

## **Enforcement of Managed Lanes**

### **Issue Paper Developed by the TRB Managed Lanes Joint Subcommittee**

Strategies are employed on managed lanes to regulate demand, and those actions require enforcement to maintain the integrity of the facility. Enforcement of vehicle-occupancy requirements, use by authorized vehicles – including hybrid vehicles and ILEVs, and proper toll payment is critical to sustaining the operating objectives of the facility. Visible and effective enforcement promotes fairness and maintains the integrity of the managed lane facility to help gain acceptance among users and non-users.

Highlighted below are the existing and emerging challenges associated with enforcement of managed lanes. Additional research is needed to fully develop alternatives and technologies so that operating agencies have practical options for enforcing managed lanes.

#### 1. Occupancy Verification

Enforcement of carpool preferences on priced managed lane facilities is one of the most difficult operational challenges facing agencies that are seeking to implement new HOT lanes or convert existing HOV lanes to HOT operations. Fully automated systems for identifying the number of occupants in a vehicle through exterior photographic techniques (primarily infrared imaging) have been tested but have failed to advance to field application. In-vehicle occupancy recognition systems related to air bag deployment offer a promising approach; however, there are a number of legal, privacy, cost, and auto industry roll-out issues to address. Until research advances in this area, visual verification of vehicle occupancy will continue to be the primary enforcement technique for managed lanes with carpool preferences.

#### 2. Tradeoffs Between Technology and Patrol Officers

The complexity of the enforcement operation will depend upon the type of facility and the operating strategy, with the most complicated being priced lanes with high-occupancy vehicle, hybrid vehicle, and ILEV preferences. In these cases, technology applications can support the police officer's function in verifying tag validity, but technology is of no value without the presence of a uniformed officer. Facility design - in particular the presence of a barrier separating managed lanes from general purpose lanes - can also influence the level of enforcement resources required. There is a need to explore the costs, benefits, and compliance expectations associated with optimum levels of police presence versus technology implementation, given different lane separation scenarios.

#### 3. "Universal Tag" Operating Approach

An operating approach similar to SR-91 where all vehicles are required to have transponders can simplify enforcement through the automation of compliance for toll payment. Yet some agencies are reluctant to embrace this approach, particularly when converting a HOV lane to HOT lane. Documentation of the benefits and drawbacks of this operating strategy is needed in the areas of public acceptance, legal/legislative concerns, hybrid vehicle and ILEV enforcement, performance monitoring and active lane management, and the influence of this approach on coincidental carpooling versus commuter carpooling.

#### 4. Adjudication Process

The process of enforcement does not end with the issuance of the citation to the violator. The court system must support the program through well-informed judges and a process that both allows time for officers to appear in court and minimizes continuances. Some toll authorities have set up separate court systems in order to streamline and expedite toll violations adjudications. Documentation of options and best practices for operating agencies is needed.

#### 5. Legal Powers and Authority of Operating Agency

Many potential operating agencies do not have the full array of legal powers necessary to utilize video enforcement or to recoup revenue from fines. Fine levels may also not be adequate to provide deterrent to scofflaws, and operating agencies may not have the flexibility to reduce or eliminate fines in exchange for customer enrollment. Most options, however, operate at their greatest efficiency when the operating agency has the legal authority to utilize video enforcement, including license plate recognition, access to motor vehicle registration data, and ticket by mail. Transportation agencies that could potentially operate managed lanes, including state departments of transportation, metropolitan planning organizations, and transit agencies, may not have the full legal authority that toll agencies have to provide a comprehensive revenue-based enforcement program. The development of model legislation would be useful for operating agencies.