



Texas Rail Initiatives

Freight Rail Studies In Texas

**AASHTO Standing Committee
On Rail Transportation**

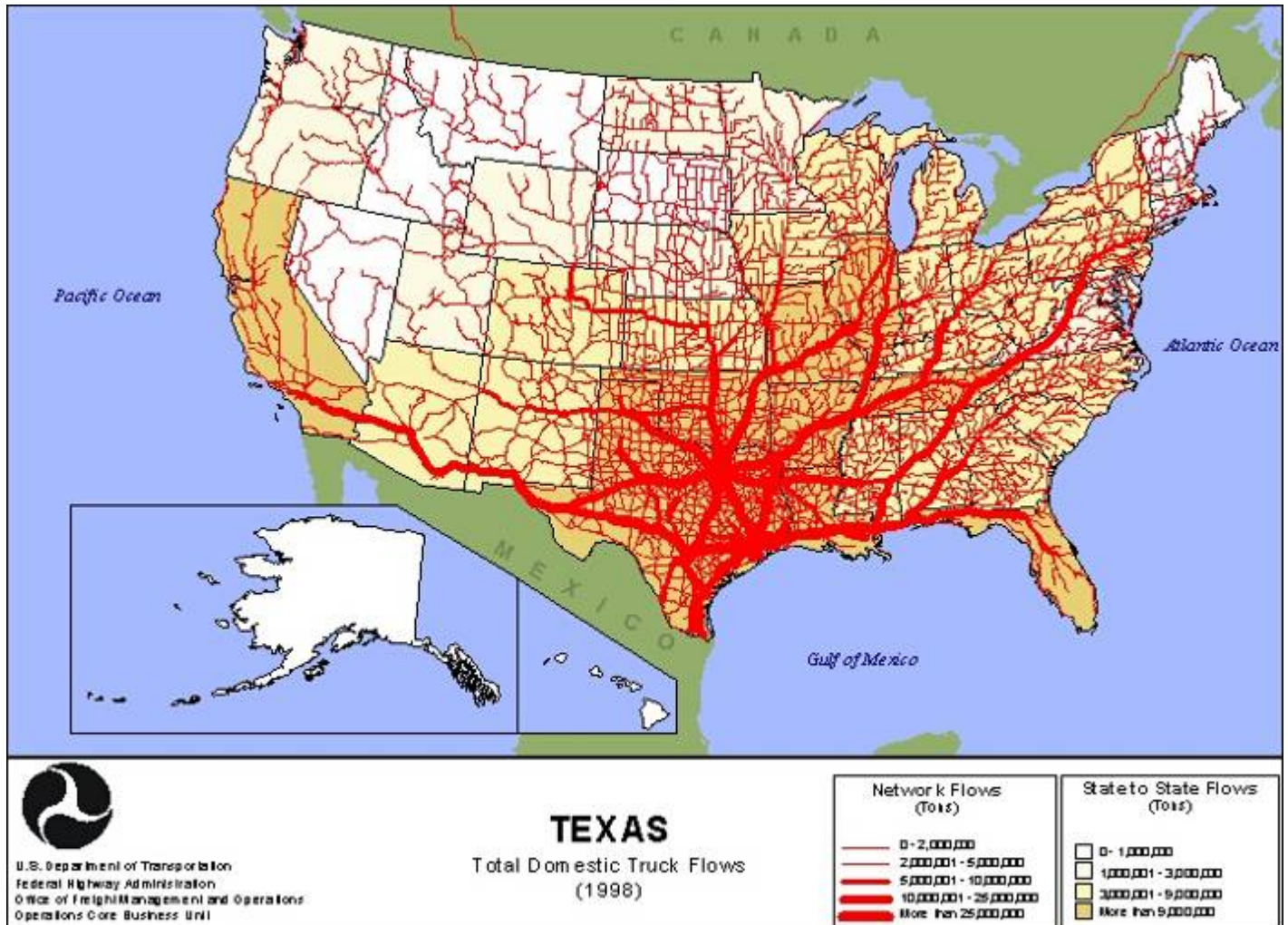
**2006 Annual Conference
San Antonio, Texas**

September 12, 2006

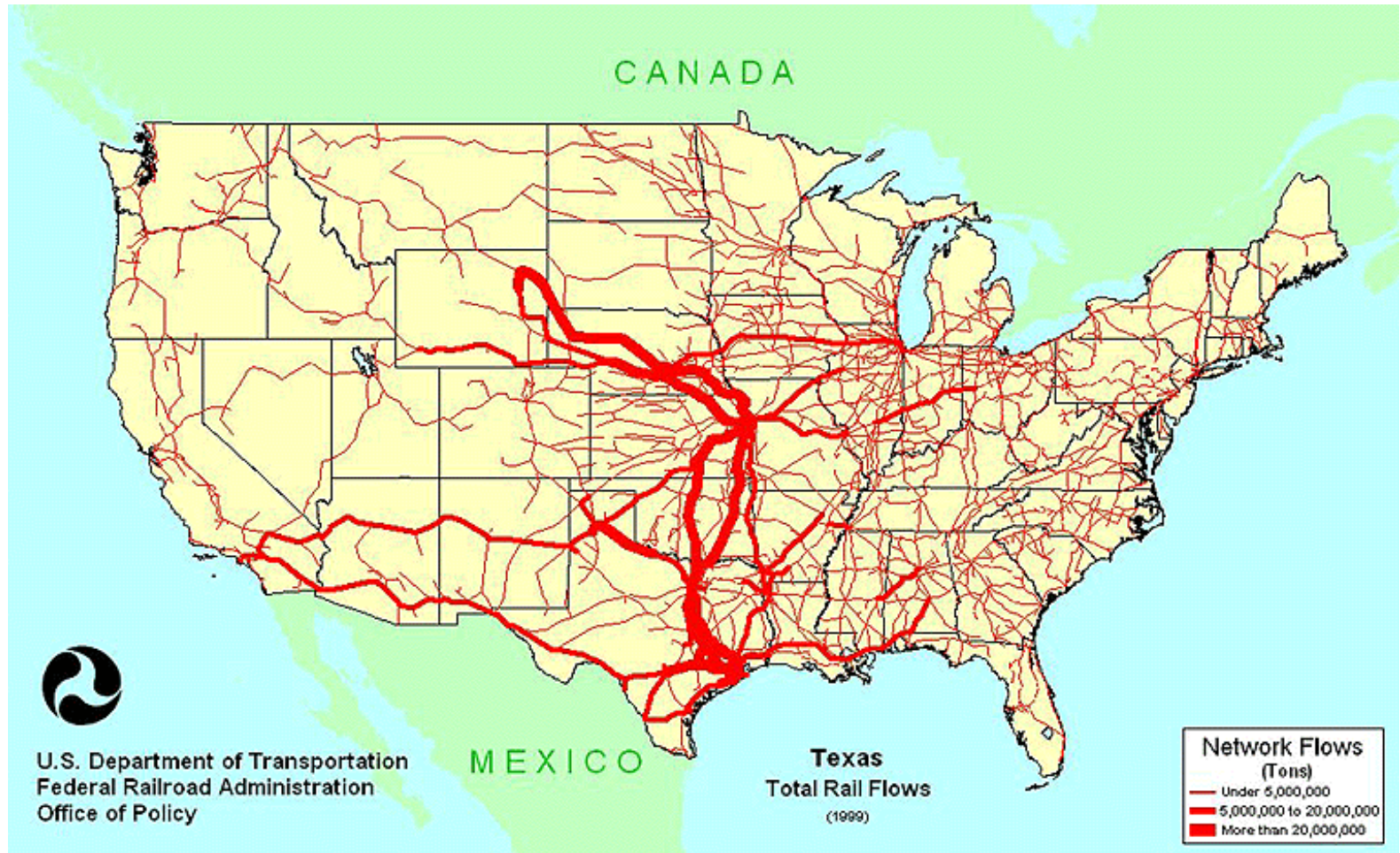
Freight Movement in Texas

- Strategically located for truck and rail freight movement
 - East – West corridor
 - Ports of Los Angeles and Long Beach
 - Port of Houston
 - North – South corridor
 - NAFTA traffic

Freight Movement in Texas



Freight Movement in Texas



National Freight Railroads

- Freight rail carries 16% of national tonnage
- Current rail freight volumes equate to 92 billion truck vehicle miles of travel (VMT) on U.S. roadways
- 20 year investment of over \$64 billion in highway improvements necessary to handle this traffic if no rail
- Would cost shippers an additional \$1.6 trillion to ship this tonnage by truck over the 20 year timeframe

Source: AASHTO Freight-Rail Bottom Line Report, January 2003

By 2020 – U.S. Rail

- 900 million tons of freight added to highways if no increase in rail system
- 450 million tons of freight added to highways if railroads build what they can afford today from revenue & loans
- Aggressive public-private partnerships for constructing additional rail estimated by AASHTO to divert 600 million tons from highway to rail

Source: AASHTO Freight-Rail Bottom Line Report, January 2003

Texas Freight Railroads

- 10,347 miles of track in Texas, #1 in U.S.
- Current freight rail volumes equate to 30-40 million more truck-loads per year on Texas roadways
- Over \$1 billion in wages paid to Texas railroad employees annually

Source: Texas State Rail Plan

Texas Freight Rail Movements

- Freight Rail movement
 - 8,413,283 carloads in 2003
 - 9,164,493 carloads in 2004
 - Nearly an 8% increase
 - 338,531,729 tons of freight rail in 2003
 - 365,352,440 tons of freight rail in 2004
 - Nearly a 9% increase

Source: Surface Transportation Board Waybill sample data

Freight Rail Border Crossing Data

In-bound Rail Container Crossings, U.S. - Mexican Border							
State	1998	1999	2000	2001	2002	2003	2004
Arizona	35,812	33,692	50,602	58,667	52,236	45,685	46,899
California	7,755	10,286	9,115	10,618	11,067	10,702	15,091
New Mexico	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Texas	344,339	456,396	512,108	513,367	539,019	551,088	613,315
Total U.S. - Mexico border	387,906	500,374	571,825	582,652	602,322	607,475	675,305

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, special tabulation 2005, based on data from U.S. Customs Service, Mission Support Services, Office of Field Operations, Operations Management Database.

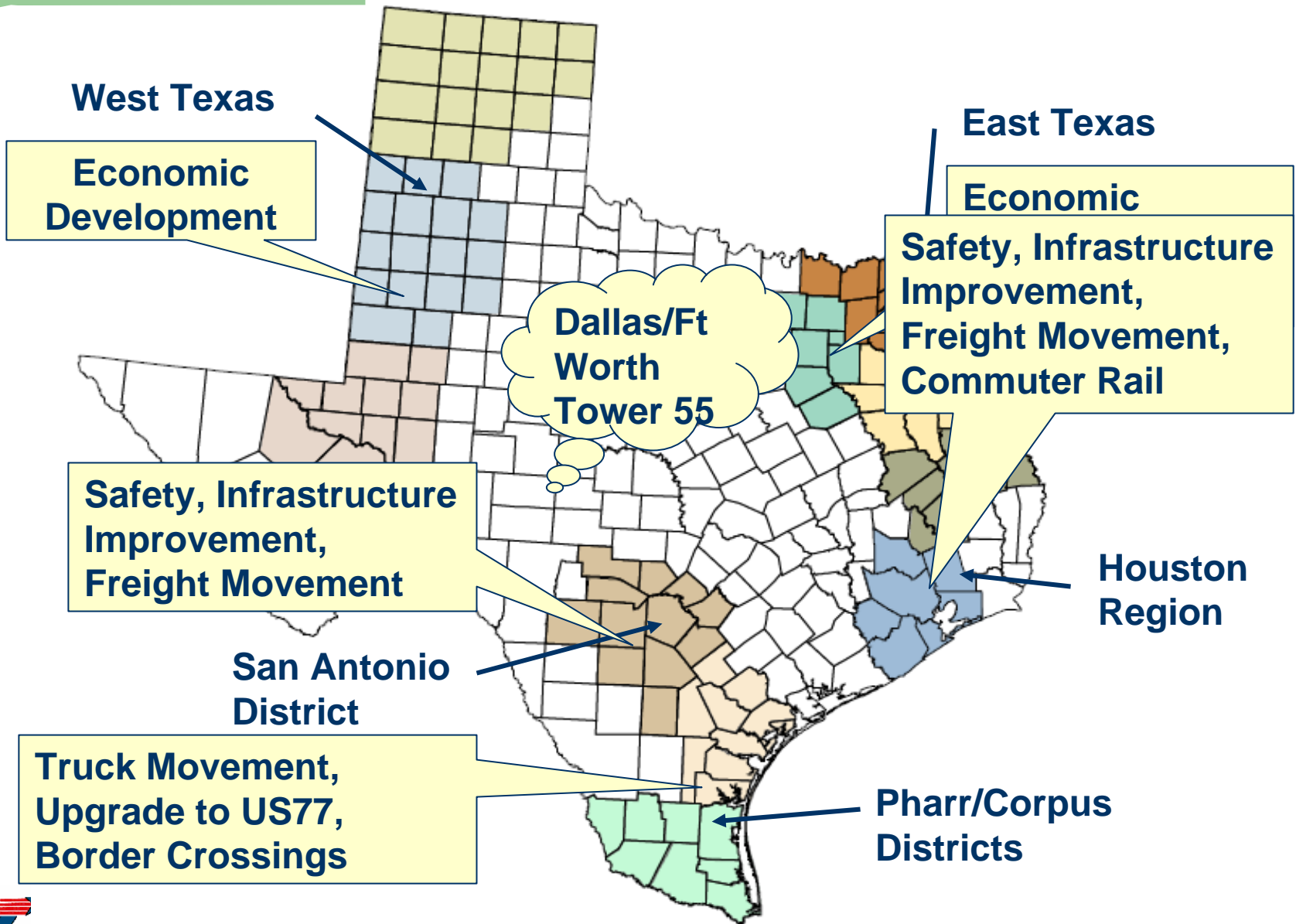
Rail Tonnage - Forecast

- Approximate 6% annual growth in rail freight movement from Mexico since 1991
 - Nearly doubled in last 6 years
- Freight tonnage moved by rail is forecast to double by 2025
- Main commodity groups are Raw and Building Materials, and Coal

Statewide Freight Study

- Development of statewide needs assessment for freight movement
- Evaluation of freight movements and operations within specific areas
- Identification of opportunities to increase freight efficiencies
- Feasibility of relocating freight infrastructure and operations to alternative alignments
- Opportunities for economic development

TxDOT Study Areas



Common Goal

- Development of recommendations and plans to implement identified projects

Need for Freight Rail Improvements

- Without rail infrastructure upgrades
 - Freight rail lines will reach capacity
 - Drastically increase truck freight
 - Increase congestion
 - Impact air quality
- Alternatives to improvements
 - Upgrade existing infrastructure
 - Investigate new rail corridors

Railroad Capacity Improvements

- Must be operationally and financially sound
- Analysis must utilize methodology acceptable to the railroads
 - Establishing a baseline of the current rail network
 - Test validity of improvements and/or alternatives
 - Establish realistic benefits for both the Public and Private sector
- Must be made to sustain growth

Railroad Capacity Improvements

- Must engage the Railroad Companies from the onset
 - Their input is critical
 - They know their operations better than us
 - It is their railroad!

Measuring Railroad Capacity

- Set of facilitating assumptions and a tremendous amount of data
 - For one region, UP supplied over 17,216 lines of “code”
- Analyze terminal facilities and line-haul routes
- Fundamental assumption that the system - at some point in time - was optimally sized

Measuring Railroad Capacity

- Develop statistical models
- Obtain actual train movement data
- Observe volume of traffic over a particular route segment
- Observe volume of traffic over the entire rail network under consideration
- Assess terminal capacity
 - Provides an entirely different set of challenges
 - Institutional challenges
 - Operational constraints

First Steps – What Exists Today?

- Identify and evaluate the physical characteristics of the railroad including terminals
- Identify potential bottlenecks
- Establish “base-case” operational model
- Establish railroad considerations for growth forecasts
 - Requirements to handle the additional traffic
 - Including terminals and yards

Rail Yard and Terminal Relationship

- Plug up the rail yards, plug up the railroad
- Yards can be the single most critical choke point for any railroad
- Keeping them fluid makes the railroad more efficient

Second Step – The Analysis

- Creating and modifying a rail network simulation
- Interface for dispatching trains
- Realistic meet-pass logic
- Calculate train running times and operating hours
- Delay time (train hours)
- Detailed train performance reports

Third Step – Quantifiable Results

- Analyze effects of capital projects, such as:
 - sidings, crossovers and bypass tracks
 - double tracking
 - new locomotives by type
- Determine best time to schedule trains
- Determine effects of adding and deleting train service
- Determine comparisons of improving existing infrastructure vs. alternative alignments
 - Key component in validating operational improvements

Multimodal Freight Movement

- Rail/Roadway constraints and conflicts
- Rail/Roadway/Maritime freight relationships
- Associated safety issues
- Investigate alternatives for infrastructure improvements
 - Rail
 - Roadway
- Public and stakeholder involvement throughout
- Ancillary benefits
 - Potential commuter rail?

Project Funding

- Carl Sagan analogy
 - Public, Private, Federal, State, Local?
- How to fund the projects so the necessary improvements can be made
 - Support needed for Texas' planned growth

Source: *The Unreliability of Federal Financing*, TxDOT, February 2006

Federal Support

- Approximately **\$11.2 BILLION** diverted away from the State for Highway improvements
- Approximately **\$3.4 BILLION** for transit improvements

Source: *The Unreliability of Federal Financing*, TxDOT, February 2006

Funding deficits

- Annual infrastructure improvement funding is about \$1.25 Billion
- Creates a need for funding alternatives
 - Tolls
 - P3's
 - Innovating funding?

Source: *The Unreliability of Federal Financing*, TxDOT, February 2006

Infrastructure Improvement Funds

- Statewide Mobility Fund
- Railroad Relocation and Improvement Fund
- Port Access and Improvement Fund
- All rely on creditworthy funding streams to allow for bond initiatives

TxDOT's Ultimate Goal

- Establish prioritized list of transportation infrastructure improvements
 - Costs/Benefits
- Present to the House Transportation Committee
 - Starting with the 2007 legislative session
- Establish ways to fund the projects
 - Railroad Relocation and Improvement Fund

THANK YOU!

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