

Memphis Metropolitan Planning Organization Regional Freight Plan

Tennessee Model User's Group
October 26, 2017



Memphis MPO
METROPOLITAN PLANNING ORGANIZATION

AECOM
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Pop Quiz

Who is credited as being the inventor of the shipping container?

Malcom McLean in 1956



Outline

- Introductions
- Overview of Regional Freight Plan
- Plan Metrics
 - Regional Industrial Areas
 - Industrial Area Indicators
- Application of the Travel Demand Model
 - Truck Model Function and Capability
 - Truck Volume, Delay, and Travel Time
- Operational and Geometric Deficiencies
- Development of Recommendations

Overview

- Address the freight competitiveness of industrial sites served by transportation
- Recommend near- and medium-term projects, policies and programs



Overview

- 14 Chapters

Chapter 1 - Executive Summary

Chapter 2 - Regional Overview

Chapter 3 - Stakeholder Outreach

Chapter 4 - Workforce and Community

Chapter 5 - Road Network Connections

Chapter 6 - Railroad Network

Chapter 7 - Inland Waterways

Chapter 8 - Air Cargo

Chapter 9 - Emerging Zone Development

Chapter 10 - Environmental

Chapter 11 - Technology

Chapter 12 - Freight Performance Measures

Chapter 13 - Greater Memphis Region as a Global Logistics Hub

Chapter 14 - Plan Alignment

- 7 Appendices

Appendix 1 - Freight Trade Tables

Appendix 2 - National Highway Freight Network in the Memphis MPO Area

Appendix 3 - Regional Industrial Area Descriptions

Appendix 4 - Listing of Projects

Appendix 5 - Freight Funding Programs

Appendix 6 - Outreach Survey

Appendix 7 - Public Comments


Pop Quiz

What country produces the most shipping containers?

97% of shipping containers are made in **China**



Plan Metrics

- Study Area
 - Focus on Regional Freight Corridors
 - Focus on Regional Industrial Areas
 - Industrial Area Indicators
- 
- A decorative graphic in the bottom right corner of the slide. It consists of two overlapping, rounded, organic shapes. The upper shape is a vibrant red, and the lower shape is a light teal or mint green. They are positioned in the bottom right corner, partially cut off by the edge of the slide.

Legend

- Memphis MPO Planning Area
- Greater Memphis Region

The map displays the Memphis MPO Planning Area, outlined in red, and the Greater Memphis Region, shaded in gray. The map includes major highways, water bodies, and surrounding areas. The Memphis MPO Planning Area is located in the central part of the map, covering parts of Shelby County and the surrounding areas. The Greater Memphis Region extends beyond the MPO Planning Area, covering a larger area in the central part of the map. The map also shows the Mississippi River to the west and the Tennessee River to the east. Major highways such as I-40, I-55, and I-75 are visible. Water bodies like Lake Mead and Lake Okechobee are also shown. The map is labeled with various cities and towns, including Memphis, Jackson, and Nashville. The map is titled 'Map of the Memphis MPO Planning Area and Greater Memphis Region'.

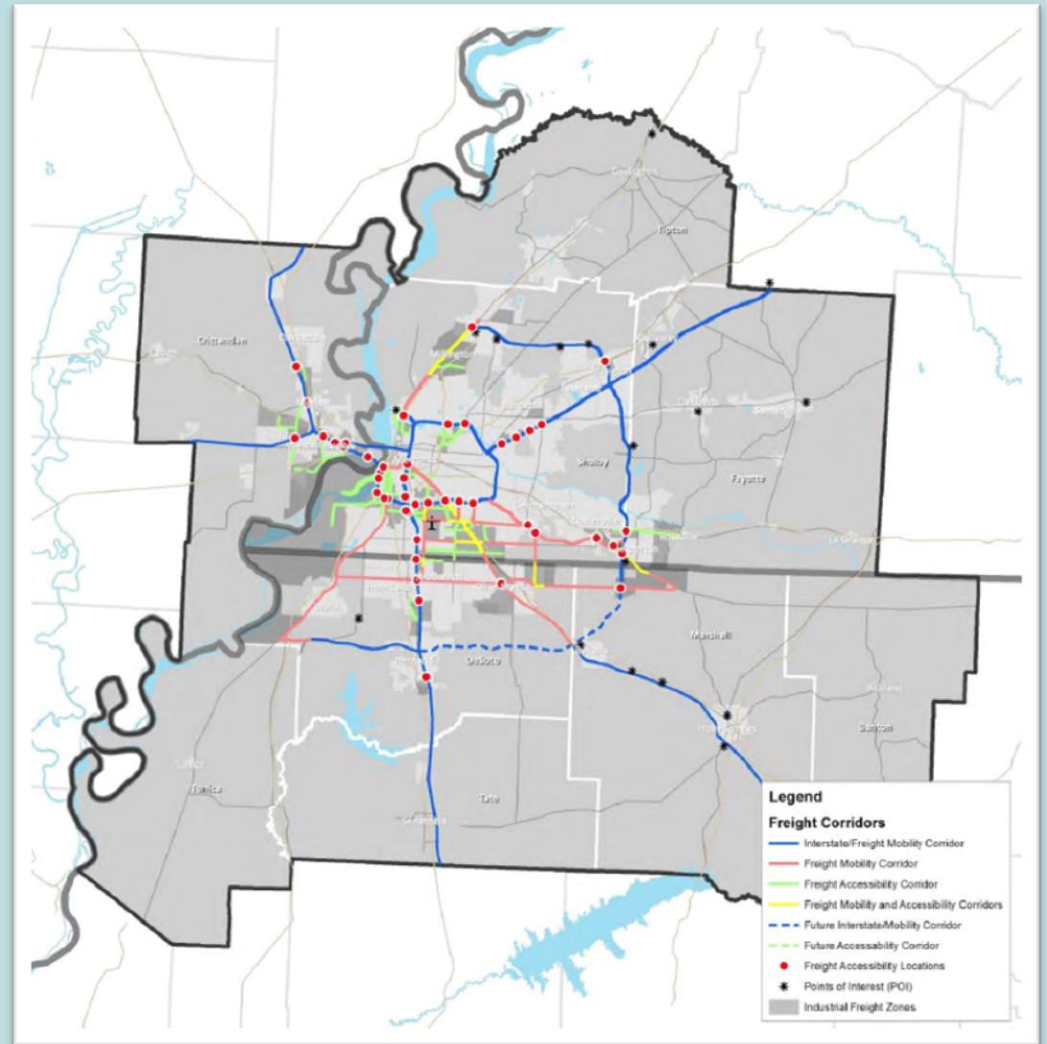
Regional Freight Corridors

- Facilities most critical to:
 - the Regional Industrial Areas
 - support of through movements
- 585.9 miles
- 15.8% of regional roadway miles
- 56.6% of regional truck VMT

Regional Freight Corridors

- Freight Mobility Corridors
 - Interstate
 - Non-Interstate
- Freight Accessibility Corridors
- Mobility & Accessibility Corridors

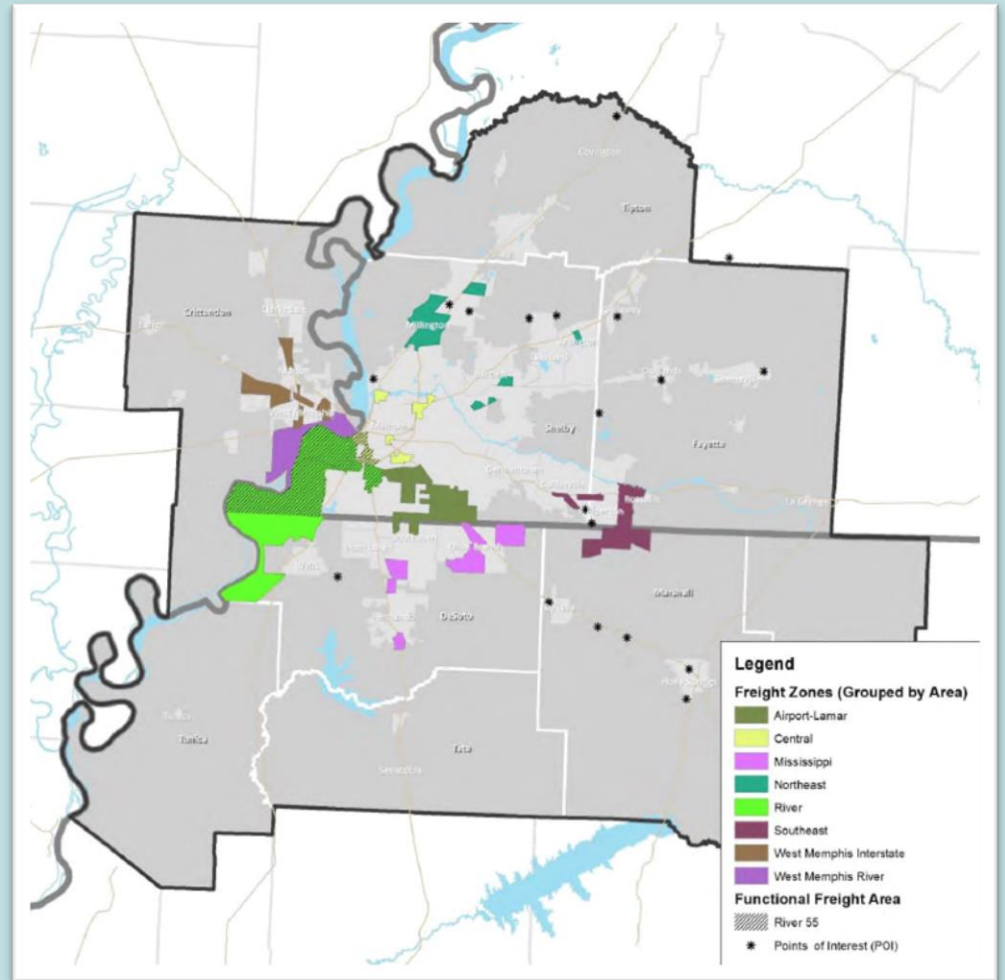
Regional Freight Corridors



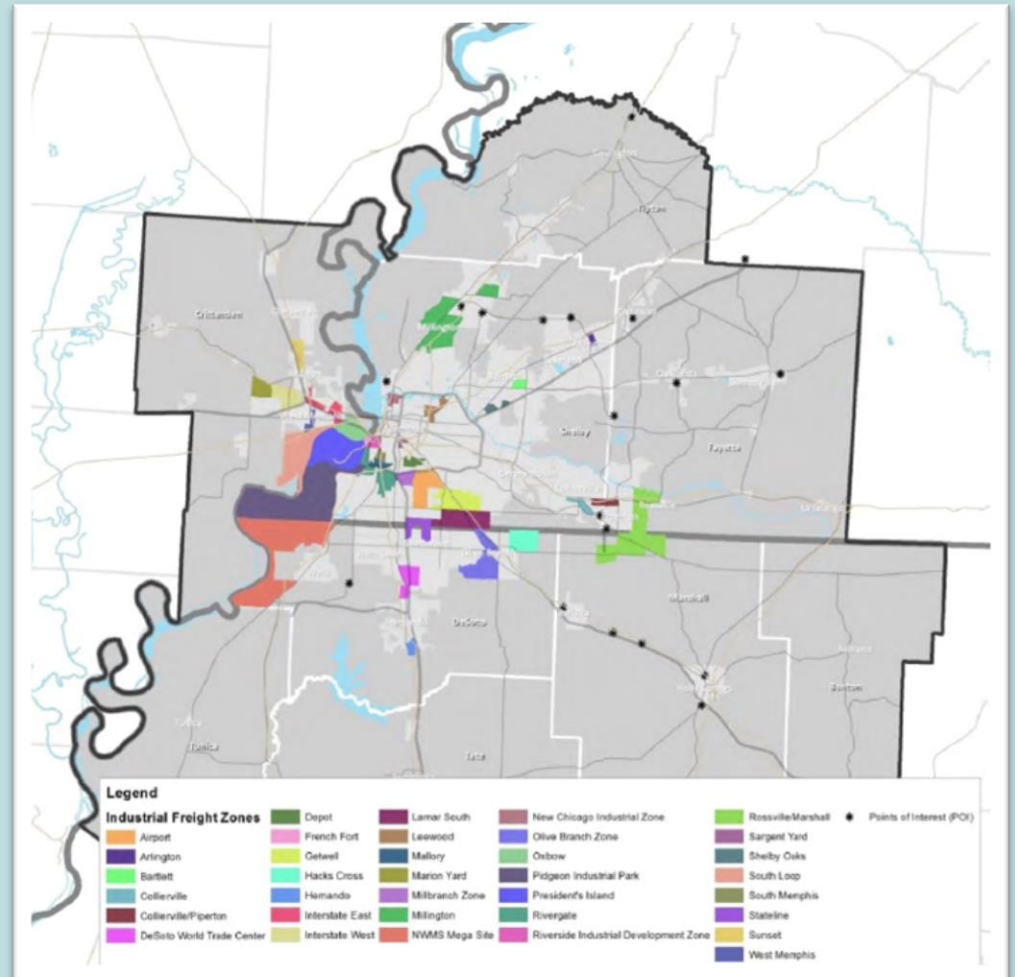
Regional Industrial Areas

- Freight Zones (35)
- Freight Areas (8)
- Functional Freight Area (1)
- Freight Points of Interest (19)

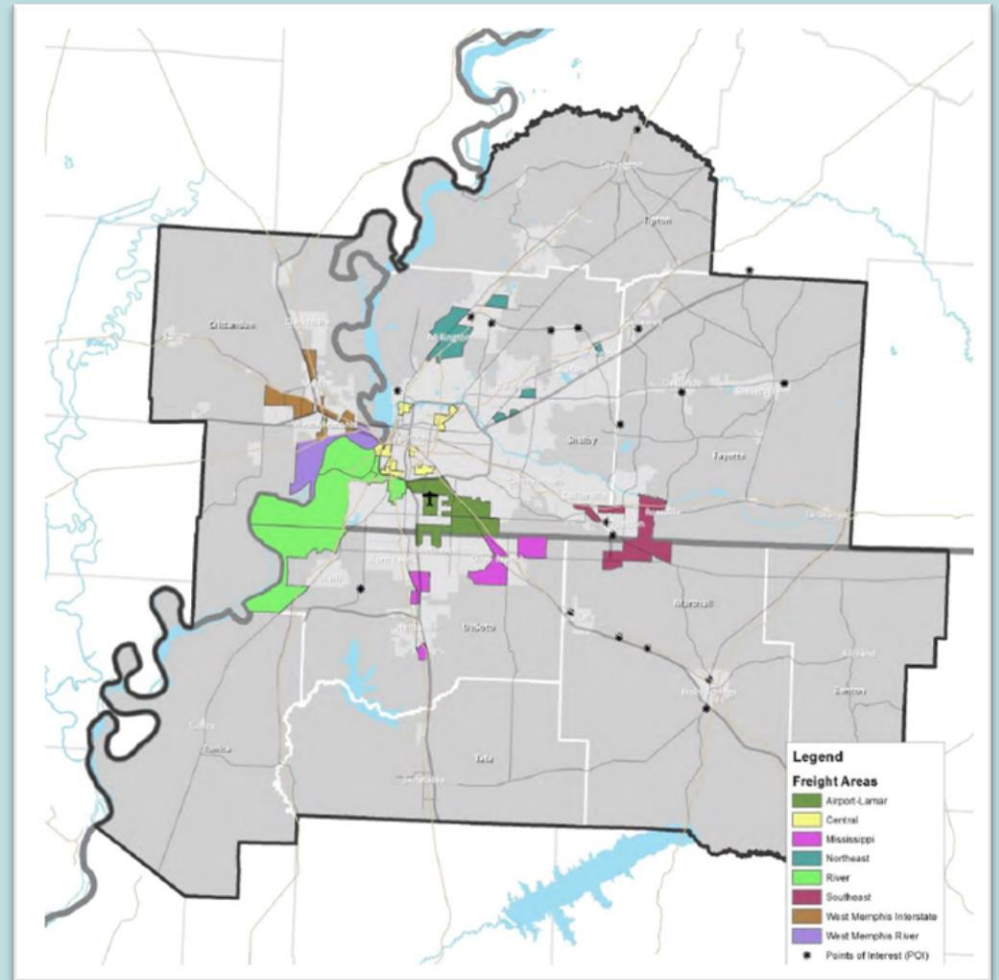
Regional Industrial Areas



Freight Zones



Freight Areas



The map displays the Nashville, Tennessee metropolitan area and surrounding regions. Key features include:

- Regional Freight Zones:** Shaded grey areas representing major freight corridors and hubs.
- Freight Points of Interest:** Red dots marking specific locations of interest.
- Geographic Labels:**
 - Counties: Davidson, Williamson, Shelby, DeKalb, Fayette, Lincoln, Giles, Hickman, Madison, Monroe, and others.
 - Cities/Towns: Nashville, Clarksville, Hendersonville, Murfreesboro, and various smaller communities.
 - Water Bodies: The Mississippi River, Tennessee River, and several large lakes.
 - Infrastructure: Major highways like I-40, I-75, and I-24.

Legend:

- Red dot: Freight Points of Interest
- Grey shaded area: Regional Freight Zones

Pop Quiz

How many shipping containers are currently in service?

23 million containers
or 38.5 million TEU

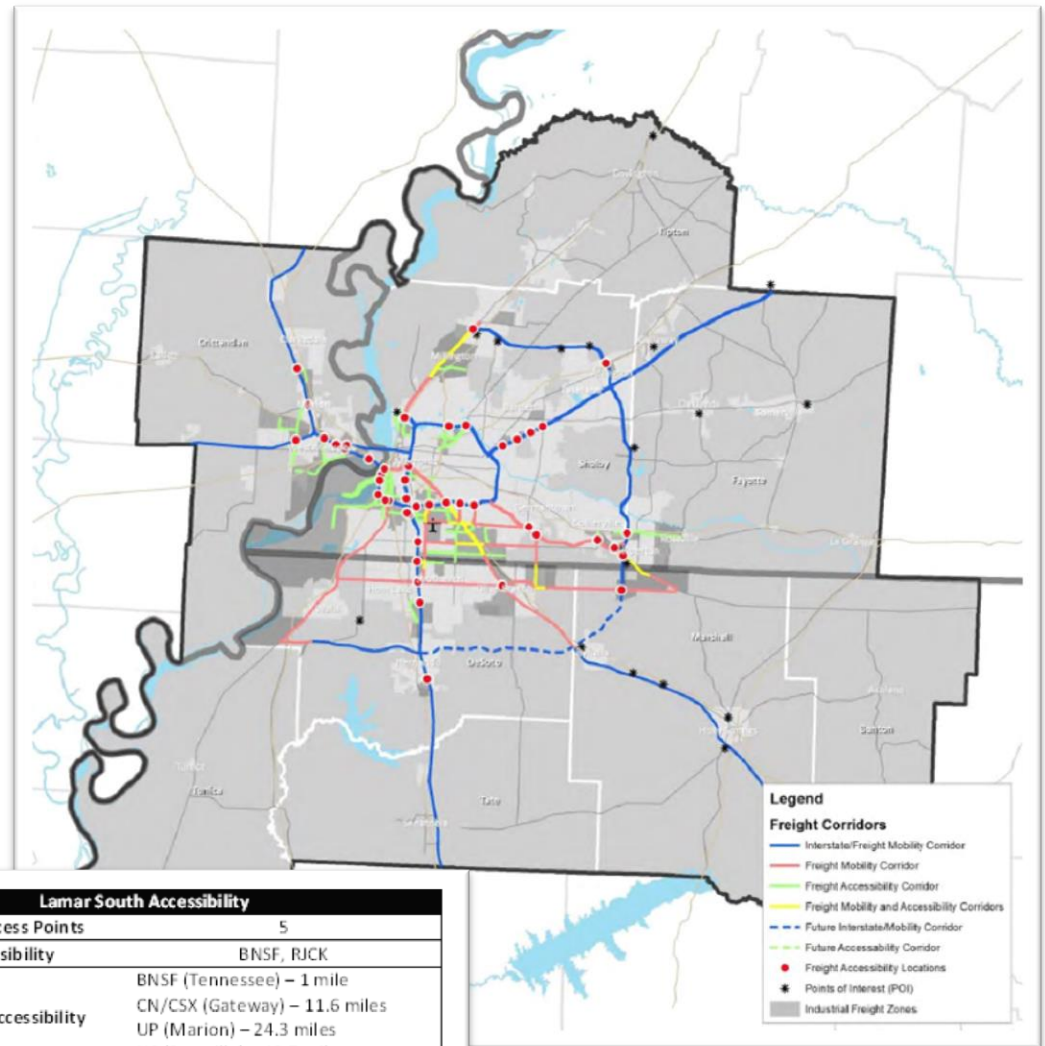


Industrial Area Indicators

- Infrastructure and Access
- Truck Traffic
- Travel Times
- Safety
- Workforce
- Land Use
- Real Estate
- Industrial Health

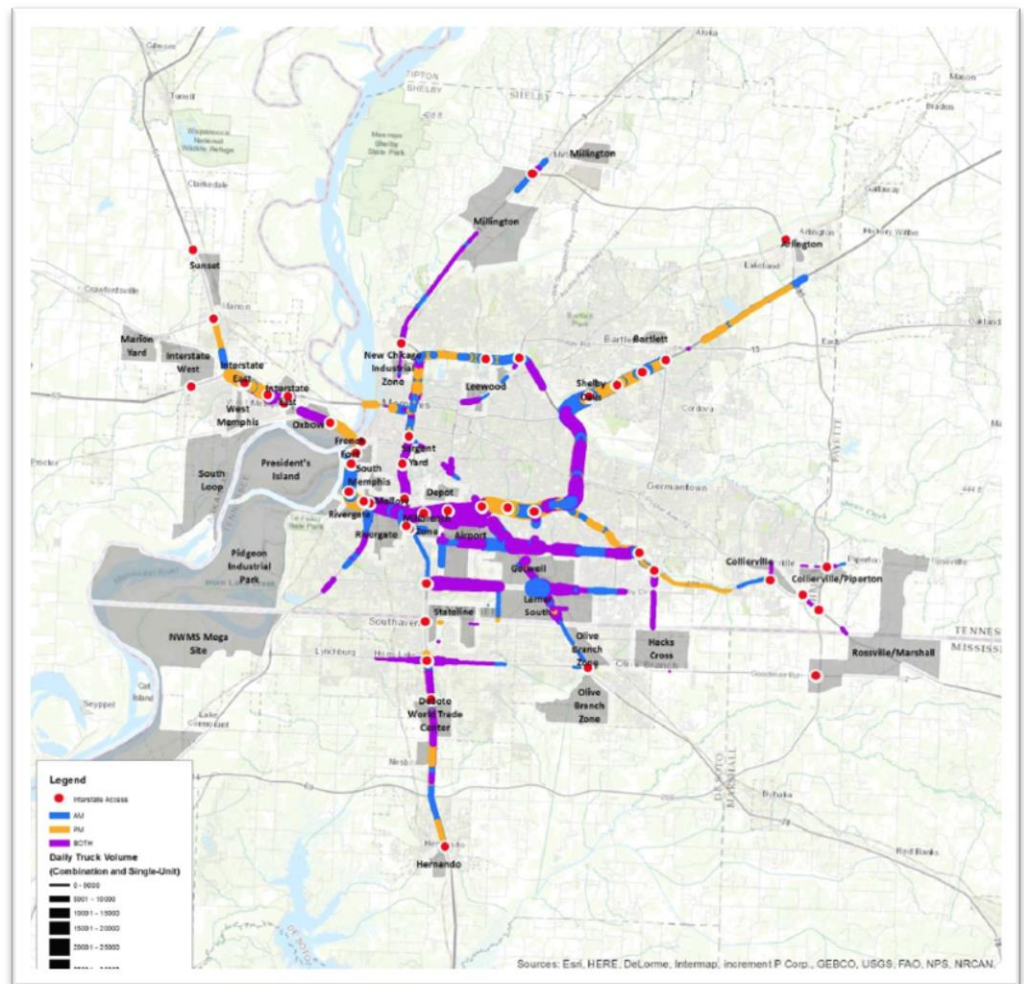
Infrastructure Access

- Access points
- Freight Corridors
- Rail service
- Proximity to intermodal
- Deficiencies



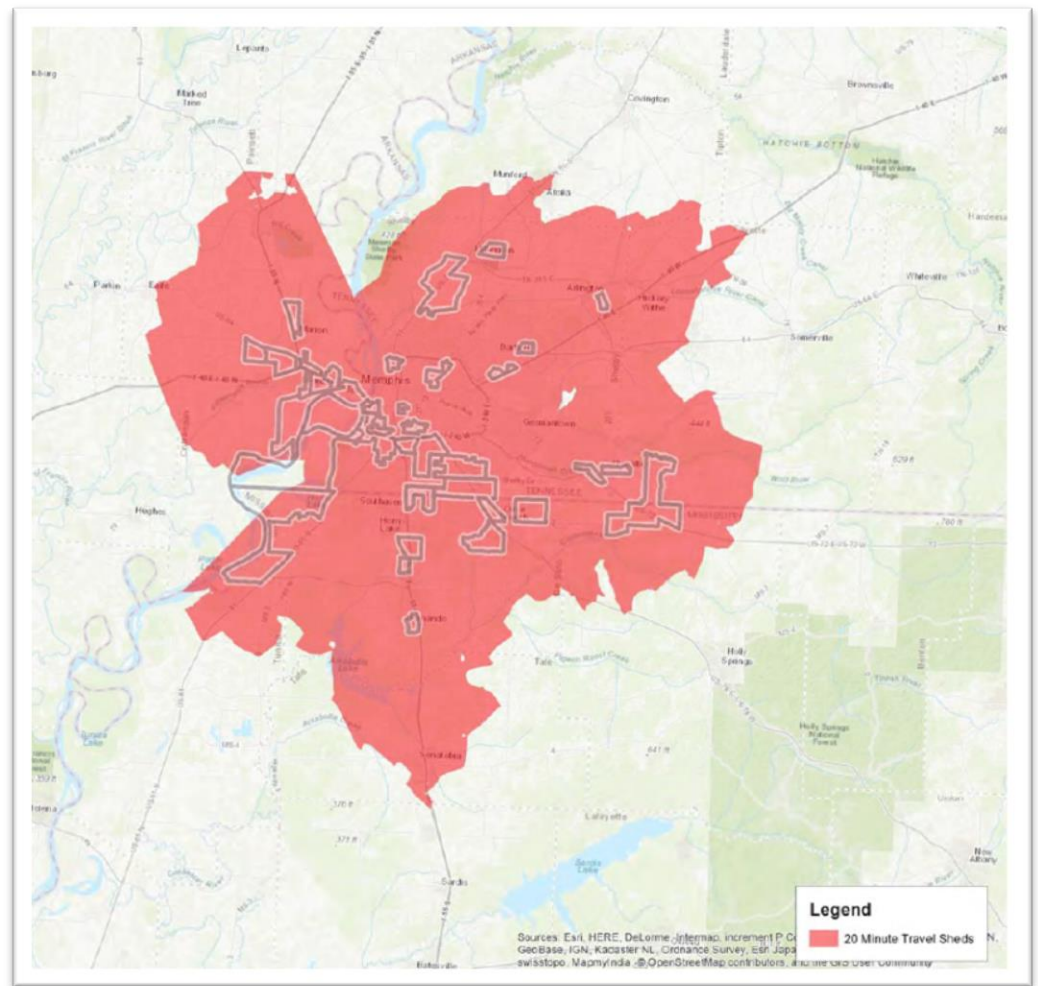
Truck Traffic

- Volumes
- Level of Service
- Time of Day
- Delay



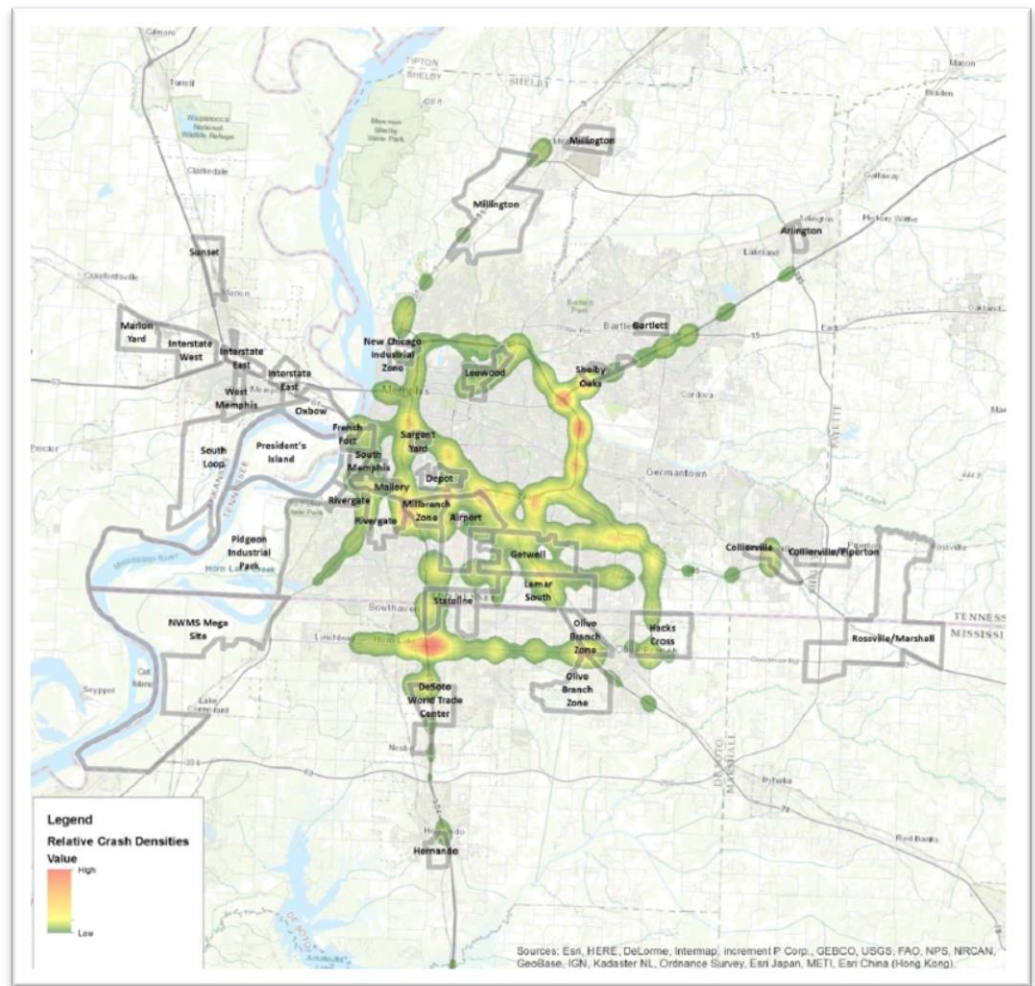
Travel Times

- 20 minutes
- PM peak



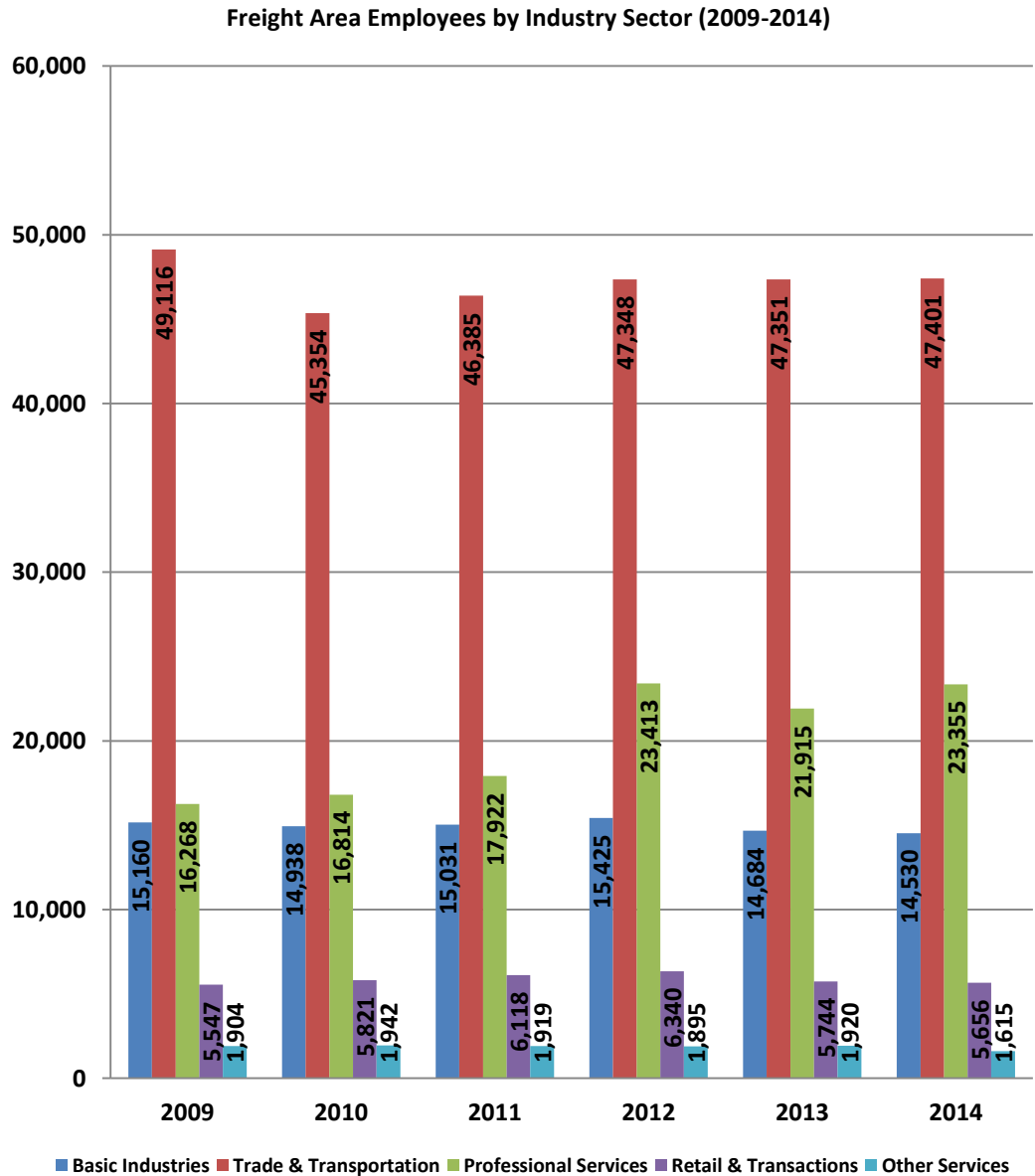
Safety

- Crashes
- Scaled to traffic
- By functional classification



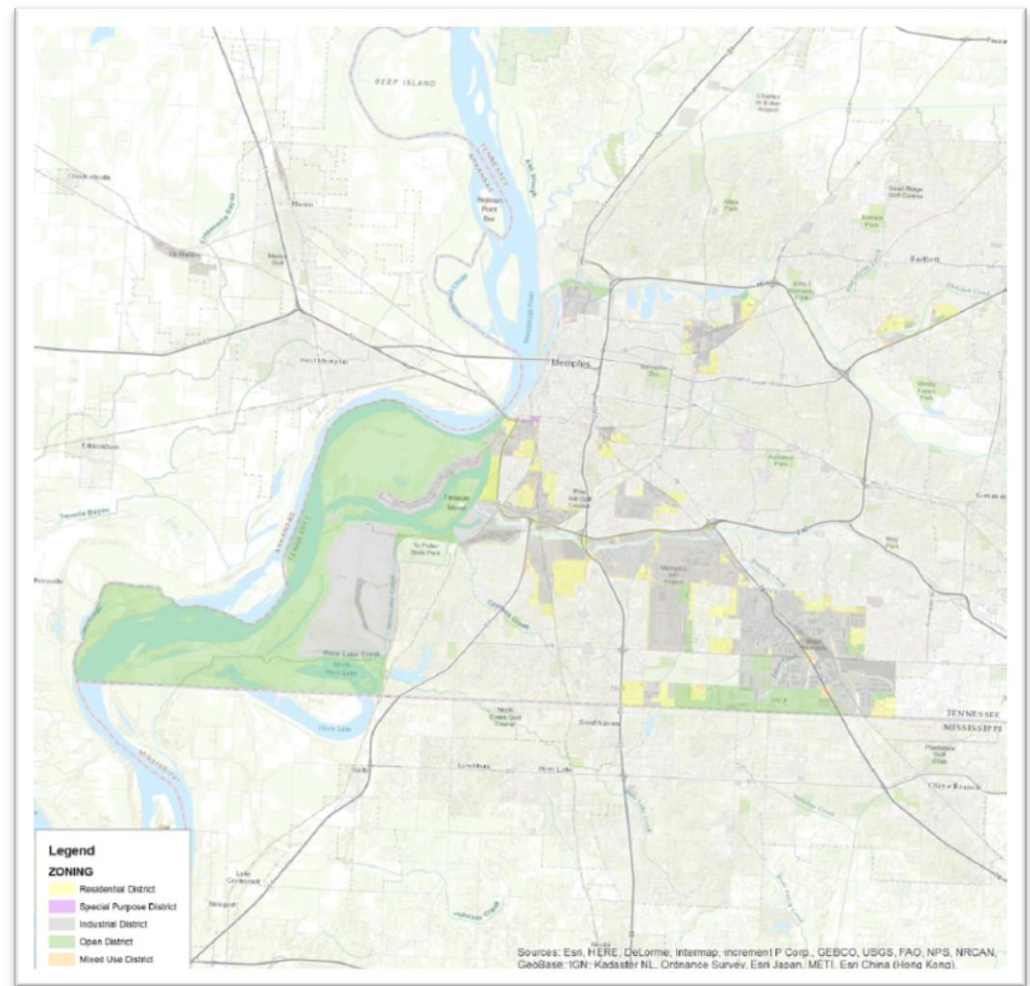
Workforce

- Basic Industries
- Trade & Transportation
- Professional Services
- Retail & Transactions
- Other Services



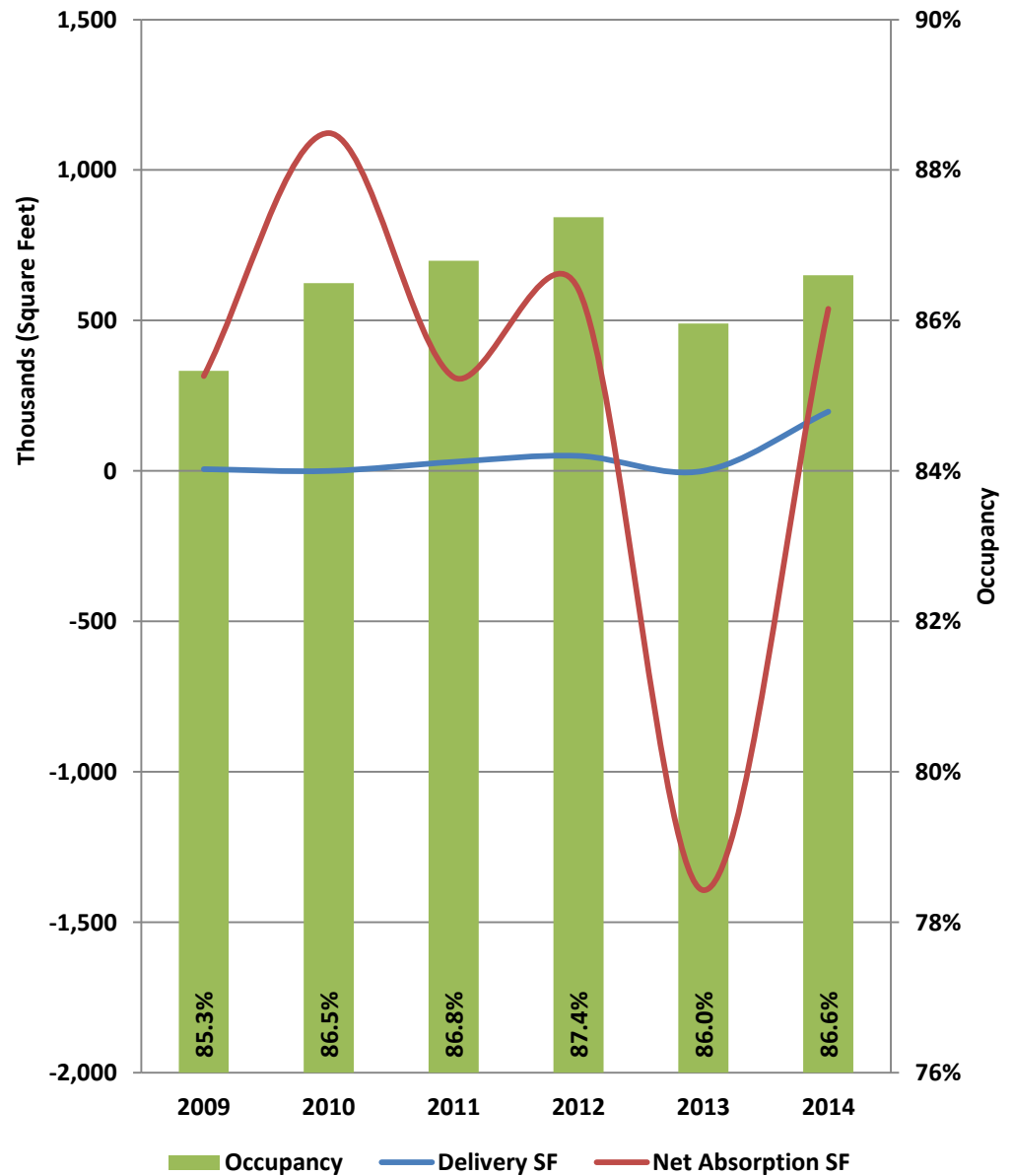
Land Use

- Relationship of industrial land to surrounding area
- Determines build-out with building footprints



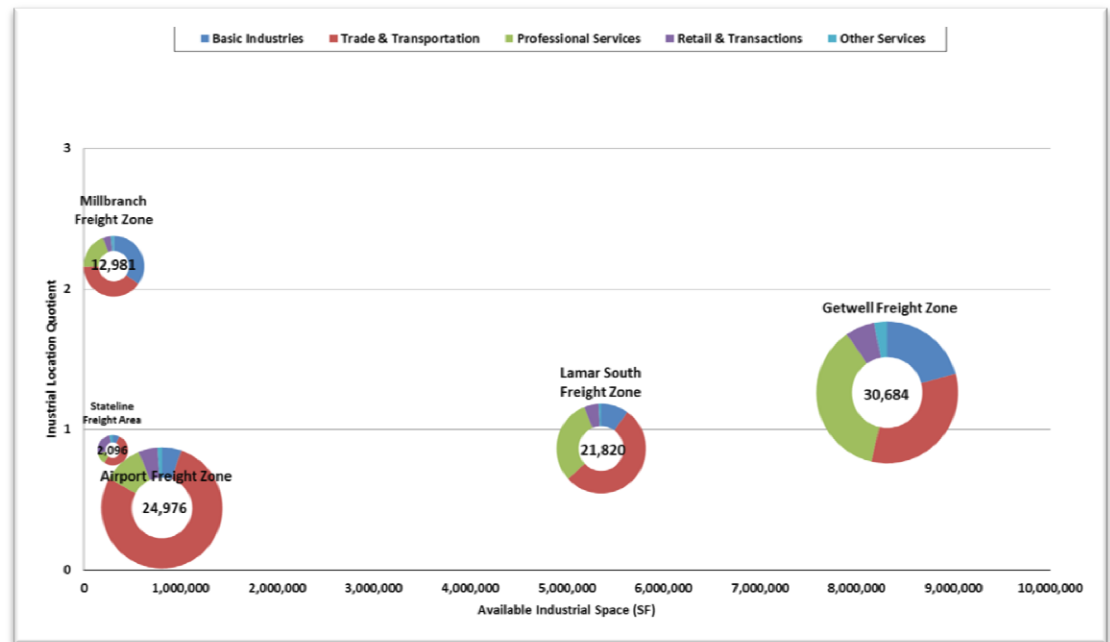
Real Estate

- Industrial inventory
- Square footage
- Occupancy
- Net absorption



Industrial Health

- Workforce
- Land use
- Real estate characteristics



Note: Location quotient (LQ) indicates the concentration of a particular industry sector relative to the nation. Industries with higher LQ's and job totals typically form the economic base for the zone and sometimes region. The size of charts within the grid is proportional to number of employees within each zone (shown above).

Pop Quiz

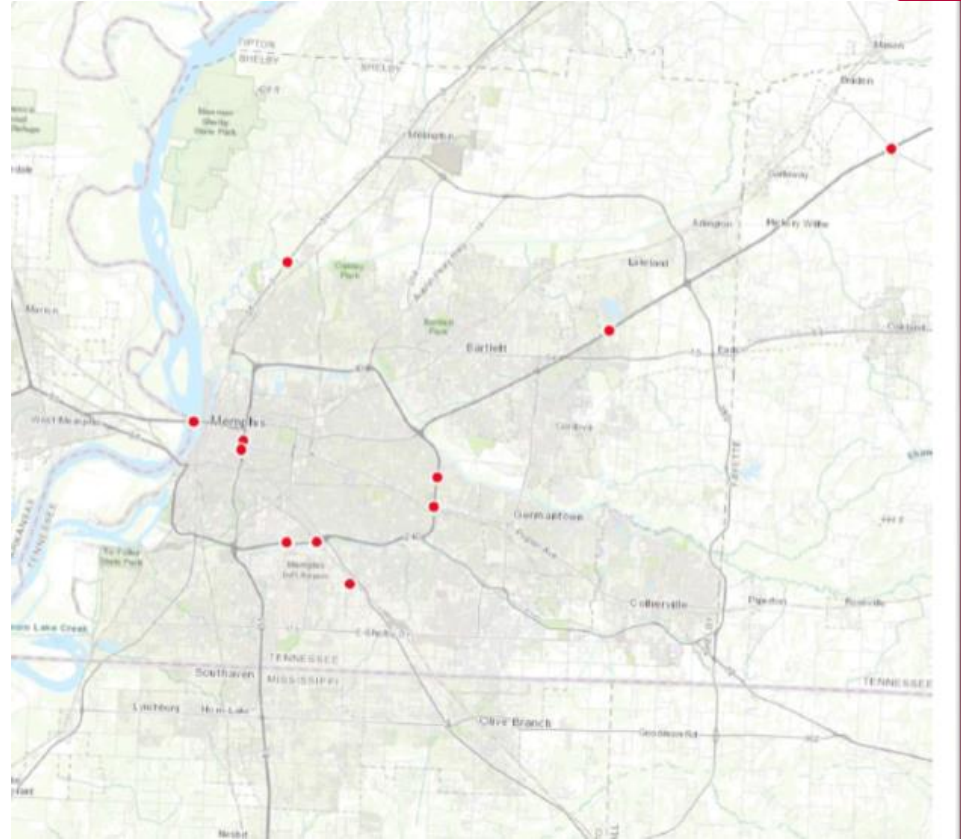
What percentage of shipping containers get inspected?

Only **2%-10%**



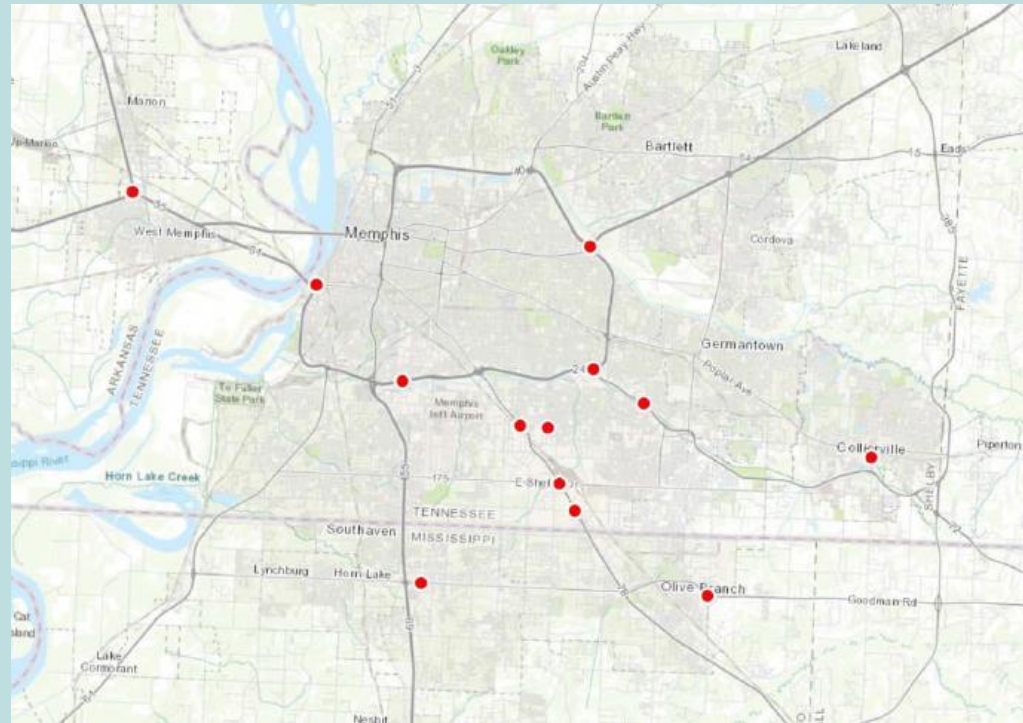
Operational and Geometric Deficiencies

- Horizontal and vertical clearance issues
- Structurally deficient structures
- Posted weight limits locations
- Bottleneck locations



Operational & Geometric Deficiencies

- Bottleneck Identification
 - Stakeholder interviews with freight community, state and local roadway agencies, and previous studies



Pop Quiz

How many incidents of piracy have been reported in 2017?

According to the International Maritime Bureau, 121



Development of Recommendations

- Groupings
 - Corridor
 - Interstate Corridors
 - Non-Interstate Corridors
 - Project Type
 - Interstate Interchanges
 - Construction and/or Widening of Interstate
 - Widening and Interchange Improvements/Modifications on Non-Interstate
 - Improving Freight Mobility around Airport (MEM)
 - Intelligent Transportation Systems (ITS)

Development of Recommendations

- Assessment Metrics
 - Safety
 - Congestion
 - State of Good Repair
 - Economic Competitiveness
 - Sustainability/Quality of Life
 - Resiliency

Development of Recommendations

- Recommended Strategies
 - Potential Programs of Work
 - Potential Policies
 - Prioritization
 - Near Term focus on Lamar Avenue (US 78)
 - Increase Capacity on East-West Routes
 - Leverage Private Sector Investment
 - Improve ITS on Freight Corridors
 - Strategy for Big Ticket Projects
 - Address Truck Parking

Pop Quiz



Who is your favorite pirate?

