



MEMORANDUM

**TO:** Southwest Washington Regional Transportation Council Board of Directors  
**FROM:** Matt Ransom, Executive Director   
**DATE:** February 27, 2018  
**SUBJECT:** **SR-14 Bingen/White Salmon Circulation Study – Final Report**

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***AT A GLANCE – INFORMATION***

*The SR-14 Bingen/White Salmon Circulation Study was initiated as a result of local agencies' desire to understand existing and future transportation needs within the Bingen/White Salmon SR-14 corridor. The Study was managed by RTC in behalf of WSDOT.*

**BACKGROUND**

The SR-14 Bingen/White Salmon Circulation Study was initiated as a result of local agencies' desire to understand existing and future transportation needs within the SR-14 corridor through the Cities of Bingen and White Salmon. The Study was funded as part of the Washington State Department of Transportation's (WSDOT) Port of Klickitat Access Improvement and managed by RTC in behalf of WSDOT. The RTC Board authorized staff to proceed with the Study at their August 2016 meeting and the study was completed in December 2017.

The SR-14 Bingen/White Salmon Circulation Study performed a planning level assessment of SR-14 through the cities of Bingen and White Salmon to develop mobility and safety solutions. The SR-14 study corridor begins at SR-141 Alternative (Alt) and ends just east of the eastern Bingen city limits. This corridor serves not only residents and employers in the local area, but also substantial freight and recreational traffic.

The attached Executive Summary provides an overview of the study effort and recommendations. Both the Full Report and Executive Summary can be viewed from RTC's current publication web site at: <http://www.rtc.wa.gov/reports/>

Attachment

# SR-14 Bingen/White Salmon Circulation Study



## INTRODUCTION

The SR-14 Bingen/White Salmon Circulation Study was managed by Southwest Washington Regional Transportation Council (RTC) in behalf of the Washington State Department of Transportation (WSDOT). The Cities of Bingen and White Salmon, along with Klickitat County, and the Port of Klickitat provided study direction. The Study was initiated as a result of local agencies desire to understand existing and future transportation needs within the Bingen/White Salmon SR-14 corridor.

The objective is to study travel patterns and trends, document existing traffic conditions, identify future transportation needs, and describe possible solutions to those needs. The targeted segment of SR-14 between SR-141 Alternative (Alt) to a location just east of the eastern Bingen city limits serves not only residents and employers in the local area but also heavy recreational traffic and substantial freight movement.

## DATA COLLECTION

Field visits, aerial imagery, and data collection were utilized to verify existing corridor features and conditions, including lane configurations, traffic control, signal timing, and traffic patterns. Major data collection efforts included the following:

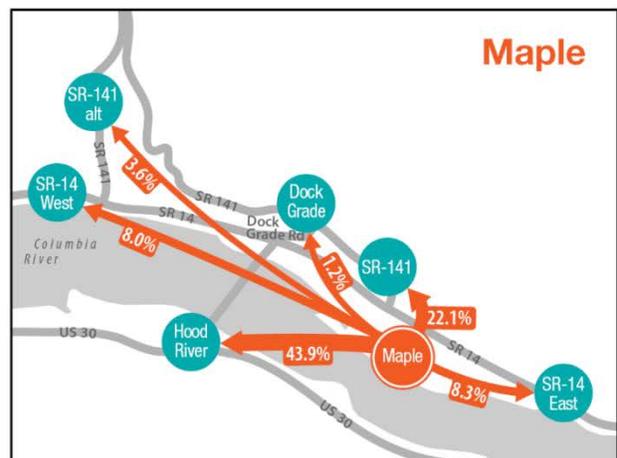
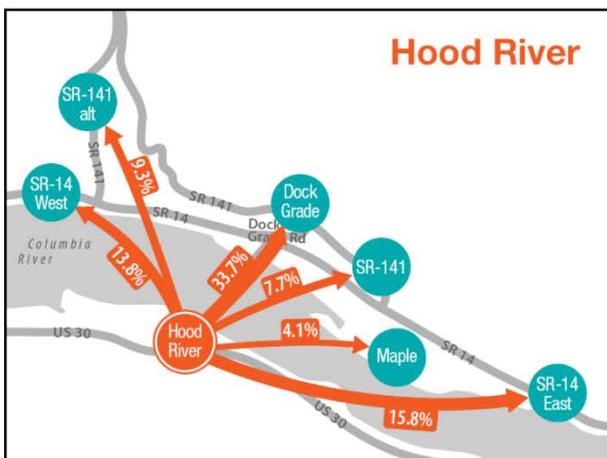
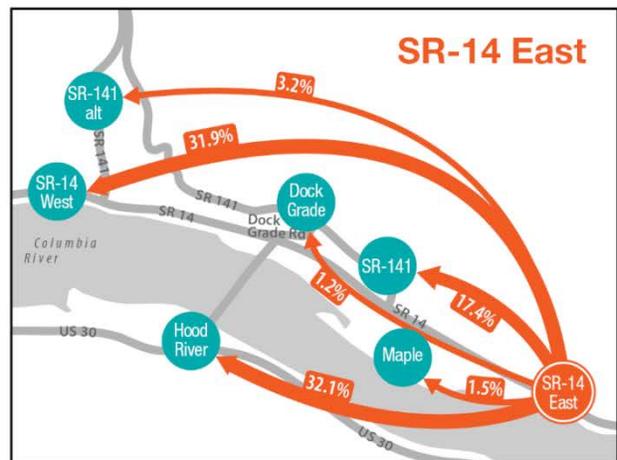
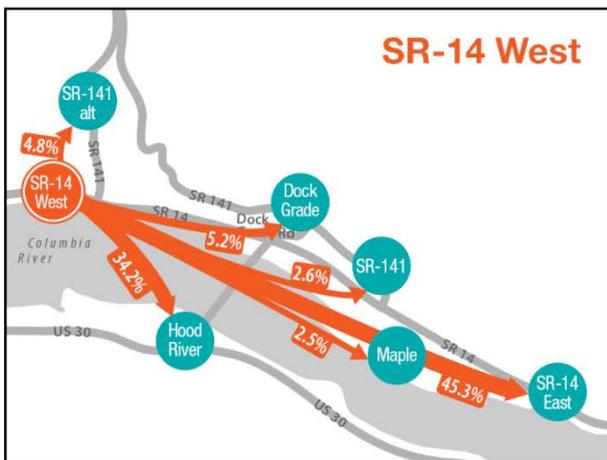
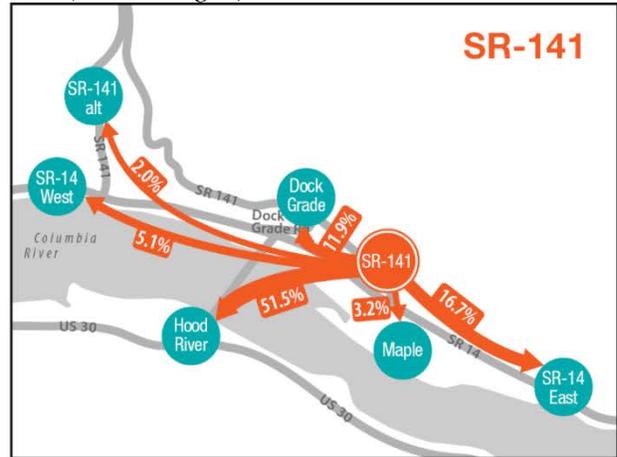
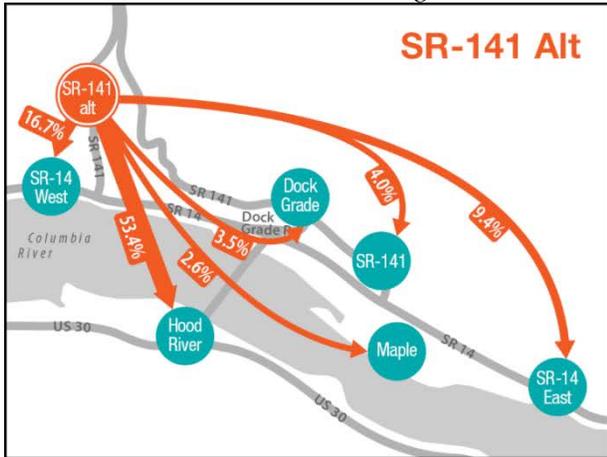
- Traffic counts were collected to understand hourly traffic volumes, vehicle types,

intersection turn movements, and seasonal variations in traffic volumes.

- Origin-destination (O-D) data was collected using Bluetooth Technology to understand percentages of trips from origins to various destinations.

- Interviews were conducted with local stakeholders to understand observed deficiencies within the study area.
- 2012-2014 collision data was collected to identify safety concerns.
- Parking utilization data was collected to understand parking supply.
- Train data was collected at the Maple Street crossing to understand train frequency and duration.

## Origin-Destination Patters (Percentages)



## EXISTING CONDITION

During existing year 2017, the average delay at all study area intersections in the PM peak hour fell within LOS C with the exception for the SR-14/Hood River Bridge (SR-35) and the SR-14/Oak Street intersections. Both of these intersections displayed delay for one or more critical movement.

## FUTURE CONDITION - NO BUILD

The target horizon year for future analysis was assumed to be 2037. A forecasted annual growth from years 2017 to 2037 along SR-14 was used to estimate the overall growth in traffic demand by year 2037. With a 20 year increase in traffic demand by 52% on SR-14, congestion levels would significantly increase along the corridor. Based on the operational analysis, without any improvements to the transportation system, significant delay will occur through the corridor in year 2037 during the PM Peak hour.

## FUTURE BUILD CONDITION

Based on the findings of the future No Build conditions assessment, improvements to the SR-14 corridor were identified and analyzed as part of the Build Conditions analysis. These improvements were analyzed in combination with WSDOT's proposed Bingen Point Access project.

Based on the operational analysis, WSDOT's Concept 14 (shown below) would provide the highest operational benefit for access in and out of the Bingen Point Business Park. The future Build Alternatives analysis indicates that with improvements to the Oak Street intersection and by partially restricting Maple Street south of the rail crossing, Oak Street and Maple Street intersection operations would be improved. A center barrier on SR-14, between roundabouts at Oak Street and Elm Street could be considered to further mitigate the gap acceptance problem at Maple Street.



## RECOMMENDATION

**Short-Term Recommendations:** Based on the existing and future conditions analysis, the following short-term improvements are recommended for the SR-14 corridor:

**SR-14 and SR 141 Alt intersection** – Safety at this intersection would be enhanced by adding an eastbound left turn pocket and installing a westbound radar speed sign.

**SR-14 and Hood River Bridge intersection** - By revising the signal timing to include an overlap phase for the northbound-to-eastbound right turn movement phase, the intersection delay could be reduced by over 45%.

**SR-14 and Alder Street crosswalk** - The addition of an enhanced pedestrian crossing at the SR-14 and Alder Street intersection would improve the ability of pedestrians to cross SR-14 safely.

**SR-14 entering downtown Bingen** - Radar speed signs would help in reducing speeds through the Bingen downtown area, thereby creating a safer environment for vehicles, pedestrians and bicyclists.

**SR-14 and Oak Street intersection** - Either a signal or a roundabout at this intersection would improve the intersection operations.

**SR-14 and Maple Street intersection** – Partially restricting Maple Street traffic south of SDS Lumber entrance would improve operations and safety at the SR-14 and Maple Street intersection.

**Sidewalk to new Bingen Point crossing** – Addition of sidewalks south of SR-14 to the new WSDOT Bingen Point crossing would improve connectivity and encourage safe pedestrian circulation.

*The following map provides a visual display of recommended short-term improvements:*



The following table provides concept-level construction costs for these short-term improvements. The costs below are planning-level estimates intended to provide a magnitude of scale and do not include design or potential right of way cost.

Improvement	Total Cost
SR-14/Oak Street Traffic Control (new signal or roundabout)	\$250-\$500K
Restrict Access on Maple Street (barrier gate)	\$5,000
Upgrade SR-14/Hood River Bridge signal (signal head, wiring)	\$20,000
RRFB at SR-14/Alder Street (equipment for full crossing)	\$30,000
Restripe for LT lane (EB), radar speed sign (WB)	\$25,000
Complete south side sidewalk on SR-14 to Elm Street (500 SY)	\$125,000
Radar speed signs on SR-14 at each end of town (sign)	\$20,000
<b>Total</b>	<b>\$475-\$725K</b>

**Long-Term Recommendations:** The following long-term recommendations could be considered when conditions warrant further action:

- *Create downtown boulevard (complete street)*
  - *Reconfigure angled parking to parallel parking*
  - *Construct center left turn lane through downtown*
  - *Restrict SR-14 driveway to right in/right out*
- *Upgrade traffic control at additional intersections*
- *Add streetscape / landscaping treatments*
- *Widen SR-14 for additional through lane(s)*
- *Construct multi-use path through town parallel to SR-14*
- *Realign Oak Street or Maple Street to consolidate and simplify North South movements*

