

Seismic Vulnerability Assessment of Oregon Bridges

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Earthquake Hazard in Oregon

Oregon is in the seismically active Pacific Northwest and the bridge inventory forms important connections within the transportation system. Many of these bridges could be vulnerable to damage in a seismic event and may need retrofit as they were designed and built to lateral forces that are below current expectations. iSTAR Laboratory conducts research and analysis of structural performance of structures in the event of an earthquake and in this study particular attention is focused on the vulnerability of bridges based on their strategic role combined with structural characteristics.

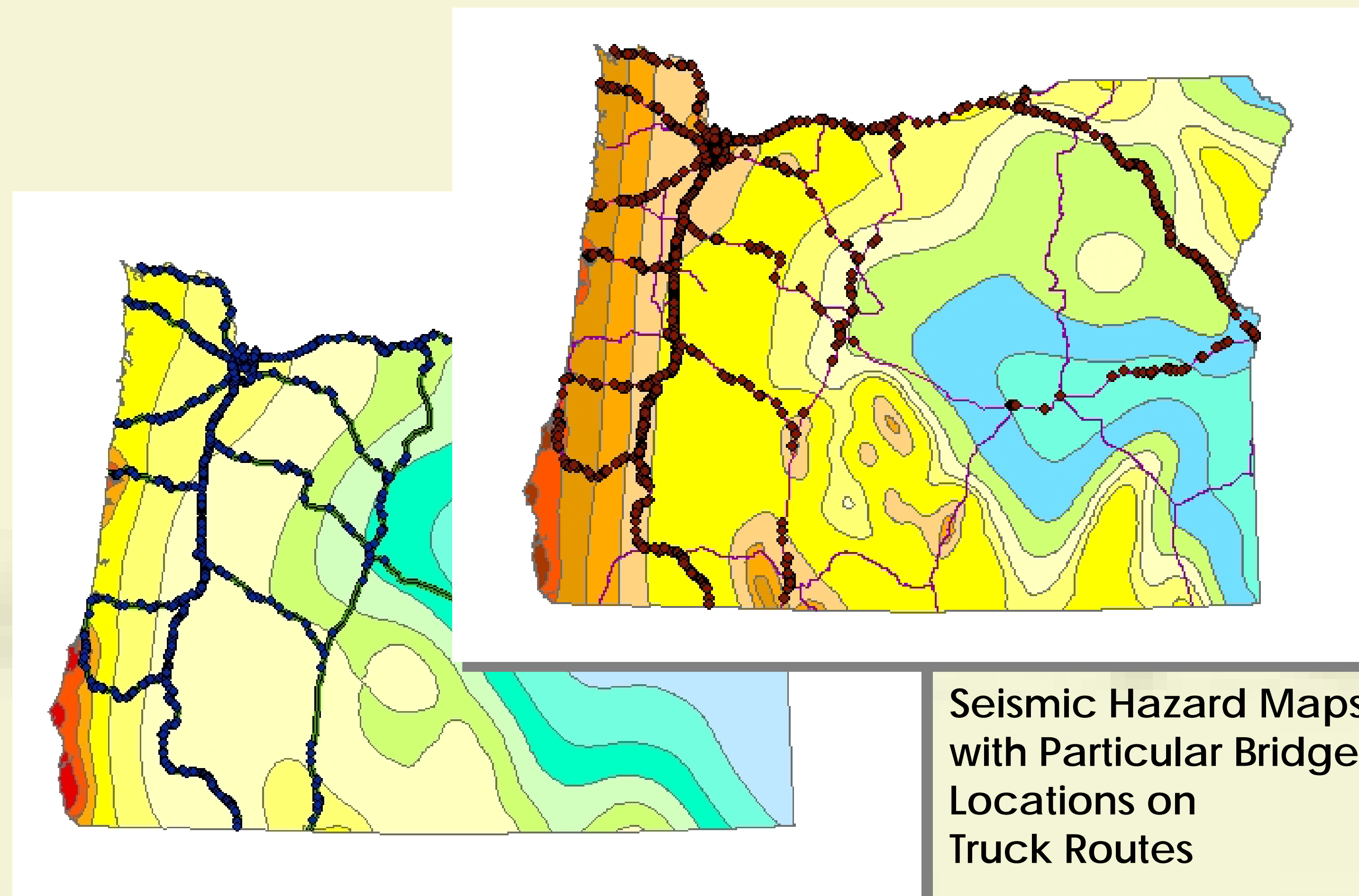
Objective

State owned bridges are being evaluated and prioritized based on criteria such as route continuity, seismic hazard, structural considerations and soil conditions.

Parameters

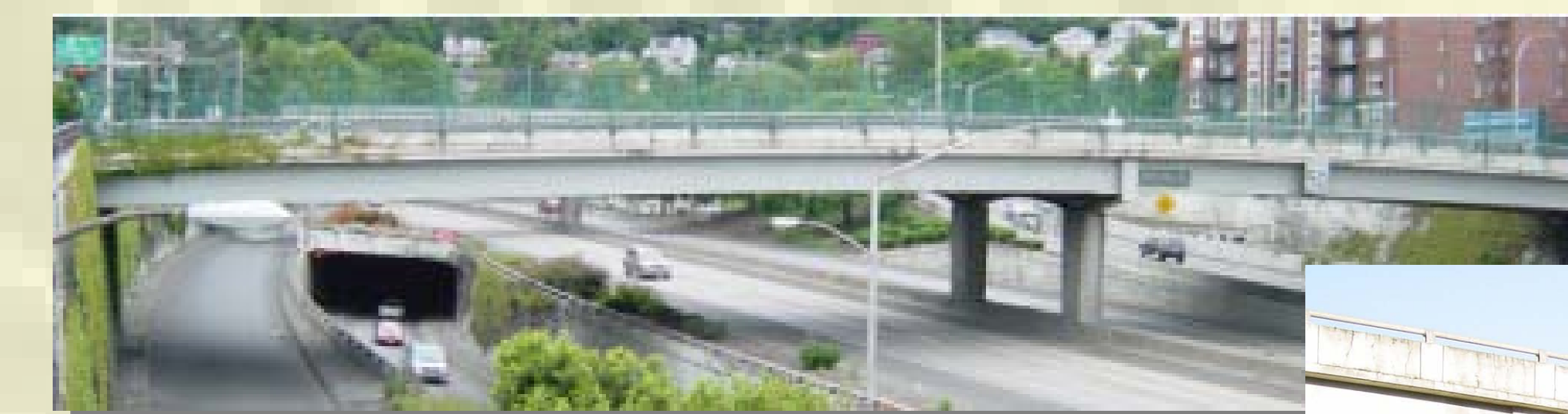
The intent of the study is not a detailed evaluation of individual bridges, but a global assessment of the current bridge inventory using criteria that depend on information from existing databases as well as newly gathered data. Bridges of various types, ages and locations throughout the state are being considered.

The project also builds on multi-disciplinary data available in current databases, such as planning network and origin-destination data, and further adds and combines key parameters using Federal Highway Administration's recently developed tools.



Seismic Hazard Maps with Particular Bridge Locations on Truck Routes

I-5 Columbia River Crossing



Steel Girder Bridge over I-405



Curved Concrete Box Approach onto Hwy. 26



Precast Slab Bridge on Hwy. 26

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