Texas Freight Advisory Committee

Meeting starts at 8:10 AM

Thank you for attending!

Help make this is a successful webinar:
• Ensure your phone and computer microphone are muted.
• Familiarize yourself with the chat box and participant list.
• If not speaking, periodically check your devices to ensure they are muted.

If you have unmuted your device and are trying to speak but no one is hearing you, dial *6 or send your message to the chat box. If you’re still having difficulty, text Tyler Graham at 512-354-9278.

Sign in using this code
Point your phone camera at code and open browser when prompted

November 10, 2021
## Today’s Agenda

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>8:00 – 8:10 a.m.</td>
<td>Login period</td>
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<tr>
<td>8:10 – 8:30 a.m.</td>
<td>Introductions and Meeting Overview</td>
<td>Judge Ed Emmett, Fellow in Energy &amp; Transportation Policy, Rice University’s Baker Institute for Public Policy, TxDOT-Chair</td>
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<td>Caroline Mays, AICP Director, Freight, Trade, and Connectivity Section, TxDOT</td>
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<tr>
<td>8:30 – 8:40 a.m.</td>
<td>Overview of Today’s Meeting Recap of August 24, 2021 TxFAC Meeting Overview of Ongoing Freight Planning Activities</td>
<td>Sherry Pifer, TxDOT</td>
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<tr>
<td>8:40 – 8:55 a.m.</td>
<td>Stakeholder Engagement</td>
<td>Paula Dowell, Cambridge Systematics Sherry Pifer, TxDOT</td>
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<tr>
<td>8:55 – 9:45 a.m.</td>
<td>Re-designation of the FHWA Primary Highway Freight System (PHFS) and the Texas Multimodal Freight Network (TMFN)</td>
<td>Sherry Pifer, TxDOT Paula Dowell, Cambridge Systematics</td>
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<tr>
<td>9:45 – 10:05 a.m.</td>
<td>TFMP 23 Goals and Objectives</td>
<td>Lizzie Welch, P.E., Cambridge Systematics</td>
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<td>10:05 – 10:15 a.m.</td>
<td>Break</td>
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<td>10:15 – 11:15 a.m.</td>
<td>Key Industry and Supply Chains overview</td>
<td>Adam Dancyzik, Cambridge Systematics Joe Bryan, WSP</td>
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<td>11:15 – 11:45 a.m.</td>
<td>Freight Trends, Disruptors and Opportunities</td>
<td>Paula Dowell, Cambridge Systematics</td>
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<tr>
<td>11:45 – 12:00 p.m.</td>
<td>Wrap Up Discussion/Closing Remarks</td>
<td>Sherry Pifer, TxDOT Judge Ed Emmett</td>
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<tr>
<td>Noon</td>
<td>Adjourn</td>
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Next meeting: Feb. 2, 2022 (Location TBD)
Stakeholder Workshop Summary
Texas Freight Advisory Committee

Series of 6 Stakeholder Workshops

- **Energy Region**
  - Oct 25
- **Border Region**
  - Nov 2
- **Urban Regions**
  - Nov 4
- **Texas Triangle**
  - Nov 1
- **Gulf Coast**
  - Nov 3
- **Rural**
  - Nov 5
How Workshop Input Is Being Used

Workshop Focus

**FREIGHT SYSTEM DESIGNATION**
- Identify freight assets to be included on network

**TRENDS AND CHALLENGES**
- Input on probability and impact of national trends and freight challenges

**Update Texas Multimodal Freight Network**

**Refine freight transportation needs assessment**

**LAY GROUNDWORK FOR RECOMMENDATIONS**
629 participants across 6 workshops

Number of Participants by Category

- Public Sector: 296
- Private Sector: 221
- Elected Official: 9
- Unknown: 103

Number of Participants by Workshop

- Energy Sector: 153
- Texas Triangle: 82
- Border Region: 105
- Gulf Coast: 88
- Urban Areas: 48
- Rural Areas: 153

Texas Freight Advisory Committee
Geographic Representation of Workshop Participants
Solicited Feedback from Stakeholders

- Input on the Texas Multimodal Freight Network
  - Facilities to consider adding
  - Developments that will impact future freight flows
- Priorities for TFMP
  - Ranking of goal areas
  - Input on key issues
- Insights on trends, challenges, and opportunities
  - Trends having most significant impact on freight
  - Infrastructure, institutional, technology, and operation challenges
National Primary Highway Freight System Redesignation
Redesignating the National Primary Highway Freight System (PHFS)

- Requested TxFAC input on three options
  - **Option 1**: Provide an equal allocation of 960 available miles to each State; yields only 18 miles of potential new PHFS in Texas
  - **Option 2**: Accommodate States that have greater restrictions on the use of Interstate Highway System routes to gain eligibility for funding under the NHFP and INFRA, resulting in 53 miles for Texas
  - **Option 3**: Add to the PHFS any routes newly flagged as Interstate Highway System since the development of the PHFS. Additional mileage in Texas maximum is 107 mile but likely get far less
Summary of TxFAC Input on PHFS Redesignation

- Other included support for allocating based on
  - Average annual daily truck volume as opposed to functional classification
  - Projects in UTP
  - Weighted average of options 1 and 2

- Specific facilities mentioned
  - IH-69, various sections
  - IH-27
  - Loop 375 and US 54 in El Paso
  - IH 635 and IH 820
  - FM 1472
  - SH 146, SH 225,
Texas Multimodal Freight Network Redesignation
What is Freight System Designation?

Why is it important?

Meets Federal requirements for National Freight Program funding eligibility

Allows TxDOT to target limited resources toward most critical freight assets

Becomes basis for needs assessment, project prioritization, recommendations, and implementation

Additional design considerations to accommodate freight movement
Texas Freight Advisory Committee

Multimodal Components

- Designated highway freight network
- All freight railroads and pipelines
- Select air cargo airports
- Select ports and the GIWW
- Commercial international border crossings

TMFN

- Texas Highway Freight Network
- Class I Railroad
- Shortline Railroad
- Cargo Airport
- Maritime Port
- Gulf Intracoastal Waterway (M-69)
- Rail International Bridge
- Commercial Vehicle International Bridge

Map of Texas showing various routes and locations.
Proposed Railroads on TMFN

- **Class 1 railroads**
  - BNSF Railway (BNSF)
  - Union Pacific Railroad (UP)
  - Kansas City Southern (KCS)
  - 8,396 miles track in 2018

- **Shortline railroads**
  - 55 shortline railroads
  - 2,143 miles
Proposed Texas Ports and Waterways on TMFN

- Ports – handle 2 million short tons or more annually
  - Beaumont
  - Brownsville
  - Calhoun
  - Corpus Christi
  - Galveston
  - Freeport
  - Houston
  - Port Arthur
  - Texas City
  - Victoria
- Gulf Intracoastal Waterway
Proposed Airports on TMFN

- Top ten air cargo airports based on volume
  - From 2018 TMFN – AFW, AUS, DFW, ELP, IAH, LAR, SAT
  - New proposed airports- HRL, LUB, SFK (Kelly Field, San Antonio)
Texas Highway Freight Network (THFN) Designation Process

1. Develop criteria based on freight demand
2. Quantify value for each criteria
3. Score network for each criteria
4. Compare against existing network
5. Rank facilities based on total weighted scores
6. Sum all criteria
7. Develop draft THFN for stakeholder input
8. Incorporate MPO input on Critical Urban Corridors
9. Draft final system for TxFAC approval
Texas Highway 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 to trading partners and international gateways.

*Example Metrics:*
- Intermodal Connectivity
- Market Gateway Access
Initial Draft THFN

- Texas portion of National Highway Freight Network
- Texas Trunk System
- Other important freight routes

<table>
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<tr>
<th>2018 THFN Mileage:</th>
<th>21,861</th>
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<tbody>
<tr>
<td>Additional 2023 Draft THFN Mileage:</td>
<td>975</td>
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<tr>
<td>Total Draft 2023 Mileage:</td>
<td>22,836</td>
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Types of additions (42 comments)
- More connections in Permian Basin (ex: SH 115, SH 18)
- Exurban routes (ex: southwest of Fort Worth)
- Emerging/developing corridors (ex: Grand Parkway)
- Extending intermodal connectors (ex: Joe Fulton ITC in Corpus Christi)

Types of deletions (2 comments)
- Review route; not used for freight today

Types of other comments (64 comments)
- Recent growth
- Role of connections already designated
- Planned future routes
1. Any highways not designated that should be considered?

2. Any highways that are designated that shouldn’t be included?

3. Are there other multimodal facilities that should be considered?
Texas Freight Advisory Committee

- TxDOT Freight Mobility Plan - TMFN Input (arcgis.com)
2023 TFMP Goals and Objectives
Developing 2023 TFMP Goals and Objectives

- What are the goals of the TFMP?
  - Draft goals presented today
  - Final goals will reflect your input

- How will goals be used throughout the TFMP?
  - Exploring trends
  - Identifying needs
  - Prioritizing projects, programs, and policies
<table>
<thead>
<tr>
<th>Draft 2023 TFMP Goals</th>
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<tbody>
<tr>
<td><strong>Safety</strong>*</td>
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<tr>
<td><strong>Asset Preservation</strong>* &amp; Modernization</td>
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<tr>
<td><strong>Mobility &amp; Reliability</strong>*</td>
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<td><strong>Connectivity</strong>*</td>
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<td><strong>Resiliency</strong></td>
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<td><strong>Stewardship</strong>*</td>
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<td><strong>Funding</strong>* &amp; Implementation</td>
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<td><strong>Economic Competitiveness</strong>*</td>
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<tr>
<td><strong>Equity</strong></td>
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* Indicates 2018 TFMP goal
Aligning Draft Goals with Coordinating Texas Plans
What We Heard From the Workshops

- Safety remains top priority for stakeholders

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<thead>
<tr>
<th>Category</th>
<th>Rating</th>
<th>Criticality</th>
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<tbody>
<tr>
<td>Safety</td>
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<td>(119 rated)</td>
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<td>Mobility and Reliability</td>
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<td>Connectivity</td>
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<td>Economic Competitiveness</td>
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<td>Resiliency</td>
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<tr>
<td>Equity</td>
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<td>(21 rated)</td>
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What does the TFMP have to address? What should be a priority?

- Network Connectivity
- Multimodal projects
- Resiliency, strong growth
- Data sharing (planning)
- Future technology
- Network Efficiency

- Improvement
- Funding
- Sustainability
- Regional and statewide comprehensive studies
- Prioritize main corridors
- Autonomous/electric vehicles

- Improve congestion
- Prioritize economic competitiveness
- Border crossing efficient and security
- Intelligent transportation systems
- Safety

- Include relief routes in plan
- Military transport
- Carbon neutral/low-emissions
- Additional truck parking throughout the state
- Ensuring oil and gas freight traffic in energy regions is captured

- Maintaining the system
Industry Clusters and Supply Chains
Identifying Supply Chains – TxFAC Input

- Recommended Critical Supply Chains include:
  - **High Priority Score:**
    - Computer, electrical equipment and products, and components
    - Oil and gas extraction
    - Wholesale and distribution
  - **Medium Priority Score:**
    - Agricultural (crop and animal)
    - Construction
    - Food manufacturing
    - Chemical manufacturing
    - Transportation equipment
    - Rubber and plastics
- **Medical manufacturing also being considered**
Integrating Supply Chains into the TFMP

Supply Chain Research:
Review of existing supply chain research and data

Freight Data Fusion:
Combine data and information from various sources

Impacts on TMFN:
Identify key facilities, needs, and recommendations
Existing Supply Chain Research

- Research available depictions of supply chain staging
  - U.S. Bureau of Economic Analysis input/output tables
  - Supply chain flow charts from literature and previous TxDOT work
  - FHWA Freight Fluidity data set
  - Industry and academic publications

- Research and compile industry-specific data sources
  - Examples:
    - US Energy Information Administration
    - US Dept. of Agriculture
    - US Dept. of Commerce Foreign Trade data
  - FHWA Freight Analysis Framework, Version 5
  - Supplemented TRANSEARCH commodity flow data
Freight Data Fusion

- Data sources
  - Business Establishment Data
  - INRIX Trip Path Data
  - IHS Markit Transearch Data (with Energy enhancements)

- Interpret important aspects in data
  - INRIX medium and heavy-duty trucks
  - Transearch distribution and drayage (secondary) traffic
  - Linking Transearch trade data to ports and gateways
  - Geofencing major facilities within the supply chains

Source: https://tti.tamu.edu/policy/freight/moving-texas-exports/the-vehicle-part-supply-chain/
Supply Chain Impacts to the TMFN

- Document the movement of goods through various lifecycle of critical supply chains
- Support subsequent tasks by providing insight to the following questions:
  - Priority needs – “What are major freight bottlenecks or challenges for industry X?”
  - “What industry will be served better if TxDOT invests in ‘x’ infrastructure at ‘y’ location of the TMFN?”
  - “Which industry relies heavily on parts of the TMFN that have low traffic volumes and previously was deemed not critical?”
Estimation of Supply Chain Flows on TMFN

- Estimate structural flows for supply chains
  - Sourcing, production, distribution, reverse logistics
    - Stages: inbound, outbound, logistical processes (e.g. consolidation)
    - Modal usage upstream and downstream
  - Representation in data
    - Resolution of issues (misalignments, granularity, etc.)
  - Outputs:
    - Graphical depiction of supply chain structures
    - Supply chain flows on the TMFN
- Stakeholder vetting and validation
- Finalization of structures and TMFN flows
Trends Impacting Freight in Texas
National and State Trends Impacting Freight

- Traditional and Emerging Energy
- Trade Agreements: USMCA
- Instability Due to Disruptions
- Business and Consumer Practices
- Technology Adoption
- Economic Growth
- Equity and Community Impacts
Stakeholder Workshop Input - Energy Trends

- Electric vehicles
- Regulation
- Oil prices and influence of global oil markets
- Pipelines and other infrastructure
- Renewable energy sources (wind, solar, etc.)
- Fuel efficiency standards
- Other

Impact on freight volumes vs. Probability of occurring

1. Electric vehicles
2. Regulation
3. Oil prices and influence of global oil markets
4. Pipelines and other infrastructure
5. Renewable energy sources (wind, solar, etc.)
6. Fuel efficiency standards
7. Other
Stakeholder Workshop Input- Energy Trends
Stakeholder Workshop Input - Trade Trends
Stakeholder Workshop Input - Trade Trends

- Implementation of USMCA
- Increase in trade sanctions/tariffs
- Decrease in trade sanctions/tariffs
- Increase in global sourcing
- Decrease in global sourcing
- Supply chain disruptions
- Other

Impact on freight volumes vs. Probability of occurring
Stakeholder Workshop Input - Business and Consumer Practices
Stakeholder Workshop Input- Business and Consumer Practices

1. E-commerce growth
2. Mobility as a service (e.g., Uber, Lyft)
3. Buying American consumer attitude
4. Changes in sourcing, e.g., near-shoring
5. Changes in packaging - minimize packaging
6. Sharing economy
7. Other

Impact on freight volumes vs. Probability of occurring
Stakeholder Workshop Input - Disruptors
Stakeholder Workshop Input - Disruptors

1. Increase frequency of extreme weather
2. Pandemics
3. Man-made disasters
4. Labor shortages/disputes
5. Infrastructure failure
6. Cyber attacks
7. Other

Impact on freight volumes vs. Probability of occurring
Stakeholder Workshop Input - Technology Adoption

- Autonomous and connected vehicles
- Advances in manufacturing - e.g., 3-D printing
- Alternative transportation - e.g., drones, freight shuttle
- Internet and information technology
- Big data and predictive analysis
- Other
Stakeholder Workshop Input - Technology Adoption

1. Autonomous and connected vehicles
2. Advances in manufacturing - e.g., 3-D printing
3. Alternative transportation - e.g., drones, freight shuttle
4. Internet and information technology
5. Big data and predictive analysis
6. Other

- Impact on freight volumes vs. Probability of occurring
# Stakeholder Workshop Input - Trends Having Greatest Impact on Freight in Texas

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<tr>
<th>Factor</th>
<th>Ranking</th>
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<td>Energy policies</td>
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<td>Trade policies</td>
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<td>Business and consumer practices</td>
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<tr>
<td>Disruptions</td>
<td>11</td>
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<tr>
<td>Technology</td>
<td>21</td>
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<tr>
<td>Economic growth</td>
<td>35</td>
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Next Steps and Wrap-up
ACCESSING CRITICAL SUPPLY CHAINS, UNDERSTANDING THE TEXAS MULTIMODAL FREIGHT NETWORK
Freight and Economic Profiles; Supply Chain Analysis, Network Designation; Trends, Disruptors & Opportunities

ASSESSING CURRENT & FUTURE FREIGHT NEEDS
Commodity Flow Forecasts and Scenarios; Needs Assessment

DEVELOPING STRATEGIES
Policy, Program, and Project Strategies

STAKEHOLDER OUTREACH

STAKEHOLDER WORKSHOPS #1
Goals, Freight Profiles, Freight System

STAKEHOLDER WORKSHOPS #2
Forecasts, Needs, Strategies

TxFAC Meetings
Next 90 Days

- Technical tasks
  - Finalize goals and objectives
  - Finalize TMFN
  - Conduct needs assessment to include safety and resiliency
  - Complete initial supply chain mapping and research

- Stakeholder engagement
  - Conduct stakeholder interviews
  - Continue TxFAC meetings
Thank you!

Contact info the TFMP

Sherry Pifer
TxDOT
sherry.pifer@txdot.gov
(512) 460 1727

Paula Dowell, Ph.D.
Cambridge Systematics
PDowell@CamSys.com
(404) 861 5834
Wrap Up Discussion

- Caroline Mays, AICP, TxDOT
- Sherry Pifer, TxDOT
- Judge Ed Emmett