HIGH OCCUPANCY VEHICLE LANE USAGE: ALTERNATIVE FUEL AND LOW EMISSION AND ENERGY EFFICIENT VEHICLES (LEEEVS)

INTRODUCTION

High occupancy vehicle (HOV) lanes are intended to maximize the person-carrying capacity of the roadway. In general, the definition of an HOV includes buses, public transportation vehicles, motorcycles, vanpools and carpools of two or more people.

HISTORY AND OVERVIEW

HOV lanes increase the total number of people moved through a congested corridor by offering two kinds of travel incentives: 1) travel time savings and 2) reliable and predictable travel time. This, in turn, can increase the person-movement capacity of the roadway by carrying more people in fewer vehicles.

The federal Transportation Equity Act for the 21st Century (TEA-21), enacted in 1998, established policy level guidance related to HOV lanes as well as specific program requirements. TEA-21 allowed for the construction of HOV lanes on freeways in areas designated as nonattainment areas under the federal Clean Air Act.

The Federal Highway Administration (FHWA) requires federal funds used to acquire the right-of-way, design or construct HOV lanes to be repaid before any significant changes can be made to the operation of an HOV lane or any conversion of an HOV lane to a general purpose lane. Therefore, by accepting federal-aid funding, states are agreeing to manage, operate and maintain HOV lanes according to federal guidelines. A review of proposals to change the original design concept, scope or operation of an HOV lane is needed to determine if federal approval is required or if any other actions are necessary before the proposed changes occur.
ARIZONA HOV LANE USAGE

Implementation of HOV lanes in Arizona began with construction of the Interstate 10 in 1983. According to the Arizona Department of Transportation (ADOT), approximately $200 million in federal funds were spent on the construction of HOV lanes on Interstates 10 and 17.

Currently, there are HOV lanes on Interstates 10 and 17, Loops 101, 202 and 303, and State Routes 51 and 60. There are currently no HOV lanes outside Maricopa County.

ALTERNATIVE FUEL VEHICLES

In 1994, legislation was enacted in Arizona authorizing single occupant alternative fuel vehicles to use HOV lanes, which, while not specifically authorized by federal law, was not prohibited. The statutory definition of alternative fuel vehicle includes vehicles that are powered 100 percent by alternative fuel sources, such as electricity, solar energy, hydrogen, natural gas or propane. The only exception to this definition is a vehicle that uses a minimum of 70 percent alternative fuel and a maximum of 30 percent petroleum-based fuel, and qualifies as a federal low emission vehicle.

LOW EMISSION AND ENERGY EFFICIENT VEHICLES

In 2001, Arizona amended statutes governing the use of HOV lanes to allow hybrid vehicles to use HOV lanes regardless of the number of people in the vehicle, subject to the approval of the FHWA. Based on the passage of 2001 legislation, Arizona made an official request to the FHWA, which was denied. In a December 21, 2001 response, the FHWA determined that hybrid vehicles do not meet the applicable federal requirements to use the HOV lanes. Federal law authorizes states to allow inherently low emission vehicles (ILEVs) or other low emission and energy efficient vehicles (LEEEVs) to use the HOV lanes. However, the FHWA noted that to date no hybrid vehicles have been certified by the EPA as meeting the emissions requirements established for the LEEEV classification because their engines have fuel vapor emissions.

Presently, the EPA is required to establish rules and guidelines for LEEEVs to qualify for HOV lane usage; however, the EPA’s deadline has passed and no rules have thus far emerged. ADOT reports that it is working with the FHWA to determine what needs to be accomplished in Arizona in order to implement this option once the EPA adopts the rules.

Laws 2009, Chapter 187 conformed Arizona transportation statutes with the federal definition for LEEEVs in accordance with Title 23, United States Code, Section 166, specifying LEEEVs as vehicles certified by the EPA Administrator or part of a federally approved pilot program (A.R.S. § 28-601). Statutory references to “hybrid vehicles” in state HOV lane law were removed as well. Subject to the adoption of federal guidelines on LEEEV use in HOV lanes, ADOT is authorized to issue LEEEV special license plates to owners of such vehicles. This would allow LEEEVs with the special plate to travel in HOV lanes at any time, regardless of occupancy level, without penalty. The 2009 law specified that qualified LEEEVs must achieve not less than a 50 percent increase in city fuel economy or not less than a 25 percent increase in combined city-highway fuel economy in accordance with 23 U.S.C. § 166 (A.R.S. § 28-2416.01).

ARIZONA ENERGY EFFICIENT PLATE PROGRAM

In August 2005, President George W. Bush signed into law the federal Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users of 2005 (SAFETEA-LU). SAFETEA-LU provides states with the option to allow hybrid vehicles to use HOV lanes if the
state establishes a method of marking the vehicles, monitoring and reporting on performance and ensuring that the program does not degrade the performance of HOV lanes.

In September 2006, Governor Napolitano issued Executive Order 2006-13 requiring ADOT, in consultation with the Arizona Department of Environmental Quality, to implement a pilot program allowing designated hybrid vehicles to drive in HOV lanes. An HOV lane capacity analysis conducted by ADOT determined the list of eligible hybrids should be limited to a small number of the most fuel efficient vehicles.

Fully electric vehicles with no other supporting fuel supply qualify for an alternative fuel special license plate, which allows the vehicle unrestricted access to HOV lanes. Arizona also allows a limited number of plug-in hybrid electric vehicles to participate in the Energy Efficient Plate Program. Drivers of qualifying vehicles may apply for an Energy Efficient special license plate, which allows the vehicle unrestricted access to the HOV lane. ADOT designates a list of qualifying vehicles each year, however the program is limited to 10,000 participants, and registration is currently at maximum capacity.

**ADDITIONAL RESOURCES**

- Arizona Department of Transportation (ADOT)
  
  [http://www.azdot.gov](http://www.azdot.gov)

- Arizona Department of Transportation (ADOT) Motor Vehicle Division (MVD)
  

- Executive Order 2006-13: Climate Change Action (Governor Janet Napolitano)
  

- Federal Highway Administration (FHWA)
  

  
  [http://www.eere.energy.gov](http://www.eere.energy.gov)


- U.S. Environmental Protection Agency (EPA) Green Vehicle Guide
  
  [http://www.epa.gov/greenvehicles/Index.do](http://www.epa.gov/greenvehicles/Index.do)