PROJECT DESCRIPTION

NORTHWEST (US-290) HOT LANE
- 15.5 mile (25.0 km), one-lane facility in the median of Northwest Freeway (US 290).
- HOT operations (QuickRide) began in 2000.
- Available only in the morning peak (6:45 - 8:00 a.m.).
- Average travel time saving is about 11 minutes.

KATY (I-10) HOT LANE
- 13 mile (20.9 km), one-lane reversible facility in the median of Katy (I-10) Freeway.
- HOT operations (QuickRide) began in 1998.
- Available during peak period (6:45 - 8:00 a.m. and 5:00 – 6:00 p.m.)
- Average travel time saving is about 17 minutes.

ENFORCEMENT

ENFORCEMENT CONCERNS
- High violation rates
- No method to confirm account status in the field
- Unauthorized HOV2s impossible to detect
- Accuracy of occupancy count difficult at some locations due to speeds
- Enforcement resources stretched
- Majority of customer complaints: violators

ENFORCEMENT PROCEDURES FOR ENFORCING QUICKRIDE
- Enrollees must display windshield identification tags
- Identification tags and vehicle occupancy checked simultaneously by visual inspection at enforcement area

PROCESSES FOR ENFORCING
- QuickRide

USAGE BY VEHICLE CATEGORY, 2002 and 2003
- Changes in Compliance as a Result of Field Tests

FIELD TEST OF EQUIPMENT FOR ENHANCED COMPLIANCE, APRIL 2004
- Trailer and gantry-mounted units with indicator lights were installed at the Eastern Extension enforcement area on Katy
- The equipment was supplemented with customer warning cards and a mass mailing reminding customers and apparent violators of operating requirements

PROPOSED IMPLEMENTATION OF ENFORCEMENT TECHNOLOGY ON US 290
- One trailer-mounted and one gantry-mounted unit for AM and PM at Dacoma
- Two hand-held units to allow officers to verify tags and to provide flexibility for remote customer service operations
There is limited capacity available since both HOT lanes are single lane facilities. Each freeway carries over 200,000 vehicles per day—a large potential number of HOT lane users. For the lanes to remain uncongested requires the ability to rapidly alter the price of entry. Therefore, dynamic pricing based on real time traffic conditions is required. To deliver dynamic pricing requires:

A. Understanding User’s Willingness to Pay

A stated preference survey was used to gather information from:
- SOV travelers in the general purpose lanes, peak or off-peak
- HOV2 travelers in the general purpose lanes, peak or off-peak
- HOV2 travelers in HOT lanes
  - Peak: QuickRide $2
  - Off-peak: free
- HOV3+, bus, motorcycle travelers in HOT lanes
  - Always free
- Casual carpool (slugs) in HOT lanes
  - Generally free

B. Deploying Required Technologies

Multiple entry and exit locations increase the difficulty of:
- Determining the current travel speed and flow rate on the HOT lane.
- Estimating future travel speeds and flow rates on the HOT lane.
- Determining the appropriate price based on those speeds and flow rates.

Speeds and flows from WaveTronix sensors via CDMA
Speeds from AVI readers via TranStar sent in real time to the traffic server

The traffic server determines the correct toll and sends this data to signs in real time and to the QuickRide billing server on a daily basis.

Transponder numbers and time of day are collected from AVI Readers and then sent to the QuickRide billing server on a daily basis. QuickRide bills based on this data plus stored price data.

A. Understanding User Needs

- Used focus groups and surveys to identify critical information that travelers require prior to choosing to use the HOT lane.
- Determined how travelers found out about the current QuickRide program.

B. Public Education Plan

Goals:
- Increase awareness & image of QR
- Increase QR membership and usage

Recommended Outreach Efforts
- Graphic Identity
- Project Champions
- Public Relations/Media Blitz
- Website
- Kickoff Promotion/Goodwill Efforts
- Community Appearances
- Advertising
- Employee Training

C. Real-Time Communication

- General program information provided at non-critical locations
- Regulatory information provided in advance of price
- Lane status and current price provided where diversion is still possible