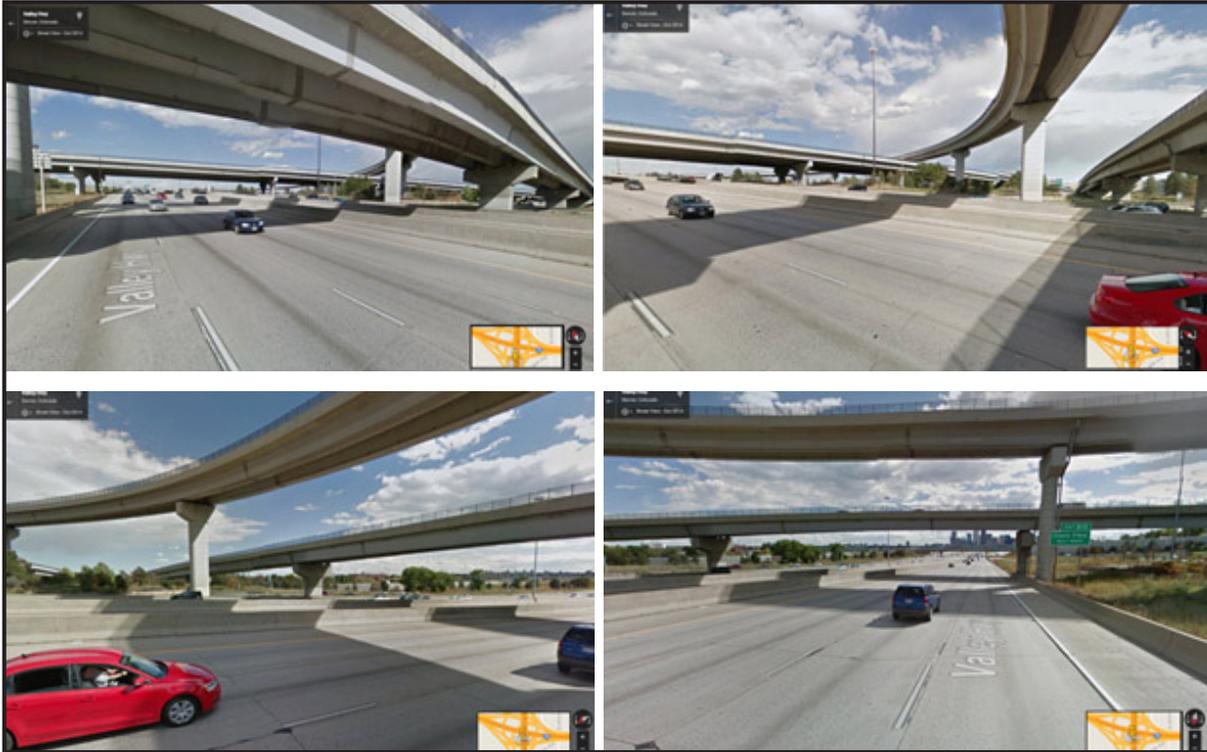


MOUNTAIN-PLAINS CONSORTIUM

PROJECT BRIEF | December 2015

Seismic Risk Assessment for the I-25/I-70 Corridor in the Mountain Plains Region of the U.S.



the **ISSUE**

This project examined a range of earthquake scenario events to gain a better understanding of the potential level of traffic disruption.

the **RESEARCH**

According to the 2005 Regional Transportation Plan for the Intermountain Transportation Planning Region (2007) there were up to 38,000 vehicles on I-70 each day and it is likely that number is much higher now (2015). Now, consider what would happen if this traffic was disrupted for some period of time, and perhaps if I-25 which intersects I-70 was also disrupted because of one or more bridge or overpass failures. This project examined a range of earthquake scenario events to gain a better understanding of the potential level of traffic disruption that might occur at the intersection of two main arterial freeways, namely Interstates 25 and 70.



A University Transportation Center sponsored by the U.S. Department of Transportation serving the Mountain-Plains Region. Consortium members:

Colorado State University
North Dakota State University
South Dakota State University

University of Colorado Denver
University of Denver
University of Utah

Utah State University
University of Wyoming



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Project Title

Seismic Risk Assessment
for the I-25/I-70 Corridor
in the Mountain Plains
Region of the U.S.

Research Assistant(s)

Negar Nazari

Sponsors | Partners

Colorado State University
USDOT, Research and
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the FINDINGS

In this summary report, the approximate damage that would result to overpasses at the intersection of two main Colorado arterial roadways, namely I25 and I70, was identified using a combination of a well-known attenuation equation and damage fragility curves for lightly reinforced overpasses. The level of damage and resulting traffic disruption varied as a function of earthquake magnitude as could be expected. From this study it is clear, that for an earthquake greater than M6.0, there would be disruption to traffic, and for an earthquake of M7.0, this disruption would be quite significant to traffic flow, including freight traveling both east-west and north-south.

the IMPACT

This preliminary study determined that, given the assumptions contained in the report, traffic disruption could be significant for several days. Further work would be needed to verify these preliminary findings. However, results suggest that, because of their potential significant effects on traffic and safety, earthquake impacts should be included in design and planning of highway infrastructure in the region.

For more information on this project, download the entire report at <http://www.ugpti.org/resources/reports/details.php?id=833>

For more information or additional copies, visit the Web site at www.mountain-plains.org, call (701) 231-7938 or write to Mountain-Plains Consortium, Upper Great Plains Transportation Institute, North Dakota State University, Dept. 2880, PO Box 6050, Fargo, ND 58108-6050.



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