UTC Project Information	
Project Title	Unmanned Aircraft System Assessments of Landslide Safety for Transportation Corridors
University	University of Alaska Fairbanks
Principal Investigator	Keith Cunningham
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans $180,000 University of Alaska Fairbanks $ 40,000 University of Washington $ 80,000 Oregon State University $ 60,000
Total Project Cost	$360,000
Agency ID or Contract Number	DTRT13-G-UTC40
Start and End Dates	January 15, 2015– September 16, 2016
Brief Description of Research Project	The proposed research addresses Pacific Northwest Transportation Consortium (PACTRANS) research priority of using new data-driven technologies to improve the safety of transportation systems in the Northwest United States. Landslides pose significant threats to the safety of motorists throughout the mountainous terrain of the Pacific Northwest. The research will advance landslide safety assessment for transportation corridors by capitalizing on recent advances in unmanned aircraft systems (UAS) and new low-cost Structure from Motion (SfM) photogrammetry techniques. The resulting improved hazard assessment techniques will facilitate cost-effective evaluation of landslide safety across the broadly distributed transportation networks of the Pacific Northwest.

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Digital surface models from utilizing lidar and photogrammetry were tested, including the role of unmanned aircraft systems (UAS) for data collection.
Impacts/Benefits of Implementation (actual, or anticipated)	The results indicated that the photogrammetry method, based on structure-from-motion, yielded comparable surface models to those collected with traditional lidar techniques. The UAS also provided some additional benefits, including better data collect perspective (airborne vs terrestrial), safer operations (the UAS hovering above the road is safer than survey crews working from the shoulder), and faster data collection (not requiring setup and movement of lidar equipment).
Web Links • Reports • Project Website	http://depts.washington.edu/pactrans/tech-transfer-1-unmanned-aircraft-assesses-landslides-completed/ http://depts.washington.edu/pactrans/pactrans-technology-transfer-success-stories-2015-1-unmanned-aircraft-assesses-landslides/ https://cms.dot.gov/sites/dot.gov/files/docs/utc/309326/utcnewslettermay2018.pdf https://onlinelibrary.wiley.com/doi/abs/10.1111/phor.12241

	https://youtu.be/1C_hf6tfYqM