Memphis Urban Area Metropolitan Planning Organization

FHWA Freight Peer Exchange, Bellevue, IA
April 26, 2016

Memphis MPO
METROPOLITAN PLANNING ORGANIZATION

Strengthening Regional Transportation

Presentation Overview

- ✓ About Memphis MPO
- ✓ Regional Overview
  - ✓ Rail
  - ✓ Road
  - ✓ River
  - ✓ Runway
- ✓ Freight Stakeholder Engagement
  - ✓ MPO Freight Advisory Committee
- ✓ Plans Freight Related and Others
- ✓ Upcoming Freight Plan Elements

About Memphis MPO

Memphis Urban Area MPO

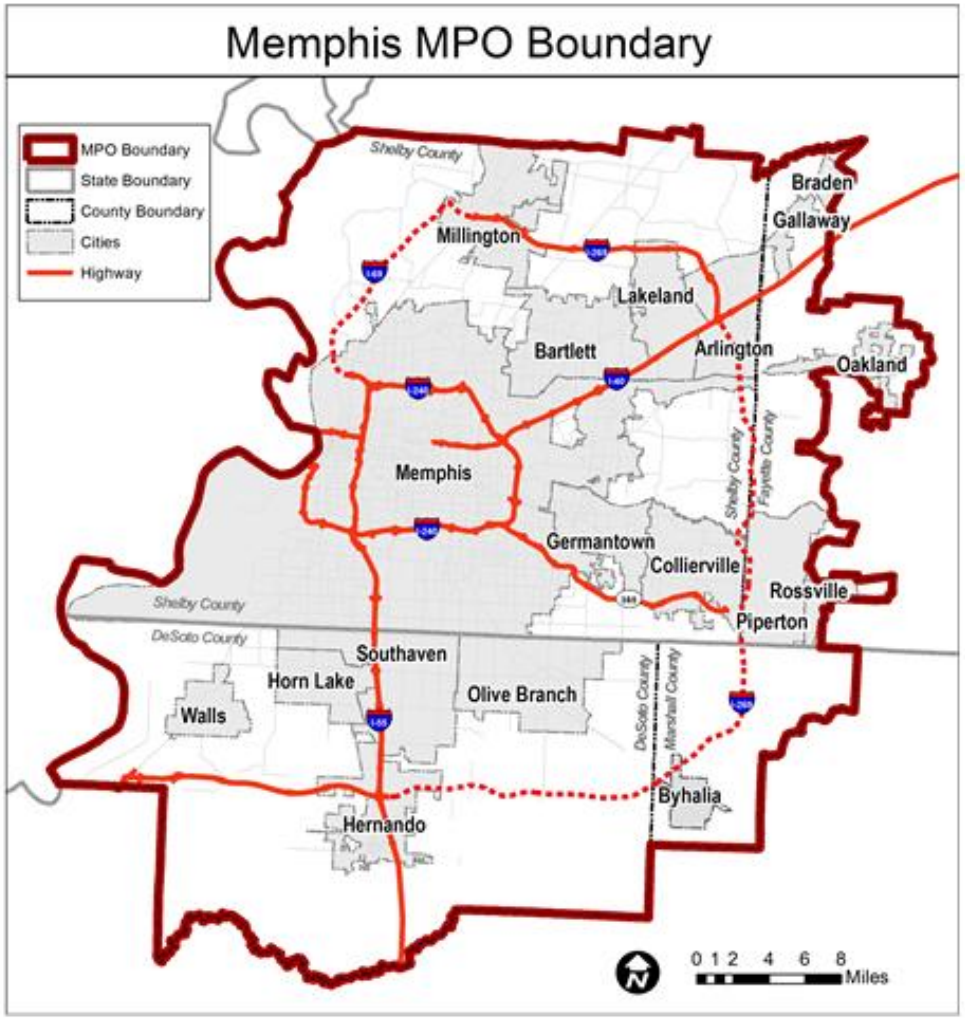
Bi-State

- 1 of 11 **MPOs in TN**
- 1 of 4 **MPOs in MS**

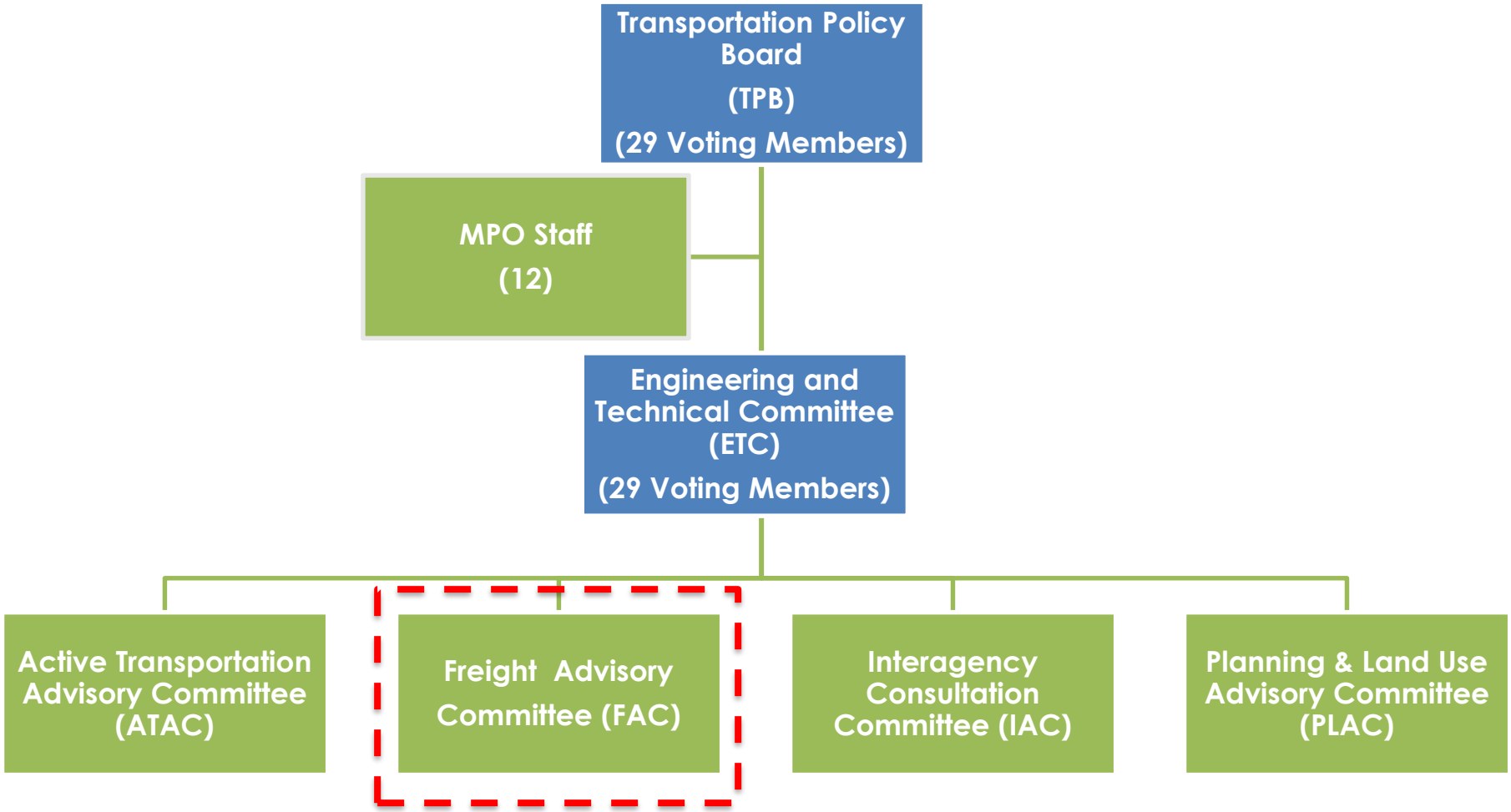
Covers 4 Counties

- Shelby County, TN
  - Entire county
- DeSoto County, MS
  - Entire county
- Fayette County, TN
  - Western portion
- Marshall County, MS
  - Northwestern portion

Coordination with West Memphis MPO, AR



Memphis Urban Area MPO Structure



Freight Overview
Memphis MPO

Regional Overview

- **Road**

Major East/West and North/South Corridors (plus future I-69)

- **River**

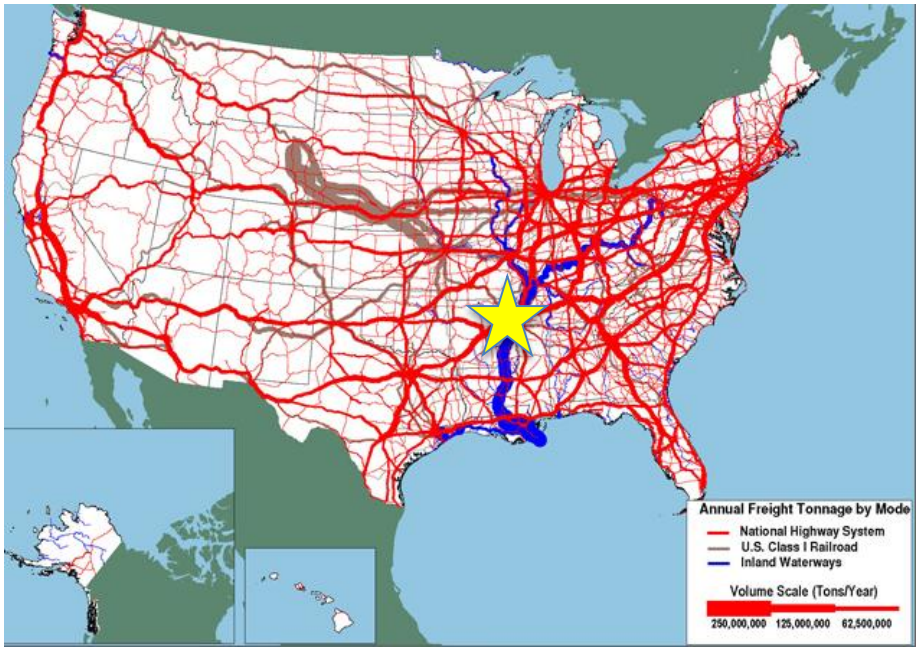
4th Largest Inland Port

- **Rail**

Five Class One Railroads. 3rd largest US rail center. 45 states within 2 days.

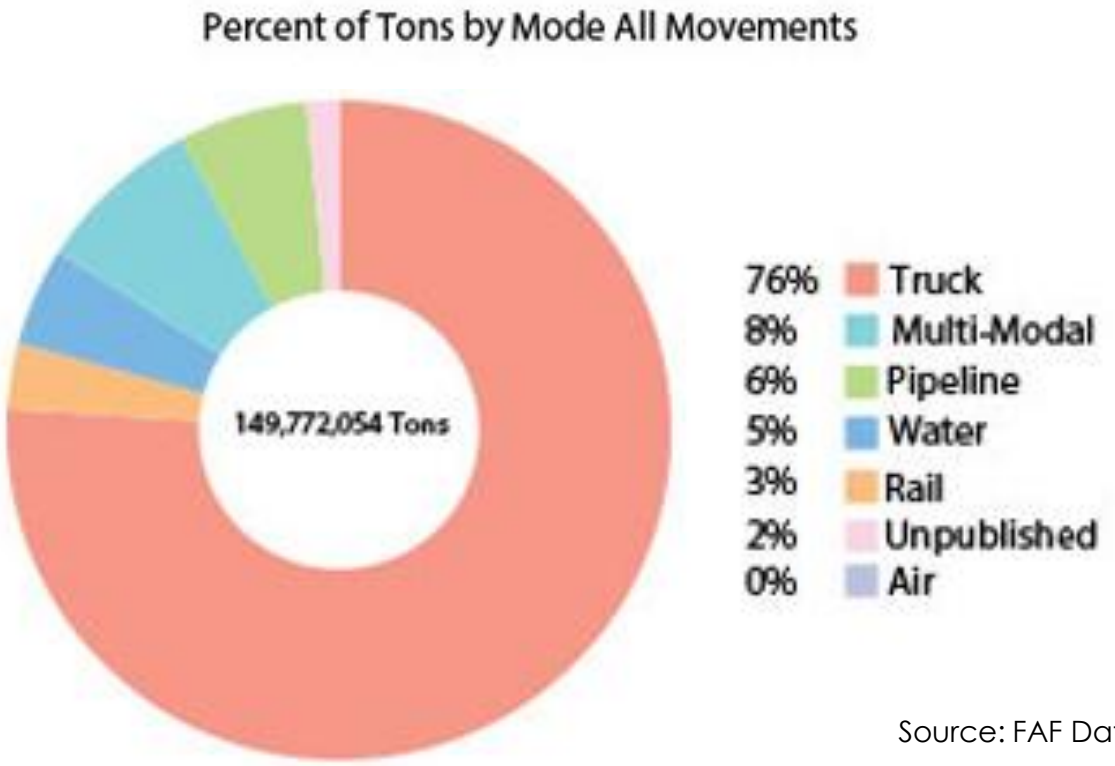
- **Runway**

Busiest US cargo airport in North America, second busiest in the world (was busiest airport in the world for 16 years in a row).

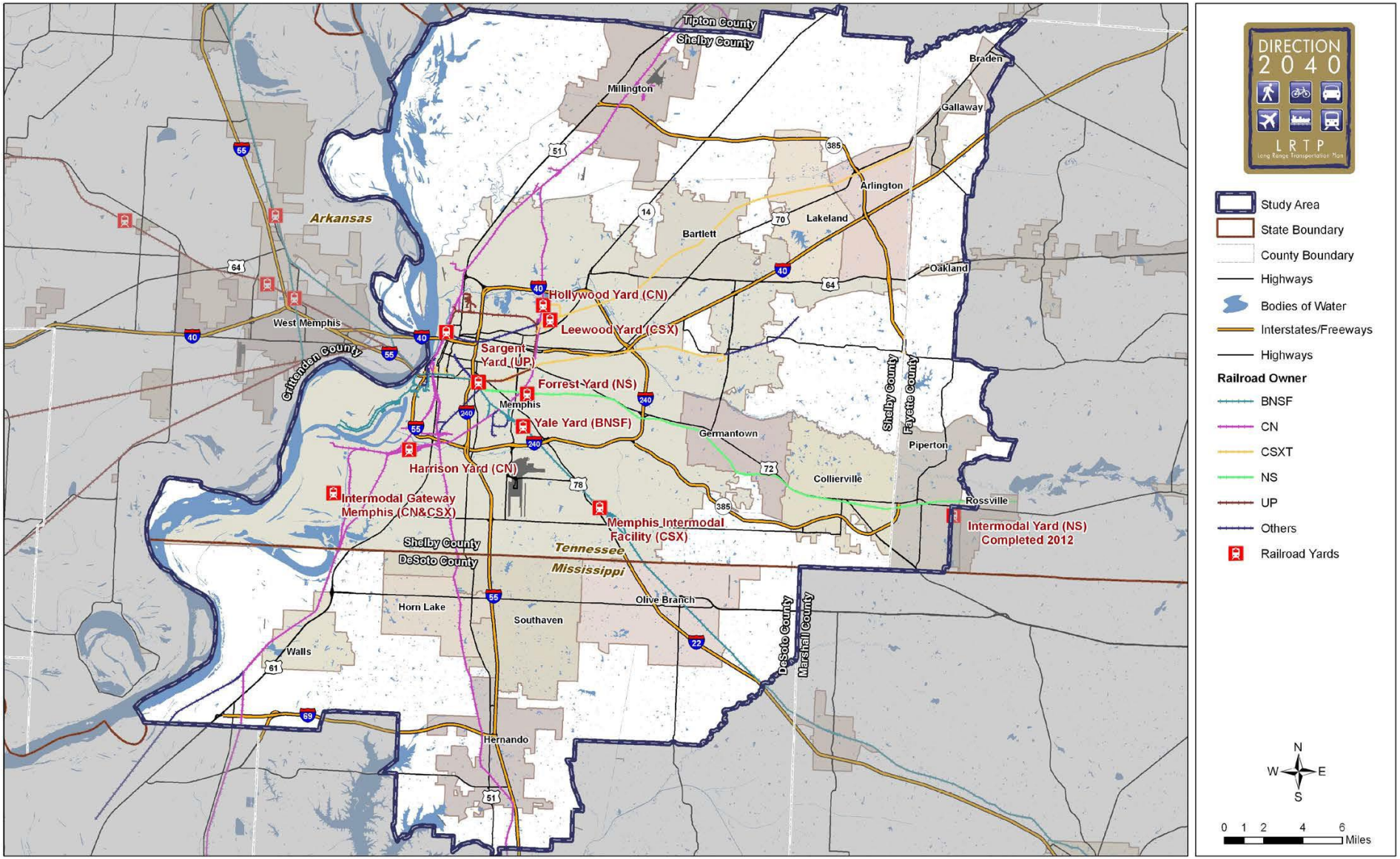


Regional Overview contd.

- Of the total freight traffic – majority is truck traffic
- Over **30%** of total employment Transportation and Warehousing Sector



Source: FAF Data 2012


Tipton County
Shelby County
Braden
Millington
Gallaway
Arlington
Lakeland
Bartlett
Oakland
Arkansas
West Memphis
Crittenden County
Hollywood Yard (CN)
Leewood Yard (CSX)
Sargent Yard (UP)
Forrest Yard (NS)
Memphis
Yale Yard (BNSF)
Germantown
Piperton
Collierville
Rossville
Harrison Yard (CN)
Intermodal Gateway Memphis (CN&CSX)
Memphis Intermodal Facility (CSX)
Intermodal Yard (NS) Completed 2012
Shelby County
DeSoto County
Tennessee
Mississippi
Horn Lake
Southaven
Olive Branch
Walls
Hernando
DeSoto County
Marshall County
Fayette County
Shelby County
DIRECTION 2040
LRTP
Long Range Transportation Plan
Study Area
State Boundary
County Boundary
Highways
Bodies of Water
Interstates/Freeways
Highways
Railroad Owner
BNSF
CN
CSXT
NS
UP
Others
Railroad Yards
N
W
E
S
0 1 2 4 6
Miles

Rail Overview

Top State Trading Partners

Outbound			
State	Tons	State	Value
Tennessee	162,313	Oklahoma	$108,434,800
Alabama	124,382	Tennessee	$85,512,500
West Virginia	87,638	West Virginia	$78,905,500
Pennsylvania	73,904	New Jersey	$52,491,600
New Jersey	71,710	Pennsylvania	$37,382,200

Inbound			
State	Tons	State	Value
Louisiana	312,146	Texas	$371,553,400
Texas	309,199	Louisiana	$116,544,400
Mississippi	253,710	Mississippi	$106,497,300
Alabama	216,704	Iowa	$63,967,300
Illinois	211,614	Oregon	$55,028,600

Top Commodities

Outbound			
Commodity	Tons	Commodity	Value
Other foodstuffs	434,771	Basic chemicals	$262,418,200
Basic chemicals	365,263	Other foodstuffs	$124,188,100
Waste/scrap	179,200	Animal feed	$122,202,500
Milled grain prods.	86,911	Milled grain prods.	$54,129,000
Animal feed	77,970	Waste/scrap	$35,859,100

Inbound			
Commodity	Tons	Commodity	Value
Basic chemicals	644,360	Basic chemicals	$470,870,000
Cereal grains	288,657	Other foodstuffs	$140,108,800
Other foodstuffs	278,140	Coal-n.e.c.	$77,328,300
Fertilizers	202,709	Fertilizers	$60,902,900
Coal-n.e.c.	193,892	Other ag prods.	$59,577,100

Investment of Over $400 million in last 5-6 years

Source: FAF Data 2012

Road Overview

Top State Trading Partners

Outbound			
State	**Tons**	**State**	**Value**
Tennessee	27,037,750	Maryland	$23,967,798,900
Mississippi	13,375,916	Tennessee	$16,963,936,800
Arkansas	2,545,747	California	$16,480,870,300
Alabama	760,975	Georgia	$11,680,741,400
Texas	600,474	Missouri	$9,471,848,200

Inbound			
State	**Tons**	**State**	**Value**
Tennessee	26,493,108	Tennessee	$18,312,677,600
Arkansas	1,953,860	North Carolina	$10,299,609,500
Mississippi	1,736,578	California	$6,180,447,800
Alabama	1,027,935	Texas	$4,864,339,600
Texas	705,055	Arkansas	$2,390,236,200

Top Commodities

Outbound			
Commodity	**Tons**	**Commodity**	**Value**
Coal-n.e.c.	19,062,667	Pharmaceuticals	$133,075,423,700
Nonmetal min. prods.	5,711,285	Mixed freight	$7,949,102,000
Waste/scrap	3,728,949	Machinery	$7,015,571,100
Other foodstuffs	2,811,171	Articles-base metal	$3,388,294,900
Gravel	2,121,016	Plastics/rubber	$2,307,080,800

Inbound			
Commodity	**Tons**	**Commodity**	**Value**
Coal-n.e.c.	9,260,052	Pharmaceuticals	$15,295,467,900
Nonmetal min. prods.	3,804,270	Electronics	$13,580,486,200
Waste/scrap	3,691,013	Machinery	$4,512,014,400
Gravel	2,646,153	Mixed freight	$3,983,132,200
Other foodstuffs	1,648,008	Motorized vehicles	$3,281,601,400

Investment of Over $400 million <u>needed</u>
(At least)

Source: FAF Data 2012

River (Inland Port) Overview

Top State Trading Partners

Outbound			
State	Tons	State	Value
Louisiana	683,116	Louisiana	$207,925,000
Tennessee	240,446	Tennessee	$148,380,800

Inbound			
State	Tons	State	Value
Missouri	4,692,125	Tennessee	$148,382,700
Illinois	739,275	Illinois	$108,010,300
Tennessee	240,451	Missouri	$68,749,900
Louisiana	178,764	West Virginia	$25,641,400
Alaska	29,227	Louisiana	$12,210,400

Investment of Over $100 million <u>needed</u>
(At least)

Top Commodities

Outbound			
Commodity	Tons	Commodity	Value
Other ag prods.	519,348	Other ag prods.	$185,187,600
Fuel oils	232,179	Fuel oils	$143,734,600
Cereal grains	163,768	Cereal grains	$22,737,400
Chemical prods.	4,566	Coal-n.e.c.	$2,915,900
Coal-n.e.c.	3,701	Chemical prods.	$1,730,300

Inbound			
Commodity	Tons	Commodity	Value
Gravel	4,042,437	Fuel oils	$143,734,600
Cereal grains	739,271	Cereal grains	$108,008,700
Nonmetal min. prods.	649,689	Nonmetal min. prods.	$47,332,200
Fuel oils	232,179	Base metals	$25,641,300
Basic chemicals	178,649	Gravel	$21,417,700

Source: FAF Data 2012

Runway Overview

Top State Trading Partners

Outbound			
State	**Tons**	**State**	**Value**
Arkansas	3,326	Illinois	$1,294,581,900
Illinois	2,131	Texas	$953,095,000
Florida	1,150	New York	$855,084,700
Arizona	1,111	Mississippi	$799,749,600
Oklahoma	1,111	Florida	$795,054,600

Inbound			
State	**Tons**	**State**	**Value**
California	25,711	Washington	$454,045,700
Kansas	2,022	Florida	$213,115,400
Florida	1,091	California	$185,759,000
New Jersey	1,087	Massachusetts	$124,342,000
New York	351	Iowa	$80,289,300

Top Commodities

Outbound			
Commodity	**Tons**	**Commodity**	**Value**
Precision instruments	7,296	Precision instruments	$7,625,030,600
Machinery	3,316	Pharmaceuticals	$1,473,516,900
Electronics	1,517	Electronics	$227,613,600
Pharmaceuticals	933	Machinery	$80,088,100
Motorized vehicles	759	Transport equip.	$20,006,200

Inbound			
Commodity	**Tons**	**Commodity**	**Value**
Misc. mfg. prods.	20,402	Transport equip.	$650,911,900
Electronics	5,164	Precision instruments	$281,799,600
Transport equip.	2,749	Pharmaceuticals	$175,818,700
Precision instruments	1,529	Electronics	$122,845,500
Machinery	427	Chemical prods.	$44,664,000

Investment of Over $$$ million

Source: FAF Data 2012

Freight by Numbers

Mode	Inbound (tons)	Outbound (tons)	Total (tons) Including local	Value ($ in million)	%age of value per ton
Runway	16,360	42,869	59,229	$ 12,509.52	**$211,206.00**
River	1,041,200	5,909,937	7,191,583	$ 909.47	$126.46
Rail	1,973,780	2,813,773	4,816,421	$ 2,993.68	$621.56
Road	51,659,190	38,513,478	**113,896,465**	$349,820.00	$3,071.39

Source: FAF Data 2012

Freight Stakeholder Engagement

Good/Not So Good

- **Good**
  - Locally somewhat acceptance of importance of freight
  - FedEx
  - Port
  - Warehousing and Distribution Center
  - Major employers
  - Engaged Chamber of Commerce – TN and MS side
  - Presence of University of Memphis- Freight Institute
- **Not So Good**
  - But different approach i.e. private vs public
  - Difficulty engaging private sector beyond Chamber contacts
  - Change in staff/ difficulty keeping in-house knowledge
  - Multiple voices

MPO Freight Advisory Committee

- **In 2013- Major Change**
  - **Conducted a FHWA peer exchange**
    - Washington DC
    - Chicago
    - Atlanta
    - Cincinnati
  - **Restructured Freight Advisory Committee**
    - Developed new by-laws for FAC

MPO Freight Advisory Committee

PURPOSE:

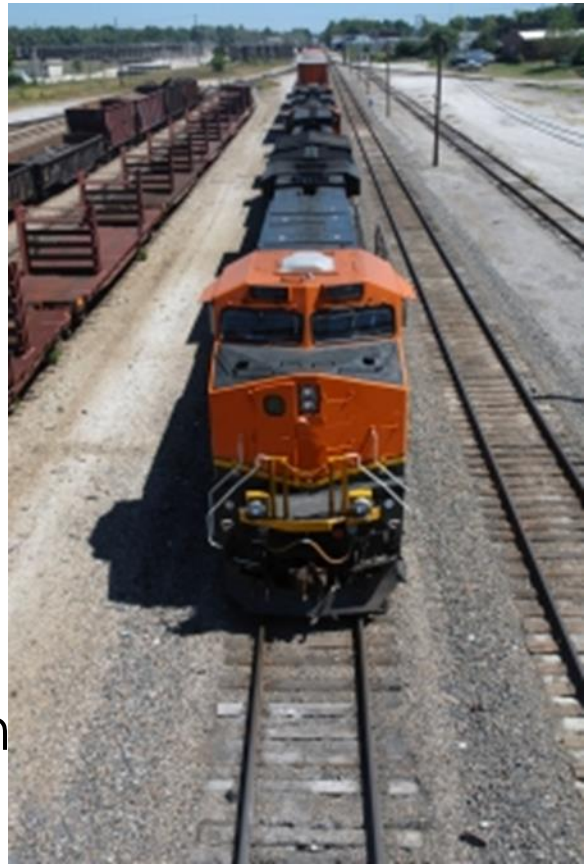
Provide a **forum for regional freight stakeholders** to discuss strategies to aid in the efficient movement of freight and increase **collaboration between the public and private sectors** regarding freight matters and improve the public's understanding of freight's economic importance and needs.

- **Membership includes Tri-State Area**
  - Much more comprehensive
- **Chair** is an elected official selected by the MPO Board
- **Vice-chair is** a private stakeholder selected by FAC
- Meets twice a year

MPO Freight Advisory Committee (A few)

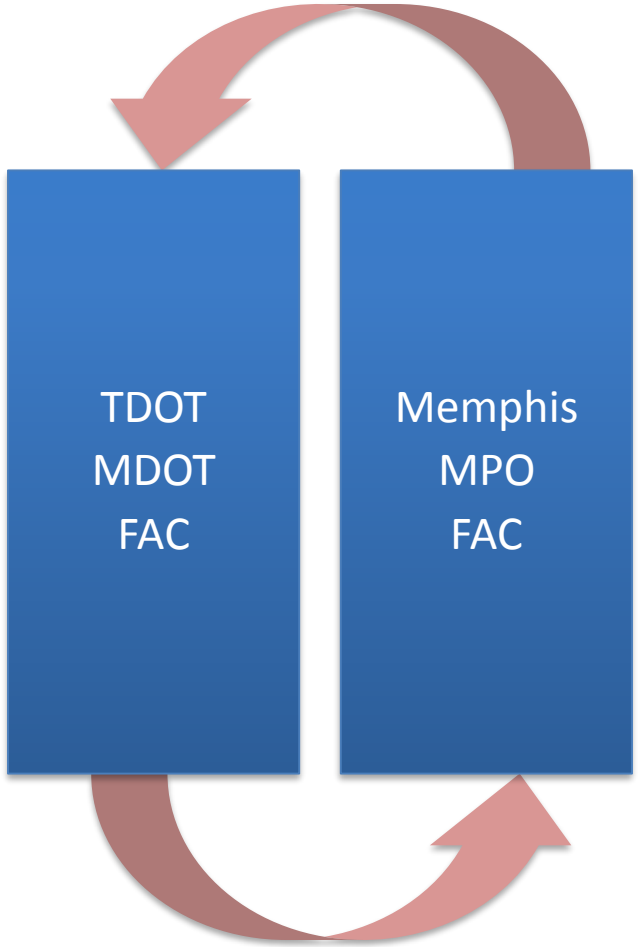
MPO Freight Advisory Committee

- **Engaging the Private Sector**
  - Keep private sector engaged by producing quick results (3yrs)
    - Use of TIP and flexible grants like CMAQ as tools that can show quick return on investment for private sector
  - Utilize economic development agencies
    - They are more engaged in the private sector and can be your conduit
  - Promote projects that benefit freigh and the general public
    - Traffic signaling and grade separation decrease the view of freight as a hindrance to the public



MPO Relations – Local and State

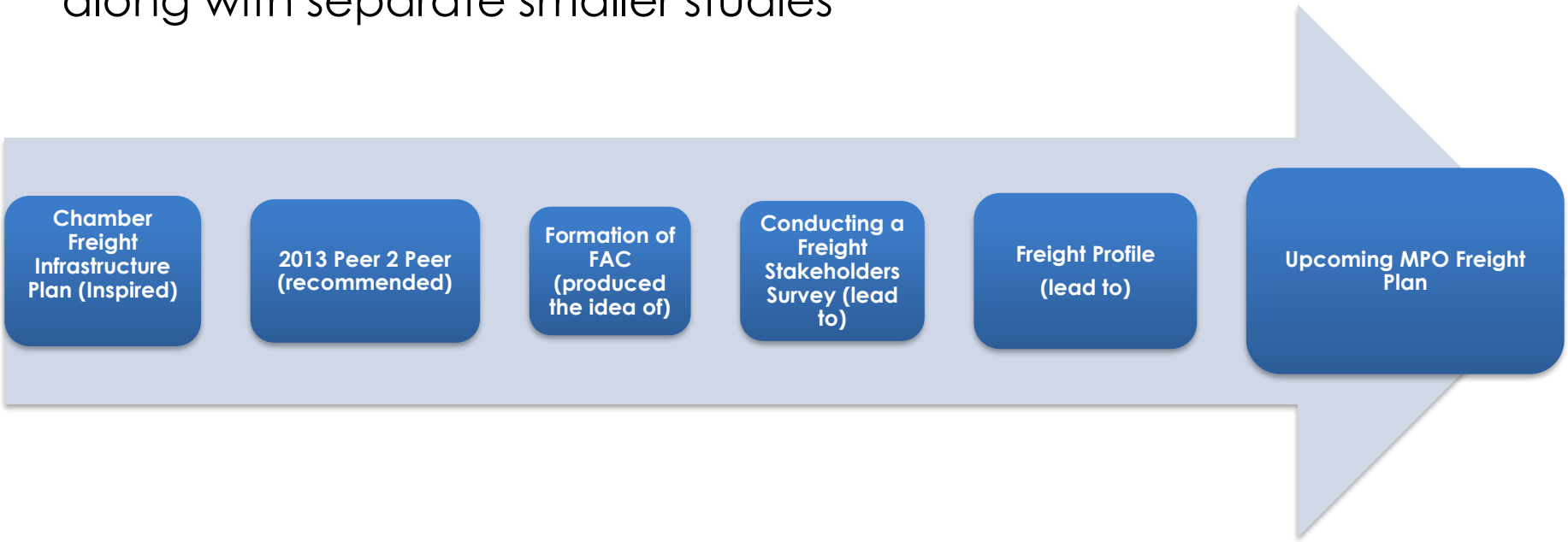
- On each others advisory committees
- Participate in each others plans
- Travel Demand Model/Data Sharing
  - TRANSEARCH
  - ATRI Truck Data
  - Socio- Economic data
- Performance measures



Plans
Freight Related & Others

How did we get here

Freight planning has been a subset of the RTP in the past along with separate smaller studies



Past studies to move forward

- Memphis Freight Infrastructure Plan
- Lamar Avenue Corridor Study
- Direction 2040 Long Range Transportation Plan
- Bus Transit To Workplace Study
- Focus: A Roadmap for Transforming The Metro Memphis Economy
- Tennessee Statewide Freight Plan
- Mississippi Statewide Freight Plan
- Memphis MPO Freight Stakeholder Survey
- Livability 2040 Regional Transportation Plan
- Upcoming – Regional Freight Plan – Memphis MPO

Memphis Freight Infrastructure Plan-2008

Consultant – Global Insight, Univ. of Memphis, Wilbur Smith

MPO partnered with the Greater Memphis Chamber of Commerce

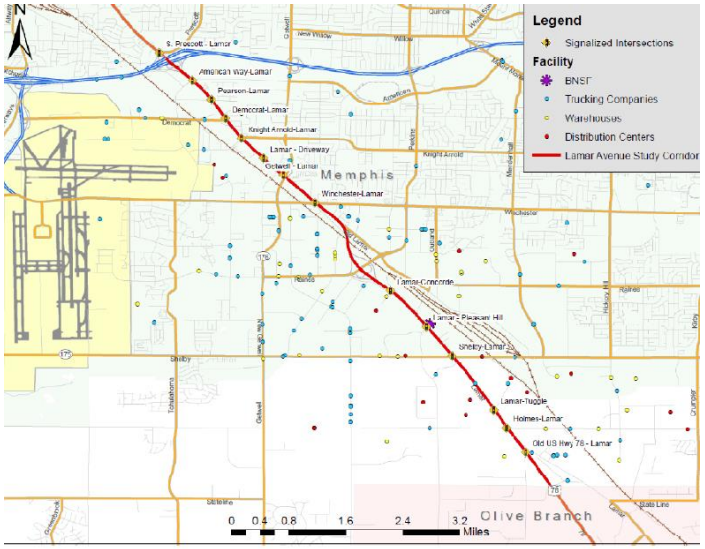
- How we fit in the global supply chain? Panama Canal
- Infrastructure inventory and evaluation
- Recommendations
- Stakeholder Interviews
- Results were used in the development of RTP in 2012

Lamar Ave Corridor Study-2010-11

Consultant – Cambridge Systematics, Kimley Horn, Univ of Memphis

MPO requested TDOT to conduct the study on Lamar Ave- **MOST CONGESTED in MEMPHIS**

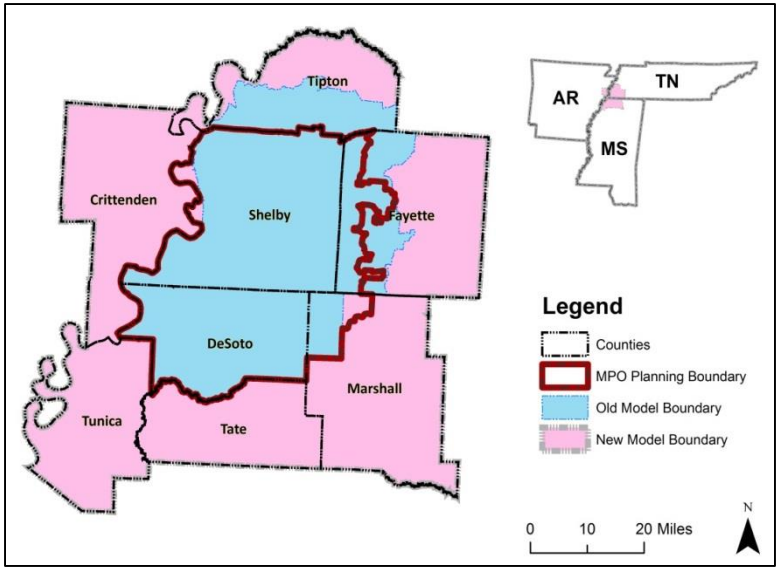
- Major Corridor connecting Memphis to Birmingham and Atlanta (1-22)
- Various Alternatives studied
- Recommended alternative was adopted by MPO Board and included in RTPs 2012 and 2016

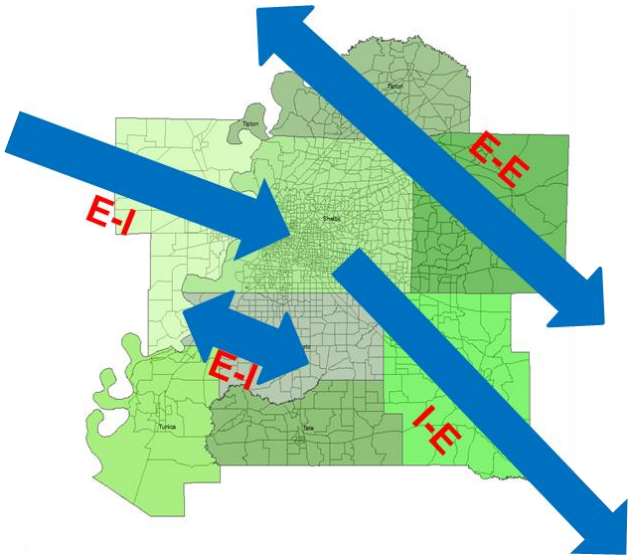


Regional Travel Survey- 2013-15

Consultant – Cambridge Systematics, SRBI, Dikita Eng, Neel Shaffer

- Goal- to produce a statistically significant picture of travel within the region and provide an update to the travel demand forecasting model.
- Updated Travel Demand Model-
  - includes 2 Freight sub models (Internal +External (EE, IE, EI)
  - used for development of 2040 RTP



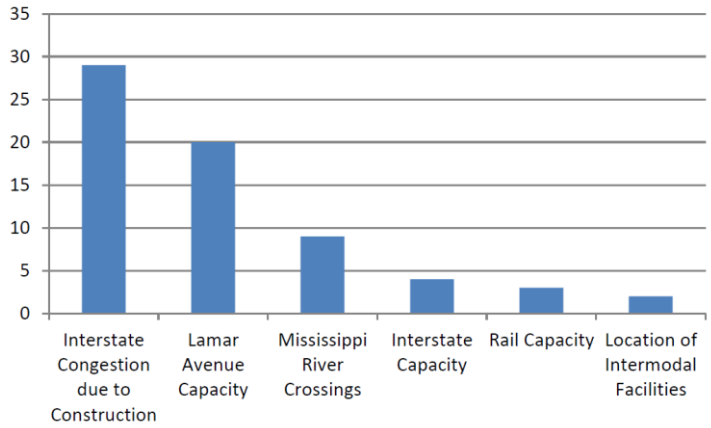


Freight Stakeholder Survey- 2015

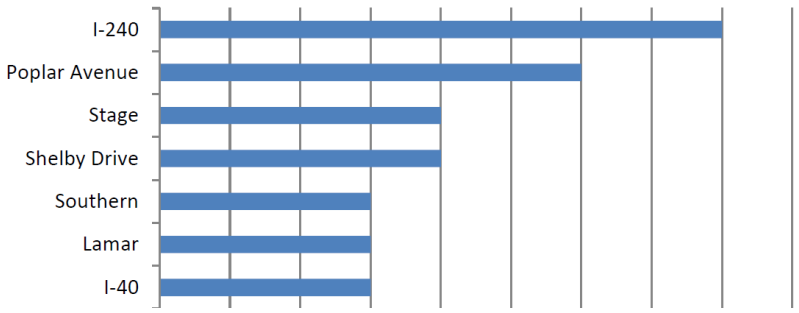
Consultant – University of Memphis, MPO Staff

- The purpose of the survey was twofold: **2 surveys**
  - Intermodal Freight Survey – to solicit opinions and perceptions and to gather information on the operations and functionality of the freight transportation system
  - Region Livability Survey – to determine the impacts of freight movements on livability within the region.
  - Findings used in development of 2040 RTP and upcoming Regional Freight Plan

What are the major infrastructure bottlenecks in the Memphis reg



Please rank: Avoided routes due to freight traffic



Freight Profile – 2014-2015

In-House

- Provided us with an inventory of what we have in order to…
  - Understand what we need to pursue
  - Make the case of the importance of freight and its infrastructure to the region
  - Prepared Inhouse

Outbound	
Tons	Value
1,041,200	$387,160,000
14%	43%

Inbound	
Tons	Value
5,909,937	$373,932,700
82%	41%

Local	
Tons	Value
240,446	$148,380,800
3%	16%

Total	
Tons	Value
7,191,583	$909,473,500
100%	100%

Outbound	
Tons	Value
51,659,190	$207,801,150,000
45%	59%

Inbound	
Tons	Value
38,513,478	$98,965,101,900
34%	28%

Local	
Tons	Value
23,723,796	$43,053,759,900
21%	12%

Total	
Tons	Value
113,896,465	$349,820,011,800
100%	100%

Outbound	
Tons	Value
4,132,170	26,854,010,000
34%	58%

Inbound	
Tons	Value
7,592,815	19,386,152,500
63%	42%

Local	
Tons	Value
352,341	255,675,400
3%	1%

Total	
Tons	Value
12,077,326	46,495,837,900
100%	100%

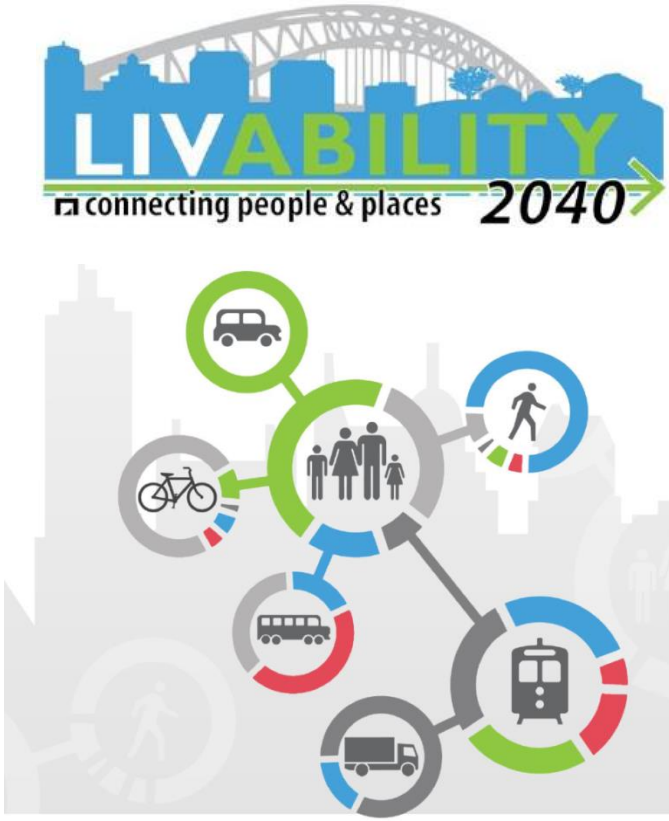
Livability 2040 RTP – 2016

Consultant – Cambridge Systematics, The Corradino Group, Parsons Brinckerhoff , Younger Associates, New West Public Relations and Dalhoff-Thomas Design Studio
Kimley Horn and Gresham Smith

MPOs Long Range Transportation Plan

Performance Based plan

- **Preservation is important** to the community: system performs well now, but will deteriorate below acceptable levels without additional funding
- Match **multimodal access** to changing distribution of population and employment
- Target opportunities for **multimodal expansion**: focus less on how much the system is expanded and more on **how the system is connected and enhanced**
- **Logistics still key**: focus on removing barriers to freight movement and related development



Livability 2040 RTP- SWOT Analysis

CONVERT

MATCH

Helpful	Harmful
➢ Global logistics and multi-modal assets ➢ One of the top research hospitals in the nation ➢ Industries serving healthcare have significant presence ➢ High level of specialization in transportation and healthcare within the region's workforce ➢ Renewed manufacturing base ➢ Hospitality, arts, entertainment and recreation are among the fastest growing industry sectors	➢ Educational attainment below the national average ➢ Persistently high poverty levels and prevalence of low wage and temporary jobs ➢ Three-state region – out-migration from city to suburbs can shift population to surrounding states which shifts state and local tax revenues ➢ Employment is decentralized - increases commuting times and the need for transportation access, while limiting the effectiveness of public transportation
➢ World-class research assets which can be built upon to diversify the economy ➢ Existing global logistics assets can be leveraged to Increase foreign exports from commodities to high-value medical devices ➢ Large proportion university students and youth that can be matched with jobs in the region to bolster workforce	➢ Decentralized growth can increase cost of providing public services ➢ Economy is highly dependent on Transportation and Logistics sector ➢ Fewer cities with direct service to the Memphis region resulting in higher airfares and longer travel time; potential impact on tourism, a large sector of the regional economy

Livability 2040 RTP – Project Selection

Significance of each measure aligned to unique investment context for each project

- Interregional, Regional Center, Town Center, Neighborhood Community &Open Space

2040 RTP Planning Emphasis Area	Project Level Measure	Investment Context (Project "Scale")				
		1	2	3	4	5
		Interregional	Regional Center	Town Center	Neighborhood Community	Open Space
Safety						
1	Project on Corridor of Safety Concern, Includes Safety Countermeasure(s)	5.0	10.0	10.0	10.0	5.0
2	Project Addresses Security or Emergency Response Need	10.0	5.0	2.5	0.0	0.0
Environment						
3	VMT Reduction	0	5	10	15	20
4	Project Requires Minimal ROW or Land Acquisition	5	5	10	15	20
Land Use						
5	Project is in Keeping with Community Priorities	5	5	15	15	15
6	Project Supports Community or Corridor Redevelopment	0	10	15	15	15
Economic Vitality						
7	Truck Hours Delay Reduced	15	5	5	2.5	2.5
	(Freight Corridor, Freight Hub/Intermodal Facility)	20	10	2.5	2.5	2.5
Mobility/Accessibility						
8	Project Fills Gap or Expands Multimodal System	5	5	5	10	15
	(Access to Community Resources, Last Mile Connection for Employment Center)	5	15	15	10	0
9	Enhances Transit Ridership	5.0	5.0	2.5	2.5	0.0
Congestion						
10	Vehicle Hours Delay Reduced	20.0	5.0	5.0	2.5	2.5
	(Corridor Connection to Employment Center)	5.0	15.0	2.5	0.0	2.5
		100	100	100	100	100

Upcoming Regional Freight Plan

Upcoming MPO Regional Freight Plan

RFQ was developed based on:

- Feedback from FAC
- Freight Stakeholder Survey

Available Information/Data:

- Updated MPO Travel Demand Model (includes freight sub-model)
- Livability 2040 RTP
- Recently completed TDOT and MDOT Freight Plans
- Recently completed TDOT and MDOT Long Range Plan Plans
- HERE Data (NPRMDS)

Funding and Time:

- Federal, State, and Local Matching Grants
- 1 year for completion (once approved)

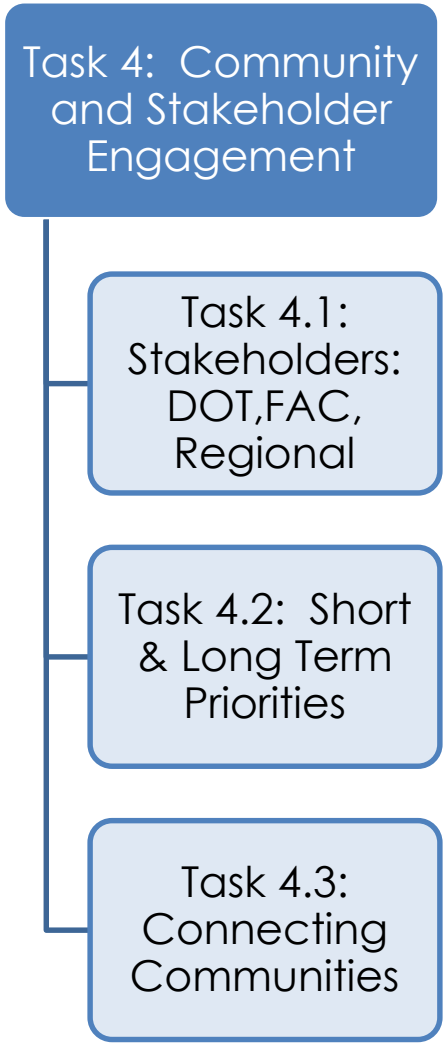
Upcoming MPO Regional Freight Plan

Upcoming MPO Regional Freight Plan

General Tasks
Truck Routing Constraints
Incident Response
Freight Route Geometrics
Land Development
Truck Parking
Industrial Land Supply/Demand
Funding Sources
Freight Competitiveness

- Identifying areas with a lack of re-routing options for freight trucks when heavy traffic or construction causes delays on key corridors
- Strategies to decrease congestion caused by accidents and other non-recurring roadway incidents
- Identify freight routes with poor curb/road geometries and create priority list of projects to improve intersections and lane widths
- Future traffic impact caused by various land development patterns
- Current and future supply/demand of truck parking areas
- Analysis of supply/demand of industrial land over the next 20-30 years
- Alternative and patterned funding sources for investment in the freight transportation system
- Analysis of future threats to economic competitiveness of freight in the region
- Identification of corridors for future inclusion in PFN

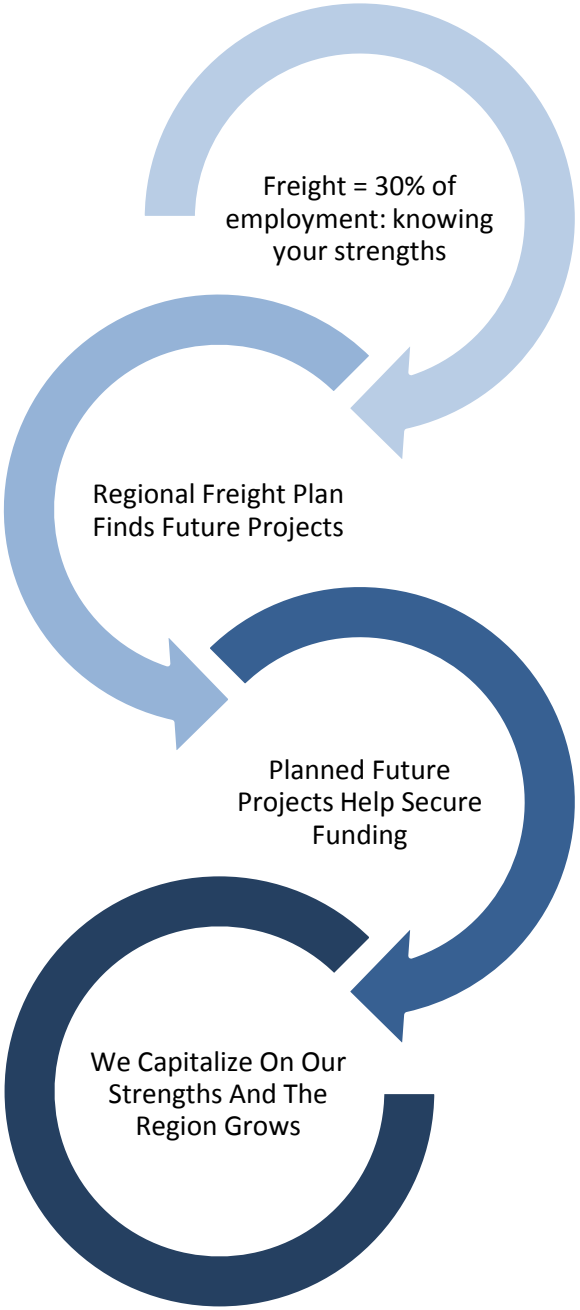
Upcoming MPO Regional Freight Plan



- 25 meetings overall
- Stakeholder meetings
  - One on one and group meetings with local businesses
  - DOT, FAC, and other regional organizations will be present
- Community Meetings
  - Identify community associations and highly impacted neighborhoods
- E-Newsletter
- Public Relations Releases
- Video/Podcast
  - To highlight major waypoints in the study

Why it all matters

■Freight/transportation anchors the heart of the local economy. FASTACT provides 800 million in freight related funding a year. It is imperative to dedicate the resources to fully plan for this strength. The regional freight plan will achieve this by helping to bring to fruition projects for the region that can capitalize on our strengths. Knowing our project potential makes us more competitive for funding.



Questions