

UTC Project Information	
Project Title	Post-Wildfire Stability and Improvement of Hillslopes Near PNW Transportation Infrastructure to Increase Mobility
University	Washington State University
Principal Investigator	Idil Akin
PI Contact Information	idil.akin@wsu.edu
Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans \$40,000 Washington State University \$ 40,000
Total Project Cost	\$ 80,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	August 16, 2019-August 15, 2021
Brief Description of Research Project	<p>The objectives of this proposed research are to (i) develop reliable methods to identify slopes that are prone to landslides post wildfire and (ii) develop reliable, environmentally friendly, efficient, cost-effective methods of stabilizing critical slopes. Identifying and stabilizing vulnerable slopes in critical locations near infrastructure systems post wildfire will prevent blockage or damage to infrastructure by landslide material and therefore will maintain mobility by preserving the corridors and reduce maintenance costs.</p> <p>Specific Goal 1: Modify the slope stability routine used in LISA with a suction-based model.</p> <p>Specific Goal 2: Use a data-driven approach to run suction-based LISA to estimate post-wildfire landslide susceptibility due to changes in infiltration rate and corresponding saturation both above (typical for shallow landslides) and below the groundwater table.</p> <p>Specific Goal 3: Develop surficial field application methods for an environmentally friendly and cost-effective biopolymer (xanthan gum) to improve post-wildfire slope stability.</p> <p>Post-wildfire wetting-induced shallow landslides and corresponding debris flows threaten mobility in transportation systems in all Pacific Northwest states. Therefore, all Pacific Northwest states will benefit from the outcomes of this research.</p>

<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	<p>Further research is needed for implementation to determine the optimum concentration of xanthan gum and downstream water quality effects.</p>

<p>Impacts/Benefits of Implementation (actual, or anticipated)</p>	<p>Surficial xanthan gum application is expected to be effective for post-fire erosion control and slope stabilization.</p>
<p>Web Links</p> <ul style="list-style-type: none">• Reports• Project Website	