

UTC Project Information	
Project Title	Quantifying Impact of Rockfall on Mobility of Critical Transportation Corridors
University	University of Alaska
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$180,000 University of Washington \$70,000 Oregon Department of Transportation \$70,000 Alaska UAV \$40,000
Total Project Cost	\$360,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	September 1, 2018-August 31, 2020
Brief Description of Research Project	<p>The work proposed develops a valuable framework to assist planners/managers in transportation agencies (and others) to support informed decisions regarding resource allocation based on the risks that rockfall poses on the mobility of critical highway corridors. Transportation agencies, already faced with difficult asset management decisions, would benefit from a data-driven framework that will synthesize objective, quantitative identification regarding unstable slopes, mitigation strategies and historical data relating debris volume and closure times. Such an analysis would enable identification of which slopes pose the greatest risk to highway closure from infrastructure damage, thus providing an objective approach towards optimized resource allocation and potential optimized mitigation strategies. In particular, proactive slope remediation is typically beneficial, but these benefits are not well quantified. The proposed effort will quantify the benefit of intervention on rockfall activity and more importantly cost-efficacy (accounting for mobility loss) from a risk perspective. The public, as both user and taxpayer, will benefit from the implementation of the results of this project.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>RIM - Rockfall Impacts on Mobility: Characterizes how rockfalls and landslides impact highway networks. Includes economic costs of debris removal, repairs, and road closures.</p> <p>RAI: - Rockfall Activity Index: Quantifies magnitude and frequency of rockfall events. Necessary for identifying routes most vulnerable to closures.</p> <p>Scaling Mitigation: Characterizes rockfall mitigation techniques, and specifically scaling techniques employed in Alaska and then quantified using RAI. Important for identifying areas prone to repeat failures.</p>
<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	<p>Characterizing and quantifying rockfall activity and its impact on critical highway corridors is essential for corridor resilience, risk mitigation, and budgeting of limited resources.</p> <p>RIM - Rockfall Impacts on Mobility: Includes economic costs of debris removal, repairs, and road closures.</p> <p>RAI: - Rockfall Activity Index: Necessary for identifying routes most vulnerable to closures.</p> <p>Scaling Mitigation: Important for identifying areas prone to repeat failures.</p>
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	<p>NHERI Natural Hazards Reconnaissance Facility RAPID: https://rapid.designsafe-ci.org/</p> <p>Oregon Hazards Explorer for Lifelines Program: http://ohelp.oregonstate.edu/</p>