UTC Project Information	
Project Title	Analysis of Roadway Safety under the Alternative Project Delivery Systems
University	University of Washington
Principal Investigator	Ahmed-Abdel Aziz
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Funding Source(s) and Amounts Provided (by each agency or organization)	University of Washington PacTrans $39,693 University of Washington $39,693
Total Project Cost	$79,386
Agency ID or Contract Number	DTRT13-G-UTC40
Start and End Dates	September 16, 2015– September 15, 2016
Brief Description of Research Project	The performance of highway projects developed under the alternative delivery systems with regard to the status of roadway safety and the contractual safety terms have not yet been analyzed by previous studies. The implementation of PPP systems is expected to affect the safety performance of the roads, but the strength of the delivery method-safety performance is unknown, which make it difficult to evaluate PPP beyond cost and time performance. Ensuring long-term safety performance or the necessity to have safety improvements on a highway may require decision makers to check the alternative delivery systems rather than a traditional one. The goals of the proposed research include: 1. Identify if the PPP delivery systems would useful for safety projects. 2. Identify if there is a relationship between roadway safety and the project delivery system. That is, investigating the roadway safety status (e.g. collisions, fatalities, injuries) on projects that were delivered using the PPP delivery systems (e.g. DBOM, DBFO-Real Toll, DBFO-Availability, etc.) and comparing them to the normal or average roadway safety in the localities/cities of the projects.

Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Research output has been documented in a final report and presented and published at two conferences as listed below. Shang, L., and Abdel Aziz, A. (2019). "An Investigation of the Contractual Roadway Safety Terms in Transportation PPPs." The 10th International Structural Engineering and Construction Conference, May 20-25, Chicago, Illinois Luming Chang, Ahmed Abdel Aziz, and Giovanni Migliaccio (2017). "Investigation of Traffic Safety Performance of U.S. PPP Transportation Projects." The 2017 Annual Meeting of the Transportation Research Board, January 8-12, 2017, in Washington, D.C. Abdel Aziz, A. M., and Migliaccio, G.C. (2016). "Analysis of Roadway Safety under the Alternative Project Delivery Systems." Pacific Northwest Transportation Consortium (PacTrans), University Transportation Center for Federal Region 10, Seattle, WA.
	The research output has also been presented in poster sessions with the TRB and CERC annual meetings as listed below. PacTrans 2016 Regional Conference: Poster session: "An Investigation of the Traffic Safety Performance of PPP Transportation Projects in the United States" CERC 2016 Annual Conference (UW): Poster Session: "Analysis of Roadway Safety under the Alternative Project Delivery Systems"
Impacts/Benefits of Implementation (actual, or anticipated)	It is expected with the publication of the research output in the TRB annual meeting (as reported above) that department of transportations would have a better look at how the alternative delivery systems can contribute in maintaining and enforcing better roadway safety measures when making decisions on the procurement of transportation infrastructure.
Web Links • Reports • Project Website	**https://trid.trb.org/view/1439666** https://digital.lib.washington.edu/researchworks/handle/1773/43513 http://depts.washington.edu/pactrans/wp-content/uploads/2015/11/2015-S-UW-91_Ahmed-Abdel-Aziz_Analysis-of-Roadway-Safety_Report.pdf