

2016 UDOT RESEARCH PROBLEM STATEMENT

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

Title: Mobile Data Collection Device

No. (office use): 16.02.02

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UDOT Champion (suggested):

Select One Subject Area

Materials/Pavements

Maintenance

Traffic Mgmt/Safety

Preconstruction

Planning

Public Transportation

1. Describe the problem to be addressed.

The problem is how to acquire timely asset information. Culvert condition data is an example of this problem. Maintenance spent 4 years locating and assessing culverts. This data was stored in UPlan to provide location and condition information. A latter review of culverts on 201 and I-80 revealed that all the bad culverts were repaired. These repairs were not entered into UPlan or OMS or any know management system. We cannot manage assets if we do not know what repair work has been accomplished.

One approach we are using to gathering asset information is to hire Mandli to gather data. They drive every road in the State of Utah every other year and capture most of what we need. However, changes between data collections are not collected and some assets like culverts cannot be assessed this way. Addition effort is needed.

Having dedicated and trained inspectors for field reviews is very expensive. Los Angeles County spends \$5 million a year to inspect 5000 culverts. If we scale this cost up to meet Utah's needs we would have to spend \$40 million. A better solution is needed.

A possible solution is to have anyone in the field help collect asset information. This could include survey crews, field engineers, designer's maintenance crews, contractors, etc. We do not need experts for a first look. A location with pictures loaded onto a GIS map would give us the information we needed. A trained inspector could review the photos and decide which locations needed a second more detailed inspection. To accomplish this task an application that can take GPS location data and photographs is needed

What we need is an evaluation of what applications are available to accomplish the data gathering and a ranking of what will best meet our need.

2. Explain why this research is important.

If we do not do this we will continue to create and evolve tools to meet our need. We can save a lot of time and effort by searching what already exist or can be easily modified. This avoids costly development and maintenance costs.

3. List the research objective(s):

1. Identify the asset data needs of UDOT organizations to include central offices and regions
2. Survey data collection methods, tools, and techniques and compare them to UDOT needs
3. Recommend a best value solution

4. List the major tasks:

1. Define the data gathering needs of UDOT organizations using various Requirements Development techniques.
2. Survey existing data collection methods, tools and techniques.
3. Prioritize the list of solutions and recommend a best selection

5. List the expected results:

1. A documented process or method to continuously capture asset data
2. A tool to assist field resources in collecting data
3. A method of data storage and retrieval

6. Describe how this research will be implemented.

Gather UDOT data needs using interviews, team meetings, brain storming techniques, etc
Literature and application research
Analysis and comparison of UDOT data needs to

7. Requested from UDOT: \$
(or UTA for Public Transportation)

Other/Matching Funds: \$

Total Cost: \$

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