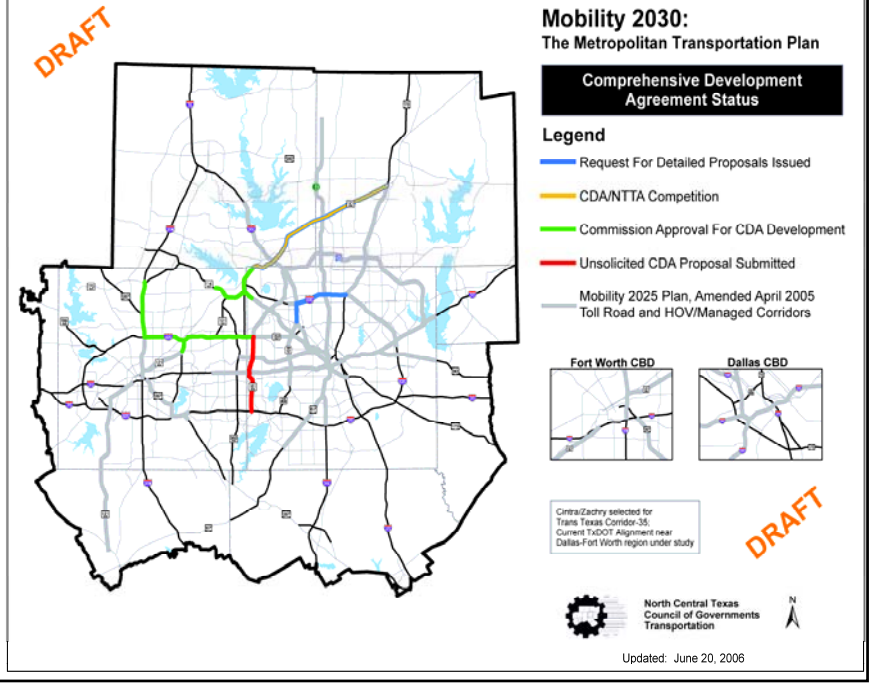
DEVELOPING A POLICY TO PLAN AND OPERATE MANAGED LANES IN NORTH CENTRAL TEXAS

TexITE Summer Meeting
June 23, 2006

Dan Lamers, P.E.
North Central Texas Council of Governments
Transportation Department
www.nctcog.org

North Central Texas Council of Governments

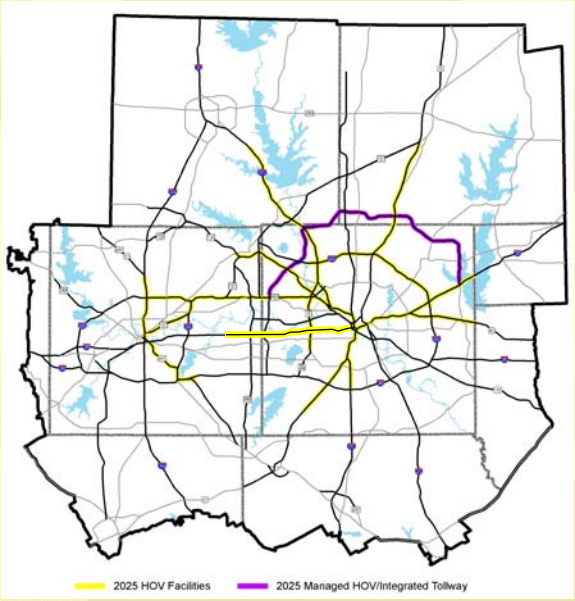


North Central Texas Council of Governments

North Central Texas Council of Governments

MOBILITY 2025 – AMENDED APRIL 2005

Managed Lane System



North Central Texas Council of Governments

Some Definitions

CDA – Comprehensive Development Agreement (Non-TxDOT Develop-Build-Operate)

Freeway – Limited access facility open to all traffic without toll

Tollroad – Limited access facility where travelers pay a toll to use the facility

SOV – Single Occupant Vehicle (one person in one vehicle)

HOV – High Occupancy Vehicle (two or more people in one vehicle)

Managed Lanes – A set of lanes where operational strategies are proactively implemented and managed in response to changing conditions (Federal Highway Administration)

North Central Texas Council of Governments

Elements of Managed Lanes

- Increase Corridor Efficiency
- Relatively Congestion Free Travel
- Travel Time Reliability
- Provide for Operational Flexibility in Response to Changing Corridor Needs
- Active Demand Management
  - Vehicle Eligibility
  - Pricing
  - Access Control

North Central Texas Council of Governments

Managed Lanes vs. Other Facility Types

	Vehicle Eligibility	Toll Pricing	Access Control
Freeway	All	No	Frequent Access Points
Tollway	All*	Yes	Frequent Access Points
HOV Lane	Vehicle Occupancy*	No	Less Frequent Access Points
Managed Lane	All*	Yes Varies by Vehicle Type/Occupancy	Less Frequent Access Points

* Heavy trucks are sometimes restricted.

Traveler Choice in Corridor

Frontage Roads – Serves Local Trips, No Demand Management

Freeway – Serves Subregional/Corridor Trips, No Demand Management

Managed Lane – Serves Regional Trips, Active Demand Management

HOV – High Occupancy Vehicles

SOV – Single Occupant Vehicles

North Central Texas Council of Governments

Policy Questions

What is the primary purpose of the managed lanes?

What types of vehicles are eligible to use the managed lanes?

Should the rate vary by time of day, vehicle type, or occupancy?

Should the rate be fixed (schedule) or dynamic (i.e., change in response to congestion)?

What should the rate be?

How should the rate be adjusted over time?

Should the policy vary by corridor?

North Central Texas Council of Governments

REGIONAL TRANSPORTATION COUNCIL
Toll Road/Managed Lane Policy History

North Central Texas Council of Governments

- Adopted Policy - all new freeways on new rights-of-way should be studied as potential toll roads (February 1993 policy position)
- Agreement with NTTA to consider value pricing (October 1994) and adopted managed HOV/integrated toll road concept (July 1998)
- Policy clarification to not support converting existing free, non-HOV/managed lanes to toll roads (October 2003)
- Excess revenue sharing policy for tollroads (Sept. 2004) and managed lanes (June 2005)
- Adoption of business terms for proposed CDA tollroad on SH 121 (April 2006)
- Adoption of business terms for proposed CDA managed lanes (May 2006)

What is the Primary Purpose of the Managed Lanes?

North Central Texas Council of Governments

- Provide Additional Capacity in Corridor
- Provide Trip Reliability for HOV and Transit (improve air quality and increase vehicle occupancy and person movement)
- Generate Revenue to Construct Facility
- Generate Revenue to Operate and Maintain Facility

DRAFT

IDENTIFIED FUNDING NEEDS
Dallas-Fort Worth Region

Metropolitan Transportation System Components	Funded Needs (Billions/2004 $)	Unfunded Needs (Billions/2006 $)
Operation & Maintenance	$14.1	
Congestion Mitigation Strategies	$1.9	
Bicycle & Pedestrian Facilities and Transportation Enhancements	$1.0	
Rail and Bus Transit System	$8.3[1]	
HOV and Managed Facilities	$1.5	
Freeway and Toll Road System	$12.4[2]	**$20.6[3]**
Regional Arterial and Local Thoroughfare System	$5.8	$5.9
Additional Cost to Purchase Right-of-Way		$1.1
Rehabilitation Costs		**$35.6**
Goods Movement/Rail Freight Costs (Trans Tx Corridor)		$6.7
TOTAL	**$45.0**	**$69.9**
	$114.9 Billion	

[1] $2.0 billion obtained through Regional Transit Initiative
[2] $0.8 billion to be obtained through future Partnership Programs
[3] Includes Freeway-to-Freeway Interchanges

DRAFT

North Central Texas Council of Governments

What Types of Vehicles are Eligible to Use the Managed Lanes?

SOV

HOV

Vanpools

Transit Vehicles

Motorcycles

Large Trucks*

Special Vehicle Type (e.g., "Green Vehicles")

*** Tunnels will likely have vehicle restrictions.**

Should the Rate Vary by Time of Day, Vehicle Type/Occupancy?

- Time of day
  - Peak Period
  - Off-Peak
  - Nighttime
  - Lanes Closed at Certain Times
- Vehicle Type/Occupancy
  - Free
  - Full Rate
  - Reduced Rate

North Central Texas Council of Governments

Should the Rate be Fixed or Dynamic?

- Fixed Schedule
  - Rate is published and set, price may vary by time of day and vehicle type/occupancy
- Dynamic
  - Rate is adjusted throughout the day based on certain facility performance measures
  - May vary by time of day, vehicle type/occupancy, and level of congestion
  - May also be capped
- Fixed with Transition to Dynamic
  - Start with a schedule and shift to dynamic based on a set of performance measures

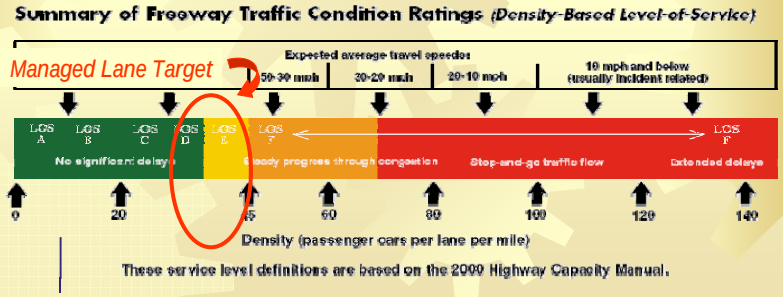
North Central Texas Council of Governments

What Should the Rate Be?

North Central Texas Council of Governments

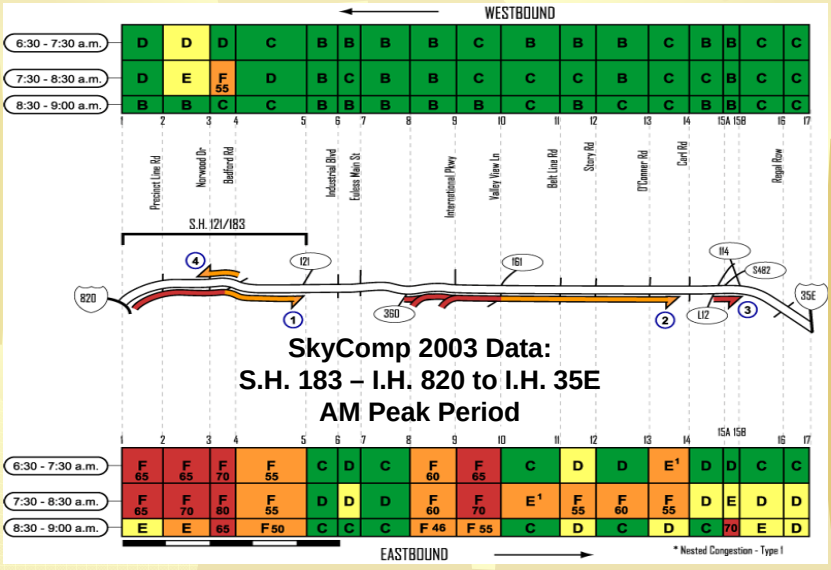
Adjacent freeway lanes and variable managed lane demand facilitates market-based rates

Market-based rates (congestion pricing) will enable managed lanes to operate at higher speeds and increase travel reliability



What Should the Rate Be? (continued)

North Central Texas Council of Governments



SkyComp 2003 Data:
S.H. 183 – I.H. 820 to I.H. 35E
AM Peak Period

North Central Texas Council of Governments

What Should the Rate Be? (continued)

The toll rate will affect the demand and level-of-service of the managed lanes

To ensure travel reliability, average toll rates will generally be higher than stand-alone tollroads

Rate Scenario	Toll Rate*	Managed Lane Demand	Level-of-Service
Low	<$0.25/mile	High	Severe Congestion Likely During Peak
Medium	$0.25-$0.75/mile	Moderate	Some Congestion Possible During Peak
High	>$0.75/mile	Low	No Congestion Expected

* Peak period discounts for HOV users.

North Central Texas Council of Governments

How Should the Rate be Adjusted Over Time?

Discretion of Managed Lane Operator

Fixed Schedule and Fixed Index (i.e., annually based on CPI)

Fixed Schedule and Performance Based (i.e., annually based on facility performance)

Should the Policy Vary by Corridor?

North Central Texas Council of Governments

- Overall Corridor Traffic Demand
- Hours of Freeway Lane Congestion
- Proximity of Parallel Routes
- Number of Freeway/Managed Lanes
- Concurrent vs. Reversible Managed Lanes
- Number/Location of Managed Lane Access Points
- Adjacent Land Uses, Special Generators (malls), or Special Events (arenas/stadiums)

Summary of Adopted Managed Lane Policy

North Central Texas Council of Governments

- Fixed Schedule for First Six Months; Dynamic Pricing After
- SOV Pays Full Rate
- Trucks Pay Higher Rate (no trucks in LBJ tunnel)
- HOV2+ Full Rate in Off-Peak
- HOV2+ 50% Discount for Peak Period*, Phase Out After Air Quality Attainment Maintenance Period (RTC will approve changes)
- Price with Speed Guarantee (maintain 50+ mph)

*6 hours per weekday: 6:30 a.m. - 9:00 a.m. and 3:00 p.m. - 6:30 p.m.

Summary of Adopted Managed Lane Policy (continued)

- During Dynamic Pricing Phase: Traveler Receives Rebate if Average Speed Drops Below 35 mph (will not apply if speed reduction is out of the control of the operator)
- Motorcycles Qualify as HOV
- No Discounts for "Green Vehicles"
- Transit Vehicles and Publicly-Sponsored Vanpools Not Charged Toll
- Toll Rate up to $0.75 per Mile During Fixed Schedule Phase; Evaluate and Adjust if Warranted (requires RTC approval)

North Central Texas Council of Governments

Summary of Adopted Managed Lane Policy (continued)

- Market-Based Tolls During Dynamic Phase
- Rates Updated Monthly During Fixed Schedule Phase
- No Scheduled Inflation Adjustments Over Time
- Same Policy in Every Managed Lane Corridor
- No Change to RTC Excess Revenue Policy
- RTC Requests that Local Governments and Transportation Authorities Assign Representatives to the CDA Procurement Process
- Duration of CDA Should Maximize Potential Revenue
- Tolls Remain on Managed Lanes After CDA Duration

North Central Texas Council of Governments

Policy Discussion at STTC on Selected Items

North Central Texas Council of Governments

HOV/Vanpool Discussion

Staff Recommendation:

- **HOV2+ 50% Discount for Peak Period, Phase Out After Air Quality Attainment Maintenance Period (RTC will approve changes)**
- **Transit Vehicles Not Charged Toll**

STTC Recommendation:

- **Discussion as to Whether Vanpools Should be Considered Transit Vehicles or HOV, Recommended Following Change to Policy**
- **HOV2+ *and Publicly-Operated* Vanpools 50% Discount for Peak Period, Phase Out After Air Quality Attainment Maintenance Period (RTC will approve changes)**

Policy Discussion at STTC on Selected Items (continued)

North Central Texas Council of Governments

Toll Rebate

Staff Recommendation:

- **During Dynamic Pricing Phase: Traveler Receives Rebate if Average Speed Drops Below 35 mph (will not apply if speed reduction is out of the control of the operator)**

STTC Discussion:

- **Clarify What "Rebate" Means**
- **Discussion Ranged from Get Rid of Rebate Altogether to Give Rebate Regardless of Whether or Not it is in the Operator's Control**