State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

M e m o r a n d u m

To: CHAIR AND COMMISSIONERS
CALIFORNIA TRANSPORTATION COMMISSION

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Information Item

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Subject: **HIGH OCCUPANCY VEHICLE LANE DEGRADATION AND MANAGED LANE POLICY AND PLANNING EFFORTS**

The California Department of Transportation (Department) will be presenting a discussion on managed lanes and High Occupancy Vehicle (HOV) Lane Degradation at the January 29, 2014, California Transportation Commission (Commission) Meeting.

BACKGROUND:

Federal law includes a performance standard for HOV lanes that are used by these vehicles. The law states that the average operating speeds during peak morning or evening hours cannot fall below 45 miles per hour more than ten percent of the time for 180 consecutive days. Any HOV lane that fails to meet this standard is considered "degraded". This requirement was introduced in the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005.

The Moving Ahead for Progress in the 21st Century Act (MAP-21), effective October 2012, requires states to take action on degraded facilities within 180 days of identifying them as degraded. A list of potential actions was included; these actions include increasing occupancy requirements and prohibiting exempt vehicles. MAP-21 requires the United States Department of Transportation to enact sanctions if a state fails to comply. These sanctions include withholding payment of federal funds and withholding approval of projects.

Inherently low emission vehicles and hybrid vehicles may use HOV lanes in California without meeting occupancy requirements. These vehicles must have decals issued by the Department of Motor Vehicles. However, certain classes of hybrid vehicles were prohibited from accessing HOV lanes after July 1, 2011, unless they met occupancy requirements.

Certain HOV lanes in California may also be used by vehicles that do not meet occupancy requirements by paying a toll. An HOV lane that may be used by toll-paying vehicles is known as a HOT lane or an express lane.

SUMMARY:

23 United States Code 166 (d) (1) requires each State agency that allows vehicles to use an HOV facility to submit to the United States Secretary of Transportation an annual report that examines HOV performance. The 2011 California HOV Lane Degradation Determination Report (Report) examined

HOV lane performance during the morning and evening peak hours for the two 180-day periods from January through June and from July through December.

The Report showed that approximately 43 percent of HOV lanes were degraded during the first half of the year.

The Report also showed that approximately 49 percent of HOV lanes were degraded in the second half of the year. This increase was observed regardless of the fact that 85,000 hybrid vehicles were no longer permitted to access HOV lanes after July 1, 2011. This increase has been observed in previous years and is associated with seasonal increases in traffic volume during that time of the year.

Analysis indicates that recurrent congestion and other contributing factors lead to degradation. These other factors could include:

- Vehicles from general-purpose lanes merging into the HOV lane at the end of the HOV facility, causing congestion in the lane upstream.
- Vehicles from the HOV lanes merging into congested general-purpose lanes.
- "Rubbernecking" due to traffic incidents on a freeway.
- Inclement weather resulting in lower speeds.

In accordance with the requirements of MAP-21, an action plan was developed by the Department to address degraded facilities identified in the 2011 performance monitoring effort. Caltrans proposed both short term and long term strategies to reduce or eliminate degradation, including:

- Increased enforcement by the California Highway Patrol.
- Improved incident response times by the Freeway Service Patrols.
- Improvements in roadway detection.
- Infrastructure improvements such as additional HOV lanes, modifications to HOV lane access openings, and elimination of bottlenecks on general purpose lanes.
- Active traffic management strategies such as the metering of freeway on ramps and freeway-to-freeway connectors.
- Conversion to high occupancy toll (HOT) lanes where proposed by regional transportation agencies.

Changing the occupancy requirements on HOV lanes was a strategy that the Department did not actively pursue in the action plan due to concerns about resulting underutilization of the HOV lanes and additional congestion in adjacent general purpose lanes. Two proposed HOV to HOT lane conversions listed in the 2011 action plan include an increase in occupancy. The Department also did not propose to prohibit inherently low emission vehicles (ILEV) and hybrid vehicles from HOV lanes because these vehicles constituted a low percentage of the users of HOV lanes. Furthermore, prohibiting these vehicles runs counter to Executive Order B–16–2012, which directs State agencies to take action to support and incentivize the purchase and use of these vehicles.

The Department is currently awaiting a formal response from the Federal Highway Administration (FHWA) on the 2011 action plan. This response is expected by the time of the Commission meeting and will be shared as part of the formal presentation.

The Department has completed the 2012 California HOV Lane Degradation Determination Report, and has developed a draft action plan for degraded facilities identified in the analysis. Based on the response from FHWA on the 2011 action plan, the 2012 action plan may need to be reviewed and revised.

The Department is currently in the process of updating existing Deputy Directive 43 to address managed lane operations on the State Highway System. The updated policy will address State and local roles, responsibilities, and expectations regarding HOV and HOT lane operations, including the need to address performance deficiencies such as degradation. There are ongoing discussions with regional transportation agency partners regarding the policy.

The Department will also be seeking consultant support in the development of a statewide Managed Lanes Master Plan by summer 2014. The Master Plan will provide a statewide concept of transportation operations for managed lanes. It will consider current managed lane operations, integrate various on-going managed lanes development activities, and address the operational, institutional, technical, and performance challenges and issues associated with managed lanes. The objective is to develop unified and seamless managed lane networks in each of the State's urban areas that can adapt to changing regional needs.