

FAST LANE

August 2001

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Welcome to FastLane

Welcome to the first edition of *FastLane*: a quarterly newsletter that highlights ongoing activities and research on managed lanes in Texas. Published by the Texas Transportation Institute as part of a multi-year research project for the Texas Department of Transportation, *FastLane* discusses key research findings and serves as a resource for transportation professionals considering a managed lane facility for their region. Please feel free to forward this newsletter to anyone who might be interested its contents. We welcome your comments and suggestions.

Managed Lanes Symposium

The first Managed Lanes Symposium was held on February 16, 2001 in Austin. The intent of this event, which was organized by Texas Southern University and TTI, was to begin generating a dialogue between all potential partners in a managed lanes project and to provide insight into the concerns of those partners regarding their operation. It served as a starting point for continued movement toward using managed lanes to maximize capacity on congested roadways and enhancing the mobility of the transportation user.

The symposium assembled over 90 key staff and decision-makers and other related stakeholders from transportation agencies across Texas to discuss issues pertinent to the planning, design and operations of managed lane facilities.

The attendees gained insight from experts around the country who provided current thinking about managed lane operations.

Key speakers included Gary Trietsch, TxDOT District Engineer for Houston, Carlos Lopez, TxDOT Director of the Traffic Operations Division, Dr. Kiran Bhatt with KT Analytic, Inc., Sally Wegmann, TxDOT Director of Transportation Operations for the Houston TxDOT District, George Beatty, Jr., Division President of the Greater Houston Partnership, Matt MacGregor, LBJ Project Manager for the TxDOT Dallas District, Glenn McVey, Congestion Management Engineer for the TxDOT Austin District, Chuck Fuhs, AICP, Deputy Project Manager with Parsons Brinckerhoff, Dan Lamers, principal transportation engineer with the North Center Texas Council of Governments, and Peter Samuel, Editor for *Toll Roads Newsletter*.



Carlos Lopez and Gary Trietsch Welcome Symposium Attendees

Attendees also participated in interactive breakout sessions to discuss managed lanes issues and determine priorities. A facilitator worked with the group to identify their top five most important issues surrounding planning, constructing, implementing, and operating managed lanes. The breakout groups were structured to reflect the range of organizations and TxDOT divisions represented by attendees to foster discussion, exchange ideas, and appreciate different views on transportation concerns.

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Managed Lanes Symposium

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The key issues on the list of all three groups were design standards and access, public awareness, and enforcement and operations. Other critical issues were eligibility, legislative concerns, funding and financing, performance and evaluation, technology, and regulatory issues.

The inaugural Managed Lanes Symposium was a success and the results from the symposium, particularly from the breakout sessions, will help the research team direct the project so that they address the major issues and concerns of stakeholders over the course of the project. It is anticipated that future symposia will be held to continue the dialogue between stakeholders and to present key research findings that can aid them in planning, designing, and operating managed lanes facilities in their region. The complete proceedings of the symposium are contained in TxDOT report number 4160-1: *Managed Lane Symposium Conference Proceedings*, authored by the Center for Transportation Training and Research at Texas Southern University.

Project Highlight

Each issue of *FastLane* features an operating managed lane project from around the country. Two of the four operating High Occupancy Toll (HOT) facilities in the U.S. are in Houston, on the Katy and Northwest HOV lanes. This issue highlights the QuickRide projects in Houston.

IH-10 and US 290, QuickRide – Houston, Texas

The IH-10 (Katy Freeway) HOV lane is a 13-mile, one-way, reversible lane that is barrier-separated with limited access. Beyond the end of the facility is a newly opened non-barrier HOV section extending for 6 miles. The HOV lane was underutilized with a 3+ occupancy requirement during the morning and evening peak hours. But allowing 2+ HOVs during those peak hours resulted in congestion in the HOV lane.

As part of FHWA's Value Pricing Program, the facility began pricing for two-person HOVs in January 1998. The program, known as QuickRide, is in operation only during the peak hours when the HOV lane has a 3+ restriction; this is 6:45–8:00 a.m. and 5:00–6:00p.m.

QuickRide allows a limited number of travelers to register for the program. When an application is accepted, a pre-paid account is established and the applicant is issued a transponder. The transponder, known locally as an EZ-Tag, also operates on the other toll roads in the area. When HOV-2s use the Katy HOV lane during the peak hour the registered motorist is debited \$ 2.00 from the established account.



The HOV Lane on the Katy Freeway in Houston

The QuickRide program is a smaller program relative to the other HOT lanes operating throughout the country. The primary goals of improving HOV utilization by increasing person movement and average vehicle occupancy have been achieved. The majority of users do not use the QuickRide program every day, but are occasional users. In December 2000, approximately 140 people were taking advantage of the QuickRide program in the AM and PM peak.

In November 2000, the QuickRide program was expanded to US 290 (Northwest Freeway). This facility is also a single lane, reversible HOV lane. The 15.5-mile HOV lane offers limited access and is barrier-separated from the mainlanes. The QuickRide program is in operation on US 290 during the AM peak, when the 3+ restriction is in effect on this roadway. In December 2000 the average use was 51 vehicles.

The success of the QuickRide program on both the Katy and the Northwest Freeway has prompted the Houston Metropolitan Transit Authority to apply for a planning grant from the Federal Highway Administration to study IH-45.

For more information on the QuickRide program go to <http://www.hou-metro.harris.tx.us/quickride.htm>.

Planned Projects in Texas

Here are brief summaries of some of the major managed lane projects under development in Texas' largest cities.



HOUSTON IH-10 Katy Freeway

The Houston District is beginning the PS&E phase for the long-range Katy Freeway Improvements. The project extends from IH-610 to the City of Katy, a 20-mile section.

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Planned Texas Projects - IH-10 Katy Freeway

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The Katy Freeway currently carries over 207,000 vehicles per day and consists of six general purpose lanes with a single reversible HOT/HOV lane in the median.

Between IH-610 and SH 6, the plan calls for the development of four managed lanes to improve regional mobility and provide for long corridor trips. The development of the managed lanes is intended to provide commuters the opportunity for shorter, more reliable travel times. Under the current proposal, the four managed lanes will operate two lanes in each direction. The inside two lanes will be separated with barriers both inside and out, while the outside lanes will operate as concurrent flow HOV lanes, separated from the mainlanes by painted buffer. Access is provided to the barrier lanes at the termini and four intermediate locations. Mainlane traffic shows a 55-45 split during much of the day, so reversible lanes were not considered.

An evaluation of the operational characteristics of the proposed access design is currently underway as part of the managed lanes research effort.

The Harris County Toll Road Authority has made a proposal to TxDOT to barrier-separate all four lanes and operate them as a toll road. Discussions are underway with TxDOT regarding this proposal.

The Katy Freeway managed lanes are expected to be operational in 2009.

For more information: <http://www.katyfreeway.org/>

DALLAS

IH-635 LBJ Freeway

The Dallas District is developing a managed lane project as part of the LBJ Corridor Study. Currently the 8-lane facility carries over 270,000 vehicles per day in its most congested section. The total project length is 21 miles and extends along IH-635 from Luna Road (West of IH-35E) to US 80 in Mesquite. Concurrent flow HOV lanes are currently operating on the most congested section from Luna Road to US 75.

The current design schematic consists of 4 general-purpose lanes and 3 HOT lanes in each direction in the heavily congested section west of US 75, and a combination of 2 HOT lanes in each direction to 2 reversible HOT lanes in the section east of US 75. A portion of the 6-lane HOT section is proposed to operate below grade in what will include eastbound and westbound 2-mile auto tunnels. These will be the longest mined auto tunnels in the U.S. Access points are located throughout the project at IH-35E, Marsh, US 75, TI Blvd., Skillman, SH 78, LaPrada, and IH-30.

The District is completing a "Phase 2 Traffic and Revenue Study" to analyze the projected revenue and performance characteristics that would result for 10 possible

scenarios with mixed packaging of operational actions to include:

- # 4 versus 5 general purpose lanes available;
- # Current schematic ramp access versus a reduced ramp access scenario to the 6-lane section of the managed lane facility;
- # HOV2+ free & tolled SOV versus HOV3+ & tolled SOV and tolled HOV2+;
- # Higher traffic growth scenario versus MPO-modeled demand estimates.

In addition to the pricing component, one of the unique features of the study process includes a regional view of intermodal connections between the LBJ managed lane facility and nearby rail/bus transfer facilities as well as DFW Airport. They are exploring possibilities to offer pricing packages that could discount travel to transit connections. The application of transponder access-only will facilitate this component and create other operational opportunities.

The next step in the process is to complete the traffic and revenue study, finalize the schematics and environmental documentation, and hold the necessary public hearings. This will result in the completion of the planning phase. The project would then be ready to move into final design.

The LBJ Managed Lanes are expected to be open for operation by 2015.

For more information on the Dallas Project contact Matthew E. MacGregor at (972) 437-0101 or visit the web site: <http://www.dot.state.tx.us/insdtdot/geodist/dal/mis/LBJ/lbjmis.htm>

SAN ANTONIO

IH-35 Northeast Corridor

The San Antonio District is evaluating managed lane options for the Northeast (IH-35) Corridor from Loop 1604 to US 281/IH-37. Currently, IH-35 is typically comprised of three general purpose lanes in each direction, serving approximately 175,000 vehicles per day. Five different lane arrangement concepts were developed and modeled to identify the best approaches for meeting projected demand. The two most promising alternatives are:

- A 14-lane cross section that consists of 4 general purpose lanes in each direction and 3 express lanes in each direction; and
- A 13-lane cross section that consists of 4 general purpose lanes in each direction, 2 express lanes in each direction, and a reversible HOV lane.

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Planned Texas Projects - IH-35 Northeast Corridor

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In all cases that were examined, access to the express lanes and HOV lane are limited to the termini at Loop 1604 and US 281/IH-37, and the interchanges at IH-410 north and IH-410 south.

The HOV lane concept has received limited support from the public based upon less-than successful experiences of other communities. However, traffic models consistently produce a peak hour HOV demand that points to the viability of an HOV lane in this corridor.

The 14-lane alternative allows for future implementation of an HOV lane by either initially "striping out" one of the three express lanes and later opening it as the HOV lane, or by converting one of the express lanes to an HOV lane at a future date.

The next step in the process for the Northeast (IH-35) corridor project is to develop "footprint" schematics for the proposed improvements. The District is examining several preliminary cross-sections in order to develop a proposal with maximum flexibility. A specific operational strategy doesn't necessarily need to be fully defined at this juncture, if a managed lane envelope can be "reserved" for flexibility in designating the ultimate lane configuration. The basic cross section that allows for such flexibility will then be utilized in the next phase of schematic design.

While pricing strategies are not being utilized at this time, the infrastructure will be designed to accommodate future electronic toll collection, if needed.

The expansion of the Northeast (IH-35) Corridor is included in TxDOT's 20-year plan.

For more information contact Judy Friesenhahn of the San Antonio District at (210) 615-5814.

FORT WORTH SH 114/SH 121

The Fort Worth District is recommending the use of managed lanes to accommodate a large volume of traffic through a 4-mile section of SH 114 where it overlaps with SH 121 just north of D/FW International Airport. The "Funnel," as it is called, is the corridor of SH 114/SH 121 where traffic from seven highways converge. It currently carries approximately 170,000 vehicles per day.

The current and projected volumes indicate that 45 percent of the traffic on this section of SH 114 travels straight through the interchange area. Eight lanes are now provided through this section. The plan calls for two additional through lanes and four additional managed lanes (two in each direction) for a total of fourteen lanes. As currently planned, access to the managed lanes will be allowed at the beginning and end of the facility only.

The managed facility combines the mobility benefits of express lanes and HOV lanes, offering greater flexibility in controlling congestion. It will accommodate

both HOV and SOV providing opportunities for congestion management through a combination of three variables: hours of operation, auto occupancy, and value pricing (toll).

The project is in the preliminary engineering phase, and is expected to be presented at a public hearing in the fall of 2002. The District has received dedicated funding for the project, and expects construction to begin in 2005. The managed lanes may be fully operational by 2008.

For more information contact Curtis Hanan of the Ft. Worth Project, 817-370-6535.

AUSTIN Loop 1/US 183

The Austin District is undertaking a corridor feasibility study for Loop 1 (Mopac Boulevard) and portions of US 183. The two connect to form a continuous corridor from south Austin through downtown to the northwest part of the Austin region. Through most of the section under study there are six general purpose lanes. Traffic volume on the busiest portion of Loop 1 is 160,000 vehicles per day.

Four improvement concepts are under consideration, one of which is a managed lane system. Potential operational techniques for the managed lane concept may include metering access, pricing lane use and restricting use by time of day to HOVs and single occupancy vehicles. The managed lane system, as initially conceived, includes to lanes in each direction for the central section of the corridor.

Planning efforts have been temporarily suspended by TxDOT pending a three-month review conducted by the MPO and the City of Austin. Upon completion of the review a determination will be made regarding the direction of the project and completion of the preliminary engineering phase.

Estimated project completion is difficult to predict at this time, but it is likely that the improvements will not be completed before 2011.

For more information visit the following web site <http://www.mopac183.com/#top>

WACO IH-35

The Waco District is undergoing a feasibility study of a 94-mile stretch of the IH-35 Corridor from just south of Salado to Hillsboro. The corridor carries an existing ADT ranging from 44,000 to 60,000 vehicles in the rural areas to 60,000 to 87,000 in urban areas. The projected ADT by 2025 increases to 70,000 to 90,000 in rural sections and 110,000 to 144,000 in urban areas.

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Planned Texas Projects - IH 35

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There are 2 lanes in each direction through most of the corridor, with three lanes each way through Waco and Temple. Truck volumes are in the 20 percent to 30 percent range.

In the IH-35 Trade Corridor Study conducted by TxDOT, with five other state DOTs and FHWA, a recommendation was made for “truckways” on IH-35 between Dallas and Laredo. The truckway is envisioned as either a separate facility or as designated lanes within the IH-35 right of way.

It is the Waco District’s full intent to explore all possibilities when it comes to the inclusion of lanes designated for “Trucks Only.” Public interest in separate truck lanes has been very high. IH-35 could possibly end up being a test case for further study. Legal issues are being explored.

The six sections of the 94-mile project are in various stages of development. The bulk of the freeway general purpose lane work is in the preliminary engineering stage. Work on the general purpose lanes, which would involve managed lanes, is expected to begin by 2006.

For more information: <http://www.i35waco.com/>

Managed Lanes On the Web

As part of our efforts in managed lane research, TTI has established a managed lanes web site. This site highlights ongoing research on managed lanes, provides key research results and access to related products, has information on meetings and other events related to managed lanes across the country, and has links to key related Internet sites. You can also read the newsletter online and join our mailing list. The current site is fairly basic and describes the TxDOT project. However, a new format and complete site is under development with the unveiling expected for later this fall. Visit the site at <http://managed-lanes.tamu.edu> and come back often.

Web Sites of Interest

This portion of *FastLane* is intended to highlight other online resources that are germane to managed lanes.

★ <http://www.hhh.umn.edu/centers/slp/conpric/>. This web site serves as a guide to the basics of value pricing and as a source for up-to-date information on resources and current value pricing projects. The site is sponsored by The State and Local Policy Program of the Federal Highway Administration and the Hubert Humphrey Institute of Public Affairs at the University of Minnesota.

The Managed Lanes List

A listserv has been set up by the managed lanes research team at TTI. This list unlike many other listservs is not a discussion list. It is merely a means for the research team to disseminate information to members of the list in an efficient manner. Information posted on the list will include *FastLane*, information about upcoming conferences, notices about available reports, and similar information of interest to the group. This list serve is open to anyone interested in managed lanes topics or research. If you have any concerns or questions about the list, wish to be removed from the list, or know of someone who would be interested in joining the list, please contact Beverly Kuhn at b-kuhn@tamu.edu.