

2016 UDOT RESEARCH PROBLEM STATEMENT

*** Problem statement deadline is March 14, 2016. Submit statements to Tom Hales at tahales@utah.gov. ***

Title: Roadway and Roadside-Related Crash Causes in Urban Areas

No. (office use): 16.03.13

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UDOT Champion (suggested): TBA

Select One Subject Area

Materials/Pavements

Maintenance

Traffic Mgmt/Safety

Preconstruction

Planning

Public Transportation

1. Describe the problem to be addressed.

This research will look into the possible causes for crashes which are related to the roadway or the roadside. It will aim to identify locations where frequent crashes of different types occur, and look into the possible causes for those crashes that can be attributed to the roadway or roadside (insufficient sight distance, insufficient clear zone, too wide or narrow travel lanes, auxiliary lanes, bike lanes, shoulders, medians, signage, pavement markings and similar). The research will also look into potential solutions for improving safety performance.

2. Explain why this research is important.

The research is directly related to UDOT's strategic goals, primarily zero fatalities, injuries and crashes. A portion of crashes has causes in the roadway and roadside environment, and most of the time this can be prevented by minor improvements. This research will look into the possible causes for crashes which can be attributed to roadway or roadside design. It will also try to address some of the problems by exploring potential solutions (which in most cases can be low-cost safety improvements), in order to reduce the crashes and their severity. The research would look into the urban area crashes in this phase, roughly identified as urban corridors inside the I-215 ring.

3. List the research objective(s):

1. Review literature related to roadway and roadside crashes and possible remedies
2. Obtain crash data for multiple years
3. Perform temporal and spatial analysis of crash data with identified causes and harmful events
4. Geo-locate the crashes and look for connection in crash causes, with a special attention to roadway and roadside
5. Perform field visits of identified locations and collect available data, including measurements, photographs, videos and similar
6. Identify potential roadway and roadside related causes
7. Explore potential improvements for identified locations

4. List the major tasks:

1. Literature review of crash causes, with special attention to roadway and roadside related crash causes
2. Data collection and analysis, including UDOT's crash databases and field data collection
3. Identification of critical locations with roadway and roadside related crash causes
4. Explore potential improvements at critical locations
5. Report findings

5. List the expected results:

1. Crash data analysis
2. Critical locations with respect to roadway and roadside crash contributing factors
3. Potential improvements at critical locations
4. Report

6. Describe how this research will be implemented.

The research will look into possible improvements (with a focus on low-cost safety improvements) that can be implemented within the urban roadway or roadside in order to reduce the number of crashes and their severity. It will also provide crash data analysis that can be used for other purposes.

The University of Utah will apply for additional funds from the Mountain Plains Consortium (MPC), a University Transportation Center, and if the funds are approved, the researchers will work with the UDOT TAC to develop an additional scope that would supplement the work presented in this proposal.

**7. Requested from UDOT: \$20,000
(or UTA for Public Transportation)**

Other/Matching Funds: \$TBA

Total Cost: \$TBA

8. Outline the proposed schedule, including start and major event dates.

The proposed project duration is one year, as follows:

Start: Summer 2016

Completion by project phases:

Phase 1: Literature review and data collection: 3 months after project start

Phase 2: Data analysis and locations identification: 6 months after project start

Phase 3: Field visits and recommendations for improvement: 9 months after project start

Phase 4: Finalize data analysis, recommendation and provide final report: 12 months after project start