

## **1.0. INTRODUCTION**

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The Nevada Department of Transportation (NDOT) and the Regional Transportation Commission of Southern Nevada (RTC) have collectively initiated an effort to install ramp meters and implement HOV lanes along US 95 to mitigate congestion, improve safety and promote more efficient transportation mobility. Both HOV lanes and ramp meters are widely implemented, cost-effective solutions that improve safety and mobility on regional freeway and ramp facilities. HOV lanes promote time savings to ridesharing and transit users by offering a way of bypassing congestion. Ramp meters accomplish these objectives by smoothing the flow of traffic that enters a freeway facility by holding traffic to the ramp, and slowly releasing vehicles in a controlled manner so ramp-based traffic can safely merge with traffic on the freeway.

To be successful in these pursuits, NDOT is developing a series of related documents that provide guidance on how to effectively design, implement and monitor HOV lanes and ramp meters. Staff within NDOT and other stakeholder agencies, including RTC, FHWA and the various entities within the State of Nevada that have a stake in implementation and operation, can use this series of documents to ensure that these activities are completed successfully and in a consistent fashion. This Implementation Plan represents one in a series of these documents, and can be used to gain a high-level understanding of the issues that should be addressed before HOV lanes and ramp meters are implemented.

### **1.1. Purpose**

This document presents general guidance on how to implement HOV lanes and ramp meters in an effective and consistent fashion throughout the State of Nevada. Technical staff and decision makers within NDOT, the RTC of Southern Nevada, as well as the numerous other transportation planning and engineering entities throughout the State of Nevada, may use this guidance to implement these treatments in a manner that not only improves freeway, ramp and arterial operations, but also improves the operation of the implementing agency. Co-sponsoring these improvements generates a number of additional benefits, including greater acceptance of regional transportation investments, improved intra- and inter-agency support and funding for these investments, and improved public perception of NDOT, RTC and the other agencies involved in HOV and ramp meter implementation.

### **1.2. Background**

#### Ramp Meters

Recently, ramp meters have been installed at seven freeway entrance ramps in Las Vegas, four in the I-515 corridor, and the remaining three in the US 95 corridor. On March 29, 2005, the three systems deployed on entrance ramps along US 95 were activated. The activation of these metering systems represented the first public exposure to ramp metering within the Southern Nevada region. The activation of meters on I-515 will follow the activation of the meters on US 95, but no specific timeframe has been finalized for I-515. These meters represent the initial deployment of ramp meters. In the future,

the system of ramp meters along these routes may be expanded. Similarly, ramp meters may be installed along other freeways within Las Vegas (e.g. I-15 and I-215), the South Nevada region, or elsewhere in the state where traffic problems exist and ramp meters are feasible.

Before ramp meters were considered for deployment within Las Vegas, vehicles had often attempted to merge onto freeways closely spaced with one another. This phenomenon, known as “platooning,” causes drivers on the freeway to slow down to let the merging vehicles enter, and these slower speeds can contribute to time-consuming mainline freeway backups as well as dangerous sideswipe, lane change, and rear-end collisions.

### HOV Lanes

As part of the reconstruction and widening of US 95 north of I-15 in Las Vegas, HOV lanes were approved as part of the overall project. These dedicated lanes are envisioned to operate concurrently (one lane in each direction of travel) and located next to the median barrier (the inside travel lane). One of the concerns raised regarding the current HOV project is that the length of the lanes may not be long enough to generate a perception of adequate use, and the lanes do not provide a means of getting transit or rideshare users directly into major employment areas. The I-15 “Spaghetti Bowl” appears to be a source of congestion near this project’s terminus, and will likely compromise the travel time benefits the HOV lane will provide in the morning commute direction. Further studies were recommended to see if the current HOV lane project could be made more viable.

Other reconstruction and widening studies are ongoing within the Las Vegas region, and consideration of HOV lanes may be justified. For these reasons, consideration of HOV lanes may be a timely subject before these studies are completed.