

## **Welcome and Introductions**

**Approval of the January 9, 2009 Meeting Minutes**

**Overall Project Progress Report & Recent Coordination**

**Discussion of Presentation Items for February 18, 2009 Public Meeting  
and Draft Recommendation of Locally Preferred Alternative (LPA)**

**Rail Operations Phasing Plan for North-South Trench Improvement**

**Environmental Document Progress and Coordination Update**

**Draft Methodology for Cost/Benefit Analysis**

**Next Steps & Questions**

**Upcoming March 13, 2009 TAG Committee Meeting Items**

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# **Tower 55 Rail Reliever Study**

## **Meetings / Presentations**

- **Texas Department of Transportation – Cultural Resources (EA)**  
January 22, 2009 – NCTCOG
- **Regional Transportation Council – New Member Orientation**  
January 22, 2009 – NCTCOG
- **City of Fort Worth – Planning Department**  
January 27, 2009 – Fort Worth City Hall
- **Burlington Northern Santa Fe (BNSF)**  
January 30, 2009 – BNSF Railway Headquarters, Fort Worth, TX
- **Fort Worth Transportation Authority – Commuter Rail Development**  
January 30, 2009 – NCTCOG
- **Downtown Fort Worth Inc.**  
February 4, 2009 – DFW Inc. Offices, Fort Worth, TX
- **NCTCOG Public Meetings (MTP – 2009 Amendment Recommendations)**  
February 9-10, 2009 – Plano, TX (Christopher Parr Library); Fort Worth, TX (Ella Mae Shamblee Library); Desoto, TX (Desoto Civic Center)
- **City of Fort Worth – Transportation & Public Works Department**  
February 12, 2009 – Fort Worth City Hall

# Tower 55 Rail Reliever Study

## Other Accomplishments

- **Completed Preliminary Schematic development of the proposed Locally Preferred Alternative for Tower 55**
- **Railroad Traffic Controller (RTC) modeling continues**
  - Amtrak-TRE relocation and BNSF/UP TERP models have been completed
  - Trench alternative to be completed and evaluated by early March
- **Completed significant progress on documentation for the Tower 55 Environmental Assessment (EA)**
- **Prepared Preliminary Schematic for Broadway Street connection between Calhoun Street and Vickery Boulevard (City of Fort Worth)**
- **Continued meetings and coordination to determine implications of Tower 55 Alternatives on Commuter Rail implementation**
- **Completing preparations for 2<sup>nd</sup> Public Meeting series:**
  - Meeting notices, advertisements, and newsletters have been distributed
  - **Wednesday, February 18, 2009 – Fort Worth Intermodal Transportation Center**

12 P.M.	Brown Bag Lunch Public Meeting
5:30 P.M. – 6:30 P.M.	Open House
6:30 P.M.	Public Meeting

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# Tower 55 Rail Reliever Study

## Measures of Effectiveness

Request for Environmental Classification;

July 20, 2007

“2. Review of available data:

a. Anticipated project (design concept/scope and right-of-way):

*A final alternative has not been selected. . . The alternative evaluation process will include evaluating these alternatives in terms of engineering, operations, social, economic, and environmental effects to determine a recommended alternative by late 2008.”*

# “A Progression of Improvements”

## November 2007 Public Meeting

- Short Term Improvements
  - A system of at-grade solutions
  - Commuter rail opportunities
- Mid-Term Improvements
  - Grade separated solution
  - Trench, Fly-Over, or FWWR Bypass
  - Commuter rail opportunities
- Long-Term Improvement
  - Regional Rail Bypass (not part of this environmental process)

# Early Alternatives Considered

## November 2007 Public Meeting

- Eight Improvement Alternatives were Initially Considered
  - Third North-South track at-grade (3 options)
  - North-South Trench (2 options)
  - East-West Flyover (1 option)
  - FW&WRR Bypass (2 options)

# Early Conclusions to Some Alternatives

- At Grade Alternatives
  - Two alternatives were geometrically infeasible
  - BNSF/UP developed a joint plan and have proceeded with design, which has become At-Grade alternative
- Trench Alternatives
  - One alternative was geometrically infeasible
- FWWR Bypass
  - Single track alternative did not provide sufficient capacity for long term solution
- Measures of Effectiveness focus on remaining alternatives

# Tower 55 Rail Reliever Study

## Measures of Effectiveness

### Railroad

Capacity Improvements: The amount of overall additional capacity added due to the construction of an alternative.

Created Meet/Pass Capacity Near Tower 55: Tracks designated to hold trains to meet other trains or to perform normal terminal operational procedures such as crew changes, equipment maintenance, etc.

Number of Conflicting EW/NS Movements at Tower 55: Quantity of incompatible East-West and North-South movements.

Number of Conflicting Turning Movements near Tower 55: Quantity of incompatible turning movements with either EW or NS movements.

Operations & Maintenance: Long-term cost of railroad operations and maintenance.

# Tower 55 Rail Reliever Study

## Measures of Effectiveness

### Public

Interactions between Railroad and Roadway Traffic: The number of crossing blockages caused by stopped or slowly moving trains.

Interactions between Railroad and Pedestrian Access: Ability to reduce railroad related obstructions to pedestrian traffic.

Commuter Rail Access North/South: The potential opportunity for North and South commuter rail operations through Tower 55.

Commuter Rail Access East/West: The potential opportunity for East and West commuter rail operations through Tower 55.

# Tower 55 Rail Reliever Study

## Measures of Effectiveness

### Environmental

Air Quality Impact: Impact on air quality as determined by locomotive emissions per ton of freight moved.

Right-of-Way Requirements: Evaluation of the number of parcels affected, number of buildings displaced, and use and accessibility of remaining parcels.

Community Effects: Indication of how well each alternative affects access to neighborhoods and community resources such as medical facilities, schools, and parks.

# Tower 55 Rail Reliever Study

## Measures of Effectiveness

### Environmental (cont'd)

Effects on Cultural Resources: Evaluation of effects to parklands and historical resources.

Visual Effect: The visual effect each alternative has on the surrounding areas.

Noise and Vibration Effect: The level of noise and vibration caused by increased rail traffic over each alternative.

# Tower 55 Rail Reliever Study

## Measures of Effectiveness

### Combined

Cost: Money required to construct a specific alternative.

Constructability: The extent to which an alternative can be constructed on-site at a reasonable cost with minimum impacts to railroad, vehicular, and pedestrian operations.

Partnership: The potential for all stakeholders to reach consensus on funding and implementation of a specific alternative.

# Tower 55 Rail Reliever Study

## Railroad Measures of Effectiveness

### Draft Preliminary Evaluation

	Short-Term (1- 3 Years)		Mid-Term (5-10 Years)					
	BNSF/UP At-Grade Alternative		Alt. 2B N/S Trench		Alt. 3A E/W Flyover		2 Track FWR Bypass	
	UP	BNSF	UP	BNSF	UP	BNSF	UP	BNSF
<b>Neutral (0)</b> <b>Very Favorable (++)</b> <b>Unfavorable (-)</b> <b>Favorable (+)</b> <b>Very Unfavorable (- -)</b>								
Capacity Improvements	+	++	++	++	++	+	+	++
Created Meet/Pass Capacity Near Tower 55	0	+	++	+	0	0	+	0
Number of Conflicting EW/NS Movements at Tower 55	0	0	++	++	++	++	+	++
Number of Conflicting Turning Movements at Tower 55	+	0	++	++	0	0	+	++
Operations & Maintenance	+	0	+	+	-	0	--	--
Interactions between Railroad and Roadway Traffic	+	+	+	0	0	0	--	--
Interactions between Railroad and Pedestrian Access	+	+	0	0	0	0	--	--

# Tower 55 Rail Reliever Study

## Other Measures of Effectiveness

	Short-Term (1- 3 Years)	Mid-Term (5-10 Years)		
Neutral (0) Very Favorable (++)    Unfavorable (-) Favorable (+)            Very Unfavorable (--)	BNSF/UP At-Grade Alternative	Alt. 2B N/S Trench	Alt. 3A E/W Flyover	2 Track FWR Bypass
Commuter Rail Access North/South	0	0	0	--
Commuter Rail Access East/West	--	+	-	-
Air Quality Impact	+	++	+	+
Right-of-Way Requirements	++	0	--	--
Community Effect	0	+	-	--
Effect on Cultural Resources	0	-	-	--
Noise and Vibration Effect	0	-	-	--
Visual Effect	0	+	--	--

# Tower 55 Rail Reliever Study

## Other Measures of Effectiveness

	Short-Term (1- 3 Years)	Mid-Term (5-10 Years)		
	BNSF/UP At-Grade Alternative	Alt. 2B N/S Trench	Alt. 3A E/W Flyover	2 Track FWWR Bypass
<b>Neutral (0)</b> <b>Very Favorable (++)</b> <b>Unfavorable (-)</b> <b>Favorable (+)</b> <b>Very Unfavorable (--)</b>				
Cost	0	--	--	--
Constructability	+	-	+	--
Partnership	++	++	--	--
Very Favorable (++) (5 points)	3	9	3	3
Favorable (4 points)	10	7	3	5
Neutral (3 points)	11	5	10	1
Unfavorable (2 points)	0	3	5	1
Very Unfavorable (1 point)	1	1	4	15
Total Points	89	95	71	55

# Recent Conclusions to Alternatives

- November 2008
  - FWWR Bypass eliminated as full alternative due to community impacts and commercial & residential property required to create connections at south end of alternative
- December 2008
  - East-West Fly-over eliminated from further consideration due to response from Ft. Worth City Council and community impacts.

# Tower 55 Rail Reliever Study

## Draft Recommendation of the Locally Preferred Alternative (LPA)

**Based on Measures of Effectiveness Evaluation Results and Public/Political Input:**

LPA: North-South Trench with additional improvements to north and south ends. Developed as a “progressive build-upon” set of improvements to BNSF/UPRR at-grade improvements.

Improved Commuter Rail Opportunities – Reconstruction of the “Hole in the Wall” as part of the trench construction would allow future simultaneous TRE and SW2NE operations through the Hole in the Wall. A new additional bridge over Lancaster Avenue parallel to the TRE Bridge would be used by freight during trench construction and then be transferred to TRE for double track between ITC and T&P Stations.

Long-Term: Regional Rail By-Pass will be further studied in future as another improvement to accommodate the relocation of thru-movement trains.

# Tower 55 Rail Reliever Study

## Draft Recommendation of the Locally Preferred Alternative (LPA)

South End: Page Street @ BNSF Ft. Worth Sub

North End: Meacham Boulevard @ UP Choctaw Sub

Project Components (general description from south to north):

1. Series of crossovers from Allen Street to Page Street between BNSF's Ft. Worth Sub and UPRR Ney Bypass.
2. Additional crossover between Rosedale Street and Magnolia Avenue on the UP Ft. Worth Subdivision
3. 3-Track "Trench" (approx. 8000') constructed between Rosedale Avenue and MLK Freeway (Spur 280) with multiple crossovers to facilitate BNSF and UP movements
4. "Trench" vertical profile closes Vickery Blvd.; 4 options being evaluated
5. Reconstruction of Lancaster Ave. from Jones Street to Kentucky Ave. and I-30 ramp connections due to construction of "Trench"
6. Bridges over trench for NW Wye, SW Wye and Dallas Subdivision connections
7. Temporary Dallas Subdivision crossovers opposite T&P Station during construction
8. New bridge parallel to TRE bridge between ITC and T&P Station for initial purposes during construction transferring to TRE for permanent use

# Tower 55 Rail Reliever Study

## Draft Recommendation of the Locally Preferred Alternative (LPA)

9. At grade track on west side parallel to trench from Rosedale Ave to SH280
10. At grade track on east side parallel to trench along UP Choctaw Sub from Rosedale Street to Spur 280, including NE & SE quadrant tracks at Tower 55
11. Widening “Hole In Wall” to allow construction of two additional tracks to create three track underpass benefitting both freight rail and commuter rail
12. New connections between Choctaw1/WF Sub and UP North Siding, extension of BNSF Track 9598 to north and new parallel crossovers near 4<sup>th</sup> St. Upgrade BNSF tracks 9598, 9599, 9501 to main line status and quality.
13. New 7600’ track from south end of Trinity River Bridges to 4th St. parallel to Choctaw 1/Wichita Falls Sub. Track will be connected to BNSF's Ft. Worth Sub and BNSF's Track 9599 by crossovers and turnouts.
14. Set of crossovers at Tower 60 to facilitate train movements
15. New 8500’ foot siding track from Beach Street on the DART-owned Cotton Belt to I-35W in a location within right-of-way allowing for future double tracking of TRE
16. A new grade separation of Sylvania Avenue over the Cotton Belt line with clear span of railroad right-of-way

# Tower 55 Rail Reliever Study

## North / South Trench Effects – Vickery Blvd.

- The Tower 55 North / South Trench would sever Vickery Boulevard at the underpass beneath the railroad corridor
- Four alternatives have been identified at this time:
  - No-Build (close Vickery Boulevard between I.H. 35W and Calhoun Street)
    - East-west access is maintained at Lancaster Avenue and at Pennsylvania Avenue
  - New Vickery Boulevard Bridge
    - Bridge would stretch from east of Main Street to west of Tennessee Avenue (travels over the I.H. 35W direct connector ramps – approximately 60 feet high)
    - Estimated Cost = **\$39.5 Million**
  - New Vickery Boulevard Tunnel
    - Tunnel would stretch from east of Main Street to west of Illinois Avenue (travels beneath I.H. 35W and the North / South Trench)
    - Estimated Cost = **\$123.3 Million**
  - New Bridge at Broadway Street
    - Bridge would stretch from east of Calhoun Street to west of New York Avenue (travels over the I.H. 35W direct connector ramps – approximately 40 feet high)
    - Broadway Street would be reconstructed with direct tie-in to New York Ave.
    - Estimated Cost undetermined at this time (anticipated to be less than Vickery Boulevard bridge)

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# Tower 55 Rail Reliever Study

## Environmental Assessment Status

(as of 2/13/09)

Section	Due Date	Date Received	Comments
<b>1.0 INTRODUCTION</b>	1/16/09	1/16/09	
<b>2.0 NEED AND PURPOSE FOR PROPOSED ACTION</b>			
2.1 Capacity	1/16/09	1/16/09	
2.2 Transportation Demand	1/16/09	1/16/09	
2.3 Economic Development	1/16/09	1/16/09	
2.4 Modal Interrelationships	1/16/09	1/16/09	
2.5 Safety	1/16/09	1/16/09	
2.6 Transportation System Deficiencies	1/16/09	1/16/09	
2.7 Purpose	1/16/09	1/16/09	
<b>3.0 DESCRIPTION OF EXISTING FACILITY</b>	1/16/09	1/16/09	
<b>4.0 ALTERNATIVES</b>			
4.1 Planning and Alternative Development Process	1/16/09	1/16/09	
4.2 Description of Reasonable Alternatives	1/16/09	1/16/09	
4.2.1 No Build Alternative	1/16/09	1/16/09	
4.2.2 Recommended Preferred Alternative	1/16/09	1/16/09	
4.3 Public and Agency Support	1/16/09	1/16/09	
<b>5.0 ENVIRONMENTAL RESOURCES, EFFECTS, AND MITIGATION</b>			
<b>5.1 Social and Economic Issues</b>			
5.1.1 Land Use	2/17/09		
5.1.2 Community Impacts	2/17/09		
5.1.3 Economic Impacts	2/16/09		
5.1.4 Displacements	2/6/09	2/6/09	
5.1.5 Utilities	2/6/09	2/6/09	
5.1.6 Environmental Justice	2/6/09	2/6/09	
5.1.7 Limited English Proficiency	2/6/09	2/6/09	
5.1.8 Public Facilities and Services	2/6/09	2/6/09	

# Tower 55 Rail Reliever Study

## Environmental Assessment Status (con't)

(as of 2/13/09)

Section	Due Date	Date Received	Comments
<b>5.2 Natural Resources</b>			Need UP permission to get on right-of-way
5.2.1 Vegetation	2/17/09		
5.2.2 Threatened and Endangered Species	2/17/09		
5.2.3 Migratory Birds	2/17/09		
5.2.4 Water Quality Issues	2/17/09		
5.2.5 Farmland Impacts	2/17/09		
<b>5.3 Hazardous Materials</b>	2/18/09		Need UP permission to get on right-of-way
<b>5.4 Air Quality</b>	2/20/09		Awaiting RTC Model Results
<b>5.5 Noise</b>	3/4/09		
<b>5.6 Vibration</b>	3/4/09		
<b>5.7 Cultural Resources</b>			
5.7.1 Archeology	3/4/09		
5.7.2 Historic Structures	3/4/09		
<b>5.8 Section 4(f) Resources</b>	3/4/09		
<b>5.9 Indirect and Cumulative Impacts</b>			
5.9.1 Indirect Effects	3/10/09		
5.9.2 Cumulative Effects	3/10/09		
<b>6.0 CONCLUSION</b>	3/11/09		

# Tower 55 Rail Reliever Study

## EA Coordination Efforts

- **On-Going Weekly Status Meetings with Consultant Team on EA Deliverables**
- **Week of 2/9/2009:**
  - **Archeological Permit Sent to THC**
  - **Coordinated with The T on Historic Properties Research Completed for the SW2NE DEIS**
  - **Conducted Noise & Vibration Field Studies**
  - **Conducted Partial Natural Resources & Regulation Material Field Studies**
  - **Received GIS Files from the City of Fort Worth Planning & Development Department**
- **2/3/2009 - Project Scope and Description sent to TxDOT & FHWA for Coordination Efforts with STB, FRA, & FTA**
- **1/27/09 - Meeting with Planning & Development Department of the City of Fort Worth**
- **1/22/09 Meeting with TxDOT (District and ENV) & FHWA Regarding Cultural Resources Studies & Air Quality Analysis**

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# Benefits Analysis

Team Qualifications and  
Proposed Approach

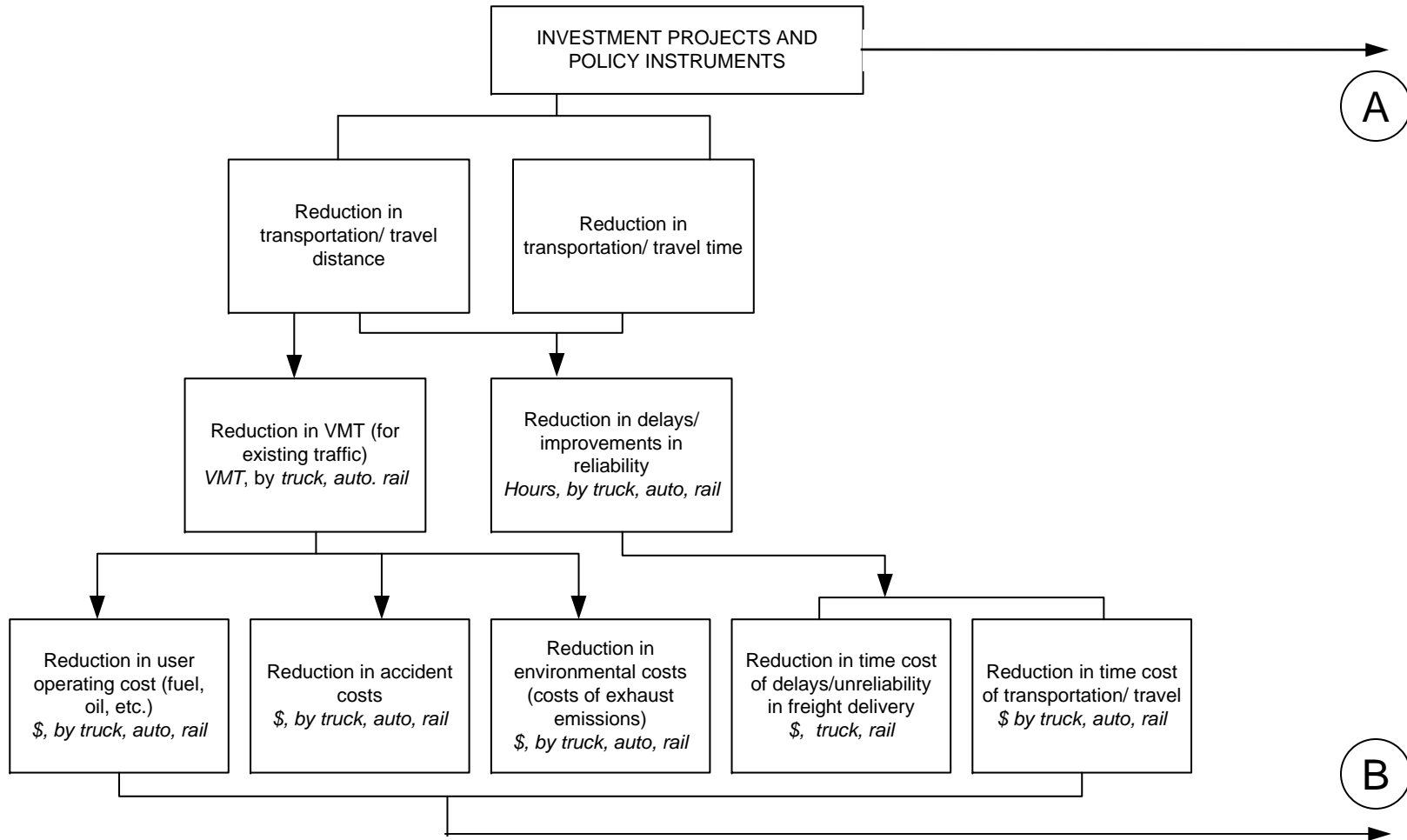
# WSA Staff

- Paula Dowell, Ph.D.
  - Vice President and National Practice Leader for Economics and Freight
  - 15 years experience
  - TRB Transportation Economics, Freight Economics and Regulation and Transportation and Economic Development Committees
- Alex King
  - 11 years experience in rail economics
- Isabel Victoria, Ph.D., PE
  - 10 years experience in transportation modeling and economics

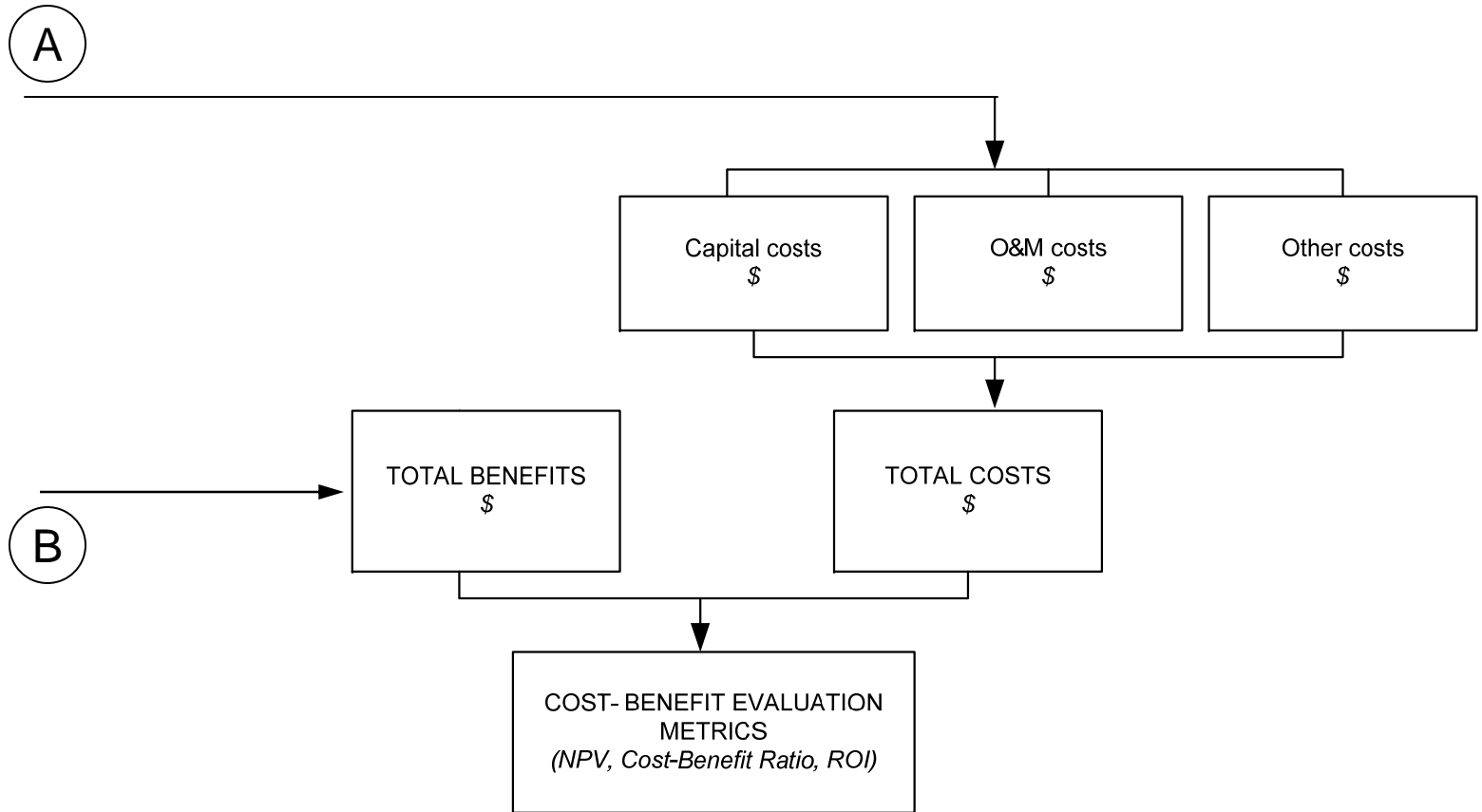
# WSA Related Experience

- **Mexico Multimodal freight Corridor Master Plan**
- **Economic Impact of Trans Texas Multimodal Corridor I-35**
- **Continental 1 Trade Corridor Study**
- **Economic Impact Measures for FL Strategic Intermodal System**
- **Economic Benefits of double-tracking FEC Medley Lead railline**
- **Economic Efficiencies of Exclusive Truck Lane**
- **Nashville Regional Freight and Goods Mobility Study**
- **El Paso Regional Freight Mobility Study and Border Queuing Model Development**
- **Economic Analysis of the Multimodal Investment Plan for the Eastern Corridor, OH**
- **Economic Impact of SVRT Investment**
- **Economic Impact of I-73**
- **I-80 Economic Impact Assessment**

# General Approach



# General Approach



# Summary of Benefits

## Private Benefits

- Reduction in delays – train and road users
- Increased rail capacity
- Operating costs savings – trains and automobiles
- Safety benefits

## Public Benefits

- Emissions reduction – Locomotives and vehicles
- Safety benefits
- Improved movement of hazardous materials
- Indirect and induced economic benefits

# Reduced Train Delays

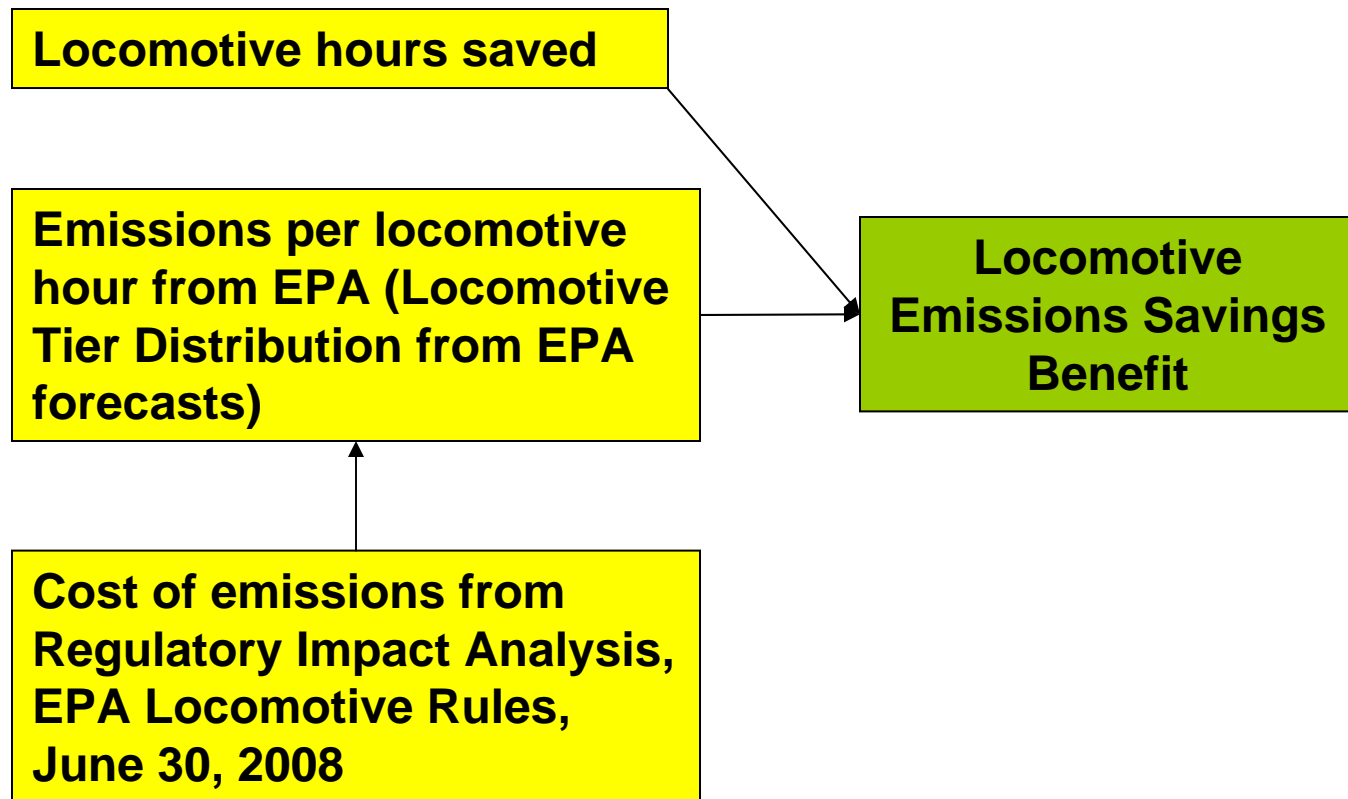
## Cost per Train Hour

<u>Statistic</u>	<u>Source</u>
Locomotive Hours	RTC Output, or Train Hours x System Average Locomotives per Train
Car Hours	RTC Output or Train Hours x System Average Cars per Train x Percentage System Cars
T&E Wages per Hour	Assume two person crew, Wage Forms A & B
T&E Fringes per Hour	System Average Fringe Rate from R-1 Annual Reports
Dispatcher per Train Hour	Wage Forms A & B, Non T&E Transportation Average, Average Fringe Rate
Locomotive Fuel per Hour	System average cost per gallon, per EPA statistics, fuel consumption assumed to be 4 gallons per hour
Locomotive Ownership per Hour	Lease rate quotes from industry publication, assume value by age of equipment
Locomotive Maintenance per Hour	Assumed \$1 per locomotive hour
Railcar Ownership per Hour	Lease rate quotes from industry publication, system average car types, percent system cars

# Reduced Train Delays

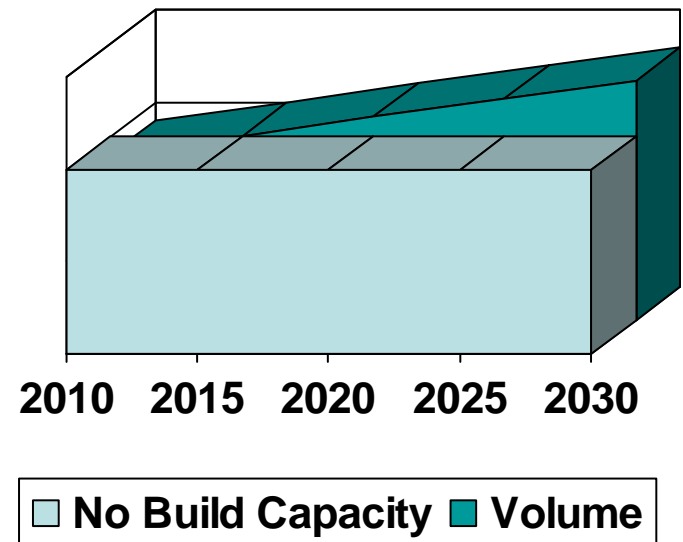
- Need to develop consistent measure of delay
  - In Tower 55 sketch plan, UP statistics suggest a 15 minute delay per train, while BNSF statistics suggest 2.4 hours of delay per train
- Hours of delay from RTC output
  - If not available, railroads will need to supply average delay per train in a consistent format

# Reduced Locomotive Emissions



# Increased Rail Capacity and Roadway User Benefits

- Define study region (16 county NCTOG region?)
- Highway user benefits
  - Reduction in delay
  - Vehicle operating cost savings
  - Safety savings
- Modeling:
  - Impact on VMT/VHT
    - Build/No-Build
  - RTC model output



# Rail and Roadway Users Crossing Benefits

## Rail

- Train length, avg time blocking crossings from RTC output
- Lag between signals train arrival/departure

## Truck

- AADT from NCTCOG by commercial/passenger (trip purpose, time of day)
- Motorist value of time from NCTCOG
- Emissions cost from SUMMIT model
- Traffic speeds
- Vehicle operating cost savings

Impedance  
Model

Crossing  
Benefits

# Assumptions

- 20 Year discounted cash flow model, perpetuity formula at year 20
  - Year 1 = First year north-south trench is operational
- Forecasted rail volumes from TxDOT freight mobility study
- Forecasted vehicle traffic volumes from NCTCOG
- Private benefits discounted by railroad cost of capital
- Public benefits discounted by public cost of capital

# Summary of Benefits

## Direct Private Benefits

- Reduces train delays and lowers cost of providing transportation service
- Reduces roadway delay
- Improves safety
- Reduces shipping costs

## Direct Public Benefits

- Reduces locomotive and auto emissions
- Reduces at-grade crossings
- Improves safety
- Reduces vehicle operating costs

**Induced impacts on Output, Income and Employment will require an economic model**

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# **Tower 55 Rail Reliever Study**

**Upcoming March 13, 2009**

## **TAG Committee Meeting Items**

- Report on Public Comments
  - February 18, 2009 Public Meeting
- Approval of Staff Recommended LPA
- Revised Cost/Benefit Analysis Methodology
- Commuter Rail Options Serving Fort Worth