An Overview of Managed Lanes in the U.S.A.

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Today’s Discussion

- The Basics
- HOV Lanes
- Pricing
- Active Traffic Management
- The Latest Projects
Managed Lanes are dedicated lanes for one or more user groups. They are proactively managed to provide better reliability and/or level-of-service. The primary benefit is travel time savings.
Lanes can be managed using:
- Eligibility
- Access Control
- Pricing
- Active Traffic Management

IH-45 HOV Lanes, Houston, TX
Autobahn, South Bavaria, Germany
Currently over 130 HOV facilities in North America
Most HOV lanes are single, concurrent flow lanes allowing vehicles with 2 or more occupants. Some variations involve increased occupancy (3+), times of day, lane separation and reversible flow lanes.
HOV lanes have been effective at moving more people in fewer vehicles

- Nearly always move more people than adjacent general-purpose lanes
- Can move two to four times the number of people per lane

Source: Caltrans District 12 (2002)
HOV lanes are often accused of being under-utilized

- Uncongested traffic is essential to HOV lanes travel reliability and time savings
- Next to a congested lane, HOV lanes can look “empty” even though they are moving more people
- Increasingly over-utilization is the problem
Technology provides opportunity for additional lane management techniques

- Pricing can be used to "sell" additional capacity in HOV lanes
- Variable pricing levels regulate demand and ensure speeds are maintained
HOV only cannot address all utilization issues

Additional management is generally necessary
- Pricing provides a comprehensive approach
- Better responds to changing conditions over time
Nine projects in U.S. currently use pricing
Almost all existing HOT projects are conversions of HOV lanes to add pricing:
- SR-91 was constructed as express toll lanes
- Pricing most recently started on existing HOV lanes in Miami and Seattle
- I-10 in Houston recently completed reconstruction
Active Traffic Management

- In addition to pricing, active traffic management systems are being introduced to better manage lanes.
  - Active traffic management uses technology to dynamically manage congestion in response to prevailing traffic conditions.
  - Improves safety and increases throughput to maximize efficiency of the system.
Active Traffic Management

- Active traffic management systems include dynamic speed harmonization.
  - Speed limits are adjusted to better regulate traffic.
  - As traffic flow increases, speeds are decreased to maintain maximum throughput.
  - Speeds can be decreased in advance of congested traffic or incidents.

M42 Variable Mandatory Speed Limits
Birmingham, England

I-270 Variable Speed Limits
St. Louis, Missouri
Active Traffic Management

- Active traffic management systems also include variable lane control
  - Makes additional capacity available during peak traffic conditions
  - Uses overhead signage and pavement markings to indicate lane status
  - Can close lanes in advance of incidents

Sydney Harbour Bridge
Sydney, Australia

Active traffic management concept for I-35W
Minneapolis, Minnesota
Active Traffic Management

- Active traffic management can substantially improve safety and trip reliability
- Results from M42 pilot indicates
  - Over 50% reduction in crashes
  - Over 25% reduction in peak period travel times
  - Over 25% improvement in trip reliability

Source: UK Highways Agency (2008)
The Latest Projects

- **SR-167 HOT Conversion, Seattle, WA**
  - Converts 9 miles of HOV lanes to variable priced HOT
  - Sells available capacity in existing HOV lanes
  - Opened May 2008
The Latest Projects

- I-95 HOT Conversion, Miami, FL
  - 21 miles of HOV lanes (one per direction) to variable priced HOT (two in each direction)
  - 8 miles of NB lanes opened July 2008
  - Toll testing October 2008
  - Full project to open late 2011
  - Lessons being learned

Sun-Sentinel.com
August 1, 2008

Crash course: New I-95 express lanes make rush hour crawl
The Latest Projects

- **I-15 Express Lane Extension, San Diego, CA**
  - 20 mile extension with 4 managed lanes and moveable barrier
  - Major bus rapid transit component
  - Real time variable pricing to regulate demand
  - $1.3 billion total cost
  - 4.5 mile segment opened September 2008
The Latest Projects

- **IH-10 Katy Tollway, Houston, TX**
  - Over 20 mile freeway expansion including multiple managed lanes
  - Largest application of real time, variable pricing to date
  - $2.8 billion total cost
  - Opened without pricing October 2008
I-35W MnPass Express, Minneapolis, MN

- Builds upon success of I-394 MnPass Express
- Converts 10 miles existing HOV to HOT
- Extends HOT by additional 6 miles
- Integrates bus rapid transit, variable lane management and use of shoulder segments for dynamic HOT operations
The Latest Projects

- **Congestion Pricing Pilot, Los Angeles, CA**
  - Congestion pricing pilot including HOV to HOT conversion on I-10 El Monte Busway and I-110 Harbor Transitway
  - Major emphasis on bus rapid transit
  - Intelligent parking with variable pricing

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**Congestion Reduction Demonstration Project**

**I-110 HOV Lanes, Los Angeles, California**
The Latest Projects

- Bay Area Regional HOT Network, CA
  - Regional system of HOT facilities throughout the Bay Area
  - Combines conversion of existing HOV facilities and new HOT construction
  - Prioritizes implementation to leverage revenue from most lucrative routes to fund others
  - I-680 SB Express Lanes to open 2010
The Latest Projects

- **Illinois Tollway “Green Lanes”**
  - “Reserves” one lane on each of four Chicago area tollways for transit, carpools and environmentally friendly vehicles
  - Charges “premium tolls” for single occupant vehicles
  - Conversion to begin in 2010
The Latest Projects

- **I-75/575 Northwest Corridor, Atlanta, GA**
  - Integrates Express Toll Lanes, Bus Rapid Transit and Truck Only Lanes
  - Potential public/private partnership
  - Part of regional managed lanes system plan
Questions and....

THANK YOU