

WHAT ARE MANAGED LANES?

The theory behind managed lanes is to use a variety of operating strategies on certain lanes to move traffic more efficiently in those lanes. As a result, travelers have an option to traveling on a congested freeway. High-occupancy vehicle (HOV) lanes, operating successfully in Houston and Dallas for the last two decades, are examples of managed lanes. The concept of HOV-only lanes is evolving into a new type of facility that offers more choices and more flexibility for a wider range of freeway motorists.

The Texas Department of Transportation (TxDOT) believes that using managed lanes will allow it to leverage existing capacity and move both people and goods in the most efficient manner possible. The managed lane concept is a tool that is available to the transportation community. This tool may be used as part of a comprehensive plan to achieve regional goals.

Managed lane strategies can:

- maximize existing capacity,
- manage demand,
- offer travel choices,
- improve emergency access, and
- generate revenue.

HOW DO MANAGED LANES WORK?

The key to successfully operating managed lanes is the ability to alter the operations of the lanes in ways that keep traffic flowing. This strategy provides flexibility, not only in the day-to-day operations of the lanes, but in situations where isolated incidents such as a major accident call for the lanes to be open to more or different user groups.

There are different techniques, referred to as lane management strategies, that can be employed to keep traffic flowing on a managed lane facility.

Lane management strategies include:

- ⌚ **Time-of-Day Restrictions**—allowing access to certain lanes at certain times of the day;
- 🚗 **Vehicle Type Restrictions**—allowing access to managed lanes only to certain types of vehicles, such as carpools, buses, trucks, or vehicles paying a fee; and
- 💰 **Variable Pricing**—charging motorists for access to managed lanes and/or charging at varying rates for specific time periods. All fees would be collected electronically without the need for toll booths.

These techniques can be used to offer incentives to rideshare through improved access for buses, vanpools and carpools, which is an important component of regional goals to reduce vehicle travel and improve air quality. Additionally, variable pricing is a mechanism that may be used to offer free or reduced-fee travel at certain times as an incentive to shift motorists out of the peak hours.



WHAT DO MANAGED LANES OFFER?

Travel Choices

In many congested corridors, travel options on the freeway are limited. As a result all travelers must endure peak travel periods sitting in congestion. By preserving some lane capacity within the freeway that offers time-saving advantages over the regular lanes, travel options such as bus transit can become a more viable choice for some commuters. For other motorists the managed lanes can be an alternative to congestion on those trips when arriving on time is critical.

More Efficient Use of the System

Even though population in our urban areas is increasing and congestion is becoming worse, new roadway construction is limited by a number of factors such as land availability, scarce funds, and social and environmental concerns. By more effectively managing existing capacity through active lane management strategies, the need to add more capacity is delayed, resulting in fewer negative community impacts. At the same time, the managed lanes may move more people in alternative modes than simply adding general-purpose lanes.

Flexible Use for Emergency Situations

Managed lanes can provide access for emergency vehicles that is safe, secure, and free from traffic congestion. Under unusual circumstances where there is a major incident, a large scale emergency or evacuation, or construction and maintenance activities, managed lanes can be opened to traffic to accommodate the extra demand.

Revenue

In addition to offering travel choices and better utilizing the existing system, managed lanes may collect toll revenue. These revenues can then be used to operate the managed lanes facility, make other improvements in the corridor, fund transit service, or address any other project or community goals. The use of excess revenue, if any, can be determined by the project goals.

WHERE IT'S WORKING

One of the most successful examples of a managed lane facility is the I-15 project, known as FasTrak, in San Diego, California. I-15 is a very heavily congested corridor where motorists typically experienced more than 30 minutes of delay daily. The corridor includes two reversible express lanes in the median of I-15. These lanes are separated from the other lanes with concrete barriers.

This two-lane, eight-mile stretch of separated lanes was restricted to high-occupancy vehicles with two or more people. With this restriction the express lanes were underutilized while the adjacent mainlanes of I-15 were heavily congested. The San Diego Association of Governments, the metropolitan planning organization for the area, acting with the California Department of Transportation and the Federal Highway Administration implemented a demonstration program whereby single-occupant vehicles could use the excess capacity by paying a toll to travel in the Express Lanes. The toll varies from \$.50 to \$ 4.00 depending on the level of congestion in the Express Lanes.

The I-15 project has been operating successfully since 1996. Drivers now have an option for their daily commute. HOVs continue to use the lanes free of charge, and solo drivers can decide whether or not to pay the toll for a faster commute. The operating agencies are now using the roadway capacity more effectively. The program also generates revenue that funds transit improvements in the corridor.

Bus ridership in the corridor has increased by 25 percent, and the number of daily carpools increased 57 percent since project inception. In fact, an entirely new bus service, *Inland Breeze*, is funded solely from revenue generated by the FasTrak program. A 20-mile extension of the project is planned to open in 2008.

Public opinion research in the I-15 corridor indicates broad support for the project. Eighty-eight percent of the FasTrak users and 66 percent of the non-users approve of the program, and a majority of both groups agree that the FasTrak program reduces congestion on I-15. A vast majority of the motorists agree that it is a good idea to have a time-savings option on I-15. These high levels of approval are represented across all income levels and ethnic groups.



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Variable Pricing – charging motorists for access to managed lanes and/or charging at varying rates for specific time periods. All fees would be collected electronically without the need for toll booths.

What was once known as rush hour may now last up to six hours each day in Texas' most congested cities. But the idea of "managed lanes" is giving transportation planners another way to address the growing problem of traffic congestion.

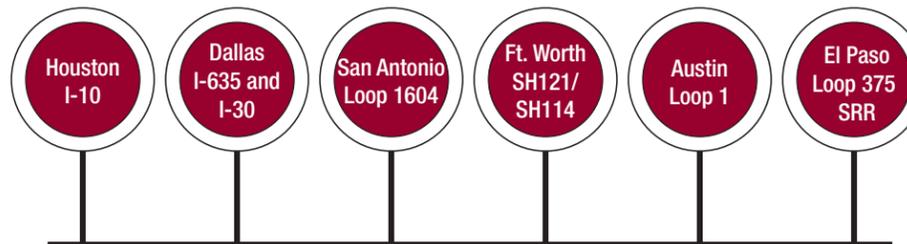
Limited land availability, scarce funds, and social and environmental concerns may prevent adding new freeway lanes. The combination of these factors is forcing transportation planners and engineers to explore new ways to more effectively operate the existing transportation network.

"Managed lanes" is one such concept that is being used successfully across the country.

WHAT'S AHEAD FOR TEXAS?

In Houston, the managed lane concept is currently being used on the I-10 and US 290 HOV lanes. HOVs with two people (HOV2s) are allowed to use the lanes during the HOV 3-person (HOV3+) time period by paying a flat-fee toll of \$2.00 per trip. For this fee, HOV2s travel at free-flow conditions in the HOV lane. Similar to the FasTrak program, participants in the program must register and be issued an electronic transponder, and the tolls are debited from the driver's account. Motorists who take advantage of the program cite its flexibility as an incentive for using the program.

Throughout the state there are a number of major freeway reconstruction projects where managed lanes are either planned or being considered. Cities where managed lanes are under consideration are:



Each project has unique characteristics, and TxDOT is approaching each in a way that meets the travel needs in the corridor and is consistent with community objectives.

The managed lanes concept is but one tool available to transportation planners. When used in conjunction with a comprehensive, long-range transportation plan, the concept has the ability to help achieve the transportation goals of the community.

WHERE TO GO FOR MORE INFORMATION

Texas Studies Underway

Katy Freeway Reconstruction, Houston: www.katyfreeway.org
LBJ Project, Dallas: www.dot.state.tx.us/DAL.mis/ih635/LBJhome.htm
Loop 1, Austin: www.mopac1.com
Managed Lanes Research: managed-lanes.tamu.edu
El Paso I-10 SRR: www.elpasomobility.org/

Other Resources

Orange County, CA, SR 91 www.91expresslanes.com/
San Diego I-15: www.sandag.org/fastrak
Minneapolis I-394: www.mnpass.org/
Denver, CO I-25: www.dot.state.co.us/CTE/expresslanes/
Denver Express Toll: www.expresstoll.com/Default.aspx
FHWA Managed Lanes: ops.fhwa.dot.gov/freewaymgmt/mngd_ins_hov.htm
TRB: www.hovworld.com
Value Pricing Research: www.hhh.umn.edu/centers/slp/projects/conpric/index.htm

Managed Lanes: A New Concept for Freeway Travel



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