UTC Project Information	
Project Title	Evaluation of the Social Cost of Modal Diversion: A Multi-Modal Safety Analysis
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Agency ID or Contract Number	
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Brief Description of Research Project	Infrastructure investment by public agencies routinely has a multi-faceted objective. Often, considerable components of these objectives may be viewed as attributable to the goal of increasing the social welfare of the residents of the region and users of the transportation system. Transportation factors related to social welfare or social costs may typically be viewed in terms of pollution, congestion, and safety. The realization of social cost savings or benefits (performance) is largely dependent upon the response functions (how the user responds to a change in the transportation system) of users. Response functions are largely an insight to the economic conditions experienced by the user. This project will develop a reliable and implementable performance evaluation of safety projects that is readily implementable by effected jurisdictions. To achieve this evaluation, the project will draw from literature and implement tactics from several research lines, primarily that of the transportation infrastructure investment, social cost, and modal choice literature. Specifically, this research will enable concerns like those over oil transport on rail to possess a reliable tool by which proposed safety projects and actions may be evaluated for the larger impacts to freight transportation in the region. It is not the focus of this project to evaluate the efficacy of energy movement by rail, but to determine the impacts of increased oil/coal movement, and the safety actions concerned with this movement, on the overall transportation system and its users. Increased utilization of rail by oil and its transportation

	system wide effects on capacity possess three direct safety risks for the communities and economies of the Pacific Northwest. (1) Capacity Induced Diversion: Increased rail demand under capacity constraints diverts hauls back to the roadways, necessarily implying that there will be increased trucks on the roadway at a time when many states are seeking to divert more trucks to rail. (2) Derailment Abatement: Oil car derailment poses direct threats to the safety and security of all communities it passes through. Consideration of rail safety based legislation is underway throughout the region. These actions pose a significant likelihood of slowing down rail or altering movement, making it less attractive to shippers and shrinking available capacity. Thus, these safety actions have the potential to compound the effects of capacity constraints and further induce diversion to the roadways. (3) At-Grade: Oil export terminals in the Pacific Northwest are established within some of the most populated cities of the region. These increased exports pose significant safety concerns as the necessary number of at-grade crossing delays dramatically increases as train volume increases. Similarly, smaller towns are also faced with congestion and traffic impacts.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	
Impacts/Benefits of Implementation (actual, not anticipated)	
Web Links • Reports • Project Website	
Project Type (basic, applied, advanced, etc)	Applied