UTC Project Information	
Project Title	Development of 3D Printed Materials for Rapid Fabrication of Pedestrian and Bicycle Infrastructure to Increase Mobility
University	University of Washington
Principal Investigator	Dawn Lehman
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans $45,000 University of Washington $45,000
Total Project Cost	$90,000
Agency ID or Contract Number	69A3551747110
Start and End Dates	September 1, 2018-August 31, 2020
Brief Description of Research Project	The long-term goal of this project is to develop a new construction methodology and materials for infrastructure to enhance mobility using fiber-reinforced cementitious materials (FRCMs) and 3D printing. The project will develop design and analysis methods for new, engineered fiber reinforced concrete for 3D printed structures, with a focus on pedestrian and bicycle infrastructure. This technology has several advantages over traditional construction methods and materials such as formed, cast-in-place concrete construction that requires substantial formwork and precast components that are expensive to construct and transport. In urban regions, pedestrian and bicycle brides are needed over busy streets with very little laydown space; therefore, printing in place will minimize equipment and space requirements. In isolated communities, printing in place reduces costs for transportation of precast components and cast-in-place formwork. New, cost-effective pedestrian and bicycle bridges have been a relatively low in priority for transportation infrastructure. In the Pacific Northwest, these bridges must meet the needs of urban and remote communities and be able to sustain seismic (extreme) demands with a negligible risk for significant structural damage or collapse. If successful, this project will provide new construction methods and structural systems for multi-modal transportation infrastructure.

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, or anticipated)	
Web Links • Reports • Project Website	