

## Expansion of the I-15 HOV Lanes in San Diego to Include HOT Vehicles

The I-15 freeway HOV pricing project tested value pricing as a method of managing congestion on the HOV and freeway lanes, expanding transit and ridesharing services, and enhancing air quality. In 1999 FasTrak™ electronic toll collection switched from fixed pricing to variable pricing. The system recalculates every 6 minutes to maintain adequate service according to the time of day relative to traffic peaks. Fees typically range from 50 cents to \$4 but can reach as high as \$8. Message signs located before the start of the lanes display the updated fee. By March 2005, there were approximately 18,670 active FasTrak™ accounts and some 27,700 transponders in use. The revenue generated from FasTrak™ users, approximately \$1.2 million annually, has been used to support operation of the system and to expand public transportation services in the corridor.

according to each metropolitan area, *Maximizing the Benefits of HOV Facilities: Reassessing Lane Eligibility and Hours of Operation* outlines the responses that can be anticipated from different groups of users to various changes. The primer provides guidance to executives, senior managers, and other key personnel who allocate resources and influence local practices.

For example, when legislation lowered the vehicle-occupancy requirement on the El Monte Busway—part of the San Bernardino (I-10) Freeway in Los Angeles—from three or more passengers to two or more passengers, vanpoolers, carpoolers in groups of three or more pas-

sengers, and bus riders were vocal in their opposition to the change. Bus riders noted a 20- to 30-minute increase in travel times, missing bus and rail connections, and arriving late for work, school, and daycare pickups. Individuals in existing carpools of three or more passengers reported longer travel times and delays. The incentives for using the HOV facility were largely gone. Based on the negative effects and feedback, emergency legislation restored the higher three-or-more occupancy requirement during morning and afternoon peak periods.

### Accessing Resources

The primer presents the basic elements of implementing and assessing requirements for HOV facilities. Its companion publication, *HOV Lane Eligibility Requirements and Operating Hours Handbook*, offers more detail on the processes of monitoring performance, assessing the need for change, and implementing and enforcing change. These publications, Federal program guidance, and related information are available from FHWA. For additional information on planning, designing, funding, operating, enforcing, and managing HOV facilities, please visit <http://www.ops.fhwa.dot.gov/freewaymgmt/hov.htm> or contact Jessie Yung, FHWA, at (202) 366-4672, [Jessie.Yung@dot.gov](mailto:Jessie.Yung@dot.gov).

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## Maximizing the Benefits of HOV Facilities: Reassessing Lane Eligibility and Hours of Operation



U.S. Department of Transportation  
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## Maximizing Person-Movement Capacity

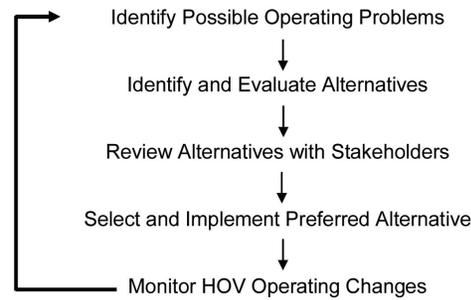
High-occupancy vehicle (HOV) facilities are used in metropolitan areas throughout the country to improve the person-movement capacity of congested freeway corridors where the physical and financial feasibility of expanding the roadway is limited. With the goal of moving more people in fewer vehicles, HOV facilities provide buses, carpools, and vanpools with travel-time savings that encourage individuals to choose shared rides over driving alone. The vast majority of HOV lanes open to carpoolers have an occupancy requirement of two or more passengers.

The Federal Highway Administration (FHWA) and the HOV Pooled-Fund Study created the primer *Maximizing the Benefits of HOV Facilities: Reassessing Lane Eligibility and Hours of Operation* as a one-stop reference for maximizing the benefits of HOV facilities. The primer provides a guide to assessing the potential impacts of changes to an existing HOV facility or to establishing new HOV lanes.

## Performance Monitoring

Federal funding is typically used to support the design, right-of-way acquisition, construction, and operation of freeway HOV lanes. FHWA provides periodic HOV program guidance to support the Federal investment in HOV facilities and to help promote their effective use. The guidance supports performance monitoring programs, which provide the information needed to make sound decisions on operating HOV facilities. Performance monitoring programs examine:

- Vehicle volume.
- Level of service.
- Travel speed.
- Travel-time savings.
- Trip-time reliability.



Some State departments of transportation (DOTs) have developed guidelines to help identify when changes in requirements or operating hours may be needed (see sidebar: *Assessing and Updating Vehicle Requirements*). Planners and managers can compare information from an HOV performance monitoring program with their minimum performance standards for the freeway to identify potential issues with the current requirements (see diagram).

## Assessing Changes

Changes in vehicle-eligibility and vehicle-occupancy levels may be needed over the life of an HOV facility. *Maximizing the Benefits of HOV Facilities: Reassessing Lane Eligibility and Hours of Operation* outlines and explains the factors to consider when assessing potential changes:

- Type and length of HOV lane.
- Design treatments or operating limitations.
- Congestion levels in the

HOV lane and general-purpose freeway lanes.

- Bus operations.
- System connectivity.
- Supporting facilities and services.
- Perceptions of HOV lane users.
- Perceptions of nonusers.
- Perceptions of policy makers.
- Target markets.
- Impact on current users.
- Pricing alternatives.

To maximize the use of HOV facilities and to meet other goals, some operating agencies have expanded HOV lane use to include high-occupancy toll (HOT)

vehicles, low-emission and energy-efficient vehicles, and other exempt vehicles not meeting occupancy requirements (see sidebar: *Expansion of the I-15 HOV Lanes in San Diego to Include HOT Vehicles*).

## Assessing and Updating Vehicle Requirements

Guidelines developed by the Washington State DOT (WSDOT) illustrate criteria for determining if changes are needed in vehicle-eligibility and vehicle-occupancy requirements. The WSDOT policies focus on the minimum average speed and speed reliability on an HOV facility. The measures used by WSDOT indicate that HOV lane vehicles should maintain or exceed an average operating speed of at least 72 km/h (45 mi/h) 90 percent of the time over a consecutive 6-month period. If this criterion is not met, approaches for addressing the problem are examined.

## Tuning In to the Public

While assessing and implementing changes to HOV requirements, State DOTs must anticipate opposition to change from the public and policy makers. Although public reaction and the needs of the community vary