RTC WORKSHOP ON TEMPORARY EXPRESS LANES/HOV LANES AND TOLLED MANAGED LANES POLICIES

December 13, 2012
WHICH IS BETTER - GO TO 3+ NOW SO THE POLICY IS THE SAME OR KEEP THE EXPRESS LANE/HOV LANE AT 2+?

Problem #1: Going to 3+ now takes the 2+ option away from current users. Policy is easier to understand but no real good reason why transportation options are taken away from current users.

Problem #2: Don’t Change the HOV Policy on the existing system and people will learn the correct requirements on each facility. (This is how most regions transition.) This results in a marketing and communication problem, especially at the wrong time with billion dollar facilities opening.
WE KNOW THE CONTRACTOR PAYS “FEES” FOR SPEEDS UNDER 50 MPH, HOW ARE THE REBATES GOING TO WORK FOR SPEEDS UNDER 35 MPH?

Problem #3: We supported Tolled Managed Lanes because there was a “rebate” involved, however, early implementation will be problematic because “cause” of delay will not be known in real time and procedures may not be in place on time.

Problem #4: Having no rebate method will result in no real accountability for the citizens we represent.
# Proposed 5 Phases of Managed Lane Deployment

<table>
<thead>
<tr>
<th>Phase</th>
<th>Year</th>
<th>Name</th>
<th>Interim Express Lane/HOV Lane</th>
<th>Permanent Tolled Managed Lane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1991-2012</td>
<td>Aggressive Air Quality Initiative</td>
<td>2+</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>2</td>
<td>2013-2016 or Sooner</td>
<td>Patient Interface</td>
<td>2+</td>
<td>2+</td>
</tr>
<tr>
<td>3</td>
<td>2016 or Sooner</td>
<td>Data Driven Operational Sensitivity</td>
<td>3+</td>
<td>3+</td>
</tr>
<tr>
<td>4</td>
<td>?</td>
<td>Completion of Interim Projects</td>
<td>Not Applicable</td>
<td>3+</td>
</tr>
<tr>
<td>5</td>
<td>?</td>
<td>Ozone Attainment</td>
<td>Not Applicable</td>
<td>Not Applicable</td>
</tr>
</tbody>
</table>
DATA PROCESS

Tolled Managed Lane Policies

How Much Money is the RTC Spending on the 2+ (50%) Subsidy During the Pilot Period?

What are the Customer Service Demands on the Proposed New Plan?

What Percent of the Time is the Contractor Responsible for not Meeting 35 MPH Speed Requirements?

Express Lane/HOV Lane Policies

Which Facilities can Benefit from the Introduction of Single Occupancy Users?

What Communication Plan Requirements are Necessary to Implement New 3+ Policy on Express Lanes?
1. A fixed-fee schedule will be applied during the first six months of operation; dynamic pricing will be applied thereafter.

2. The toll rate will be set up to $0.75 per mile during the fixed-schedule phase. The established rate will be evaluated and adjusted, if warranted, with Regional Transportation Council approval.

3. Toll rates will be updated monthly during the fixed-schedule phase.

4. Market-based tolls will be applied during the dynamic-pricing phase. During dynamic operation, a toll rate cap will be established. The cap will be considered “soft” during times of deteriorating performance when a controlled rate increase above the cap will be temporarily allowed.

5. Transit vehicles will not be charged a toll.

6. Single \textit{and two}-occupant vehicles will pay the full rate.

7. Trucks \textit{will be allowed and} will pay a higher rate, and no trucks will be permitted in the LBJ tunnel.
8. High-occupancy vehicles of two or more occupants and vanpools will pay the full rate in the off-peak period.

9. High-occupancy vehicles with two or more occupants will receive a 50 percent discount during the peak period.* This discount will phase out after the air quality attainment maintenance period. **Eligible HOVs must pre-register as part of the HOV pre-declaration process.** RTC-sponsored public vanpools are permitted to add peak-period tolls as eligible expenses. Therefore, the Comprehensive Development Agreement firm will be responsible for the high-occupancy vehicle discount and the Regional Transportation Council will be responsible for the vanpool discount. **Managed Lane occupancy requirements of 3+ may begin on or before June 1, 2016, resulting in the initial implementation of the existing HOV 2+ policy. HOV 3+ will be implemented when necessary due to operational constraints. It is our intention for this policy and the Express Lane/HOV Lane policy to be triggered to HOV 3+ at the same time.**

10. The toll rate will be established to maintain a minimum average corridor speed of 50 miles per hour.

*6 hours per weekday: 6:30 am - 9:00 am and 3:00 pm - 6:30 pm*
11. During the dynamic-pricing phase, travelers will receive rebates if the average speed drops below 35 mph. Rebates will not apply if speed reduction is out of the control of the operator. **This policy is suspended at this time. This policy could be phased in by June 1, 2016 after implementation of dynamic pricing.** Quarterly reports regarding operator responsibility and customer communication needs will be presented to the RTC previous to implementation.

12. Motorcycles qualify as high-occupancy vehicles.

13. No discounts will be given for “green” vehicles.

14. No scheduled inflation adjustments will be applied over time.

15. Every managed lane corridor will operate under the same **regional** policy.

16. Adoption of this policy will have no impact on the Regional Transportation Council Excess Revenue Policy previously adopted.

17. The Regional Transportation Council requests that local governments and transportation authorities assign representatives to the Comprehensive Development Agreement procurement process.
18. In CDA-leased corridors, the duration of the Comprehensive Development Agreement should maximize potential revenue.

19. Tolls will remain on the managed lanes after the Comprehensive Development Agreement duration.

20. Initially, managed lanes will be enforced manually with technology support. Over time, more advanced technology verification equipment will be phased in.
# EXPRESS LANE/HOV LANE POLICIES

**Proposed Express Lane/HOV Lane Policy**

1. A fixed-fee schedule will be applied with periodic adjustments to the rate schedule necessary to meet established speed guarantee. **It is anticipated that these corridors will be instrumented with toll collection equipment in time to seamlessly interface with tolled managed lanes. Other tolling methods can be considered if seamless operation cannot be achieved in a timely fashion.**

2. The toll rate will be set, similar to the managed lane rate, up to $0.75 per mile. The established rate will be evaluated and adjusted, if warranted, with Regional Transportation Council approval. **It is anticipated the actual toll rate will be lower than this.**

3. Express lanes/HOV lanes will be enforced manually. Enhanced technology will be utilized when available and can be retrofitted in each corridor.

4. Transit vehicles will not be charged a toll.
5. Single-occupant vehicles will pay the full rate.

6. Trucks will not be permitted due to inadequate design standards.

7. Motorcycles qualify as high-occupancy vehicles and will not be charged a toll.

8. No discount will be given to “green” vehicles.

9. High-occupancy vehicles with two or more occupants and vanpools will be free at all times.

10. When the available capacity of the Express/HOV lane is full from HOV2+ users, the option to increase auto occupancy from HOV2 to HOV3+ may be initiated, or when necessary to ensure consistent operations with permanent managed lanes. Managed Lane occupancy requirements may begin on or before June 1, 2016, resulting in the initial implementation of the existing HOV 2+ policy. It is our intention for this policy and the Tolled Managed Lane policy to be triggered to HOV 3+ at the same time.
11. The toll rate will be established to maintain a minimum average corridor speed of 50 miles per hour.

12. Rebates will not apply to Express/HOV lanes since dynamic pricing will not be implemented.

13. Every Express lane/HOV lane corridor will operate under the same regional policy.

14. Adoption of this policy will have no impact on the Regional Transportation Council Excess Revenue Policy previously adopted.
### Operational Characteristics – Express Lanes/HOV Lanes vs. Managed Lanes

<table>
<thead>
<tr>
<th>Policy already in Place</th>
<th>Policy to be Developed</th>
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<tbody>
<tr>
<td><strong>Managed Lanes</strong></td>
<td><strong>Express Lanes/Current HOV</strong></td>
</tr>
<tr>
<td>SOV Occupancy</td>
<td>Toll – Dynamic</td>
</tr>
<tr>
<td>HOV2 Occupancy</td>
<td>Toll – Dynamic (initial 50% discount during peak periods)</td>
</tr>
</tbody>
</table>
| HOV 3+ Occupancy        | 50% discount peak periods  
                          | HOV pre-declaration    | Free |
| Trucks                  | Yes – designed to accommodate  | No – not designed to accommodate |
| Speed Guarantee         | Yes – 50 mph per RTC policy | Yes – 50 mph |
| Rebates                 | Yes – below 35 mph during dynamic phase | No – will not apply without dynamic pricing |
| Enforcement             | Manual with technology support, phase in technology verification | Manual with technology support, phase in technology verification |

*Existing mainlanes and frontage roads will be improved and will remain free*
### Summary of HOV Discount Subsidy: LBJ & NTE

#### Subsidy for a 50% discount to HOV 2+ users (2008$ millions)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>LBJ</td>
<td>$11.6</td>
<td>$46.5</td>
<td>$128.0</td>
<td>$189.1</td>
<td>$375.2</td>
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<tr>
<td>NTE</td>
<td>$11.4</td>
<td>$38.8</td>
<td>$105.8</td>
<td>$148.8</td>
<td>$304.8</td>
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<tr>
<td>Total</td>
<td>$23.0</td>
<td>$85.3</td>
<td>$233.8</td>
<td>$337.9</td>
<td>$680.0</td>
</tr>
</tbody>
</table>

#### Subsidy for a 50% discount to HOV 3+ users (2008$ millions)

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</tr>
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<tbody>
<tr>
<td>LBJ</td>
<td>$1.2</td>
<td>$4.6</td>
<td>$12.8</td>
<td>$13.6</td>
<td>$32.2</td>
</tr>
<tr>
<td>NTE</td>
<td>$1.1</td>
<td>$3.8</td>
<td>$10.4</td>
<td>$10.9</td>
<td>$26.2</td>
</tr>
<tr>
<td>Total</td>
<td>$2.3</td>
<td>$8.4</td>
<td>$23.2</td>
<td>$24.5</td>
<td>$58.4</td>
</tr>
</tbody>
</table>

Source: NCTCOG, Extrapolated to 2028 based on TxDOT data
LBJ – Official Statement Table 37: Traffic and Revenue Forecasts
NTE – Official Statement Table 83: Segment 1 and 2 Revenue by Vehicle Class

* - June 1st, 2016
REGIONAL MANAGED LANE SYSTEM
Steps Toward Implementation

**Occupancy Policies**

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**Trends**

- **1997 – 2008:** Adoption of pre-existing HOV requirements
- **2009 – current:** Modification of HOV requirements

### HOV-2+ free at all times
- I-15 (SD)
- I-394
- I-15 (SLC)
- I-25
- SR 167
- I-35W
- I-680
- SR-237 / I-880

### HOV-2+ free peak only
- I-10 (TX)
- I-45

### HOV-3+ with restrictions *
- I-95 (FL)
- I-85
- I-495
- SR-91

### HOV-3+ discount
- SR-91
- I-635
- I-35E

* Restrictions include time-of-day and/or specific lanes or direction of travel
IH 85 EXPRESS LANES – ATLANTA, GA
USDOT Congestion Reduction Demonstration Program Grant ($110M)

• HOV to HOT: 15 miles
• Convert from 2+ HOV to managed (3+ free)
• Project includes Express Lane component, new park-and-ride lots, and new passenger coach buses
• 2009 ADT: 180K – 260K
• Opened: October 1, 2011
• All-electronic tolling
• Peach Pass required for all vehicles
• Dynamically priced

Source: Georgia DOT, State Road & Tollway Authority
IH 85 EXPRESS LANES – ATLANTA, GA

Lessons Learned

_Things we have learned:_

• Early, extensive, and continuous public involvement efforts.
• Don’t simply tell the media, include them as stakeholders in the process.
• Begin with fixed tolling, rather than dynamic, to allow for adequate ramp-up time and to avoid public backlash.
• Do not introduce a confusing system where the traveler cannot anticipate what to expect.
• Avoid the appearance that financial revenue is the driving force for pricing the lanes.
• Probably better to begin with a lower toll initially, and increase only when the lanes are full.
• The worst public image is empty lanes where a toll is being charged.
REGIONAL MANAGED LANE SYSTEM
EXISTING HOV LANE AVAILABLE CAPACITY

Existing Regional HOV Lane Utilization

CAPACITY OF EXPRESS LANE

- US 75 (NC EXPY)
- IH 30 (ERLT)
- IH 635 (EAST)
- US 67/IH 35 (SRLT)
- Roadway Capacity
OBJECTIVE: TRANSITION CURRENT HOV FACILITIES TO MANAGED LANES

Options for Transition: Phased starting with pricing SOV
(Initially 2+ and allow for SOV toll / convert to 3+ when full with HOV2+)

Graphic adapted from U.S. DOT / FHWA report Managed Lanes: A Primer, August 2008, Publication No. FHWA-HOP-05-031
REGIONAL MANAGED LANE SYSTEM

Switchable Tag

Metro ExpressLanes
110 ExpressLanes
Open November 10.
Sign up now for FasTrak.

- Los Angeles
- Atlanta
II. APP CONCEPT

Downloadable smartphone applications to manage accounts and HOV declaration are no longer new to the tolling industry.
IV. HOV DECLARATION: QUICK BUTTON

Declaration Function: Always one click away from the declaration screen

Declaration can be per time or trip

Status Function: Current HOV Verified status in the Toll network
How pay express lanes work

To help elevate congestion on highways during rush hour, metro areas across the U.S. are considering using express lanes, or carpool lanes that solo drivers can use for a fee. Here's how one such system works:

1. **Toll signs**
   - Electronic signs display current toll, based on level of congestion

2. **Entry and exit lanes**
   - Lane striping alerts drivers to fixed entry and exit points to carpool

3. **Vehicle enters carpool lane**
   - Transponder sends a signal to a sensor above the road

4. **Sensor records vehicle information**
   - Overhead antenna reads solo driver's transponders, deducts toll; carpooler covers transponder to avoid being charged

5. **Enforcement**
   - Highway Patrol detects cheaters with aid of electronic signals pinpointing vehicles with no transponders

NOTE: Diagram not to scale.

© 2009 MCT
Source: Caltrans
Graphic: Doug Griewold, San Jose Mercury News
Vehicle Occupancy Enforcement

- SRTA transmits list of registered vehicles in the 3+ non-toll mode
  - Full list downloaded daily
  - Incremental updates every 5-10 minutes throughout the day

- Automatic License Plate Reader scans license plate and notifies officer to check occupancy for vehicles registered with SRTA in the 3+ non-toll mode

- Officer’s on board computer system will send “stop/citation” information back to SRTA

www.PeachPass.com
Beacon Light

TxDOT HOV Enforcement Zone
REGIONAL MANAGED LANE SYSTEM

Future Technologies

- Automatic occupancy detection
- Minimal enforcement required