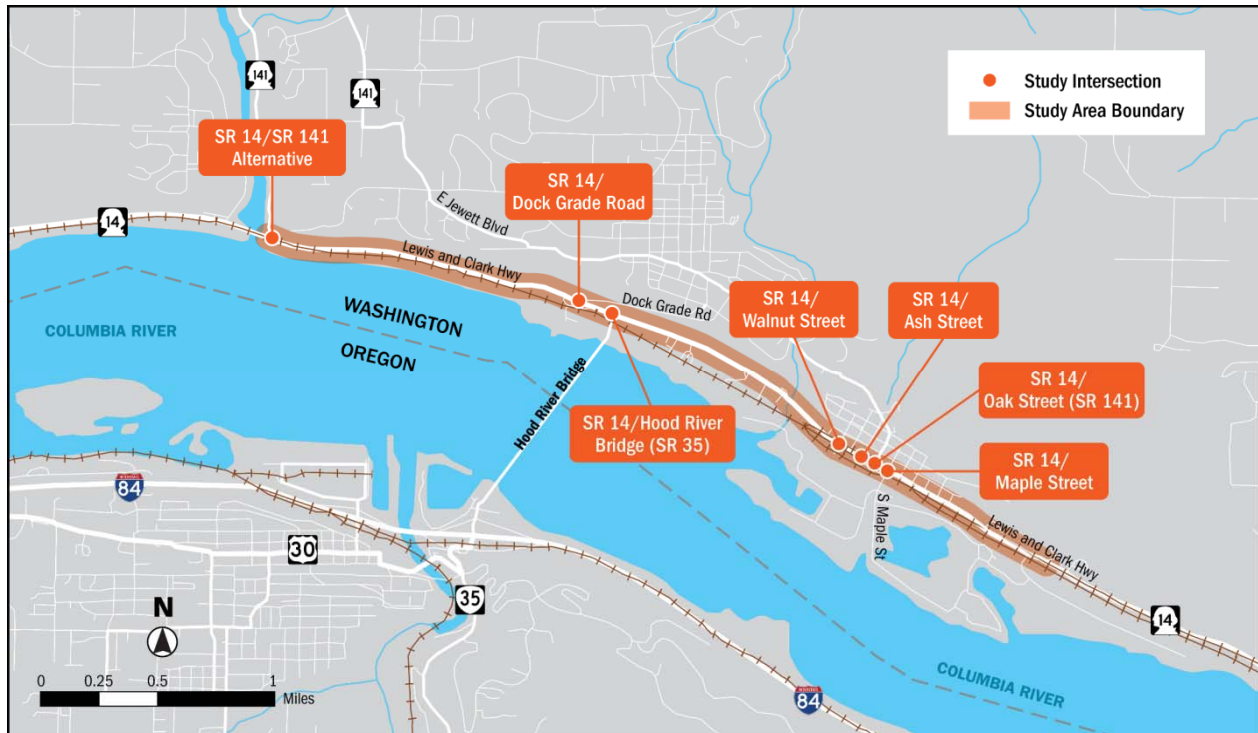


SR-14 Bingen/White Salmon Circulation Study



INTRODUCTION

The SR-14 Bingen/White Salmon Circulation Study was managed by Southwest Washington Regional Transportation Council (RTC) on 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 of this study is to perform a planning-level assessment of travel patterns and trends, document existing traffic conditions, identify future transportation needs, and describe possible access and mobility solutions to address current travel impacts and improve circulation. The targeted segment of SR-14 between SR-141 Alternative (Alt) to a location just east of the eastern Bingen city limits.

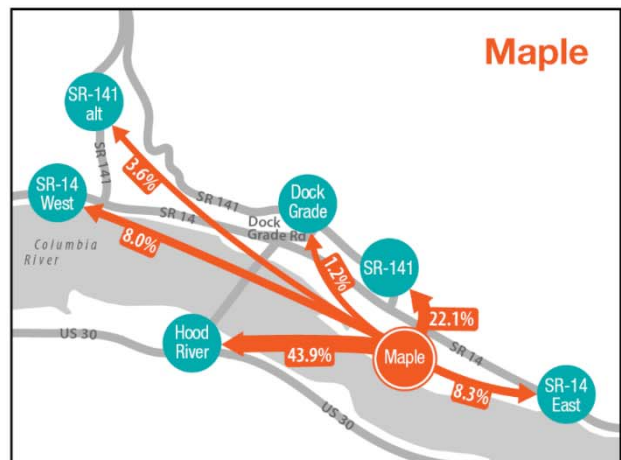
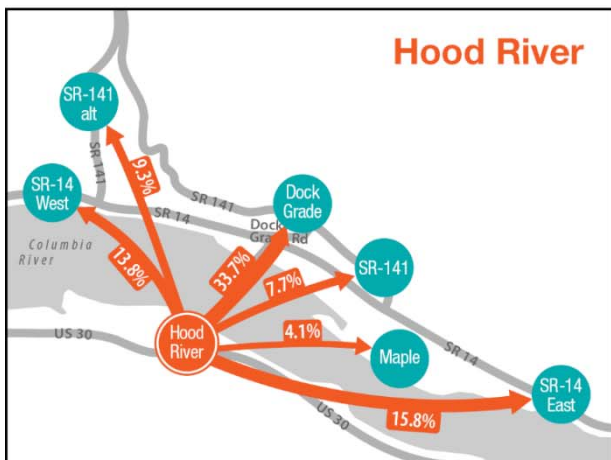
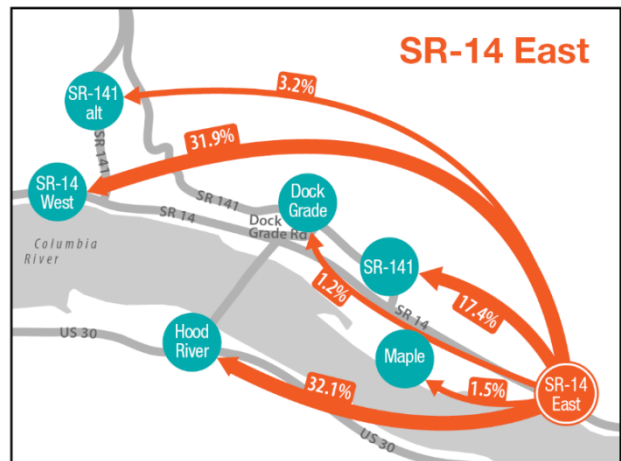
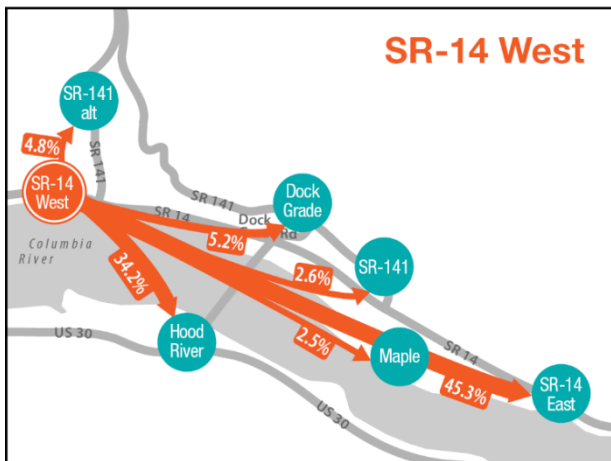
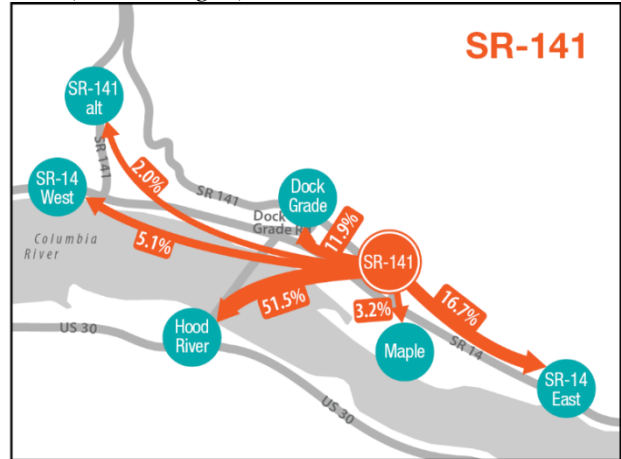
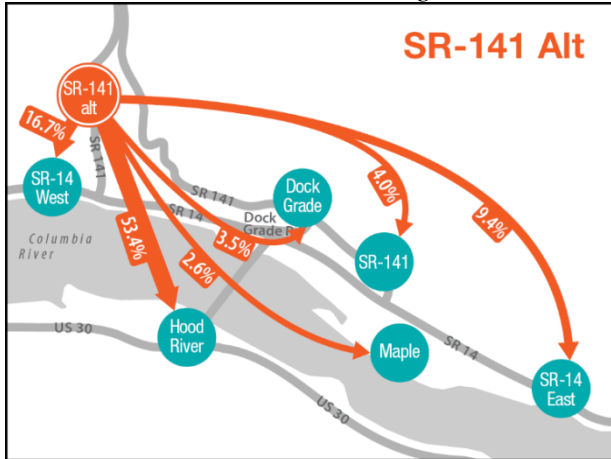
DATA COLLECTION

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

Under the existing conditions, the SR-14 corridor meets the WSDOT Highway LOS C standard for all segments except the eastbound direction on Segment 1 (SR-141 Alt to Hood River Bridge). The eastbound traffic on this Segment experiences slightly more congestion because of traffic volume levels approaching the traffic signal at the Hood River Bridge access road intersection.

Bingen Point Access

In August 2017, WSDOT identified Concept 14 as the preferred new grade-separated railroad crossing for access to the Bingen Point. This concept would provide a new railroad undercrossing and roundabout on SR 14 at Elm Street—roughly 0.2 miles east of Maple Street.

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.

Under Future Build Conditions, the Highway LOS analysis shows a projected increase in congestion as shown in the following figure. This increased congestion would occur because of the new roundabout at SR-14/Elm Street, which would provide additional access to Bingen Point. As a result, traffic volumes on SR-14 between Elm Street and Maple Street would increase, which would cause more platooning.

Future Build Condition Level of Service



CONCLUSION

The following potential improvements are presented for consideration to reduce congestion, improve connectivity, and enhance mobility along SR-14.

The construction costs included are planning-level estimates intended to provide only a magnitude of scale and do not include costs for design, engineering, or right-of-way acquisition.

Upgrade traffic control at the SR 14/Oak Street intersection – Analysis indicates that either a signal or a roundabout at this intersection would substantially decrease delays. The approximate cost of these types of improvements would be \$250,000 to \$500,000.

Partially or fully restrict access on Maple Street south of SR-14 - The SR 14/Maple Street intersection would benefit by partially restricting traffic on Maple Street. Options could include a barrier gate north of Marina Way, center barrier on SR-14, or full closure of Maple between SR-14 and Depot Street. The approximate cost of barrier gate would be \$5,000.

Revise and update SR 14 and Hood River Bridge intersection signal timing – To address the current delay at this intersection, a signal phasing revision could be implemented to introduces an overlap phase for the northbound-to-eastbound right turn movement. The approximate cost of this improvement would be \$20,000.

Add a rectangular rapid flashing beacon (RRFB) at SR 14 and Alder Street crosswalk –An RRFB at the SR 14/Alder Street crosswalk is recommended to enable the pedestrians to cross SR 14 safely. The approximate cost of this improvement would be \$30,000.

Improve striping and install a radar speed sign at the SR 14/SR 141 Alt intersection –Adding an eastbound left turn pocket through striping and installing a westbound radar speed sign at the SR 14/SR 141 Alt intersection could improve safety. The approximate cost of this improvement would be \$25,000.

Add radar speed signs on SR 14 entering town – Radar speed signs would help reduce speeds through the Bingen downtown area, thereby creating a safer environment. The approximate cost of this improvement would be \$20,000.

In the future, the SR-14 corridor could also benefit by implementing the following higher cost improvements:

Create Downtown Boulevard (complete street) – Repurposing the existing right-of-way could have a calming effect on driving behavior as well as reallocate space for protected turns, which increases mobility and safety. Specific elements of a downtown boulevard could include:

- Reconfigure angled parking to parallel parking.
- Construct center left turn lane through downtown.
- Restrict SR 14 driveways to right in/right out.
- Upgrade traffic control, such as adding signals or roundabouts, at additional intersections.
- Add streetscape/landscaping treatments.

Widen SR 14 for additional through lane(s) – Acquire property to widen the roadway so that one or more through lanes could be added on SR-14.

Realign Maple Street to Oak Street south of SR-14 or Close Maple Street between SR-14 and Depot Street – By realigning these two streets, north-south and turning movements could be consolidated in one intersection.

In addition, the study also identified the following pedestrian and bicycle improvements:

Complete sidewalk along eastbound SR-14 to new SR-14/Elm Street roundabout –Adding sidewalk along eastbound SR-14 from Maple Street to the new SR-14/Elm Street roundabout (3 blocks) would improve connectivity and encourage safe pedestrian circulation. The approximate cost of this improvement would be \$125,000.

Construct multi-use path through town parallel to SR 14 – To enhance pedestrian and bicycle connectivity and experience in the study area, one consideration would be to locate a parallel multi-use path further away from SR-14.