



MEMORANDUM

TO: Southwest Washington Regional Transportation Council Board of Directors
FROM: Matt Ransom, Executive Director
DATE: May 28, 2019 
SUBJECT: **Regional Origin Destination and Urban Freeway Corridor Operations Studies: Update**

INTRODUCTION

At the March RTC Board meeting, RTC staff provided members with an overview of the Regional Origin Destination (ROD) and Urban Freeway Corridor Operations (UFCO) Studies.

The UFCO Study is analyzing existing freeway operational needs. It will identify near term strategies to address them, evaluate their effectiveness and recommend low cost strategies to improve system performance and mobility on I-5, I-205, SR-500 and SR-14. Strategies being considered include both technology based real-time advanced traffic management and low cost capital improvements to address geometric constraints. The ROD Study directly supports the operational analysis by providing an understanding of trip patterns, access to and from the freeways, and regional versus local trips. It will also supplement other traffic data collected for the UFCO Study.

While the Regional Origin Destination Study and the Urban Freeway Corridor Operations Study are separate initiatives, they are being closely coordinated to ensure the origin destination data supports the baseline data and analysis needs of the UFCO Study. Although these studies are being led by RTC, Washington State Department of Transportation (WSDOT) has provided funding support and has been an important partner for both initiatives.

ROD AND UFCO STUDIES: UPDATE

The ROD Study evaluated a number of options to procure origin destination data, including field data collection and private sector ‘big data’ providers, and recommended Inrix/Moonshadow as the preferred OD data source for the study.

The UFCO Study has completed an analysis of existing conditions for the study corridors. Information developed for the study included: roadway geometrics, speed data, hours of congestion, and collision density. In addition, a ‘toolbox’ of operational strategy types has been compiled that can smooth traffic flow, improve safety, and manage congestion.

An all-day UFCO workshop was held on May 14. The purpose of the workshop was to identify lower cost capital, operational and ITS projects/strategies to address congestion on each of the four study corridors. Workshop attendees included transportation planning and traffic engineering staff from the WSDOT, City of Vancouver, Clark County and RTC. The operational strategies described on the following page served as a starting point for discussion of improvements to consider for the corridors. RTC staff will present an overview of the origin

destination data, the associated web based O/D analysis tool, and an update on the UFCO study and UFCO workshop ideas at the RTC Board meeting on June 4.

OPERATIONAL PROJECTS AND STRATEGIES

Transportation system management and operations strategies focus on low cost operational improvement strategies that can maintain and improve the performance of the existing transportation system. These strategies can also complement the addition of new capacity and provides operational management tools to maximize the efficiency of the transportation system.

The strategies in the table below can be corridor wide or location based and represents the scope of potential projects and strategies for the UFCO Study.

Operational Projects/Strategies Toolbox	
<i>Active Traffic Management (ATM)</i>	
Adaptive Ramp Metering	Allows vehicles to merge smoothly onto the mainline. Eliminates vehicle platooning and reduces merging conflicts from on-ramp. Metering rate changes based on current traffic conditions.
Queue Warning Systems	Notifies motorists of upstream congestion, incidents, or closures.
Variable Speed	Recommended freeway speed changes based on real time traffic, road and weather conditions.
Traveler Information	Web based or roadside real-time information on travel time, incidents, closures or other transportation related events.
Off Ramp Queue Management	Flushes off-ramp when needed to prevent queueing onto the freeway mainline.
Integration of Freeway and Arterial Systems	Integrated real-time management of the freeway with parallel arterials to improve reliability and reduce congestion. Effective during freeway incidents to reroute traffic and change signal timing to manage traffic flow.
<i>Operational Changes</i>	
Restriping Roads, Lanes or Ramps	Maximizes efficiency and capacity; reduces vehicle conflicts.
Part-Time Shoulder Use (PTSU)	Provides extra capacity during peak congestion.
Static Signing and Marking	Ensures motorists are aware of downstream roadway features, conditions or slow areas.
Lane Assignment	Redirects traffic to balance lanes or to avoid congested or closed lanes. Can be dynamic or static.

<i>Lower Cost Capital Projects</i>	
Merge and Diverge Extension	Extended sections provide more distance for vehicles entering or exiting the freeway reducing turbulence, merging and concentration of weaving traffic.
Auxiliary Lanes or Extensions	Constructed between on and off ramps; provides more room to speed up or slow down preventing bottlenecks caused by weaving.
Recovery Lanes	Provides additional length for vehicles to weave or merge beyond an exit only lane.
Widening On and Off Ramps	Improves ramp capacity and storage; limits queueing onto the freeway mainline and arterial facilities.
Sight Distance Improvements	Geometric modifications to ensure that motorists have sufficient length along the highway to avoid collisions with other vehicles and objects that conflict with their path.

NEXT STEPS

Over the next week, operational improvement ideas identified at the workshop will be documented for review and confirmation by attendees to ensure that discussion was fully captured. Over the next several months, the initial set of strategies identified at the workshop will undergo detailed analysis and evaluation to determine impacts, benefits, costs, and implementation timeline. Based on the assessment, the UFCO TAC will work to develop a set of draft projects/strategies to be recommended for the study. RTC staff will continue to provide periodic project reports to the Regional Transportation Advisory Committee (RTAC) and the RTC Board at key project milestones.