

# Multnomah County Willamette River Bridges Capital Improvement Plan



Project Summary Information: Hawthorne Bridge Limited Seismic Retrofit							
Bridge Names(s):	Hawthorne			Project ID#:	BUN-HA-06	Project Status:	In Progress
Project Rank:	27	Primary Category of Work	Seismic	Performance Attribute Total Score	61	Importance Score	TI-3 170.72
Logical Grouping Project ID #'s:	HA-SEIS-04						
Bridge Num and Names(s):	02757D Willamette River, SW Hawthorne Blvd (Hawthorne Br) [Hawthorne] ; 02757 Willamette River, Hawthorne Ave [Hawthorne] ; 02757 Willamette River, Hawthorne Ave [Hawthorne]; 02757A Hawthorne Blvd Ramp to Hwy 1E SB [Hawthorne]						

## Definition of Problem

The Hawthorne Bridge was identified to have seismic vulnerabilities throughout its members. The Multnomah County Willamette River Bridges Capital Improvement Plan Consultant Team identified the vulnerabilities based on an assessment of the as-built plans, previous retrofit studies and engineering judgment. From the assessment, it was determined that superstructure spans are vulnerable to falling from their existing bent caps and/or abutment seats during a major earthquake. This is primarily caused by inadequate detailing or dimensioning.

## Description of Proposed Solution

The proposed solution for the defined problem would be to construct a Phase 1 bridge seismic retrofit throughout the structure. The assumed Phase 1 seismic retrofit incorporates measures that restrain each superstructure span from collapsing during a defined seismic event. This consist of installing transverse and longitudinal restraint mechanisms at every expansion joint, constructing shear lugs at each bent cap to prevent movement, and/or constructing restraining members adjacent to each movable bridge component. Existing bearings also need be replaced.

## Project Justification

The benefits of completing the proposed solution are to avoid a likely loss of life associated with a bridge span collapse, reducing damage to adjacent structures, and maintaining bridge service caused by a lower level seismic event. The improved performance will also reduce economic losses associated with the event and improve compliance with current seismic design standards.



Right-of-Way:	\$94,750
Utility Reimbursement:	\$0
Construction:	\$31,505,229
Preliminary Engineering:	\$6,643,206
Construction Engineering:	\$6,643,206
<b>Total Cost at Target Construction Time:</b>	<b>\$44,886,391</b>
<b>Target Construction Time:</b>	<b>2025-2029</b>

Notes:

This project includes improvements identified during the 2014 public engagement process.