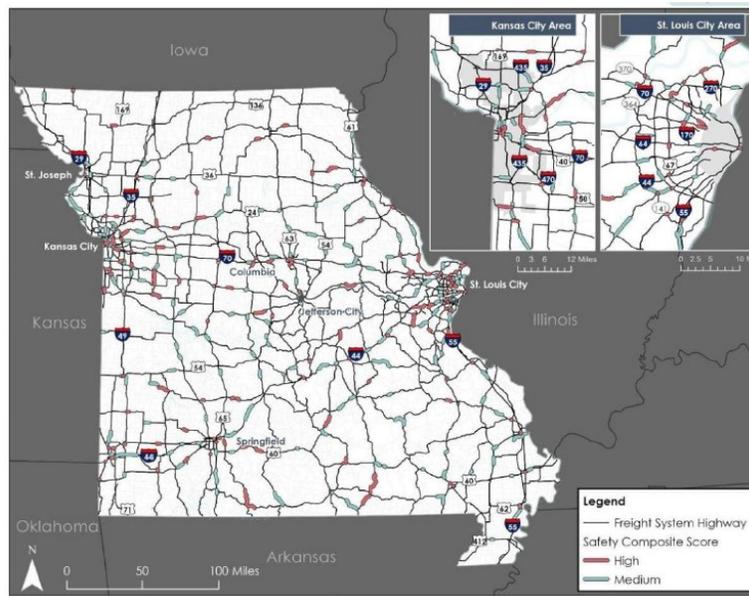
**A:** It is crashes on public right of way but not necessarily at public safety rest areas. It could be ramps leading to private truck facilities or ramps with no authorized truck parking nearby. Geographic data will be available through the MoFAS tool which will allow users to drill down to specific locations.

Mobility and reliability key metrics include level of service, truck travel time reliability, connectivity to strategic industry supply chains, connectivity to intermodal terminals and gateways, and at-grade highway-railroad crossings. Mobility and reliability needs are highest in rural areas when factoring in at-grade crossings and are generally concentrated in and around Kansas City and St. Louis. Asset preservation needs key metrics included bridge weight restrictions, bridge condition issues, and pavement condition. Concentrated areas for these metrics include Route 370, I-55, and other areas distributed around the state. Freight design key metrics include freight critical two-lane highways and vertical clearance limitations. Design needs were found to be typically in rural areas.

**Q:** Did you grade high med low in urban areas under all metrics?

**A:** Yes, for this category we did evaluate in both rural and urban areas. There are more design needs in addition to these two, key metrics (intersection design, turning radius, etc.). Since we're doing it at a state level, we needed to use metrics we have data for across all state networks. Everything discussed is freight focused and not passenger focused.

High need highway segments were analyzed for segments that scored 2 to 3 high or medium needs from the categories above. These areas were found to be spread evenly across the state. Segments with four or more high to medium categories were then analyzed. Segments in this range were concentrated on I-435 in Kansas City and along I-55 south of St. Louis. There are also routes in central and southern Missouri in this category. The following graphic shown is an example of Missouri's highway needs map from the presentation.



**Q:** So where does the information from the needs assessment go? Is MoDOT taking this into consideration?

**A:** As part of the SFRP, we are producing a memo from this. This information helps look at needs across the network. It helps prioritize projects across the state. Yes, when this plan is completed, we use this data as part of the planning process to determine which projects to focus on in the regions.

**C:** I thought I-70 would show up more. Poor Hwy 55. Not familiar with this Hwy. We will discuss this further regarding the STIP and other projects.

**C:** I would be curious to know if - from a big picture perspective - the trucking industry representatives agree that I-55 has the highest interstate needs in Missouri.

**C:** Paula Dowell- The analysis shows the greatest number of needs but that does not necessarily mean they are the highest priority needs on I-55.

**C:** Shoulders are very important for safety when trucks breakdown.

**A Menti question was posed to the group: What do you think are the priority freight needs?**



### Missouri Freight Rail Needs

Aaron Bowe (HNTB) discussed freight rail needs. An industry trend is intermodal connectivity. We are looking at how to improve the network for moving freight from one mode to another. A key component in Missouri is how to support expansion of local and bigger railroads to get products to market. There are a handful of aging structures that could now have clearance issues.

**C: As related to rail,** Depends on the company and their needs. Companies can be very routes.

The analysis also looked at passenger rail. The plan will investigate how to support the River Runner from Kansas City to St. Louis and communities that could benefit from intercity passenger rail services.

Improvements would need to be made to the stations and rail network for these rail lines to attract riders to the services provided.

**C:** For freight rail it isn't always higher gauge rail it can be a tie program. Depending on the gauge of the program, you can do a program to handle a heavier weight freight. For bridges and overpasses, it's not just freight rail bridges so may need assistance from a federal program. Some DOT or road structures have encroached and made a bottleneck for freight that hinders from expanding the rail network there. Height and width have encroached into rail right of way. New structures need to be outside of rail right-of-way so the corridor can grow.

**A:** Correct. For the rail gauge, a tie replacement program is another way. Looking at upgrading from wood ties to concrete ties.

**C:** Can replace with wood ties because it's a lower cost, higher capacity alternative. UP has stuck with using wood ties because of this.

### **Missouri Air Cargo Needs**

Kip Strauss (HNTB) presented on Missouri air cargo needs. COVID affected passenger travel but increased freight air cargo. Kansas City, St. Louis, and Springfield airports carry 99% of air freight cargo. The list of needs were identified during interviews with the three major airports listed above.

**Q:** Is there a mistake in the wording? Rte. 157 is in Kirksville area not STL Lambert Int. (Shawn Tooley)

**A:** Most air cargo is in KCI and STL and then trucked to other places. This is Route 157 into Illinois from STL airport.

**C:** Thank you for supporting the need to invest in the airports! it is a critical piece of the multi model growth.

**Q:** Do you see air cargo expanding, growing at smaller regional airports?

**A:** Air cargo is typically coming in on larger aircrafts. Those typically won't go into the smaller airports because they can't handle the side of the aircraft.

**Q:** Can you provide an example of infrastructure needs?

**A:** Needs included utility needs (lack of utility access on the west side of the state). Do not have the infrastructure of water and other utilities over there.

**C:** When we are looking at bringing in charters or bigger planes, we are looking at getting the freight on and off quickly (quick turn around on the ground). So, infrastructure is super important. We look at taking planes into KCI and STL.

**C:** Springfield is starting to see expansion with e-commerce because MO is at a central location in the country for distribution centers. We need to be planning for expansion of infrastructure and distribution centers.

Katie Kirk (Cambridge Systematics) discussed Missouri port needs and themes. Port needs are on a facility to facility need basis. Several ports are eager to expand to attract more tenants and expand

how much freight is coming and going through their system. Many ports can better connect to other modes of transportation. Many ports are already identifying rail connection projects. MoDOT recently received status to establish port services for agricultural goods. Use container on barge service to ship to international markets across the globe (expected to start by 2022). Port needs and opportunities identified included new or developing ports, port expansion, upgraded & resilient infrastructure, multimodal connectivity, and cargo diversification.

**Menti question: Are there other multimodal freight needs MoDOT should consider?**

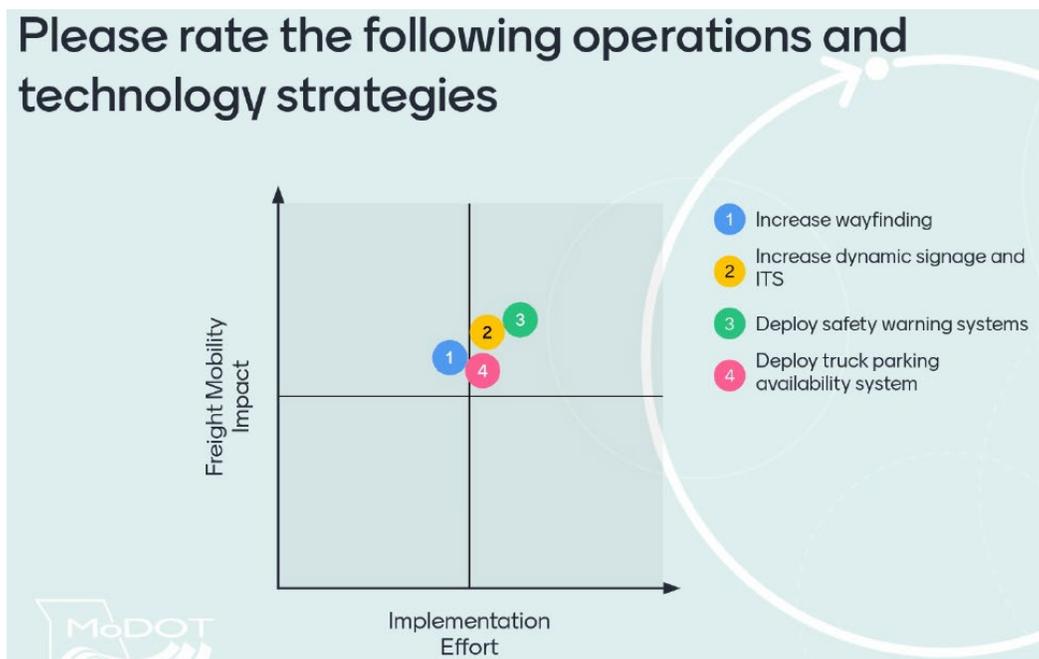
- High speed rail
- CAV
- Truck rail combinations that address driver/equipment productivity, highway congestion, and truck parking

Q: Any information that supports future priority of Hyperloop? Is there a freight business case for that technology?

**4. Strategies and Recommendations:** Paula Dowell) discussed the process of developing strategies. The team developed a list and discussed it with stakeholders and MoDOT. Next, the strategies will be screened and classified as high, medium, or low. There are four buckets of strategies to look at: operations & technology, programs, policies & coordination, and infrastructure.

**Preliminary Operations and Technology Strategies:** This is important for safety and reliability and helps prepare infrastructure for automated vehicles. Some components of this strategy included increasing signage, deploying advanced warning systems, and increasing wayfinding.

**Menti question: Please rate the following operations and technology strategies.**



**Preliminary Program Strategies:** The components of this strategy can be seen in the Menti questions below.

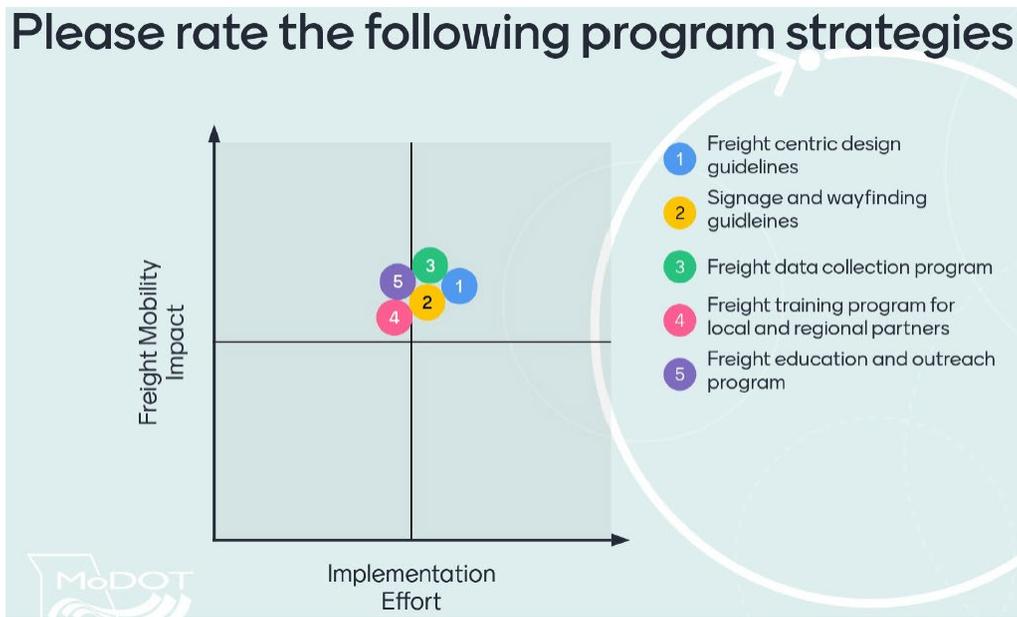
**Q:** Awareness and training -- any thought about training elected officials

**A:** Absolutely the material must go out to those folks. May have some material targeting some specific audiences but they must be part of that group.

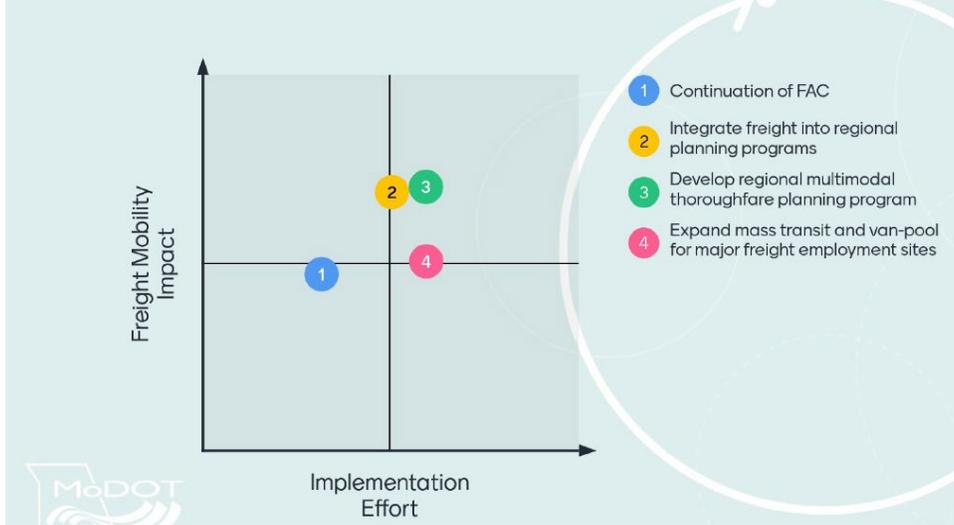
**Q:** Public funded education campaign or private? or Partnership?

**A:** Could be both. Trucking and freight industries already have some campaigns for the public. All modal partners in the private sector and public sectors have opportunities on partnerships.

**Menti question(s):** Please rate the following program strategies.

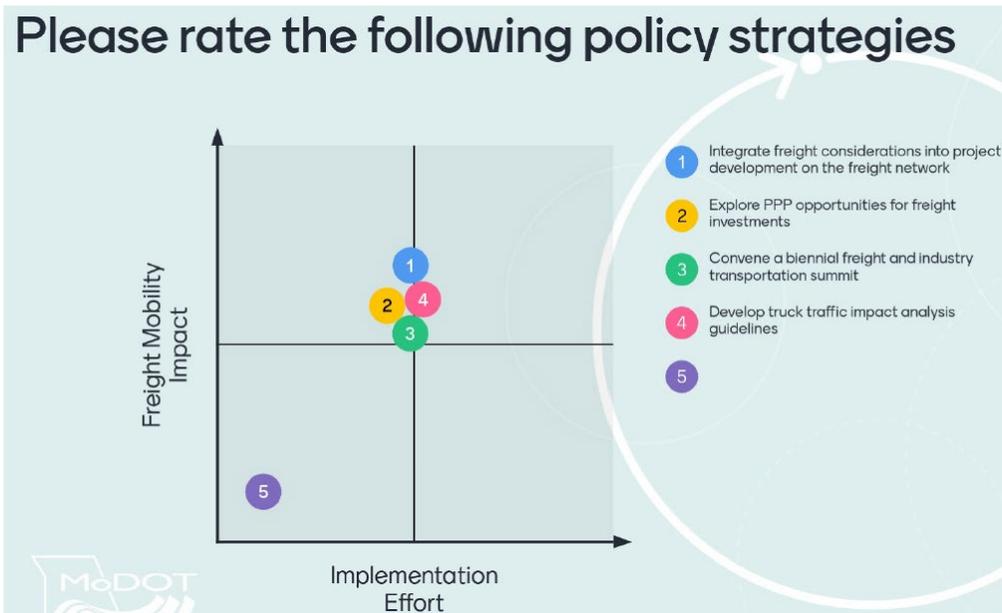


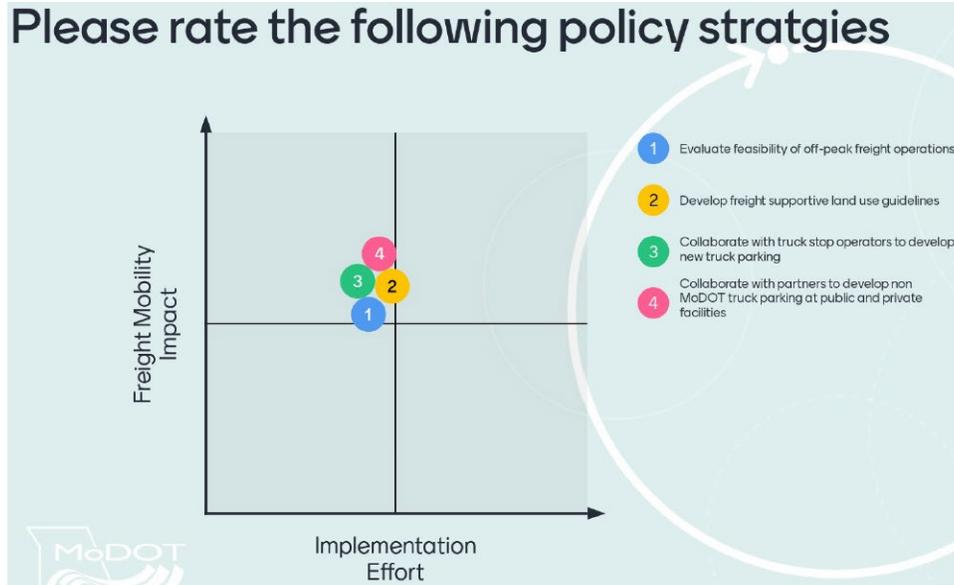
## Please rate the following program strategies



**Preliminary Policy, Outreach, and Coordination Strategies:** The components of this strategy can be seen in the Menti questions below.

**Menti question(s):** Please rate the following policy, outreach, and coordination strategies.





**Menti question: What are additional operations, program, and policy strategies MoDOT should consider?**

- Truck to rail freight conversions, work with manufacturing and customers to get greater access to rail freight instead of trucks.
- Work with neighboring states, for the feel is consistent for truck operators. Be one Midwest region, not regions within a state.
- In more rural areas we need wider shoulders and better signage.
- Coordinate with neighboring states.
- Reengage old rail lines to improve freight and passenger transportation in rural areas.
- Increase state funding of railroad public private partnerships.
- KDOT chairs the Midwest DOT group and could support that.
- Invest in grade separations for high-use/ risk at-grade crossings.
- Electric charging infrastructure for trucks.
- Increase opportunities to expand regional freight planning to flow into the state plan.

**Process of Developing Infrastructure Strategies:** Paula Dowell overviewed mapping planned projects to the identified freight needs. This will help assess what needs the projects are meeting. The next step is to prioritize recommendations and develop a 5-year Freight Investment Plan (FIP) to identify unmet freight needs.

**Q:** Will freight projects stand alone or be incorporated within traditional highway projects?

**A:** Partnership between private public partners.

**Q:** Can we access this map?

**A:** Yes, will be sending out the presentation. A version will be sent out once finalized and populated. Still going through approval process.

**5. Schedule and Next Steps:** Paula Dowell presented the next steps to the group. Next steps include:

- Evaluating extent to which STIP project addressing freight needs
- Develop 5-year FIP
- Compile stakeholder identified projects
- Identify strategic projects
- Incorporate multimodal projects
- Develop unconstrained multimodal FIP

Katie Kirk discussed the schedule and key milestones. The next couple months are incorporating all the latest feedback and comments. Then MoDOT will have a draft plan complete for review by December 2021 and have the final plan complete by February 2022. Cheryl Ball (MoDOT Project Manager) provided project remarks and thanked the participants for their feedback and time.

**Attendees:**

Gigi Quinlan Mc... 	Mike Henderso... 	HNTB 	Teona Jerman -... 
Trevor Tutt 	Jennifer Bowde... 	Paula Dowell, CS 	Josh Colligan,... 
Brandon Kanoy... 	Monica Duncan 	Katie Kirk 	Darrell Knierim 
Chance 	Darryl Fields -... 	robert_palmer 	 Charlie Herb... 
Rhonda Hamm-... 	Sue Goulder, Ma... 	<b>Cheryl Ball - Mo...</b> 	Don Schaefer M... 
Chris Hess 	Lincoln Brown,... 	Ralph Martin 	Deann Wieberg... 
Alex McElroy 	 Jason Ray - Sw... 	Anita Horton 	Joe Arbona 
Ken Henderson 	Kip Strauss - HN... 	 Carolyn Chris... 	Gerritt Brinks, H... 
Bill Branit 	 Jerry Beckma... 	Krishna Kunapa... 	Leslie Holloway,... 

